



2020.056 - IW-NET - Waterway Infrastructure

Danube										
Location	Country	Type	River-km	Length physical [m]	Length legal [m]	Width physical [m]	Breadth legal [m]	Depth physical [m] at RLW	Draught legal [m]	min. Height [m]
Ust-Dunaysk	UA	port	0,01							
Kilia	UA	port	46,50							
Tulcea	RO	port	70,00							
Izmail	UA	port	85,00							
Reni	UA	port	127,80							
Giurgiulesti	MD	port	133,80							
Galati	RO	port	160,00							
Braila	RO	port	160,00							
Vadu Oii - Giurgeni	RO	bridge	237,80			120,00				15,20
Cernavoda	RO	port	298,00							
Cernavoda	RO	junction	299,00	Danube-Black Sea-Canal (Cernavoda-Canal)						
Cernavoda	RO	bridge	300,00			150,00				24,99
Cernavoda	RO	bridge	300,07			150,00				24,99
Silistra-Lesil	BG	port	381,00							
Tutrakan	BG	port	432,68							
Ruse-Port Bulmarket	BG	port	484,20							
Giurgiu - Rousse	BG/RO	bridge	488,70			150,00				13,91
Ruse-Iztok	BG	port	491,00							
Giurgiu-Freeport	RO	port	492,10							
Ruse-Zapad	BG	port	497,63							
Svishtov - International port	BG	port	554,00							
Svishtov-Sviloza	BG	port	558,50							
Belene	BG	port	567,00							
Somovit	BG	port	608,00							
Oryahovo	BG	port	678,00							
Lom	BG	port	742,00							
Vidin	BG	port	785,00							
Calafat - Vidin	BG/RO	bridge	796,10			148,00				21,79
Prahovo	RS	port	861,00							
Djerdap II	RS	bridge	863,00			34,00				13,87
Portile de Fier II	RO	bridge	863,55			34,00				17,70
Djerdap II / Portile de Fier II	RS/RO	lock	863,70	340,00	300,00	34,00	33,00			
Drobeta Turnu Severin	RO	port	927,00							
Djerdap I / Portile de Fier I	RO	bridge	942,60			34,00				10,00
Djerdap I / Portile de Fier I	RS/RO	bridge	942,90			34,00				10,00
Djerdap I / Portile de Fier I	RS/RO	lock	942,95	310,00	290,00	34,00	33,00			
Orsova	RO	port	953,00							
Moldova Veche	RO	bridge	1045,12			150,00				23,71
Moldova Veche	RO	port	1050,00							
Smederevo	RS	port	1111,00							
Smederevo - Kovin	RS	bridge	1112,10			150,00				8,44
Smederevo	RS	bridge	1112,90			120,00				12,19
Pancevo	RS	port	1153,00							
Pancevacki most	RS	bridge	1166,63			100,00				9,37
Belgrade	RS	port	1168,00							
Pupinov most	RS	bridge	1176,10			150,00				10,76
Beska	RS	bridge	1232,17			180,00				38,05
Novi Sad	RS	port	1254,00							
Zezeljev most	RS	bridge	1254,20			150,00				9,80
Varadinska duga	RS	bridge	1255,07			125,00				9,73
Sloboda	RS	bridge	1257,57			190,00				14,16
Beocin	RS	port	1268,00							
Backa Palanka	RS	port	1295,00							
Backa Palanka - Ilok	HR/RS	bridge	1297,05			120,00				10,13
Vukovar	HR	port	1335,00							
Bogojevo	RS	port	1366,00							
Bogojevo - Erdut	HR/RS	bridge	1366,44			80,00				8,59
Bogojevo - Erdut	HR/RS	bridge	1366,63			125,00				9,60
Bezdan - Batina	HR/RS	bridge	1424,43			120,00				9,29
Mohacs-Margitta	HU	port	1446,00							
Mohacs-Boly Zrt.	HU	port	1450,00							

source

<http://www.viadonau.org/en/economy/the-danube-transport-axis/locks>

http://www.viadonau.org/fileadmin/content/viadonau/05Wirtschaft/Dokumente/2020/20200804_Danube_Bridges_int_deu.pdf

<https://at.d4d-portal.info/>

<https://www.danube-logistics.info/danube-ports/>

<https://www.danubeportal.com/bottleNeck>

http://www.eps.rs/lat/djerdap/Stranice/brodske_prevodnice.aspx

http://www.eps.rs/lat/djerdap/Stranice/brodske_prevodnice.aspx

Baja	HU	port	1479,00							
Baja	HU	bridge	1480,22			60,00			8,09	
Bogyiszlo	HU	bridge	1498,81			100,00			9,50	
Paks	HU	port	1528,00							
Dunaföldvár	HU	bridge	1560,40			74,00			8,73	
Dunaujvaros - Dunavecse	HU	bridge	1571,60			180,00			11,86	
Dunavecse	HU	port	1572,00							
Dunaujvaros-ISD Dunaferr	HU	port	1579,00							
Dunaujvaros-Centroport	HU	port	1580,00							
Budapest	HU	bridge	1632,90			100,00			10,00	
Budapest-Ferropport	HU	port	1639,70							
Budapest-Freepport	HU	port	1640,00							
Budapest	HU	bridge	1643,10			60,00			9,15	
Budapest	HU	bridge	1644,30			80,00			9,47	
Budapest	HU	bridge	1645,30			80,00			9,54	
Budapest	HU	bridge	1646,00			180,00			8,72	
Budapest	HU	bridge	1647,00			130,00			8,20	
Budapest	HU	bridge	1648,80			60,00			9,95	
Budapest	HU	bridge	1651,40			70,00			8,16	
Budapest	HU	bridge	1654,40			70,00			9,50	
Budapest	HU	bridge	1659,80			180,00			13,21	
Esztergom - Sturovo	HU/SK	bridge	1718,80			80,00			11,37	
Sturovo	SK	port	1722,00							
Komarno	SK	port	1767,00			40,00			5,69	
Komarom - Komarno	HU/SK	bridge	1767,80			80,00			7,29	
Komarom - Komarno	HU/SK	bridge	1770,40			95,40			8,83	
Győr-Gönyű	HU	port	1794,00							
Medved'ov	HU/SK	bridge	1806,36			80,00			8,51	
Gabcikovo	SK	lock	1819,15	280,00	220,00	34,00		34,00		
Gabcikovo	SK	bridge	1819,30			34,00			8,72	
Bratislava-Pálenisko	SK	port	1865,40			100,00			11,88	
Bratislava	SK	port	1866,25			50,00			11,06	
Bratislava	SK	bridge	1866,40			128,00			11,06	
Bratislava	SK	bridge	1867,30			150,00			11,75	
Bratislava	SK	bridge	1868,14			100,00			10,00	
Bratislava	SK	bridge	1869,10			138,00			11,28	
Bratislava	SK	bridge	1871,35			120,00			11,03	
Hainburg	AT	bridge	1886,25			120,00			13,46	
Schwechat	AT	bridge	1914,35			120,00			11,37	
Wien-Lobau	AT	port	1916,70					44,00	11,34	
Mannswörth	AT	bridge	1917,70			120,00			11,60	
Wien-Albern	AT	port	1918,30			ca. 25				
Wien-Freudenau	AT	port	1920,10					26,50	8,24	
Freudenau	AT	bridge	1920,87			59,00			8,92	
Freudenau	AT	bridge	1921,05			24,00			10,16	
Freudenau	AT	lock	1921,05	275,00	275,00	24,00		23,00	3,00	maximum permissible dimensions for passage of locks: § 6.28 Z 15 lit. b) WVO
Wien	AT	bridge	1924,96			65,00			7,99	
Wien	AT	bridge	1925,76			131,00			7,91	
Wien	AT	bridge	1925,99			123,00			8,24	
Wien	AT	bridge	1928,90			59,00			7,88	
Wien	AT	bridge	1930,45			128,00			8,53	
Wien	AT	bridge	1931,17			65,00			7,71	
Wien	AT	bridge	1931,20			65,00			8,12	
Wien	AT	bridge	1931,71			118,00			8,32	
Wien	AT	bridge	1932,57			64,50			8,41	
Wien	AT	bridge	1932,62			64,50			8,12	
Korneuburg	AT	port	1942,95							
Greifenstein	AT	lock	1949,20	230,00	230,00	24,00		23,00	3,00	maximum permissible dimensions for passage of locks: § 6.28 Z 15 lit. b) WVO
Greifenstein	AT	bridge	1949,23			24,00			9,29	
Tulln	AT	bridge	1963,15			76,00			7,76	
Tulln	AT	bridge	1965,50			151,00			9,91	
Altenwörth	AT	bridge	1979,80			24,00			11,26	
Altenwörth	AT	lock	1980,11	230,00	230,00	24,00		23,00	3,00	maximum permissible dimensions for passage of locks: § 6.28 Z 15 lit. b) WVO
Traismauer	AT	bridge	1991,35			120,00			8,55	
Krems	AT	port	1998,00			ca. 20			8,51	
Krems	AT	bridge	1999,77			108,00			8,25	
Krems	AT	bridge	2001,51			73,00			7,94	
Stein-Mautern	AT	bridge	2003,53			75,50			7,67	
Melk	AT	bridge	2034,43			126,70			9,68	
Melk	AT	lock	2038,06	230,00	230,00	24,00		23,00	3,00	maximum permissible dimensions for passage of locks: § 6.28 Z 15 lit. b) WVO
Melk	AT	bridge	2038,12			24,00			9,89	
Pöchlarn	AT	bridge	2043,60			85,60			8,91	
Ybbs	AT	port	2057,67			ca. 15				
Persenbeug	AT	lock	2060,42	230,00	230,00	24,00		23,00	3,00	maximum permissible dimensions for passage of locks: § 6.28 Z 15 lit. b) WVO
Persenbeug	AT	bridge	2060,42			24,00			8,01	

<http://www.slovris.sk/en/fairway-information/objects-reference-data-data-for-navigation/locks/>

maximum permissible dimensions for passage of locks: § 6.28 Z 15 lit. b) WVO

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Grein	AT	bridge	2080,82			99,50			8,31	
Wallsee	AT	bridge	2094,50			24,00			10,07	
Wallsee	AT	lock	2095,06	230,00	230,00	24,00	23,00	3,00		maximum permissible dimensions for passage of locks: § 6.28 Z 15 lit. b) WVO
Mauthausen	AT	bridge	2111,05			66,70			8,35	
Enns/Ennsdorf	AT	port	2111,83			ca. 60				
Abwinden	AT	bridge	2119,45			24,00			11,10	
Abwinden	AT	lock	2119,54	230,00	230,00	24,00	23,00	3,00		maximum permissible dimensions for passage of locks: § 6.28 Z 15 lit. b) WVO
Steyregg	AT	bridge	2127,68			67,00			8,46	
Steyregg	AT	bridge	2127,73			70,00			8,18	
Linz-Felbermayr	AT	port	2124,73			ca. 15				
Linz-voestalpine	AT	port	2127,16				60,00		6,72	
Linz-Tankhafen	AT	port	2128,19			ca. 60				
Linz-Handelshafen	AT	port	2130,70			ca. 50				
Linz-Werfthafen	AT	port	2131,80			ca. 60				
Linz	AT	bridge	2133,42			100,00			9,98	
Linz	AT	bridge	2133,46			100,00			9,97	
Linz	AT	bridge	2133,49			100,00			10,00	
Linz	AT	bridge	2133,82			80,00			8,22	
Linz	AT	bridge	2135,10			90,00			7,96	
Ottensheim	AT	bridge	2146,73			24,00			11,05	
Ottensheim	AT	lock	2146,82	230,00	230,00	24,00	23,00	3,00		maximum permissible dimensions for passage of locks: § 6.28 Z 15 lit. b) WVO
Aschach	AT	bridge	2159,97			125,00			8,59	
Aschach	AT	lock	2162,67	230,00	230,00	24,00	23,00	3,00		maximum permissible dimensions for passage of locks: § 6.28 Z 15 lit. b) WVO
Aschach	AT	bridge	2162,68			24,00			11,05	
Niederranna	AT	bridge	2194,10			107,30			8,13	
Jochenstein	AT/DE	bridge	2203,31			24,00			7,70	
Jochenstein	AT/DE	lock	2203,33	230,00	190	24,00	22,90	2,80		maximum permissible dimensions for passage of locks: § 9.03 DonauSchPV (convoys; for single vessel L _{max} = 135 m)
Kräutelstein	DE	bridge	2223,28			71,00			9,50	
Passau	DE	bridge	2225,75			80,55			5,15	
Passau	DE	bridge	2226,96			101,00			7,70	
Passau-Racklau	DE	port	2228,25			ca. 30				
Passau	DE	bridge	2230,10			67,00			11,00	
Passau	DE	bridge	2230,28			59,20			6,30	
Kachlet	DE	bridge	2230,42			24,00			9,40	
Kachlet	DE	lock	2230,60	230,00	190	24,00	22,90	2,80		maximum permissible dimensions for passage of locks: § 9.03 DonauSchPV (convoys; for single vessel L _{max} = 135 m)
Kachlet	DE	bridge	2230,63			24,00			8,50	
Passau-bayernhafen	DE	port	2232,75							
Schalding	DE	bridge	2234,26			100,15			35,75	
Vilshofen	DE	bridge	2249,16			89,00			8,00	
Winzer	DE	bridge	2266,23			62,00			8,60	
Deggenau	DE	bridge	2282,52			82,90			9,65	
Deggendorf	DE	port	2283,90			ca. 25				
Deggendorf	DE	bridge	2284,59			89,85			8,60	
Deggendorf	DE	bridge	2285,49			89,85			8,40	
Deggendorf	DE	bridge	2285,87			90,00			8,40	
Deggendorf	DE	bridge	2285,89			90,00			8,40	
Metten	DE	bridge	2290,12			71,40			8,60	
Bogen	DE	bridge	2308,40			75,10			9,00	
Bogen	DE	bridge	2311,27			43,95			5,00	
Straubing-Sand	DE	port	2313,30			ca. 75				
Reibersdorf	DE	bridge	2316,98			71,90			8,85	
Straubing	DE	bridge	2320,00			66,55			8,85	
Straubing	DE	bridge	2321,82			24,00			8,30	
Straubing	DE	lock	2324,13	230,00	190	24,00	22,90	2,80		maximum permissible dimensions for passage of locks: § 9.03 DonauSchPV (convoys; for single vessel L _{max} = 135 m)
Pfatter	DE	bridge	2353,32			85,35			7,35	
Geisling	DE	lock	2354,29	230,00	190	24,00	22,90	2,80		maximum permissible dimensions for passage of locks: § 9.03 DonauSchPV (convoys; for single vessel L _{max} = 135 m)
Wörth	DE	bridge	2358,26			138,45			8,10	
Donaustauf	DE	bridge	2369,64			101,75			8,75	
Regensburg-Osthafen	DE	port	2373,00			ca. 100				
Regensburg-Schwabelweis	DE	bridge	2376,33			101,00			8,65	
Regensburg-Westhafen	DE	port	2376,35			ca. 100				
Schwabelweis	DE	bridge	2376,82			33,00			5,95	
Regensburg	DE	bridge	2378,39			50,20			6,95	
Regensburg	DE	bridge	2379,56			12,00			6,65	
Regensburg	DE	lock	2379,68	190,00	190	12,00	11,45	2,80		maximum permissible dimensions for passage of locks: § 9.03 DonauSchPV (convoys; for single vessel L _{max} = 135 m)
Regensburg	DE	bridge	2380,17			65,00			6,40	
Pfaffenstein	DE	bridge	2381,04			37,00			6,60	
Pfaffenstein	DE	bridge	2381,13			35,00			6,75	
Mariaort	DE	bridge	2385,67			32,60			8,65	
Sinzing	DE	bridge	2386,71			48,65			10,46	
Sinzing	DE	bridge	2387,59			49,20			40,80	
Bad Abbach	DE	lock	2397,17	190,00	190	12,00	11,45	2,80		maximum permissible dimensions for passage of locks: § 9.03 DonauSchPV (convoys; for single vessel L _{max} = 135 m)
Bad Abbach	DE	bridge	2400,28			48,60			6,45	
Bad Abbach	DE	bridge	2401,74			48,45			6,40	

Poikam	DE	bridge	2401,92	28,75	7,05
Saal	DE	bridge	2410,10	64,40	7,10
Kelheim	DE	port	2411,00	ca. 100	
Kelheim	DE	junction	2411,50 Main-Danube-Canal		
Kelheim	DE	bridge	2412,72	31,10	6,80
Kelheim	DE	bridge	2414,25	17,25	5,25



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2020.056 - IW-NET - Waterway Infrastructure

Danube-Black Sea-Canal (Cernavoda-Canal)

Location	Country	Type	Canal-km	Length physical [m]	Length legal [m]	Width physical [m]	Breadth legal [m]	Depth physical [m]	Draught legal [m]	min. Height [m]
Cernavoda	RO	junction	65,00	Danube						
Cernavoda	RO	bridge	63,19							17,00
Cernavoda	RO	lock	60,30	300,00	296,00	25,00	23,50			
Medgidia	RO	bridge	40,37							17,00
Medgidia	RO	port	37,50							
Medgidia	RO	bridge	36,32							17,00
Murfatlar	RO	port	25,00							
Murfatlar	RO	bridge	23,28							17,00
	RO	bridge	18,86							17,00
Agigea	RO	bridge	2,68							17,00
Agigea	RO	lock	1,90	310,00	296,00	25,00	23,50			
Constanta	RO	bridge	0,55							17,00
Constanta	RO	port	0,00							

source

<http://www.viadonau.org/en/economy/the-danube-transport-axis/locks>

<https://at.d4d-portal.info/>

<https://www.danube-logistics.info/danube-ports/>

<https://www.acn.ro/index.php/en/locks-ports-bridges-charts/239-cernavoda-lock>

<https://www.acn.ro/index.php/en/inland-rules>

<https://www.acn.ro/index.php/en/locks-ports-bridges-charts/238-agigea-lock>



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Main-Danube-Canal											
Location	Country	Type	Canal-km	Length physical [m]	Length legal [m]	Width physical [m]	Breadth legal [m]	Depth physical [m]	Draught legal [m]	min. Height [m]	
Kelheim	DE	junction	170,70	Danube							
Kelheim	DE	bridge	169,70			44,75				6,70	
Kelheim	DE	bridge	168,32			38,45				6,60	
Kelheim	DE	bridge	167,77			39,30				6,85	
Kelheim	DE	bridge	167,44			35,85				6,65	
Kelheim	DE	bridge	166,18			12,00				6,35	
Kelheim	DE	lock	166,06	190,00	190,00	12,00	11,45		2,70		
Essing	DE	bridge	161,89			33,05				6,35	
Essing	DE	bridge	160,26			33,05				6,50	
Nusshausen	DE	bridge	157,16			33,10				6,55	
Riedenburg	DE	bridge	152,92			35,25				7,25	
Riedenburg	DE	bridge	152,39			36,50				6,75	
Riedenburg	DE	bridge	150,95			12,00				6,65	
Riedenburg	DE	lock	150,83	190,00	190,00	12,00	11,45		2,70		
Gundlfing	DE	bridge	147,82			39,40				7,45	
Untereggersberg	DE	bridge	145,38			37,20				6,80	
Meihern	DE	bridge	142,37			33,10				6,90	
Griesstetten	DE	bridge	136,91			33,10				6,90	
Dietfurt	DE	bridge	135,93			33,10				7,05	
Dietfurt	DE	bridge	135,37			12,00				6,95	
Dietfurt	DE	lock	135,26	190,00	190,00	12,00	11,45		2,70	6,30	
Ottmaring	DE	bridge	133,75			33,10				6,40	
Kevenhüll-Beilngries	DE	bridge	129,46			33,30				6,05	
Beilngries	DE	bridge	128,62			38,85				6,15	
Biberbach	DE	bridge	127,36			33,10				8,30	
Plankstetten	DE	bridge	125,12			33,60				6,20	
Eglasmühle	DE	bridge	124,08			33,05				6,85	
Berching	DE	bridge	122,62			12,00				7,05	
Berching	DE	lock	122,51	190,00	190,00	12,00	11,45		2,70	6,70	
Berching-Süd	DE	bridge	121,44			35,80				6,75	
Berching	DE	bridge	120,85			35,00				6,30	
Berching-Nord	DE	bridge	120,33			35,00				6,30	
Pollanten	DE	bridge	116,96			33,05				6,90	
Bachhausen	DE	bridge	115,57			12,00				7,00	
Bachhausen	DE	lock	115,46	190,00	190,00	12,00	11,45		2,70	6,65	
Bachhausen	DE	bridge	114,61			33,65				6,15	
Körnersdorf	DE	bridge	113,51			33,65				6,40	
Erasbach	DE	bridge	112,24			33,65				6,25	
Sulzkirchen	DE	bridge	108,92			33,70				6,65	
Forchheim	DE	bridge	107,51			33,70				7,05	
Michelbach	DE	bridge	104,56			33,70				6,20	
Mörlach-Pierheim	DE	bridge	101,09			33,70				7,15	
Bischofsholz	DE	bridge	100,55			33,65				6,70	
Hilpoltstein	DE	bridge	100,50			33,65				7,65	
Hilpoltstein	DE	lock	98,99	190,00	190,00	12,00	11,45		2,70	6,70	
Hilpoltstein	DE	bridge	98,87			12,00				11,00	
Feystadt-Hilpoltstein	DE	bridge	97,38			33,70				6,10	
Allersberg-Hilpoltstein	DE	bridge	95,76			33,70				6,15	
Eckersmühlen	DE	lock	94,94	190,00	190,00	12,00	11,45		2,70	6,70	
Eckersmühlen	DE	bridge	94,82			12,00				11,00	
Eckersmühlen-Brunnau	DE	bridge	92,54			33,10				8,75	
Roth-Allersberg	DE	bridge	90,21			33,10				6,10	
Leerstetten	DE	lock	84,32	190,00	190,00	12,00	11,45		2,70	6,65	
Leerstetten	DE	bridge	84,21			12,00				8,80	
Rednitzhembach-Schwand	DE	bridge	83,04			33,10				6,15	
Rednitzhembach-Harm	DE	bridge	82,27			33,10				6,10	
Schaftnach-Leerstetten	DE	bridge	79,82			33,15				6,00	
Nürnberg-Heilbronn	DE	bridge	77,95			33,10				7,05	
Nürnberg	DE	bridge	77,66			33,10				6,10	
Nürnberg	DE	bridge	76,27			33,05				5,95	
Nürnberg	DE	bridge	75,00			33,05				5,95	
Eibach	DE	lock	72,82	190,00	190,00	12,00	11,45		2,70	6,95	
Eibach	DE	bridge	72,71			12,00				7,00	
Nürnberg	DE	bridge	72,69			12,00				6,95	

source

https://de.wikipedia.org/wiki/Liste_der_Main-Donau-Schleusen

https://www.elwis.de/DE/Schiffahrtsrecht/Verzeichnis-Rechtsverordnungen-Gesetze-Richtlinien/BinSchStrO.pdf?__blob=publicationFile&y=37

Verzeichnis der Brückendurchfahrtshöhen/-breiten im Bezirk GDWS Standort Würzburg, Okt. 2017

maximum permissible dimensions for passage of locks:

§ 12.02 Binnenschiffahrtsstraßen-Ordnung

Nürnberg	DE	bridge	70,34			41,45			6,70
Nürnberg	DE	bridge	69,63			89,40			5,90
Nürnberg	DE	lock	69,09	190,00	190,00	12,00	11,45	2,70	6,00
Nürnberg	DE	bridge	68,98			12,00			8,40
Nürnberg-Eibach	DE	bridge	68,51			38,05			9,80
Nürnberg-Treuchtlingen	DE	bridge	68,47			36,25			5,95
Nürnberg-Roth	DE	bridge	68,44			35,35			6,05
Nürnberg	DE	bridge	67,84			34,00			8,75
Nürnberg	DE	bridge	67,37			34,00			7,55
Nürnberg	DE	bridge	66,46			34,00			7,30
Nürnberg-Stein	DE	bridge	66,36			34,00			9,45
Nürnberg-Crailsheim	DE	bridge	66,34			34,00			9,55
Nürnberg	DE	bridge	65,69			34,00			6,40
Nürnberg	DE	bridge	64,22			33,00			5,85
Fürth	DE	bridge	61,32			34,00			6,15
Fürth-Cadolzburg	DE	bridge	60,93			34,00			6,30
Fürth	DE	bridge	60,50			33,10			6,15
Fürth	DE	bridge	60,08			33,10			6,00
Fürth	DE	bridge	59,30			34,00			8,45
Fürth-Fürberg	DE	bridge	58,67			34,00			5,95
Fürth	DE	bridge	58,05			34,00			10,00
Fürth	DE	bridge	57,72			34,00			8,70
Fürth	DE	bridge	57,25			33,10			6,20
Fürth	DE	bridge	57,15			33,10			6,05
Fürth-Farnbach	DE	bridge	56,29			33,05			6,35
Fürth	DE	bridge	55,65			33,05			6,65
Heuweg	DE	bridge	50,21			33,05			6,25
Kriegensbrunn	DE	lock	48,66	190,00	190,00	12,00	11,45	2,70	5,95
Kriegensbrunn	DE	bridge	48,55			12,00			7,55
Erlangen	DE	bridge	48,13			53,00			6,40
Erlangen-Herzogenaurach	DE	bridge	47,57			33,10			6,00
Erlangen-Frauenaurach	DE	bridge	47,54			33,10			5,90
Erlangen-Herzogenaurach	DE	bridge	46,53			33,10			6,40
Erlangen-Büchenbach	DE	bridge	45,19			33,05			6,10
Erlangen	DE	bridge	44,85			33,05			6,15
Erlangen-Büchenbach	DE	bridge	44,43			33,05			6,65
Erlangen-Kosbach	DE	bridge	43,54			33,10			6,55
Erlangen-Membach	DE	bridge	42,80			33,10			6,50
Erlangen-Dechsendorf	DE	bridge	42,08			33,05			6,20
Erlangen	DE	lock	41,05	190,00	190,00	12,00	11,45	2,70	5,85
Erlangen	DE	bridge	40,94			12,00			7,75
Möhrendorf	DE	bridge	38,90			33,05			6,45
Kleinseebach	DE	bridge	37,82			33,05			6,00
Baiersdorf	DE	bridge	36,16			33,10			5,90
Hausen	DE	lock	32,86	190,00	190,00	12,00	11,45	2,70	6,00
Hausen	DE	bridge	32,76			12,00			7,25
Hausen	DE	bridge	32,75			12,00			10,80
Forchheim-Neustadt/Aisch	DE	bridge	30,92			34,30			6,70
Forchheim-Hausen	DE	bridge	30,69			34,50			6,00
Forchheim	DE	bridge	29,07			43,30			6,85
Forchheim-Burk	DE	bridge	28,45			42,10			6,70
Forchheim-Burk	DE	bridge	28,00			42,30			7,05
Forchheim	DE	lock	25,89	190,00	190,00	12,00	11,45	2,70	6,00
Forchheim	DE	bridge	25,77			12,00			6,15
Neuses-Schlammersdorf	DE	bridge	22,62			15,80			6,20
Neuses	DE	bridge	21,81			32,95			6,05
Altendorf	DE	bridge	19,86			33,10			14,30
Altendorf	DE	bridge	19,48			33,10			6,10
Hirschaid	DE	bridge	16,60			33,10			6,05
Strullendorf	DE	lock	13,29	190,00	190,00	12,00	11,45	2,70	6,05
Strullendorf	DE	bridge	13,17			12,90			6,75
Strullendorf-Pettstadt	DE	bridge	13,16			17,30			6,15
Bamberg-Höchstadt	DE	bridge	12,55			33,10			8,40
Strullendorf	DE	bridge	12,20			33,05			6,25
Bamberg	DE	lock	7,42	190,00	190,00	12,00	11,45	2,70	6,30
Bamberg	DE	bridge	7,30			12,00			9,35
Bamberg	DE	bridge	6,97			42,50			6,65
Bamberg	DE	bridge	5,85			40,00			7,45
Bamberg	DE	bridge	5,37			40,00			7,80
Bamberg	DE	bridge	5,15			40,00			7,00
Bamberg	DE	bridge	4,82			40,00			6,75
Bamberg	DE	bridge	4,22			40,00			6,30
Bischberg	DE	bridge	1,37			40,00			6,50
Bamberg	DE	junction	0,00 Main						



2020.056 - IW-NET - Waterway Infrastructure

Main											
Location	Country	Type	River-km	Length physical [m]	Length legal [m]	Width physical [m]	Breadth legal [m]	Depth physical [m]	Draught legal [m]	min. Height [m]	
Bamberg	DE	junction	384,00	Main-Danube-Canal							
Viereth	DE	bridge	380,86			12,00				6,60	
Viereth	DE	lock	380,70	289,80	190,00	12,00	11,45	2,90			
Viereth	DE	bridge	379,83			36				7,15	
Eltmann	DE	bridge	369,54			36,00				6,60	
Eltmann	DE	bridge	367,90			30,00				10,65	
Limbach	DE	lock	367,18	299,10	190,00	12,00	11,45	2,50			
Limbach	DE	bridge	366,99			12,00				6,45	
Zeil	DE	bridge	362,92			36,00				6,75	
Knetzgau-Zeil	DE	bridge	360,76			36,55				6,70	
Knetzgau	DE	bridge	359,83			12,00				6,30	
Knetzgau	DE	lock	359,78	298,85	190,00	12,00	11,45	2,50			
Haßfurt	DE	bridge	355,22			36,00				6,65	
Horhausen	DE	bridge	349,21			36,00				7,35	
Ottendorf	DE	lock	345,26	301,60	190,00	12,00	11,45	2,50			
Untereuerheim	DE	bridge	343,75			36,00				6,40	
Weyer	DE	bridge	341,20			36,00				12,95	
Schweinfurt	DE	bridge	332,63			36,00				6,35	
Schweinfurt	DE	lock	332,04	300,60	190,00	12,00	11,45	2,50			
Schweinfurt-Gerolzhofen	DE	bridge	331,47			35,80				7,00	
Schweinfurt	DE	bridge	331,22			35,95				10,05	
Schweinfurt	DE	bridge	329,78			36,00				6,45	
Bergtheinfeld	DE	bridge	326,92			36,00				7,95	
Garstadt	DE	lock	323,50	299,75	190,00	12,00	11,45	2,50			
Wipfeld	DE	lock	316,29	300,15	190,00	12,00	11,45	2,50			
Volkach	DE	bridge	305,96			39,15				6,95	
Volkach	DE	bridge	304,53			36,85				6,35	
Gerlachshausen	DE	bridge	304,22			32,85				6,30	
Sommerach	DE	bridge	302,63			34,15				6,15	
Gerlachshausen	DE	bridge	301,53			36,40				6,40	
Gerlachshausen	DE	lock	300,51	300,00	190,00	12,00	11,45	2,50			
Gerlachshausen	DE	bridge	300,34			12,00				6,65	
Schwarzach	DE	bridge	298,33			36,00				6,25	
Dettelbach	DE	bridge	295,48			12,00				6,70	
Dettelbach	DE	lock	295,40	299,35	190,00	12,00	11,45	2,50			
Dettelbach	DE	bridge	292,12			37,40				15,00	
Kitzingen	DE	bridge	287,32			36,00				10,85	
Kitzingen	DE	bridge	286,76			36,00				6,50	
Kitzingen	DE	bridge	286,18			36,00				7,65	
Kitzingen	DE	bridge	285,12			26,15				12,75	
Kitzingen	DE	bridge	285,10			62,80				7,35	
Kitzingen	DE	lock	283,98	299,80	190,00	12,00	11,45	2,50			
Segnitz	DE	bridge	277,37			63,25				6,75	
Marktbreit	DE	bridge	275,96			35,95				48,85	
Marktbreit	DE	lock	275,68	296,40	190,00	12,00	11,45	2,50			
Ochsenfurt	DE	bridge	271,44			36,00				7,90	
Ochsenfurt	DE	bridge	271,18			36,00				6,90	
Goßmannsdorf	DE	bridge	269,05			12,00				8,00	
Goßmannsdorf	DE	lock	269,03	296,90	190,00	12,00	11,45	2,50			
Goßmannsdorf	DE	bridge	268,83			19,30				7,60	
Sommerhausen	DE	bridge	265,01			36,00				6,70	

source

https://de.wikipedia.org/wiki/Liste_der_Mainstaustufen

Verzeichnis der Brückendurchfahrthöhen/-breiten im Bezirk GDWS Standort Würzburg, Okt. 2017

maximum permissible dimensions for passage of locks:
§ 11.02 Binnenschiffahrtsstraßen-Ordnung

Randersacker	DE	bridge	260,56			36,00			15,20
Randersacker	DE	lock	258,89	299,60	190,00	12,00	11,45	2,50	
Randersacker	DE	bridge	258,81			12,00			7,35
Heidingafeld	DE	bridge	255,15			37,00			7,65
Würzburg	DE	bridge	255,06			40,00			6,80
Würzburg	DE	bridge	254,24			40,55			7,05
Würzburg	DE	bridge	253,06			21,20			5,75
Würzburg	DE	lock	252,51	293,10	190,00	12,00	11,45	2,50	
Würzburg	DE	bridge	252,32			12,00			4,45
Würzburg	DE	bridge	251,64			16,00			6,45
Würzburg	DE	bridge	251,23			40,35			7,30
Zell	DE	bridge	247,47			18,55			6,90
Veitshöchheim	DE	bridge	244,86			47,60			16,70
Veitshöchheim	DE	bridge	243,79			40,00			7,50
Erlabrunn	DE	bridge	241,22			12,00			7,45
Erlabrunn	DE	lock	241,20	299,20	190,00	12,00	11,45	2,50	
Zellingen	DE	bridge	235,41			23,80			6,50
Retzbach	DE	bridge	234,69			44,65			10,15
Himmelstadt	DE	bridge	232,37			12,00			7,35
Himmelstadt	DE	lock	232,29	299,50	190,00	12,00	11,45	2,50	
Himmelstadt	DE	bridge	232,11			12,00			6,60
Karlstadt	DE	bridge	227,03			41,90			7,65
Karlstadt	DE	bridge	226,23			21,30			6,55
Karlbürg	DE	bridge	224,71			40,00			8,30
Harrbach	DE	bridge	219,53			12,00			7,40
Harrbach	DE	lock	219,47	299,45	190,00	12,00	11,45	2,50	
Wernfeld	DE	bridge	215,96			47,45			7,15
Gemünden	DE	bridge	211,06			40,05			11,20
Gemünden	DE	bridge	210,28			40,00			20,75
Nantenbach	DE	bridge	204,80			53,20			12,35
Steinbach	DE	bridge	200,80			12,00			7,00
Steinbach	DE	lock	200,67	299,10	190,00	12,00	11,45	2,50	
Lohr-Sackenbach	DE	bridge	198,20			51,95			7,15
Lohr	DE	bridge	197,95			11,90			6,40
Neustadt-Erlach	DE	bridge	189,61			40,40			8,35
Rothenfels	DE	bridge	186,06			12,00			7,80
Rothenfels	DE	lock	185,89	298,45	190,00	12,00	11,45	2,50	
Marktheidenfeld	DE	bridge	180,87			40,00			7,05
Marktheidenfeld	DE	bridge	179,79			11,50			6,00
Lengfurt	DE	bridge	174,62			11,98			8,30
Lengfurt	DE	lock	174,51	300,08	190,00	11,98	11,45	2,90	
Lengfurt	DE	bridge	173,68			42,20			6,35
Bettingen	DE	bridge	167,70			40,00			14,95
Eichel	DE	bridge	160,60			12,00			7,55
Eichel	DE	lock	160,47	299,92	190,00	12,00	11,45	2,90	
Wertheim	DE	bridge	157,37			30,30			6,50
Kreuzwertheim	DE	bridge	155,75			49,35			8,55
Hasloch	DE	bridge	152,55			40,00			6,25
Faulbach	DE	bridge	147,12			12,10			8,15
Faulbach	DE	lock	147,07	299,80	190,00	12,10	11,45	2,90	
Freudenberg	DE	bridge	134,06			12,00			7,60
Freudenberg	DE	lock	133,95	300,00	190,00	12,00	11,45	2,90	
Freudenberg	DE	bridge	132,70			45,00			6,30
Miltenberg	DE	bridge	125,70			40,60			10,85
Miltenberg	DE	bridge	124,80			18,00			6,45
Miltenberg	DE	bridge	123,47			42,30			6,30
Heubach	DE	bridge	122,37			12,00			6,90
Heubach	DE	lock	122,36	300,00	190,00	12,00	11,45	2,90	
Kleinheubach	DE	bridge	121,67			53,60			7,30
Klingenberg	DE	bridge	113,16			12,05			9,00
Klingenberg	DE	lock	113,05	300,71	190,00	12,05	11,45	2,90	
Klingenberg	DE	bridge	112,78			20,00			7,90
Wörth	DE	bridge	109,86			33,90			6,35
Obernburg	DE	bridge	104,93			39,95			8,70
Obernburg	DE	bridge	104,50			40,55			7,15

Wallstadt	DE	bridge	101,37			12,00			7,60
Wallstadt	DE	lock	101,20	299,93	190,00	12,00	11,45	2,90	
Sulzbach	DE	bridge	97,98			40,10			9,10
Obernau	DE	bridge	93,04			12,00			6,85
Obernau	DE	lock	92,91	299,18	190,00	12,00	11,45	2,90	
Nilkheim	DE	bridge	89,75			39,60			8,55
Aschaffenburg	DE	bridge	87,70			40,75			7,70
Aschaffenburg	DE	bridge	87,12			61,60			6,85
Aschaffenburg	DE	bridge	85,85			49,85			7,55
Aschaffenburg	DE	port	84,00					2,90	
Stockstadt	DE	bridge	81,34			52,90			6,45
Stockstadt	DE	bridge	80,05			49,65			6,70
Kleinostheim	DE	lock	77,91	298,22	190,00	12,02	11,45	2,90	
Kleinostheim	DE	bridge	77,73			12,02			6,30
Mainflingen	DE	bridge	76,63			51,05			7,60
Mainhausen	DE	bridge	74,09			52,30			7,45
Krotzenburg	DE	lock	63,85	300,01	190,00	12,00	11,45	2,90	
Krotzenburg	DE	bridge	63,73			12,00			7,85
Großauheim	DE	bridge	61,14			50,20			8,20
Auheim	DE	bridge	59,55			23,90			4,85
Auheim	DE	bridge	59,55			23,90			4,85
Steinheim	DE	bridge	58,30			70,45			7,90
Hanau	DE	bridge	56,39			19,70			6,10
Hanau	DE	bridge	56,37			19,70			5,95
Hanau	DE	bridge	56,35			19,70			6,60
Mühlheim	DE	lock	53,19	299,90	190,00	12,04	11,45	2,90	
Mühlheim	DE	bridge	53,04			12,04			8,20
Offenbach	DE	bridge	44,67			52,55			6,75
Offenbach	DE	bridge	41,07			58,00			6,85
Offenbach	DE	bridge	39,16			54,95			8,30
Offenbach	DE	lock	38,51	230,07	190,00	13,05	12,20	2,90	
Offenbach	DE	bridge	38,44			13,05			8,75
Frankfurt	DE	bridge	37,33			52,00			8,05
Osthafen Frankfurt	DE	port	37,20					2,90	
Frankfurt	DE	bridge	36,90			53,90			8,80
Frankfurt	DE	bridge	36,14			54,70			6,60
Frankfurt	DE	bridge	36,00			18,40			6,20
Frankfurt	DE	bridge	35,65			55,40			6,35
Frankfurt	DE	bridge	35,26			51,85			6,50
Frankfurt	DE	bridge	34,84			19,35			6,60
Frankfurt	DE	bridge	34,39			60,80			7,80
Frankfurt	DE	bridge	33,89			25,55			6,85
Frankfurt	DE	bridge	32,77			22,65			7,50
Niederrad	DE	bridge	31,00			23,95			7,40
Niederrad	DE	bridge	30,97			23,95			7,75
Griesheim	DE	bridge	30,01			56,85			7,75
Griesheim	DE	bridge	28,72			15,00			8,15
Griesheim	DE	lock	28,69	344,38	190,00	15,00	14,20	2,90	
Schwanheim	DE	bridge	26,80			51,00			7,35
Höchst	DE	bridge	24,31			52,95			9,35
Höchst	DE	bridge	23,37			50,95			8,75
Höchst	DE	bridge	23,34			50,95			10,35
Höchst	DE	bridge	22,03			61,90			6,55
Sindlingen	DE	bridge	21,46			63,05			7,80
Eddersheim	DE	bridge	15,60			15,05			8,05
Eddersheim	DE	lock	15,55	344,26	190,00	15,05	14,20	2,90	
Eddersheim	DE	bridge	14,26			54,20			10,20
Eddersheim	DE	bridge	14,21			55,25			9,80
Rüsselsheim	DE	bridge	9,93			48,80			8,90
Hochheim	DE	bridge	4,00			57,80			6,90
Hochheim	DE	bridge	3,53			48,55			7,30
Kostheim	DE	lock	3,21	339,02	190,00	15,00	14,20	2,90	
Kostheim	DE	bridge	3,17			15,00			7,35
Kostheim	DE	bridge	1,33			39,65			6,70
Mainz	DE	junction	0,00 Rhine						



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2020.056 - IW-NET - Waterway Infrastructure

Rhine between Gorinchem and Rheinfelden

Location	Country	Type	River-km	Length physical [m]	Length legal [m]	Width physical [m]	Breadth legal [m]	Depth physical [m]	Draught legal [m]	min Height [m]
Gorinchem	NL	bridge	956,20			155,00				10,30
Zaltbommel	NL	bridge	933,60			236,00				10,75
Zaltbommel	NL	bridge	933,50			119,70				8,09
Wamel	NL	junction	913,40	Amsterdam-Rijnkanaal						
Beneden-Leeuwen	NL	bridge	910,90			260,00				7,70
Beuningen	NL	bridge	893,80			260,00				10,00
Nijmegen	NL	bridge	885,90			235,00				9,46
Nijmegen	NL	bridge	884,60			220,00				8,10
Nijmegen	NL	bridge	883,60			241,40				9,95
Millingen aan de Rijn	NL	junction	866,6	Bijlandsch Kanaal						
Kleve-Emmerich	DE	bridge	853,23							9,00
Rees-Kalkar	DE	bridge	838,65							9,00
Wesel-Büderich	DE	bridge	813,89							9,00
Duisburg	DE	bridge	785,26							9,00
Duisburg	DE	bridge	785,02							9,00
Duisburg	DE	bridge	780,70							9,00
Duisburg	DE	bridge	778,36							9,00
Rheinhausen-Duisburg	DE	bridge	775,29							9,00
Rheinhausen-Duisburg	DE	bridge	774,38							9,00
Krefeld	DE	bridge	764,03							9,00
Düsseldorf	DE	bridge	752,46							9,00
Düsseldorf	DE	bridge	746,70							9,00
Düsseldorf	DE	bridge	744,84							9,00
Düsseldorf	DE	bridge	743,57							9,00
Düsseldorf	DE	bridge	738,19							9,00
Düsseldorf	DE	bridge	737,10							9,00
Düsseldorf	DE	bridge	732,45							9,00
Leverkusen	DE	bridge	701,45							9,00
Köln	DE	bridge	691,95							9,00
Köln	DE	bridge	690,16							9,00
Köln	DE	bridge	688,48							9,00
Köln	DE	bridge	687,93							9,00
Köln	DE	bridge	687,28							9,00
Köln	DE	bridge	685,71							9,00
Köln	DE	bridge	683,38							9,00
Bonn	DE	bridge	657,15							9,00
Bonn	DE	bridge	654,94							9,00
Bonn	DE	bridge	651,38							9,00
Weißenthurm-Neuwied	DE	bridge	607,73							9,00
Urmitz-Engers	DE	bridge	602,10							9,00
St. Sebastian-Bendorf	DE	bridge	598,42							9,00
Koblenz-Pfaffendorf	DE	bridge	590,87							9,00
Koblenz-Horchheim	DE	bridge	588,52							9,00
Koblenz-Horchheim	DE	bridge	588,47							9,00
Schierstein	DE	bridge	504,43							9,00
Mainz-Nord	DE	bridge	500,95							9,00
Mainz	DE	bridge	498,47							9,00
Mainz	DE	junction	496,70	River Main						
Mainz-Süd	DE	bridge	496,38							9,00
Weisenau	DE	bridge	493,63							9,00
Worms	DE	bridge	445,45							9,00

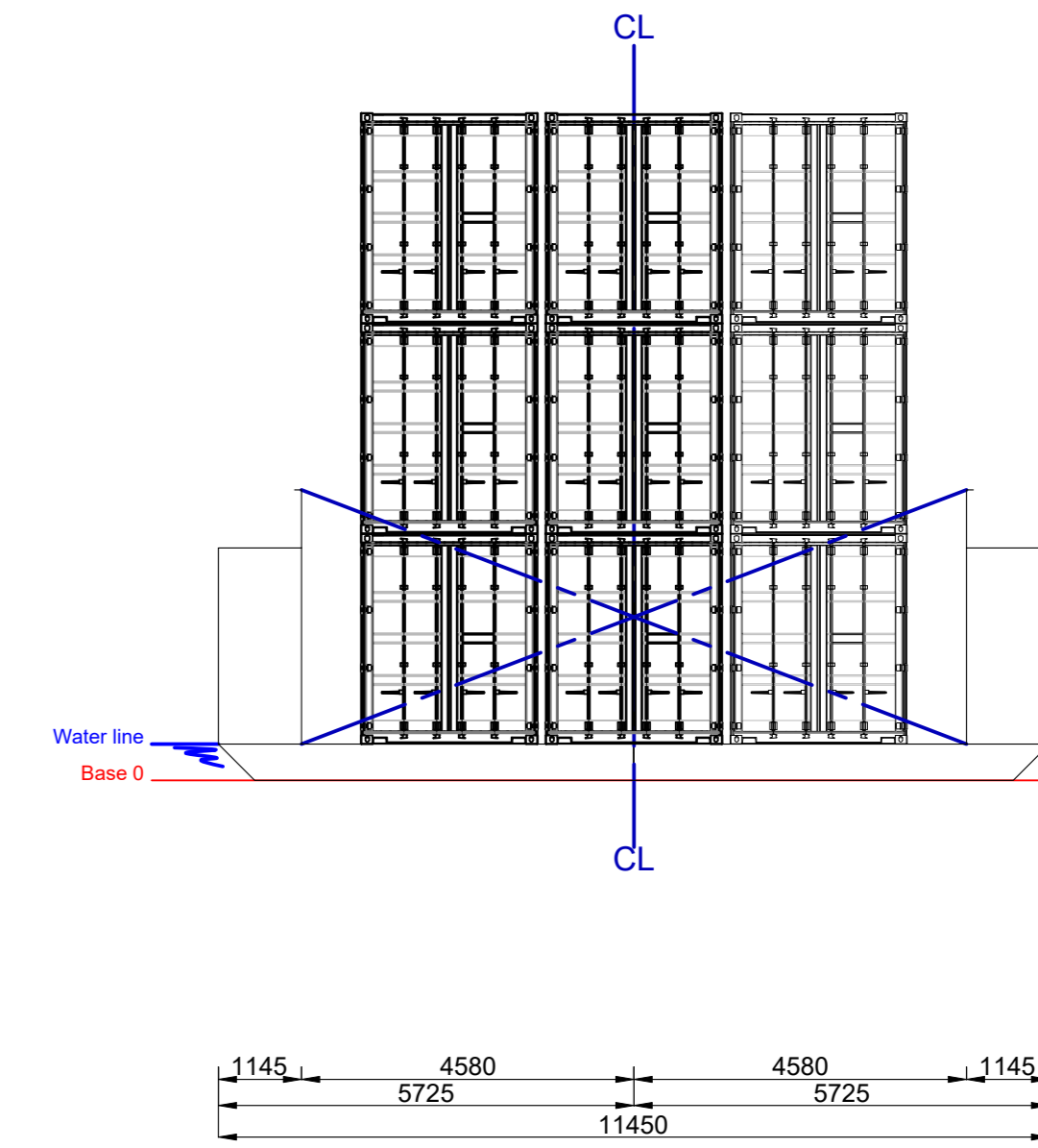
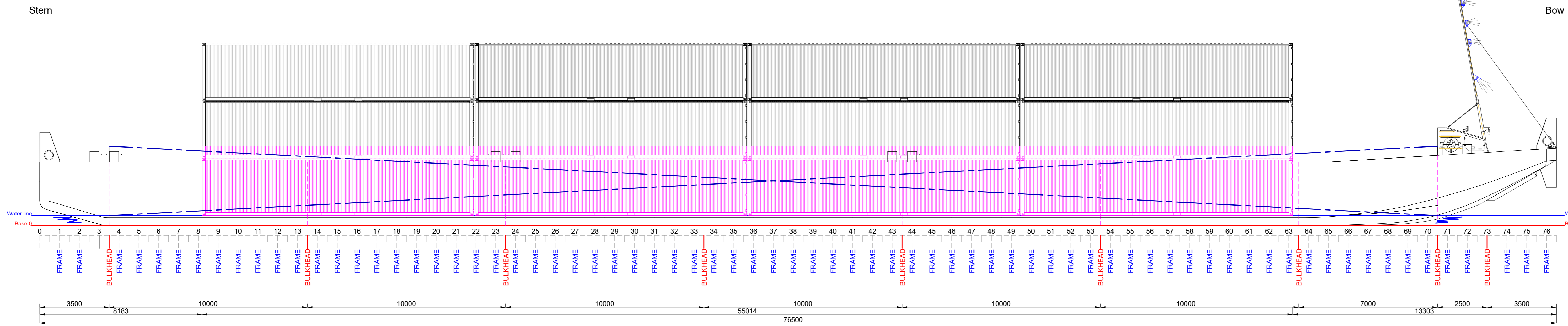
source

<https://de.wikipedia.org/wiki/Rheinschiffahrt>
<https://at.d4d-portal.info/>
<https://port-of-switzerland.ch/hafenservice/schiffahrtsservice/inland-enc-hochrhein/>
<http://www.vnf.fr/ecdis/ecdis.html>
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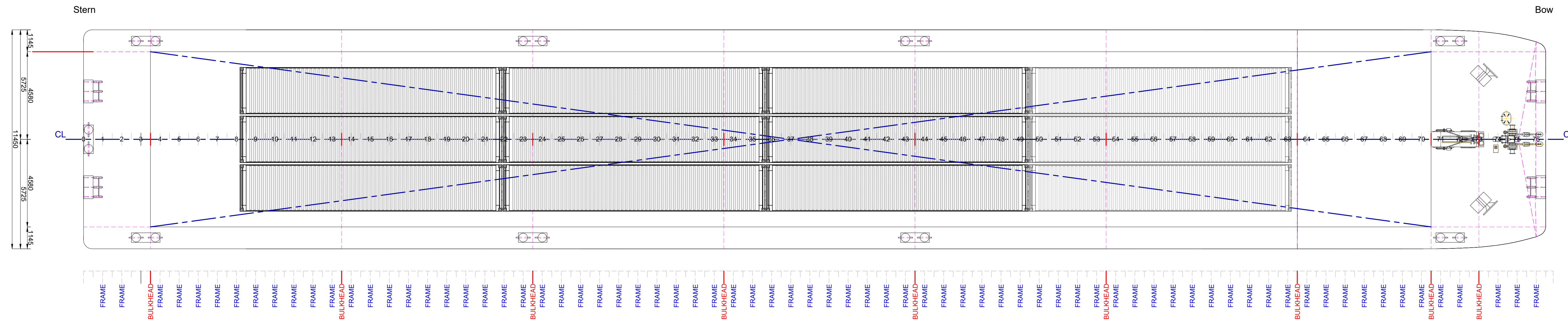
Worms	DE	bridge	443,27							9,00
Ludwigshafen	DE	bridge	432,57							9,00
Ludwigshafen	DE	bridge	425,69							9,00
Ludwigshafen	DE	bridge	424,44							9,00
Ludwigshafen	DE	bridge	424,42							9,00
Ludwigshafen	DE	bridge	424,40							9,00
Speyer	DE	bridge	403,19							9,00
Speyer	DE	bridge	399,87							9,00
Germersheim	DE	bridge	384,88							9,00
Germersheim	DE	bridge	383,91							9,00
Maxau	DE	bridge	362,07							9,00
Maxau	DE	bridge	362,03							9,00
Wintersdorf-Beinheim	FR/DE	bridge	335,66							9,10
Iffezheim	FR/DE	lock	334,00	270,00			24,00			9,10
Gambshheim	FR	lock	308,83	270,00			22,80			9,10
Strasbourg	FR/DE	bridge	293,68							7,00
Strasbourg	FR/DE	bridge	293,48							7,00
Strasbourg	FR/DE	bridge	292,95							7,00
Strasbourg	FR	lock	287,36	185,00			22,80			7,00
Altenheim-Eschau	FR/DE	bridge	282,80							7,00
Gerstheim	FR	lock	272,23	185,00			22,80			7,00
Rhinau	FR	lock	256,15	185,00			22,80			7,00
Marckolsheim	FR	lock	239,88	185,00			22,80			7,00
Vogelgrun	FR	lock	224,54	185,00	183,00		22,80			7,00
Fessenheim	FR	lock	210,51	185,00	183,00		22,80	22,80	3,00	7,00
Chalampé	FR	bridge	199,26							7,00
Ottmarsheim	FR	bridge	194,48							7,00
Ottmarsheim	FR	lock	193,64	185,00	183,00		22,80	22,80	3,00	7,00
Kembs	FR	lock	179,10	186,50	186,50		22,90	22,90	3,00	7,00
Huningue-Weil	FR/DE	bridge	171,33							7,00
Huningue-Weil	FR/DE	bridge	170,20							7,00
Basel	CH	bridge	167,80							8,00
Basel	CH	bridge	167,14							5,30
Basel	CH	bridge	166,53							5,10
Basel	CH	bridge	165,90							9,50
Basel	CH	bridge	164,50							7,50
Basel	CH	bridge	164,48							7,50
Basel	CH	bridge	164,46							7,50
Birsfelden	CH	lock	163,43	187,50			11,45			7,90
Augst	CH	lock	155,50	110,00			11,45			7,90
Rheinfelden	CH	bridge	151,58							7,80

vert. Clearance in Inland ENC 1,00 m ???

Europa 2b barge



Europa 2b barge
 Length Overall : 76,50 m
 Breadth : 11,45 m
 Mean draft (lightship) : 0,52 m
 Displacement at DWL : 375,921 t
 Frame spacing : 500mm



Version	Description of the Amendment	Date	Created	Verified
03				
02				
01		26.01.2023	POTZMANN	Dipl.-Ing. Anzböck
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Customer
 IW-NET
 A project co-funded by the Horizon 2020 programme of the European Union

Vessel
 Europa 2b barge

Project No. 2020.056
 Drawing No. 001a
 Area of Navigation: EU inland waterways Zone 3

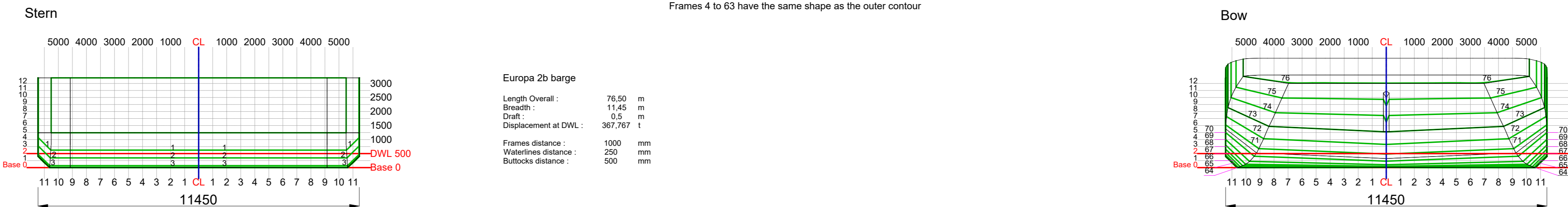
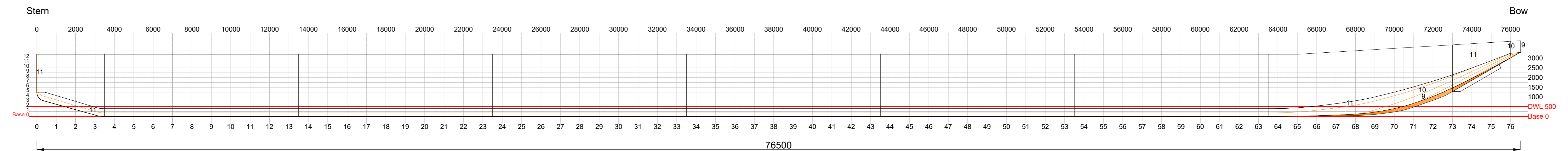
Designation: General Arrangement Plan
 Scale: 1:100
 Format: A0

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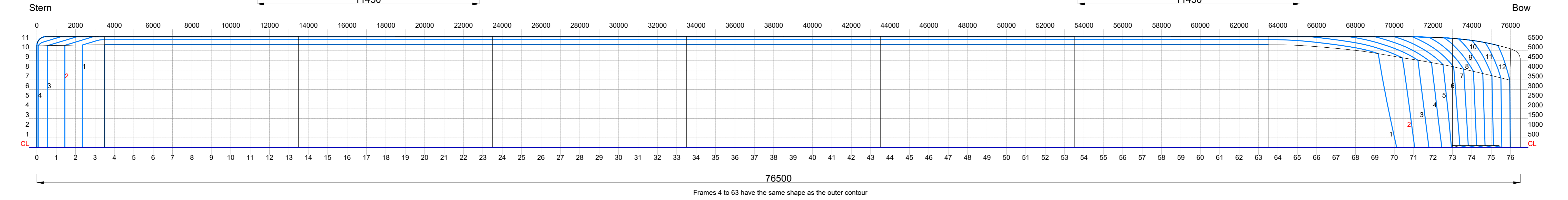
A-1190 Wien
 office@anzboeck.com
 GUGLIGASSE 8/29
 TEL.: +43-1-320 86 93


Europa 2b barge



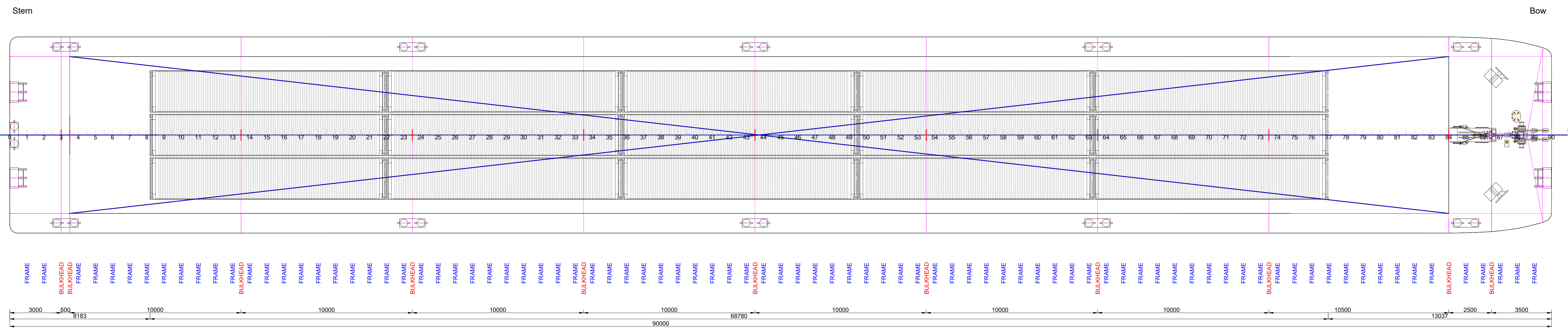
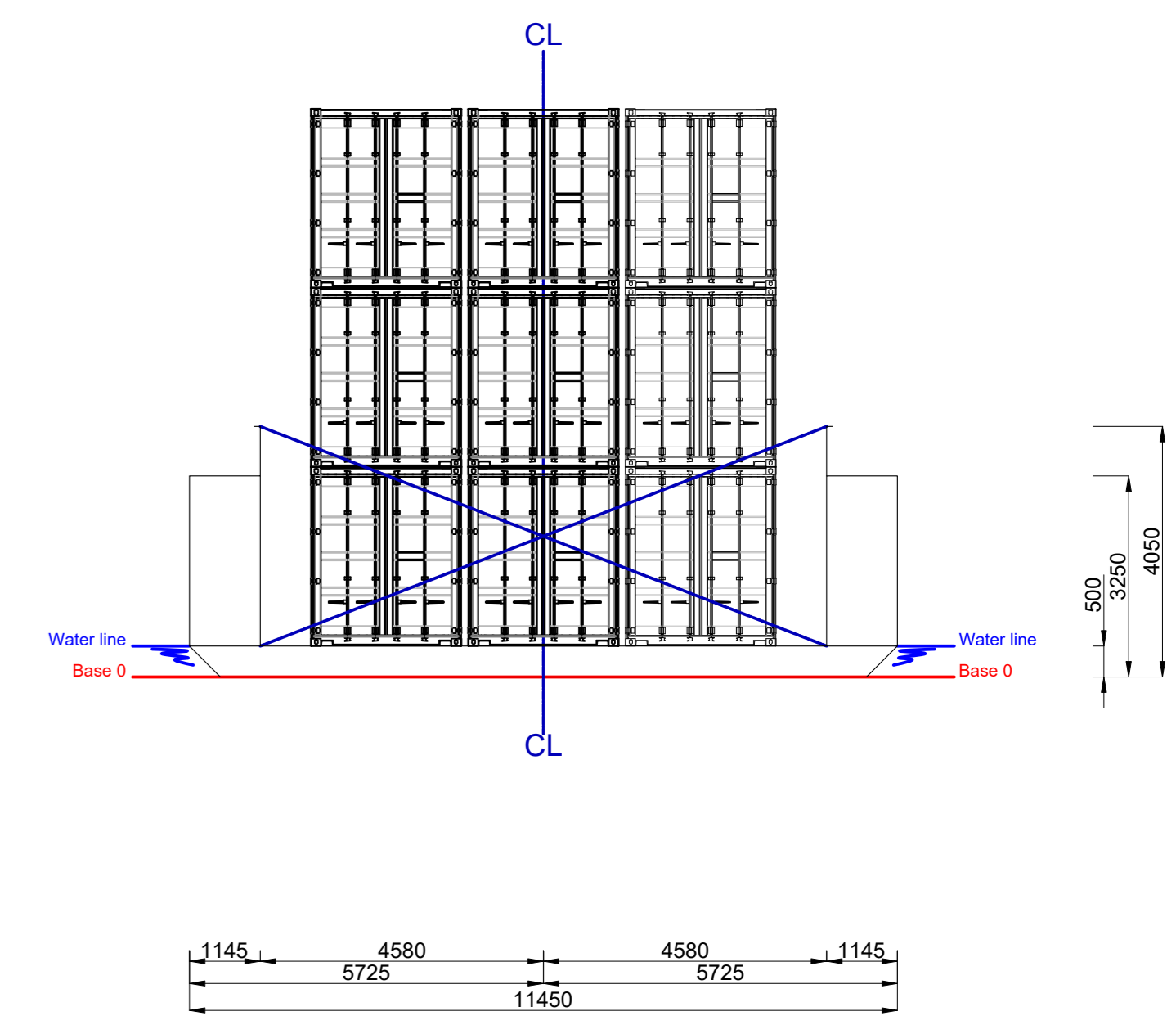
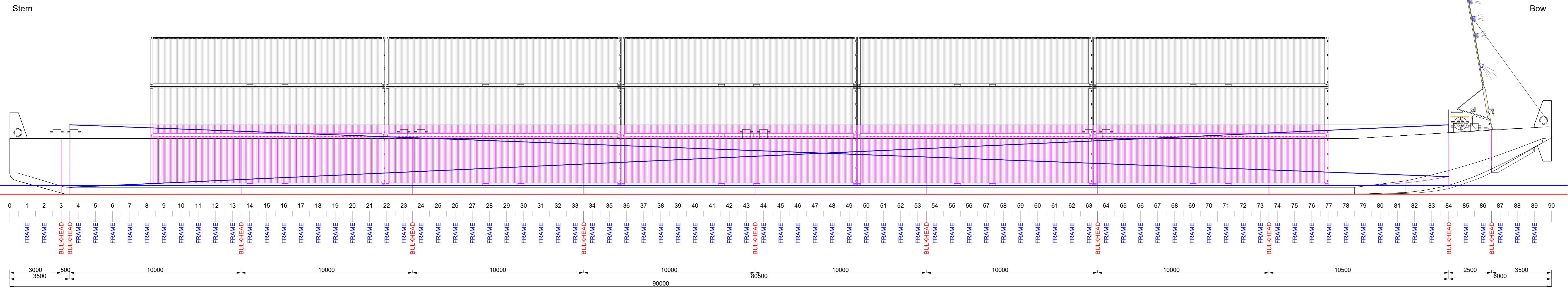
Europa 2b barge

- Length Overall : 76,50 m
- Breadth : 11,45 m
- Draft : 0,5 m
- Displacement at DWL : 367,767 t
- Frames distance : 1000 mm
- Waterlines distance : 250 mm
- Buttocks distance : 500 mm



03				
02				
01				
---	Original Version	22.02.2021	KHANBILVERDI	Dipl.-Ing. Anzböck
Version	Description of the Amendment	Date	Created	Verified
Customer				
IW-NET				
A project co-funded by the Horizon 2020 programme of the European Union				
Vessel				
Europa 2b barge				
Project No.		Drawing No.		Area of Navigation
2020.056		001b		EU inland waterways Zone 3
Designation				Scale
Linesplan				1:100
				Format
				A0
 DIPL.-ING. RICHARD ANZBÖCK STAATLICH BEFUGTER UND BEEIDETER ZIVILINGENIEUR FÜR SCHIFFSTECHNIK A. 1190 Wien office@anzboeck.com Guglgasse 8/29 Tel.: +43-1-320 68 93				
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Europa 3a barge



Europa 3a barge

Length Overall : 90,00 m
 Breadth : 11,45 m
 Draft : 0,5 m
 Displacement at DWL : 441,794 t
 Frames distance : 500mm

Version	Description of the Amendment	Date	Created	Verified
03				
02				
01		26.01.2023	POTZMANN	Dipl.-Ing. Anzböck
---	Original Version	22.02.2021	KHANBILVERDI	Dipl.-Ing. Anzböck

Customer
 IW-NET
 A project co-funded by the Horizon 2020 programme of the European Union

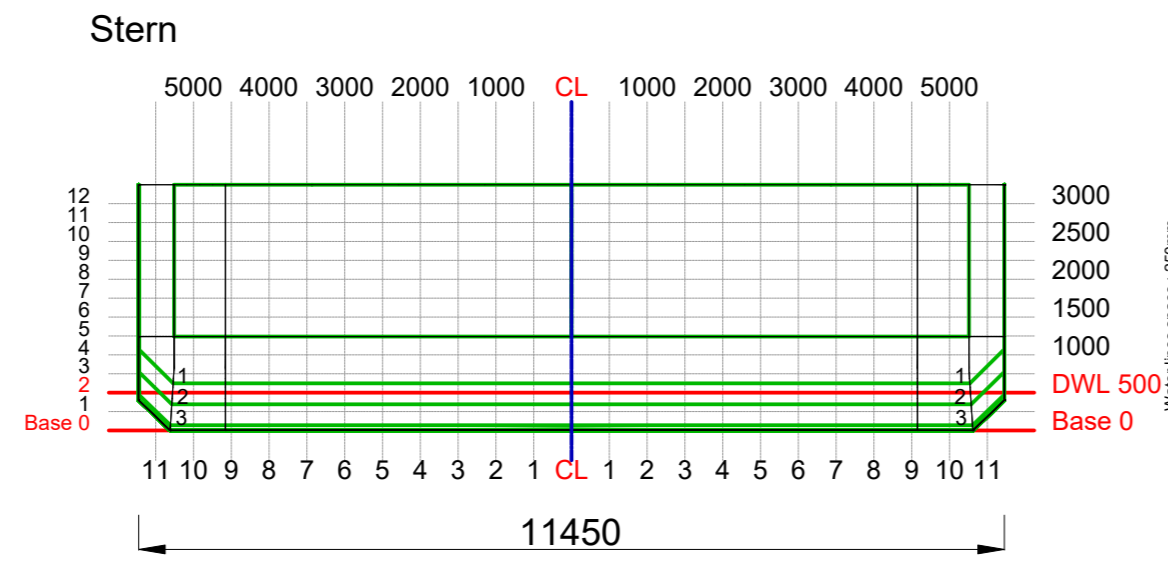
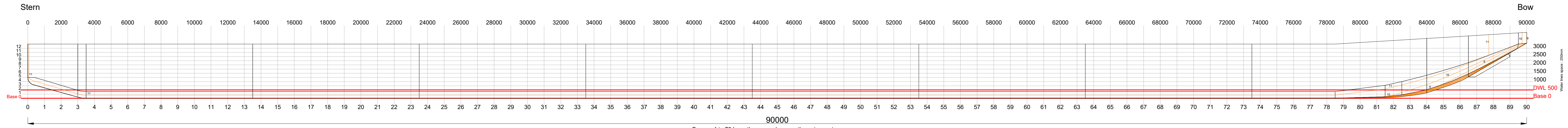
Vessel
 Europa 3a barge

Project No. 2020.056
 Drawing No. 002a
 Area of Navigation EU inland waterways Zone 3

Designation
 General Arrangement Plan
 Scale 1:100
 Format A0



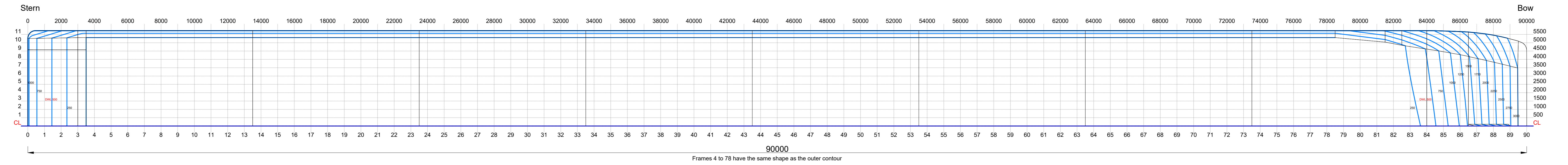
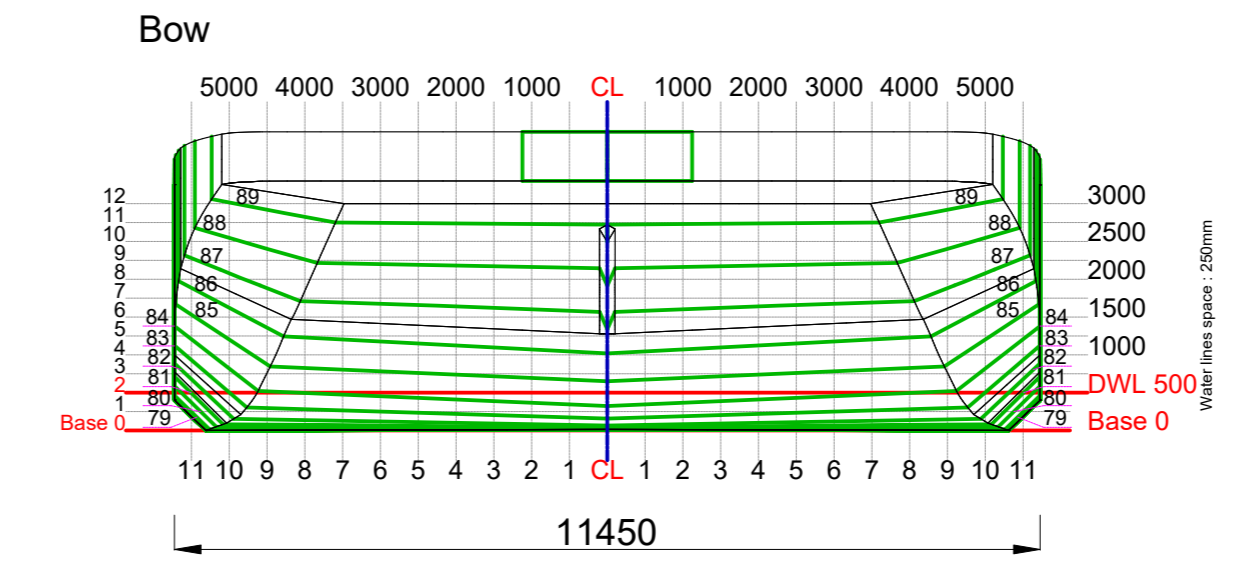
Europa 3a barge



Europa 3a barge

Length Overall : 90,00 m
 Breadth : 11,45 m
 Draft : 0,5 m
 Displacement at DWL : 441,794 t

Frames distance : 1000 mm
 Waterlines distance : 250 mm
 Buttocks distance : 500 mm



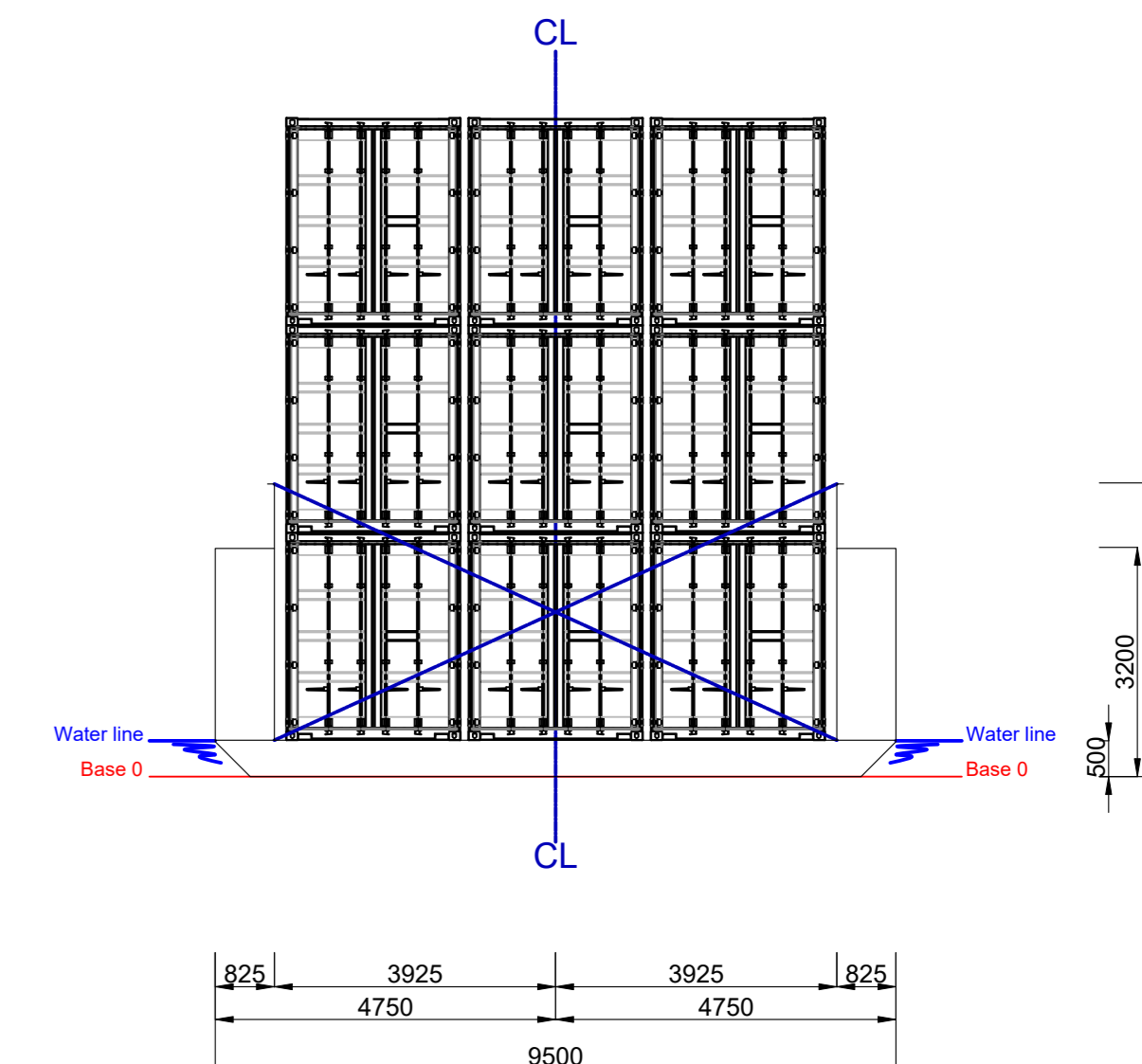
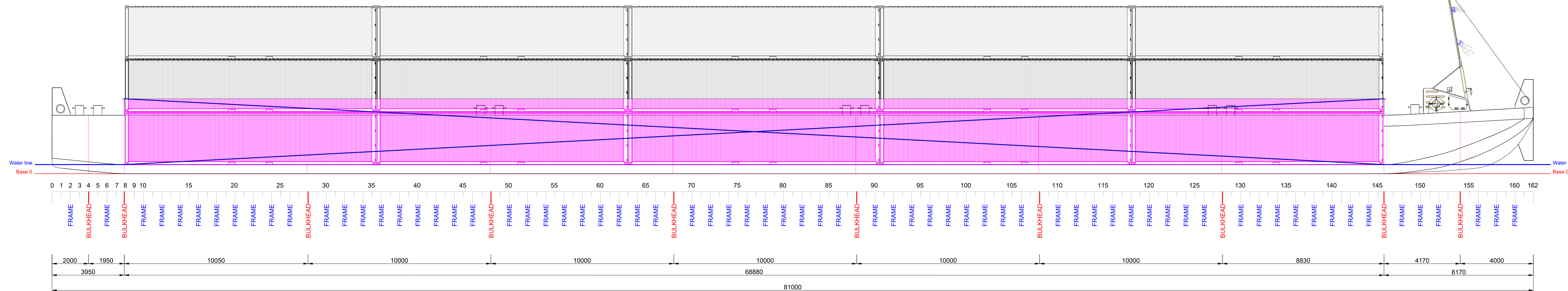
03				
02				
01				
---	Original Version	22.02.2021	KHANBILVERDI	Dipl.-Ing. Anzböck
Version	Description of the Amendment	Date	Created	Verified
Customer				
IW-NET A project co-funded by the Horizon 2020 programme of the European Union				
Vessel				
Europa 3a barge				
Project No.		Drawing No.		Area of Navigation
2020.056		002b		EU inland waterways Zone 3
Designation				Scale
Linesplan				1:100
				Format
				A0

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3 Units abreast

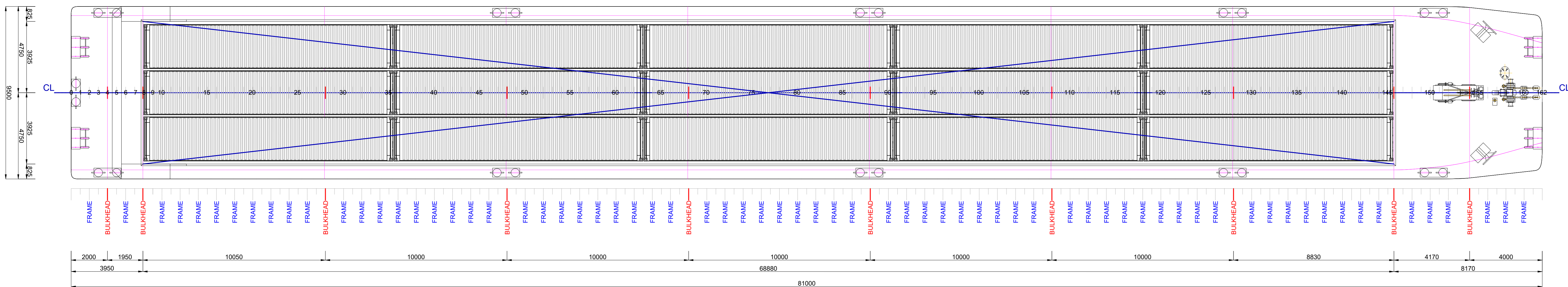


3 Units abreast


Length Overall : 81,00 m
 Breadth : 9,50 m
 Draft : 0,5 m
 Displacement at DWL : 335,980 t

Frame distance

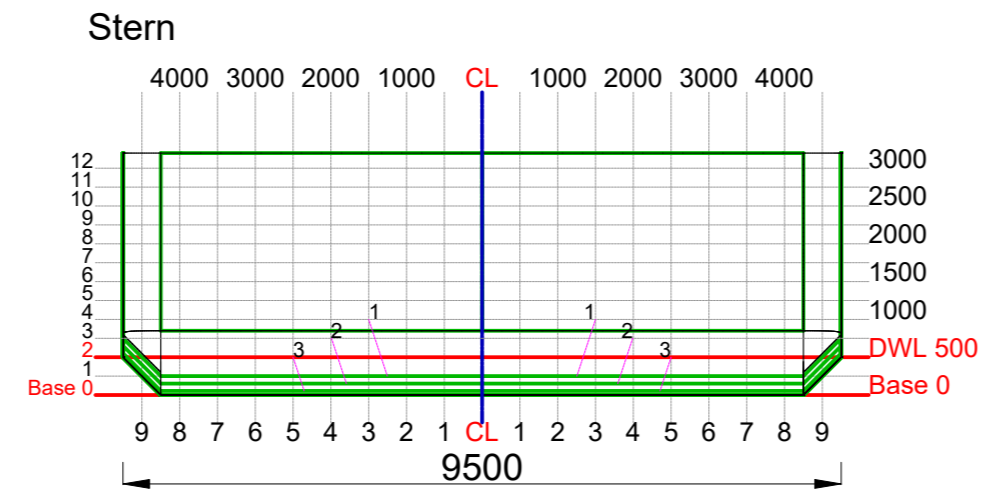
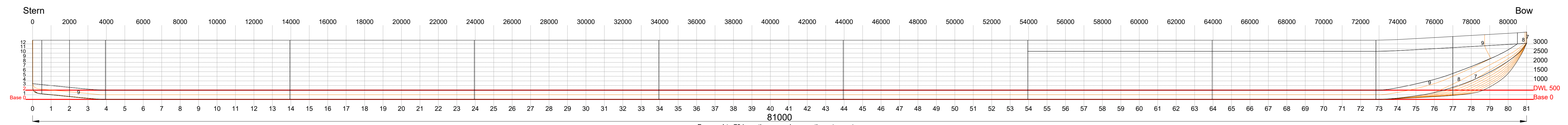
From	To	Distance	mm
0	7	500	mm
7	8	450	mm
8	9	550	mm
9	145	500	mm
145	146	330	mm
146	153	500	mm
153	154	670	mm
154	162	500	mm



Version	Description of the Amendment	Date	Created	Verified
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02				
01		26.01.2023	POTZMANN	Dipl.-Ing. Anzböck
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Vessel		
IW-NET 3 units abreast		
Project No.	Drawing No.	Area of Navigation
2020.056	003a	EU inland waterways Zone 3
Designation		Scale
General Plan		1:100
		Format
		A0

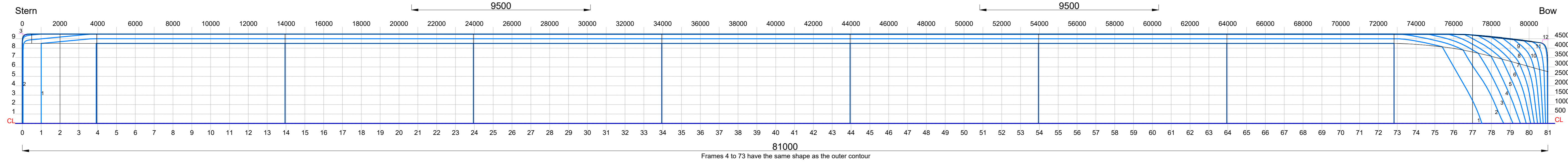
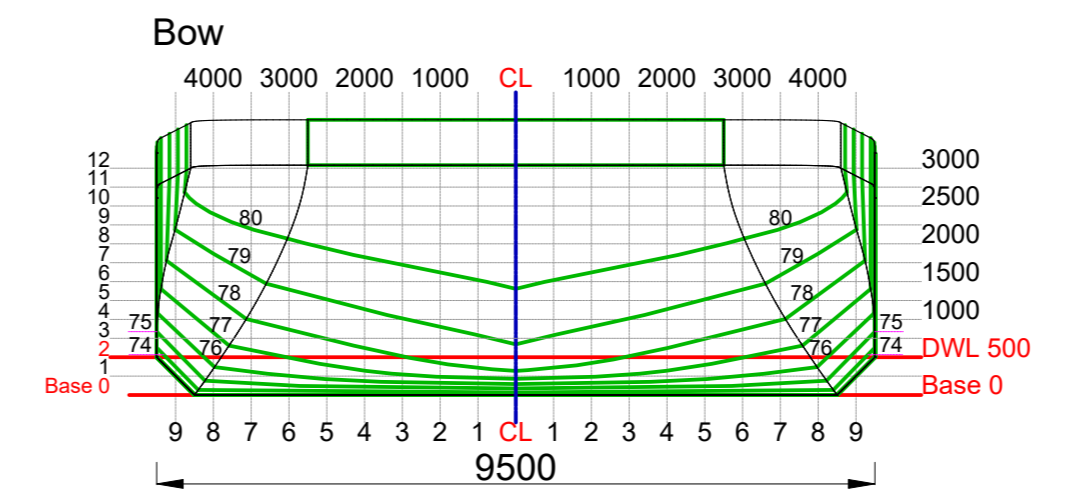
3 Units abreast



Europa 3a barge

Length Overall : 81,00 m
 Breadth : 9,50 m
 Draft : 0,5 m
 Displacement at DWL : 344,379 t

Frames distance : 1000 mm
 Waterlines distance : 250 mm
 Buttocks distance : 500 mm

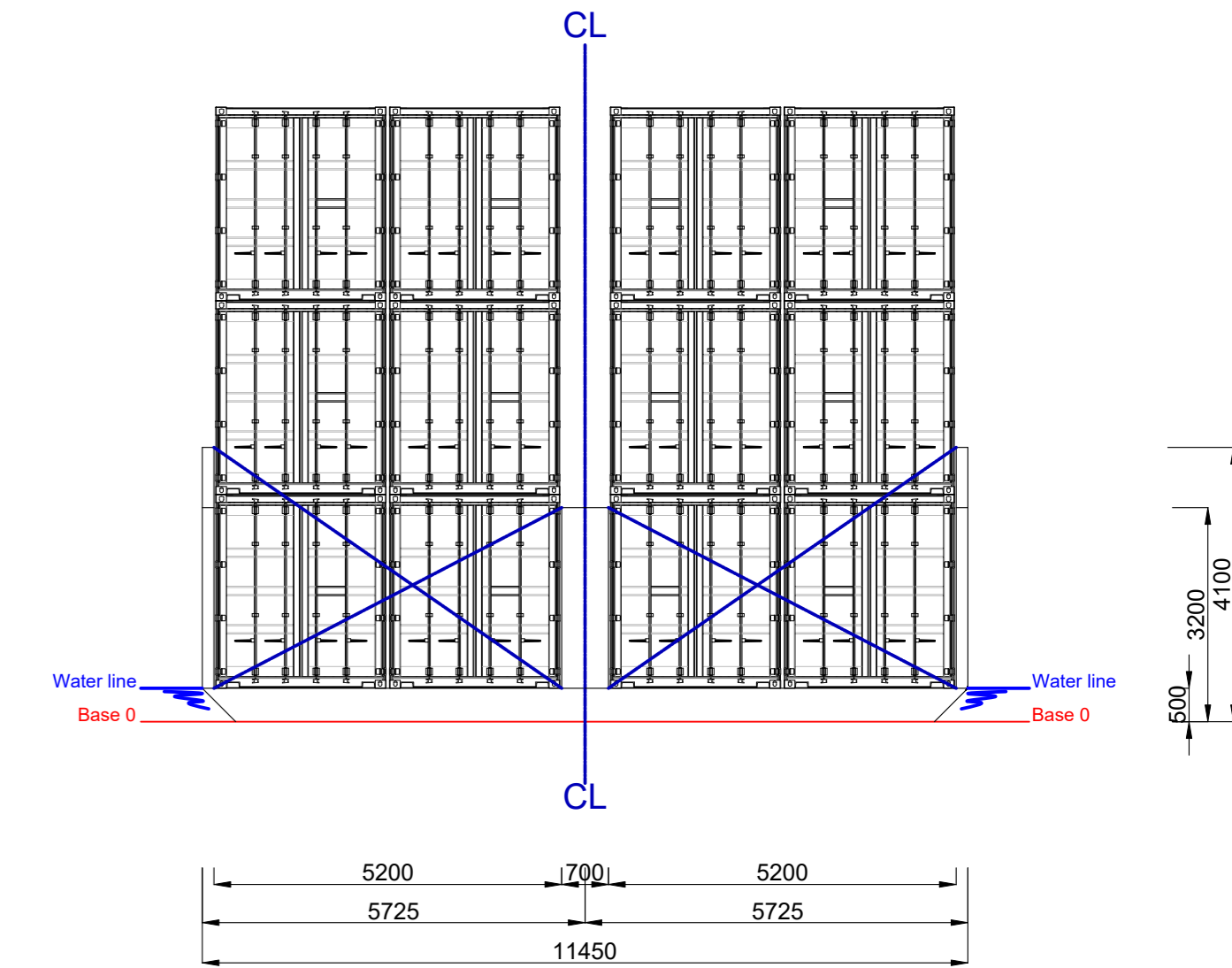
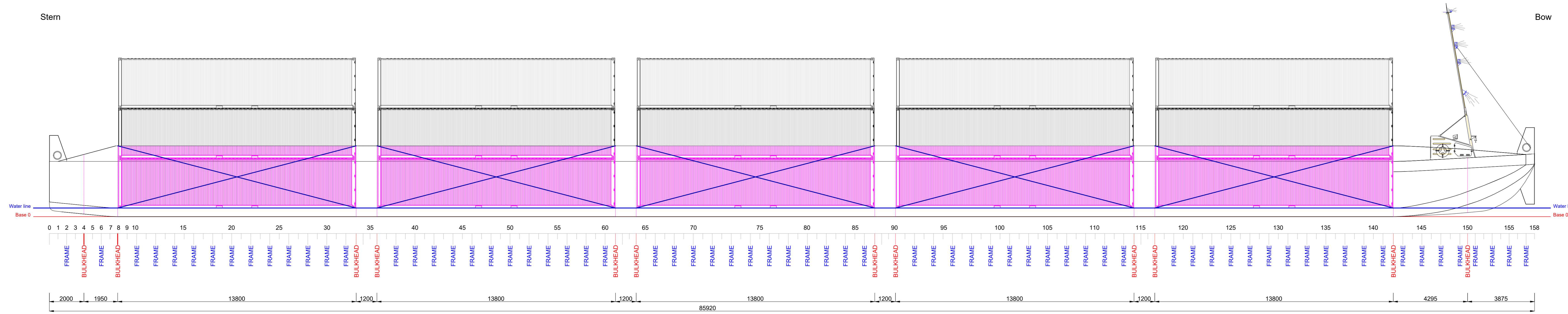


03				
02				
01				
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Customer				
IW-NET A project co-funded by the Horizon 2020 programme of the European Union				
Vessel				
IW-NET 3 units abreast				
Project No.		Drawing No.		Area of Navigation
2020.056		003b		EU inland waterways Zone 3
Designation				Scale
Linesplan				1:100
				Format
				A0
DIPL.-ING. RICHARD ANZBÖCK STAÄTTLICH BEFUGTER UND BEEIDETER ZIVILINGENIEUR FÜR SCHIFFSTECHNIK A 1190 Wien office@anzboeck.com Gürtelgasse 8/29 Tel.: +43-1-320 68 93				
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NEWS Evolution

Stern

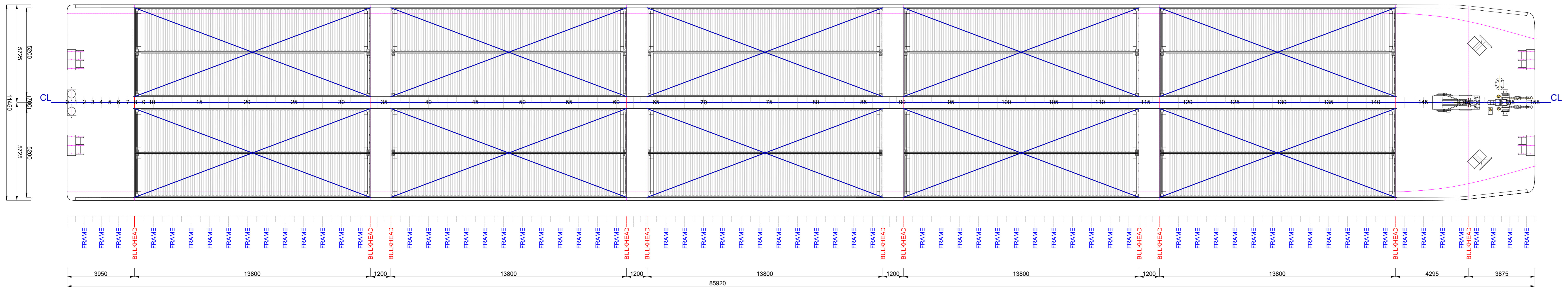
Bow





NEWS Evolution		Frame distance			
Length Overall :	85,920m <th>From</th> <th>To</th> <th>Distance</th> <th>mm</th>	From	To	Distance	mm
Breadth :	11,45 m	0	7	500	mm
Draft :	0,5 m	7	8	450	mm
Displacement at DWL :	436,167 t	8	32	550	mm
		32	33	600	mm
		33	36	400	mm
		36	60	550	mm
		60	61	600	mm
		61	64	400	mm
		64	86	550	mm
		86	87	600	mm
		87	90	400	mm
		90	113	550	mm
		113	114	600	mm
		114	117	400	mm
		117	141	550	mm
		141	142	600	mm
		142	149	550	mm
		149	151	445	mm
		151	158	490	mm

Stern

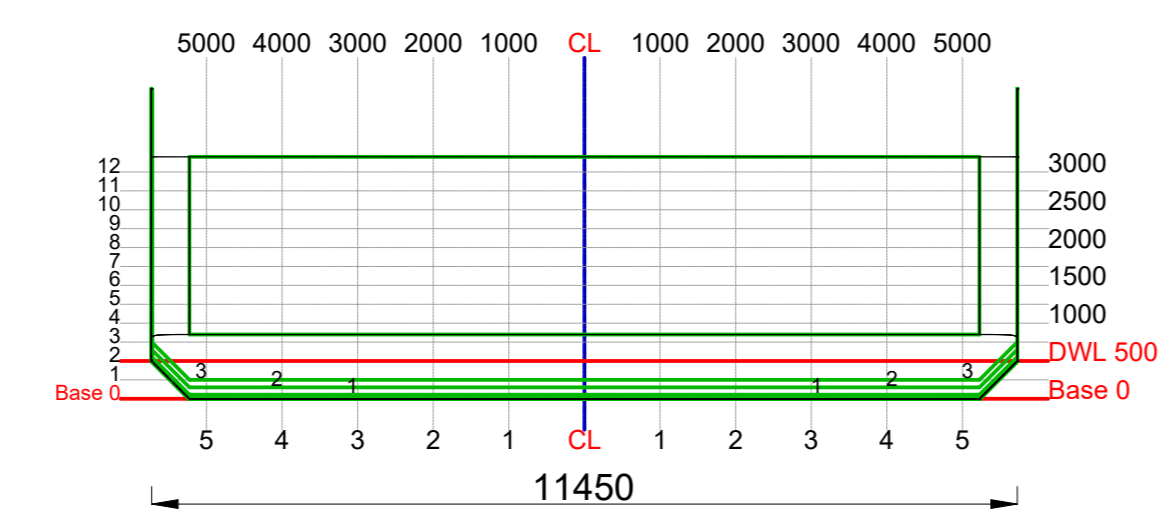
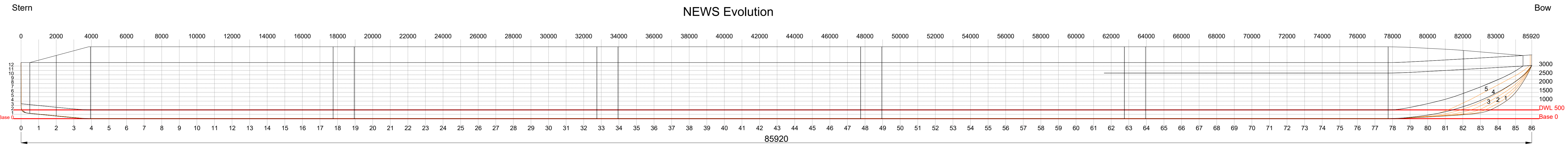
Bow



Version	Description of the Amendment	Date	Created	Verified
03				
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01		26.01.2023	POTZMANN	Dipl.-Ing. Anzböck
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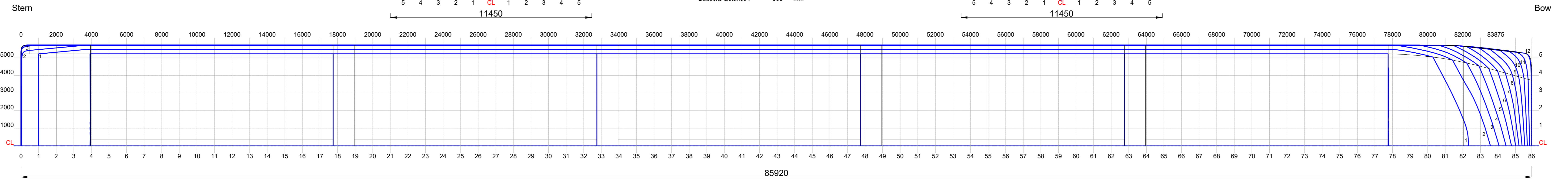
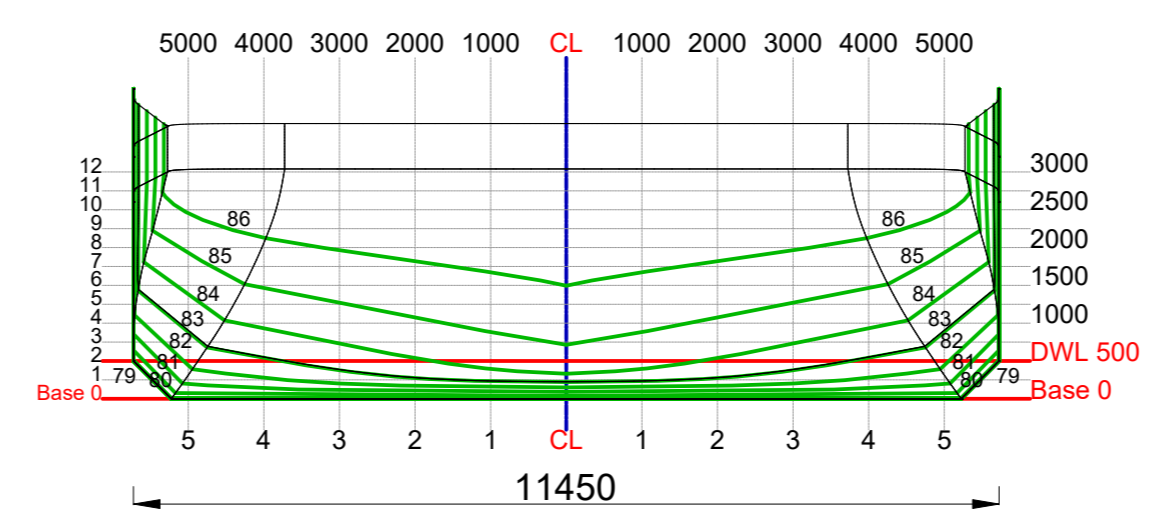
Customer		 DIPL.-ING. RICHARD ANZBÖCK STAATLICH BEFUGTER UND BEEIDETER ZIVILINGENIEUR FÜR SCHIFFSTECHNIK <small>A-1190 Wien office@anzboeck.com</small>	
IW-NET A project co-funded by the Horizon 2020 programme of the European Union		<small>Gültig bis 8/29 Tel.: +43-1-320 86 93</small>	
Project No.	Drawing No.	Area of Navigation	
2020.056	004a	EU inland waterways Zone 3	
Designation		Scale	Format
General Arrangement Plan		1:100	A0 

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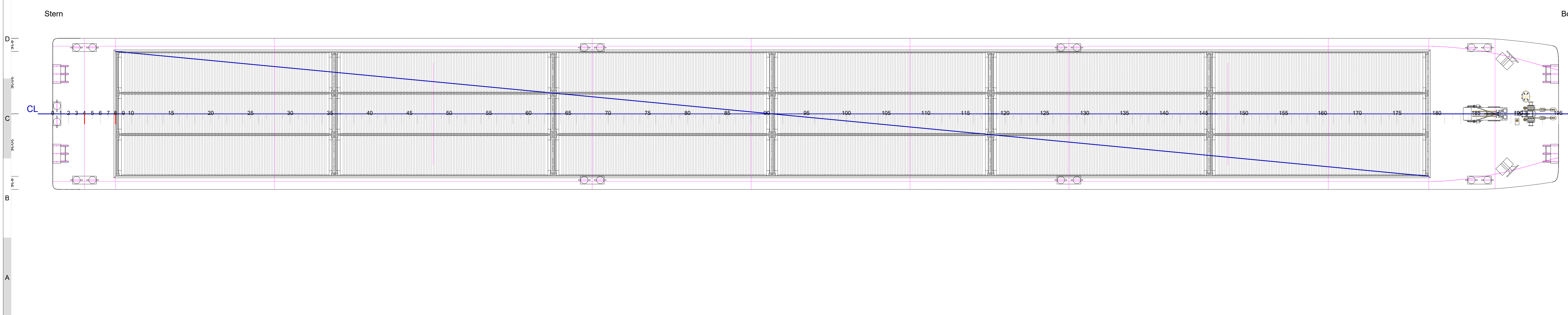
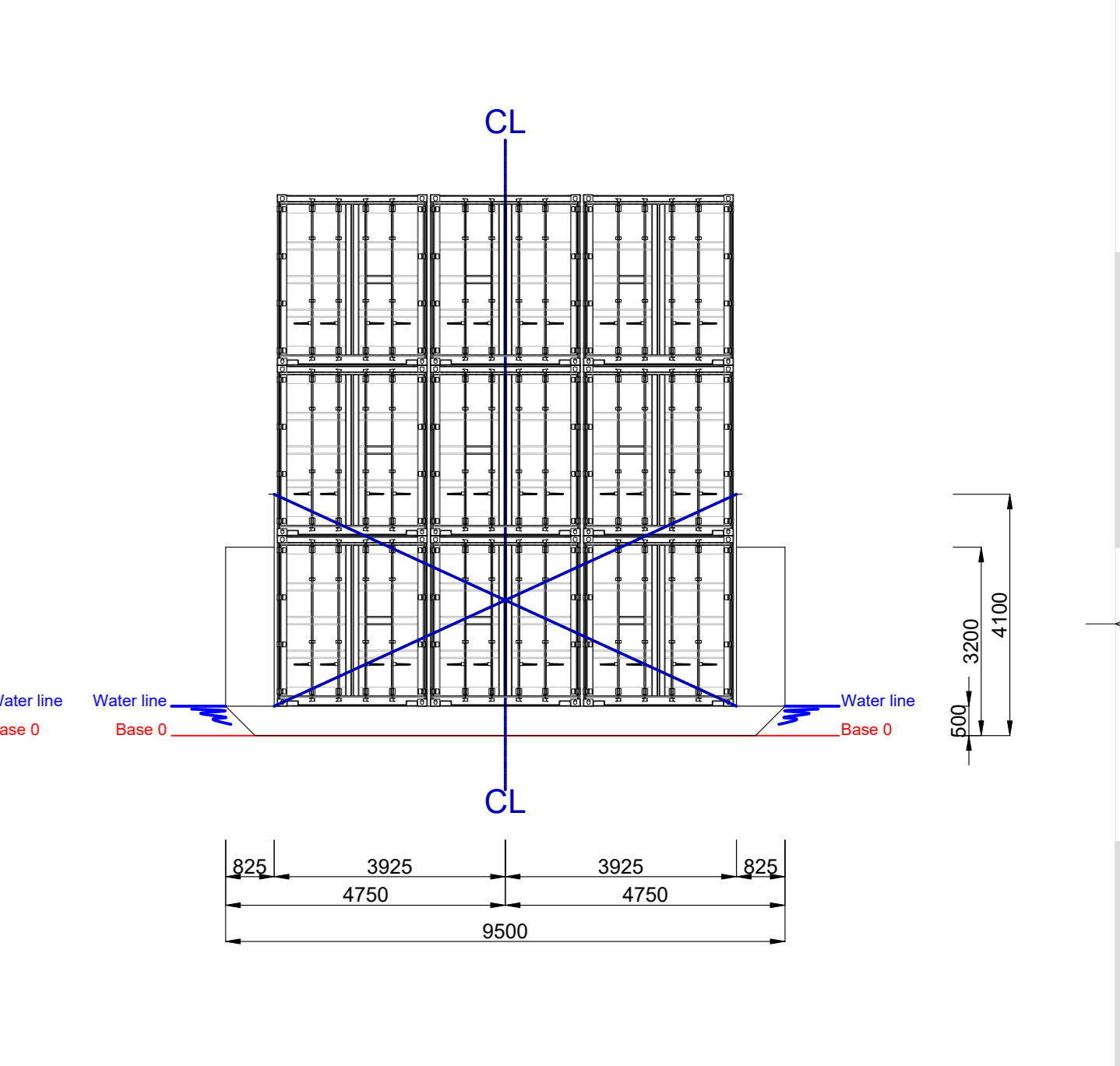
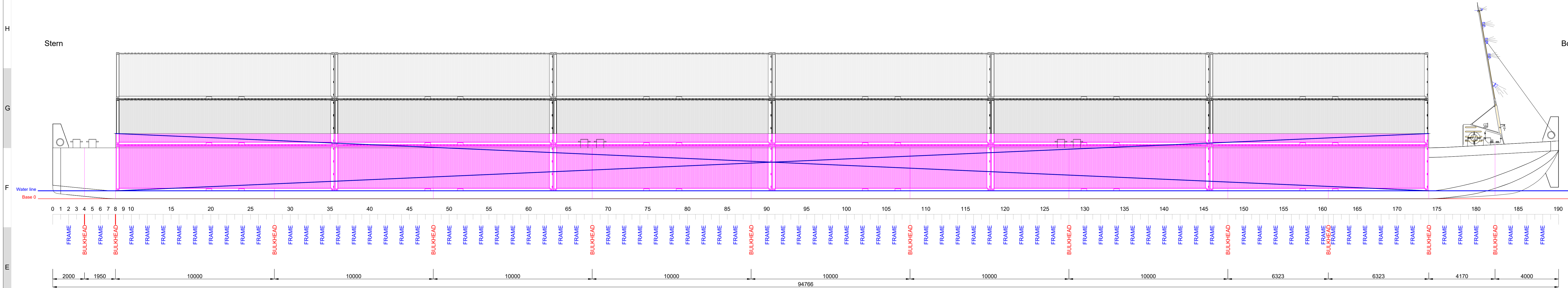
NEWS Evolution
 Length Overall : 85,920m
 Breadth : 11,45 m
 Draft : 0,5 m
 Displacement at DWL : 436,167 t

Frames distance : 1000 mm
 Waterlines distance : 250 mm
 Buttocks distance : 500 mm



03				
02				
01				
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Version	Description of the Amendment	Date	Created	Verified
Customer				
IW-NET A project co-funded by the Horizon 2020 programme of the European Union				
Vessel				
IW-NET NEWS Evolution				
Project No.		Drawing No.		Area of Navigation
2020.056		004b		EU inland waterways Zone 3
Designation				Scale
Linesplan				1:100
				Format
				A0
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3 Units abreast long



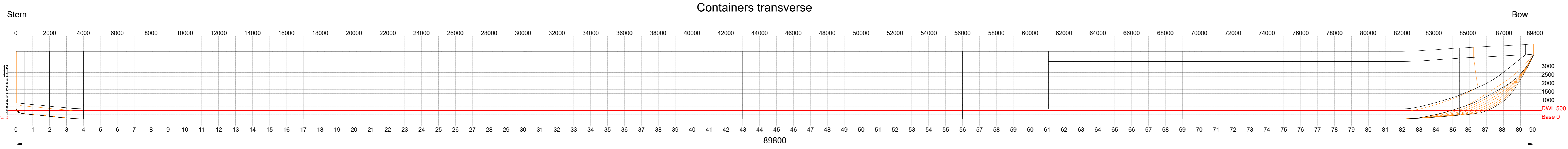
3 Units abreast long

Length Overall : 94,766m
 Breadth : 9,50 m
 Draft : 0,5 m
 Displacement at DWL : 397,927t

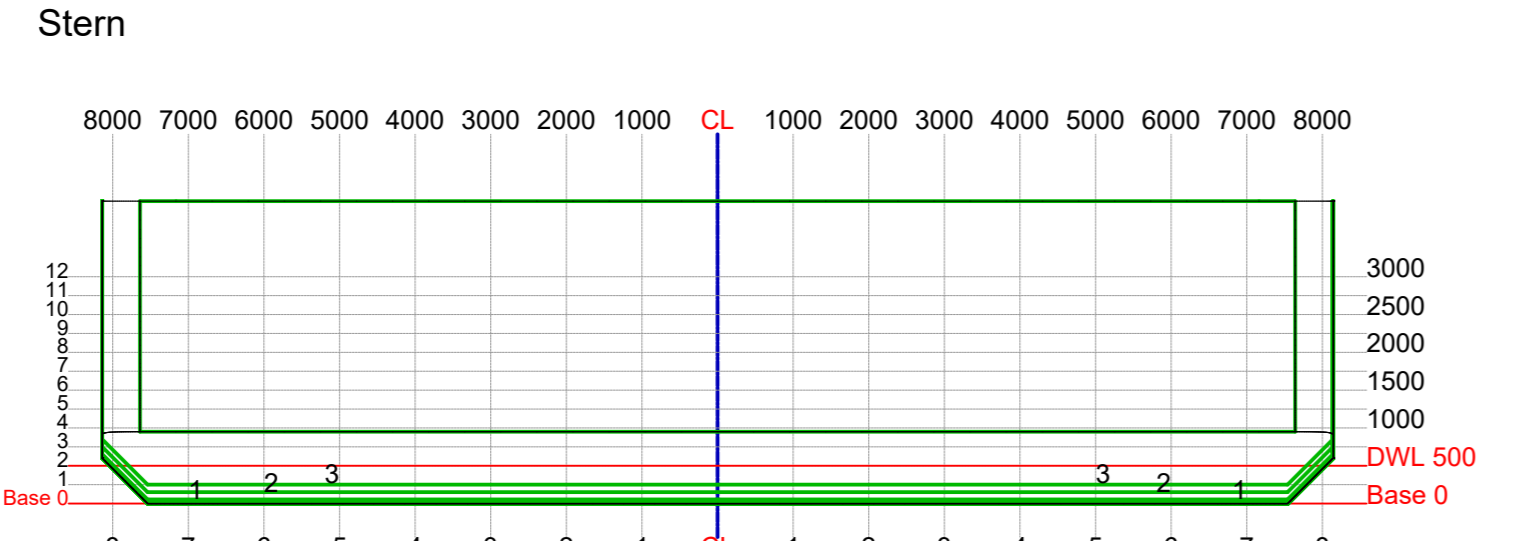
From	To	Distance	mm
0	7	500	mm
7	8	450	mm
8	160	500	mm
160	162	323	mm
162	181	500	mm
181	182	670	mm
182	190	500	mm

03				
02				
01		26.01.2023	POTZMANN	Dipl.-Ing. Anzböck
---	Original Version	22.02.2021	KHANBILVERDI	Dipl.-Ing. Anzböck
Version	Description of the Amendment	Date	Created	Verified
Customer				
IW-NET				
A project co-funded by the Horizon 2020 programme of the European Union				
Vessel				
IW-NET 3 units abreast long				
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Project No.	Drawing No.	Area of Navigation		
2020.056	006a	EU inland waterways Zone 3		
Designation				Scale
General Arrangement Plan				1:100
				Format
				A0

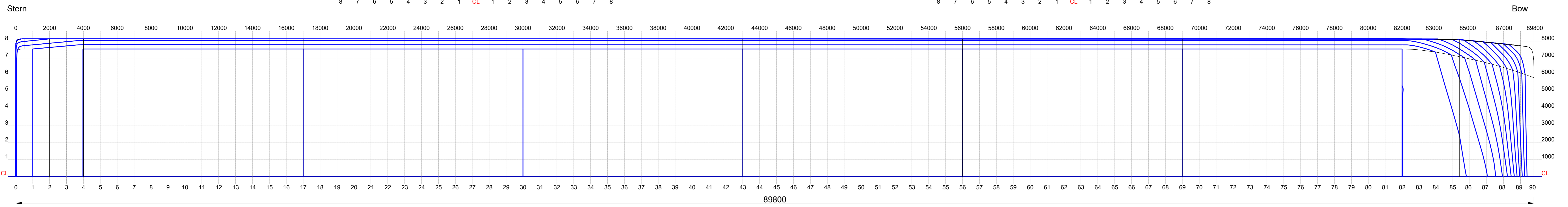
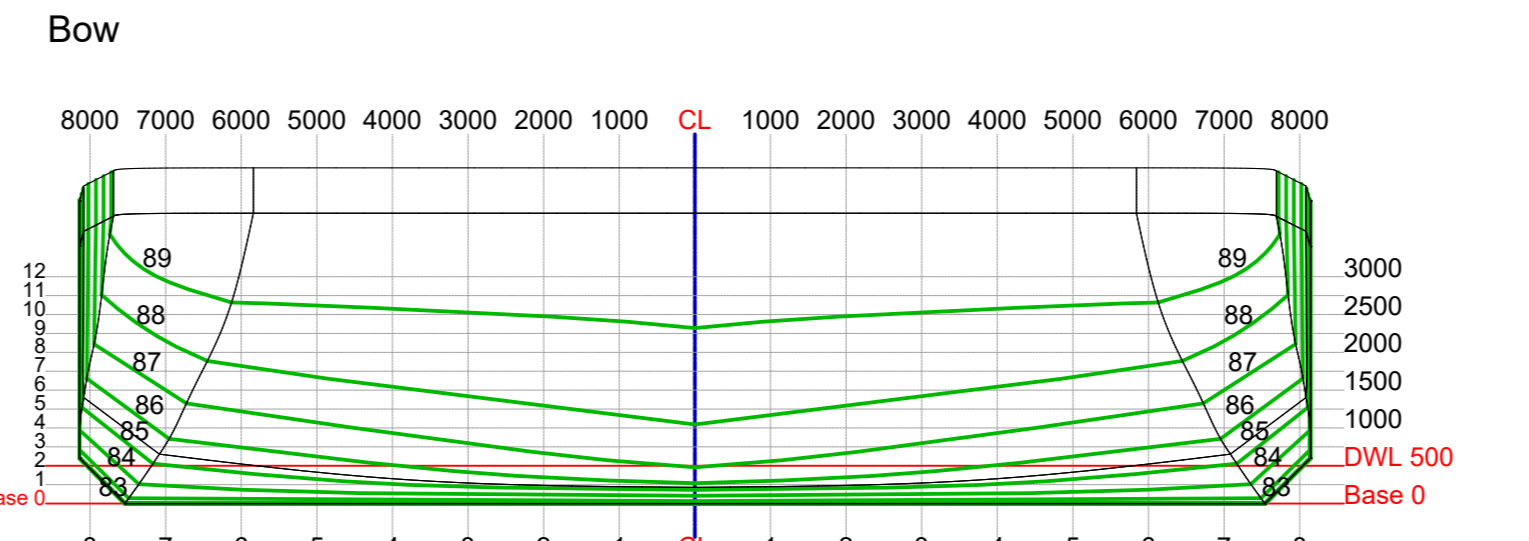
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Frames 4 to 82 have the same shape as the outer contour



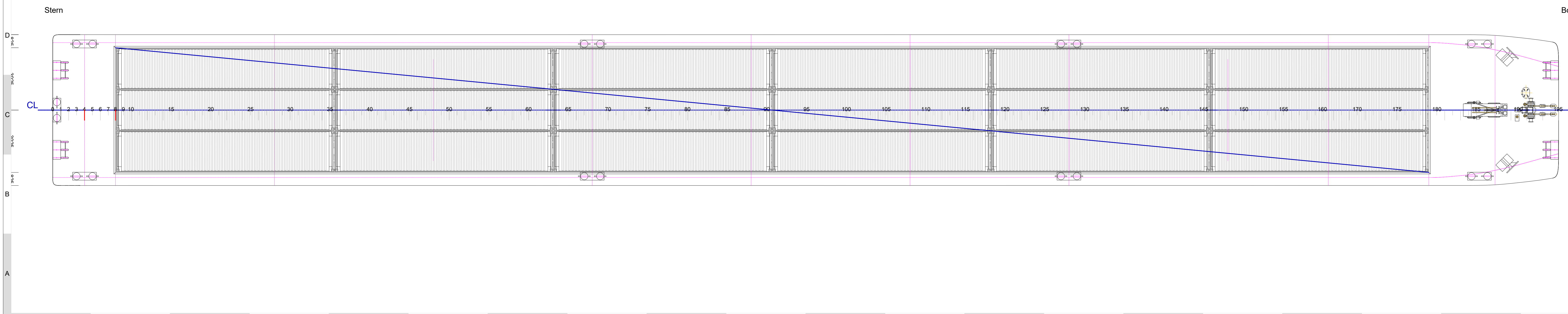
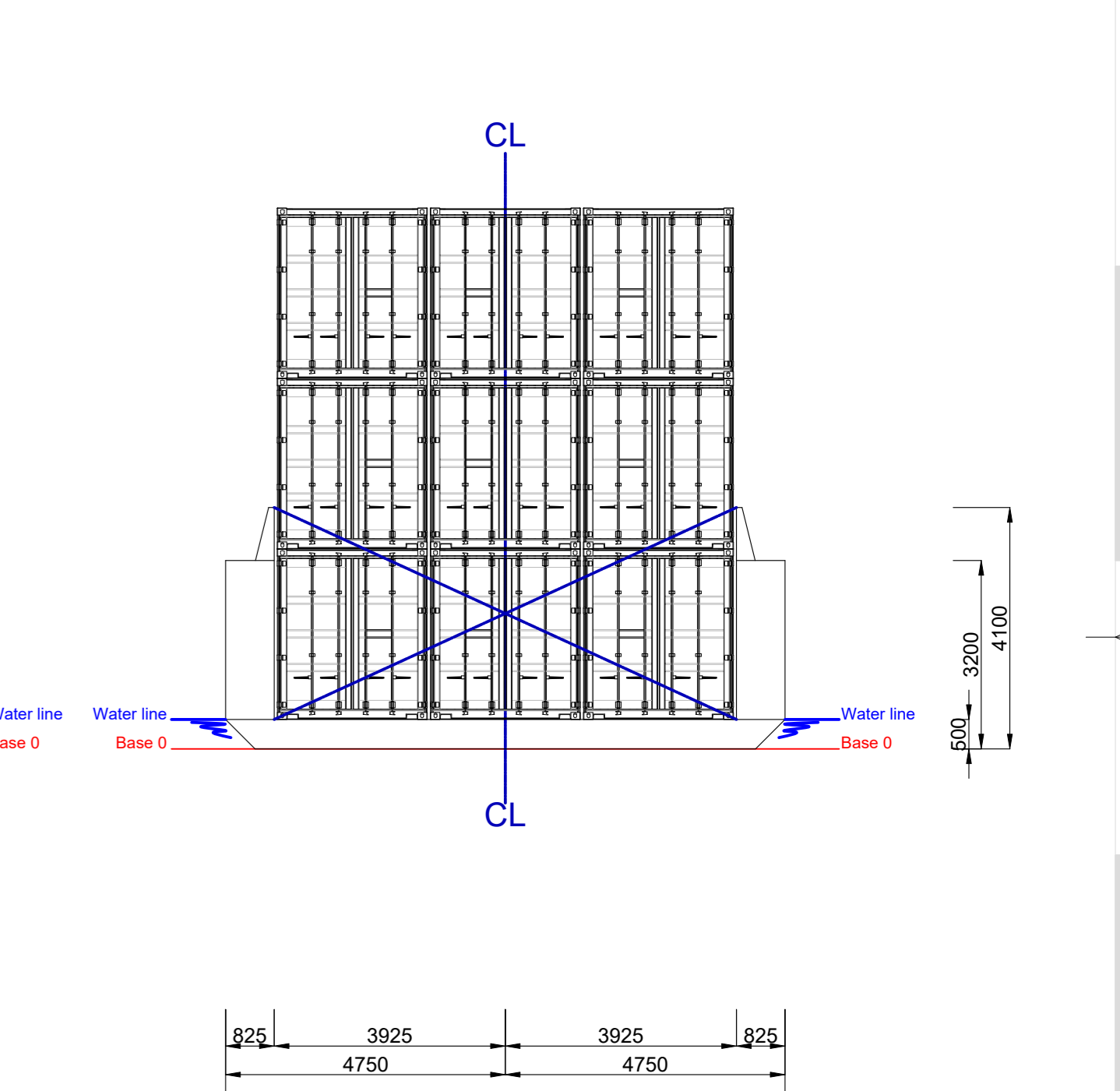
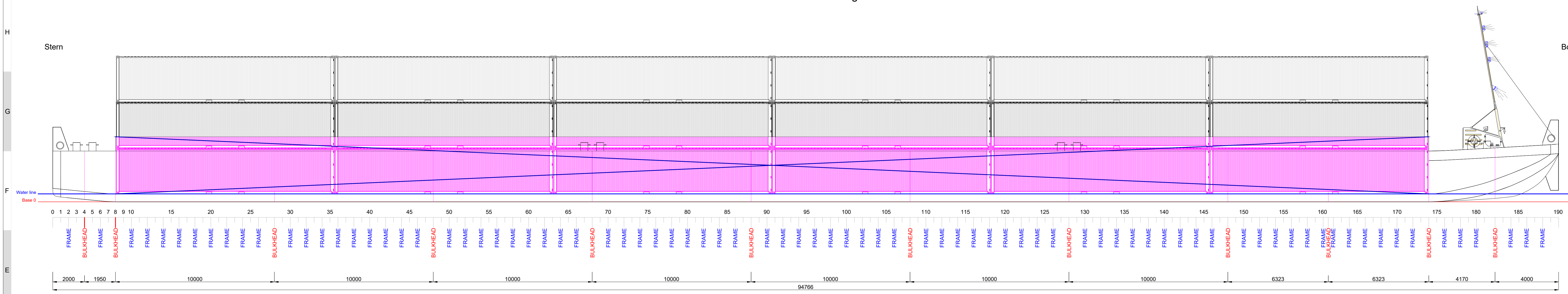
Containers transverse
 Length Overall : 89.800m
 Breadth : 16.280m
 Draft : 0.5 m
 Displacement at DWL : 649.199t
 Frames distance : 1000 mm
 Waterlines distance : 250 mm
 Buttocks distance : 1000 mm



Frames 4 to 82 have the same shape as the outer contour

03				
02				
01				
---	Original Version	22.02.2021	KHANBILVERDI	Dipl.-Ing. Anzböck
Version	Description of the Amendment	Date	Created	Verified
Customer				
IW-NET				
A project co-funded by the Horizon 2020 programme of the European Union				
Vessel				
IW-NET Containers transverse				
 DIPL.-ING. RICHARD ANZBÖCK STAÄTLICH BEFUGTER UND BEEIDETER ZIVILINGENIEUR FÜR SCHIFFSTECHNIK <small>A: 1190 Wien office@anzboeck.com Glogitzgasse 8/29 Tel.: +43-1-320 88 93</small>				
Project No.	Drawing No.	Area of Navigation		
2020.056	005b	EU inland waterways Zone 3		
Designation				Scale
Linesplan				1:100
				Format
				A0
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3 Units abreast long



3 Units abreast long

Length Overall : 94,766m
 Breadth : 9,50 m
 Draft : 0,5 m
 Displacement at DWL : 397,927t

Frame distance

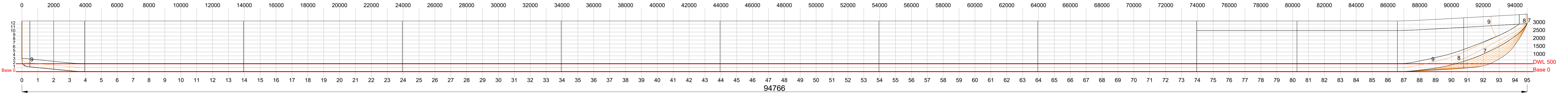
From	To	Distance	mm
0	7	500	mm
7	8	450	mm
8	160	500	mm
160	162	323	mm
162	181	500	mm
181	182	670	mm
182	190	500	mm

03				
02				
01				
---	Original Version	22.02.2021	KHANBILVERDI	Dipl.-Ing. Anzböck
Version	Description of the Amendment	Date	Created	Verified
Customer				
IW-NET				
A project co-funded by the Horizon 2020 programme of the European Union				
Vessel				
IW-NET 3 units abreast long				
Project No.	Drawing No.	Area of Navigation		
2020.056	006a	EU inland waterways Zone 3		
Designation				Scale
General Arrangement Plan				1:100
				Format
				A0

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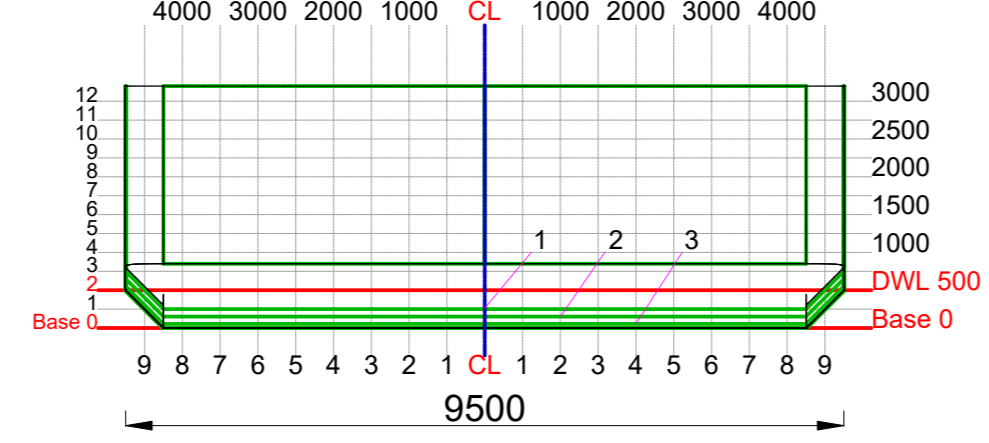
3 Units abreast long

Stern



Bow

Stern



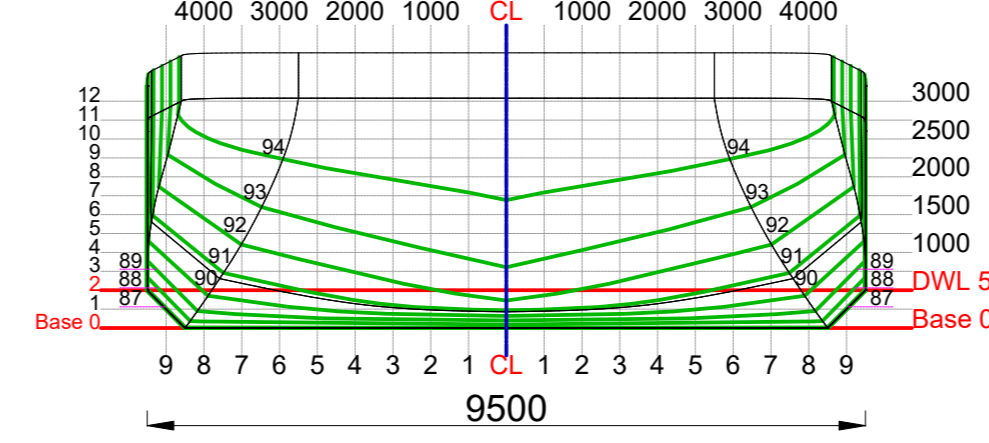
Frames 4 to 86 have the same shape as the outer contour

3 Units abreast long

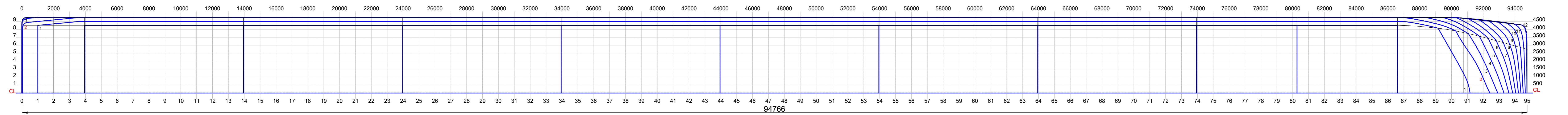
Length Overall : 94,766 m
 Breadth : 9,50 m
 Draft : 0,5 m
 Displacement at DWL : 397,927 t

Frames distance : 1000 mm
 Waterlines distance : 250 mm
 Buttocks distance : 500 mm

Bow



Stern



Bow

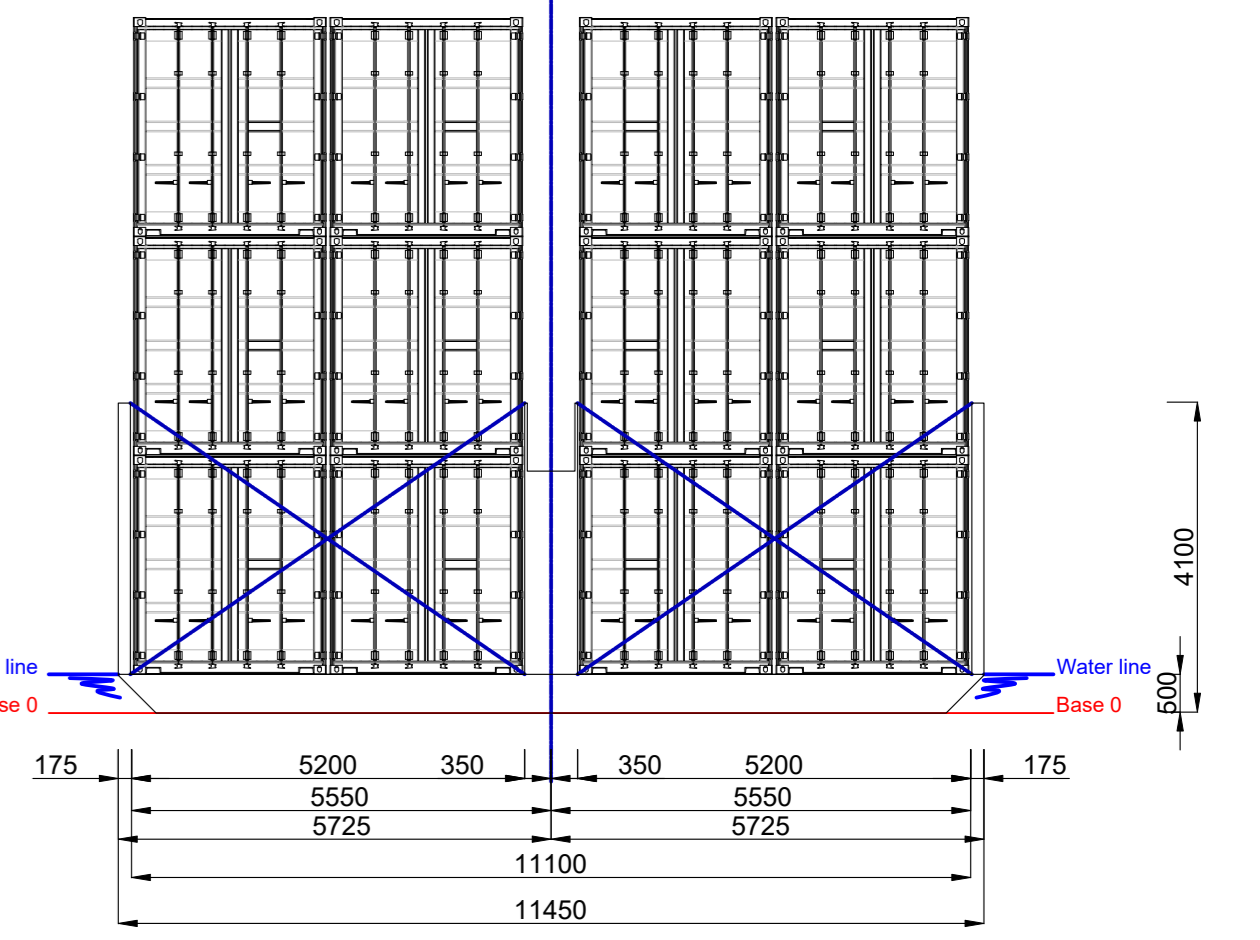
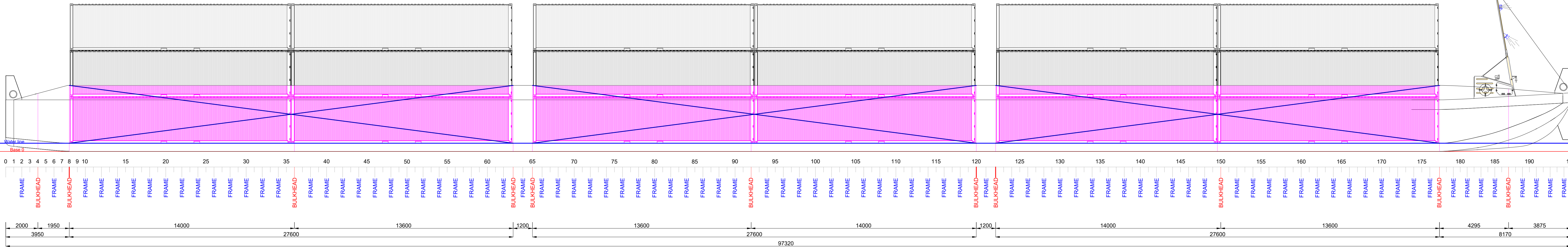
Frames 4 to 86 have the same shape as the outer contour

03				
02				
01				
---	Original Version	22.02.2021	KHANBILVERDI	Dipl.-Ing. Anzböck
Version	Description of the Amendment	Date	Created	Verified
Customer				
IW-NET A project co-funded by the Horizon 2020 programme of the European Union				
Vessel				
IW-NET 3 units abreast long				
Project No. 2020.056		Drawing No. 006b		Area of Navigation EU inland waterways Zone 3
Designation Linesplan			Scale 1:100	Format A0
DIPL.-ING. RICHARD ANZBÖCK STAÄTLICH BEFUGTER UND BEEIDETER ZIVILINGENIEUR FÜR SCHIFFSTECHNIK A. 1190 Wien office@anzboeck.com Guglgasse 8/29 Tel.: +43-1-320 68 93				
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NEWS Evolution long

Stern

Bow



NEWS Evolution long
 Length Overall : 97,32 m
 Breadth : 11,45 m
 Draft : 0,5 m
 Displacement at DWL : 498,582t

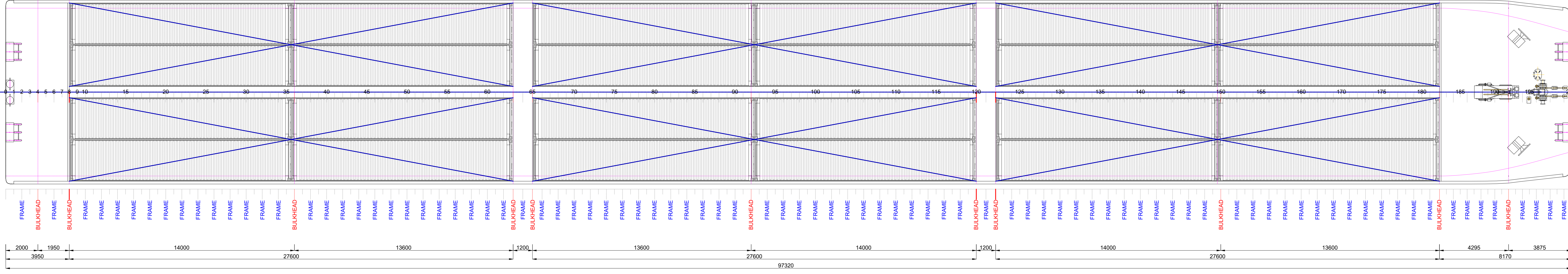
Frame distance

From	To	Distance	mm
0	7	500	mm
7	8	450	mm
8	62	500	mm
62	66	600	mm
66	120	500	mm
120	122	600	mm
122	176	500	mm
176	177	600	mm
177	196	430	mm

*BULKHEAD *187* -5mm

Stern

Bow



03				
02				
01		02.03.2023	Potzmann	Dipl.-Ing. Anzböck
---	Original Version	22.02.2021	KHANBILVERDI	Dipl.-Ing. Anzböck
Version	Description of the Amendment	Date	Created	Verified
Customer				
IW-NET A project co-funded by the Horizon 2020 programme of the European Union				
Vessel IW-NET NEWS Evolution long				
Project No.	Drawing No.	Area of Navigation		
2020.056	007a	EU inland waterways Zone 3		
Designation				Scale
General Arrangement Plan				1:100
				Format
				A0

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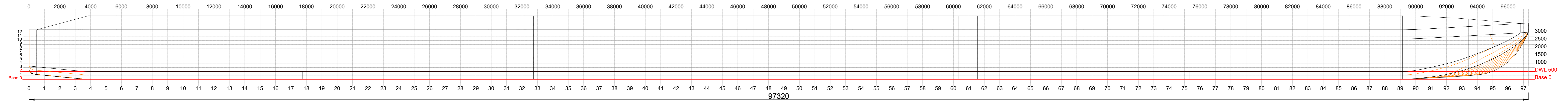


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NEWS Evolution long

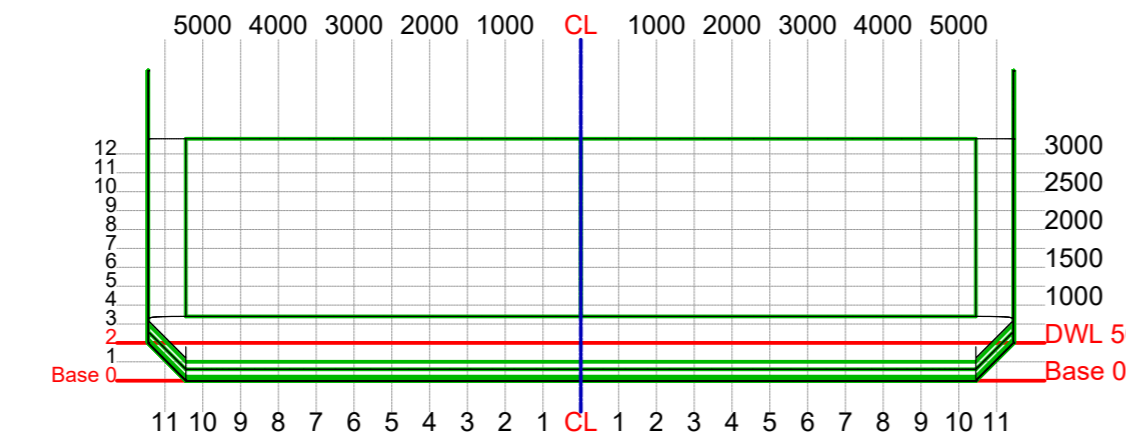
Stern

Bow



Stern

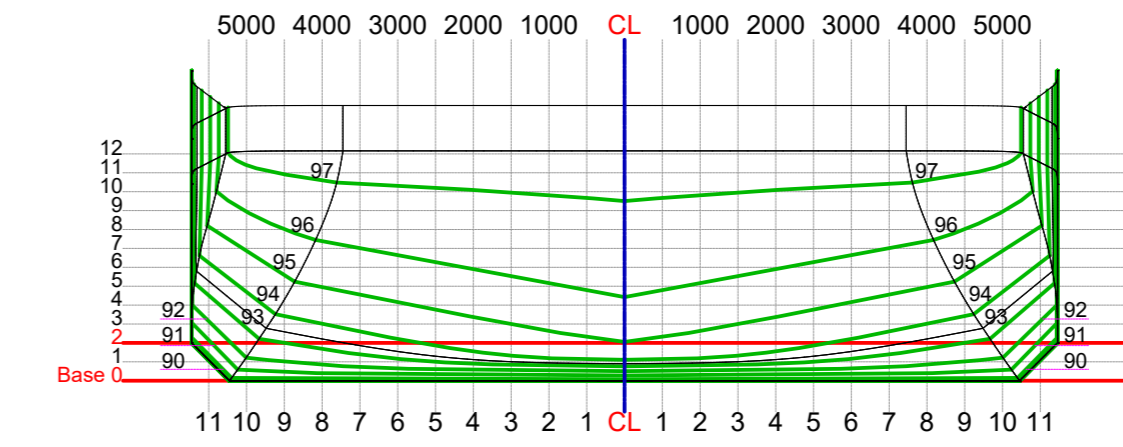
Bow



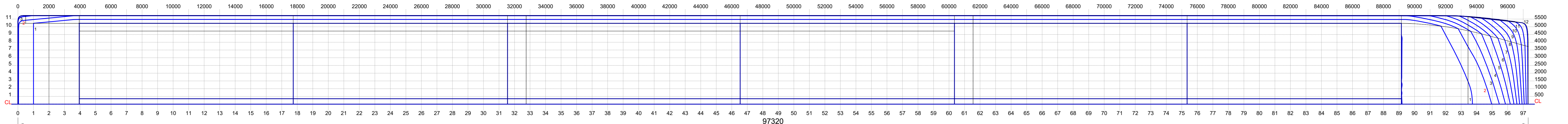
Frames 4 to 89 have the same shape as the outer contour



NEWS Evolution long

Length Overall : 97,32 m
 Breadth : 11,45 m
 Draft : 0,5 m
 Displacement at DWL : 498,582 t
 Frames distance : 1000 mm
 Waterlines distance : 250 mm
 Buttocks distance : 500 mm



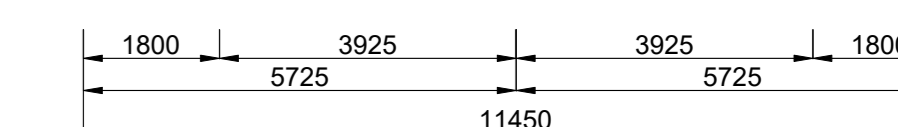
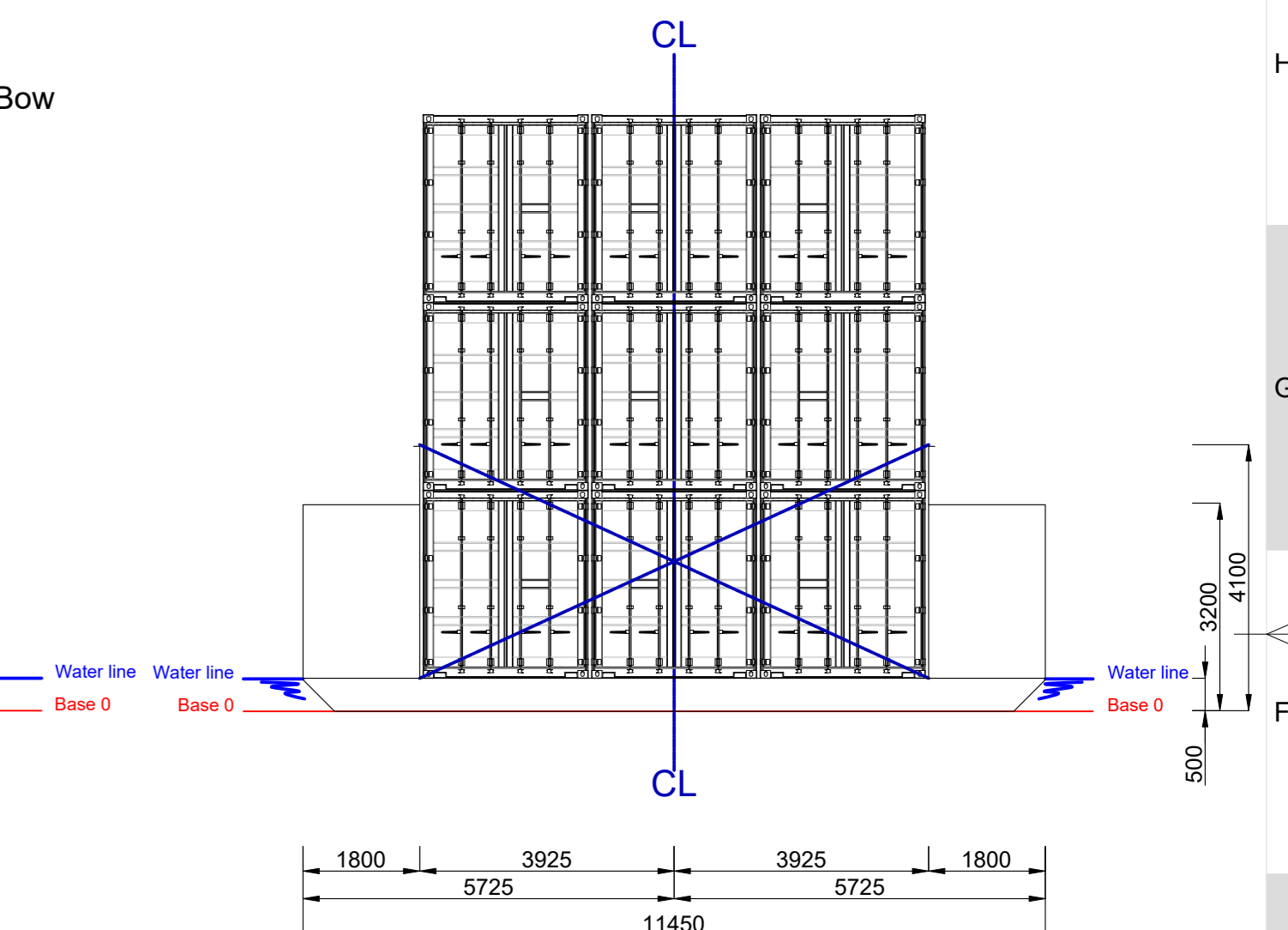
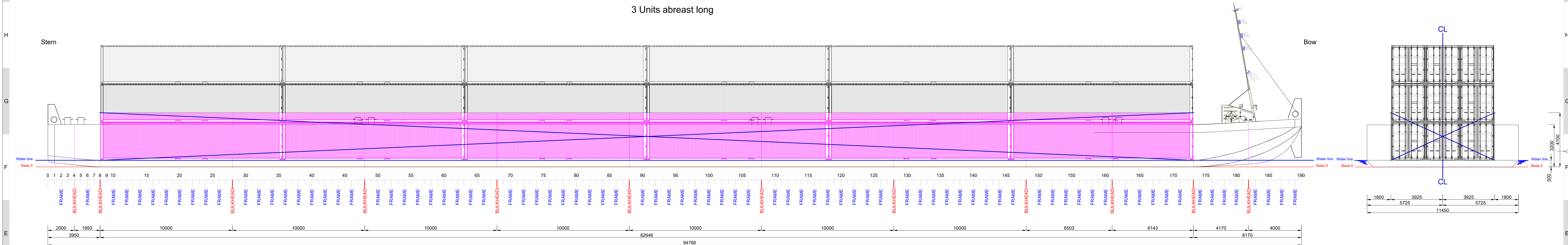
Frames 4 to 89 have the same shape as the outer contour



03				
02				
01				
---	Original Version	22.02.2021	KHANBILVERDI	Dipl.-Ing. Anzböck
Version	Description of the Amendment	Date	Created	Verified
Customer				
IW-NET A project co-funded by the Horizon 2020 programme of the European Union				
Vessel				
IW-NET NEWS Evolution long				
 DIPL.-ING. RICHARD ANZBÖCK STAÄTLICH BEFUGTER UND BEEIDETER ZIVILINGENIEUR FÜR SCHIFFSTECHNIK A-1190 Wien office@anzboeck.com Guglgasse 8/29 Tel.: +43-1-320 88 93				
Project No.	Drawing No.	Area of Navigation		
2020.056	007b	EU inland waterways Zone 3		
Designation		Scale	Format	
Linesplan		1:100	A0 	

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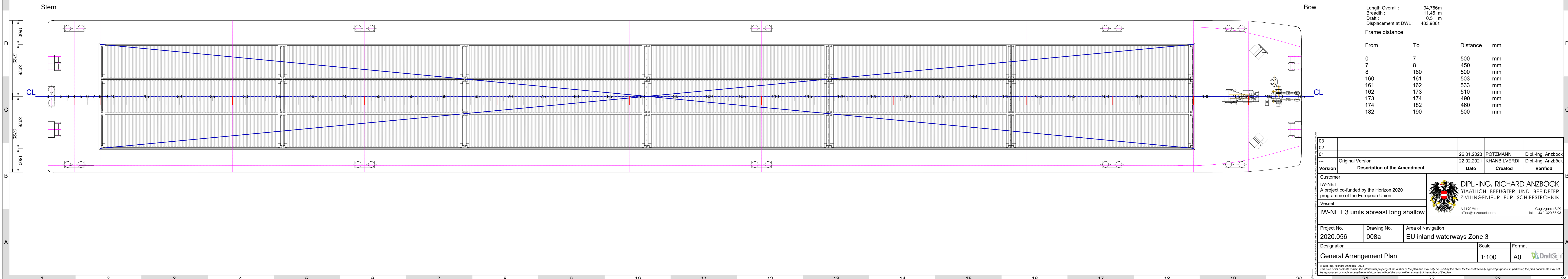
3 Units abreast long



3 Units abreast long
 Length Overall : 94,766m
 Breadth : 11,45 m
 Draft : 0,5 m
 Displacement at DWL : 483,986 t

Frame distance

From	To	Distance	mm
0	7	500	mm
7	8	450	mm
8	160	500	mm
160	161	503	mm
161	162	533	mm
162	173	510	mm
173	174	490	mm
174	182	460	mm
182	190	500	mm

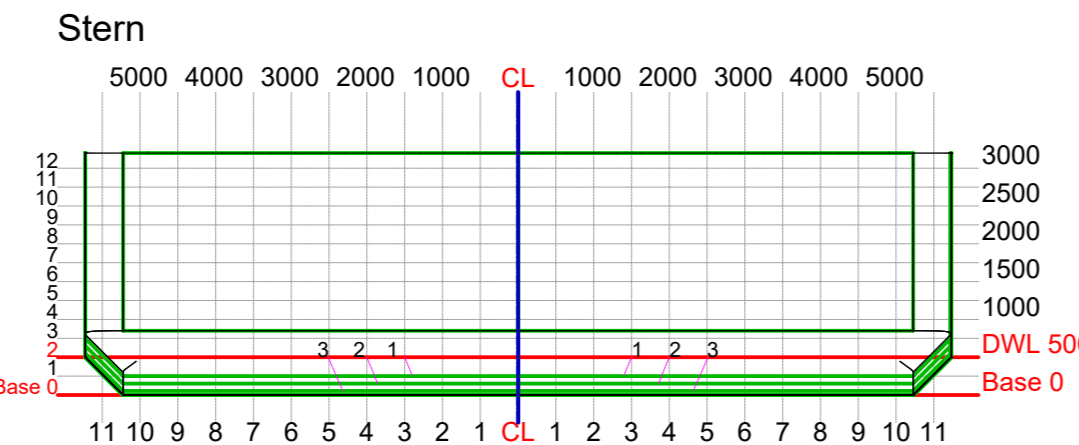
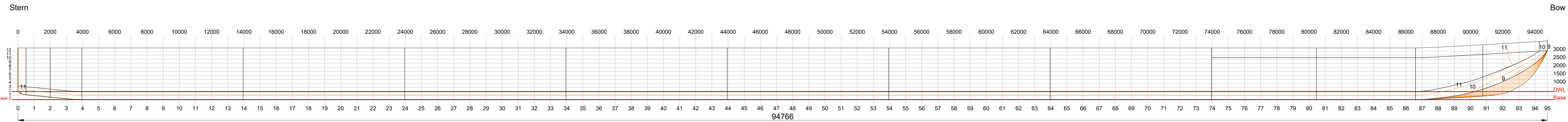


Version	Description of the Amendment	Date	Created	Verified
03				
02				
01		26.01.2023	POTZMANN	Dipl.-Ing. Anzböck
---	Original Version	22.02.2021	KHANBILVERDI	Dipl.-Ing. Anzböck

Customer		IW-NET	
A project co-funded by the Horizon 2020 programme of the European Union			
Vessel		IW-NET 3 units abreast long shallow	
Project No.	Drawing No.	Area of Navigation	
2020.056	008a	EU inland waterways Zone 3	
Designation		Scale	Format
General Arrangement Plan		1:100	A0

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3 Units abreast long

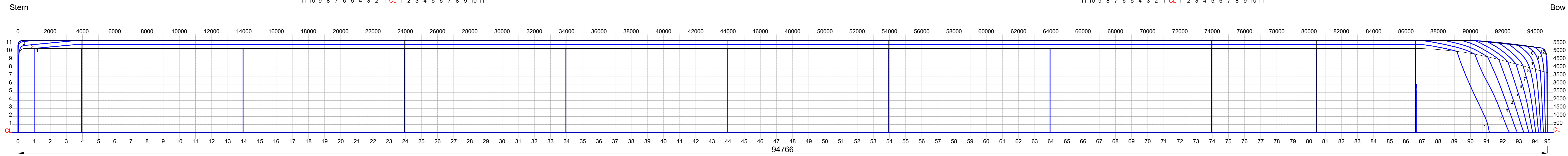
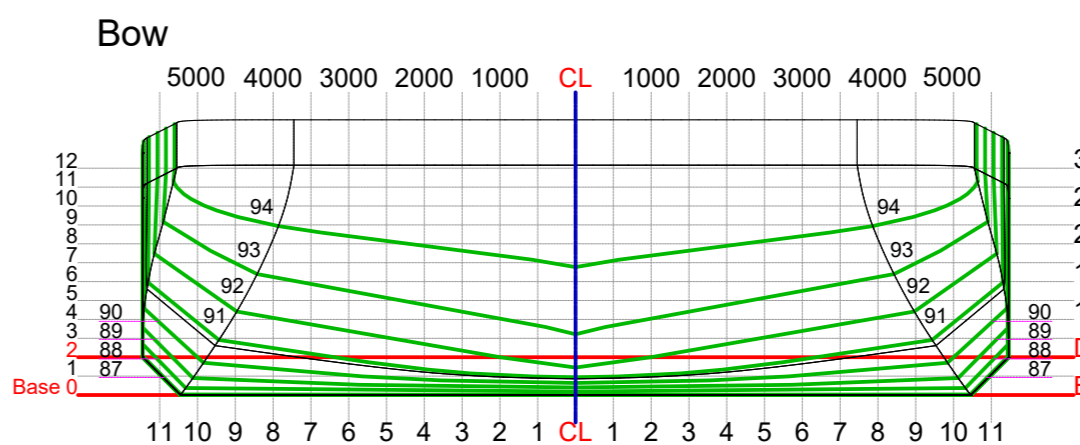


Frames 4 to 86 have the same shape as the outer contour

3 Units abreast long

Length Overall : 94,766m
 Breadth : 11,45 m
 Draft : 0,5 m
 Displacement at DWL : 483,986t

Frames distance : 1000 mm
 Waterlines distance : 250 mm
 Buttocks distance : 500 mm



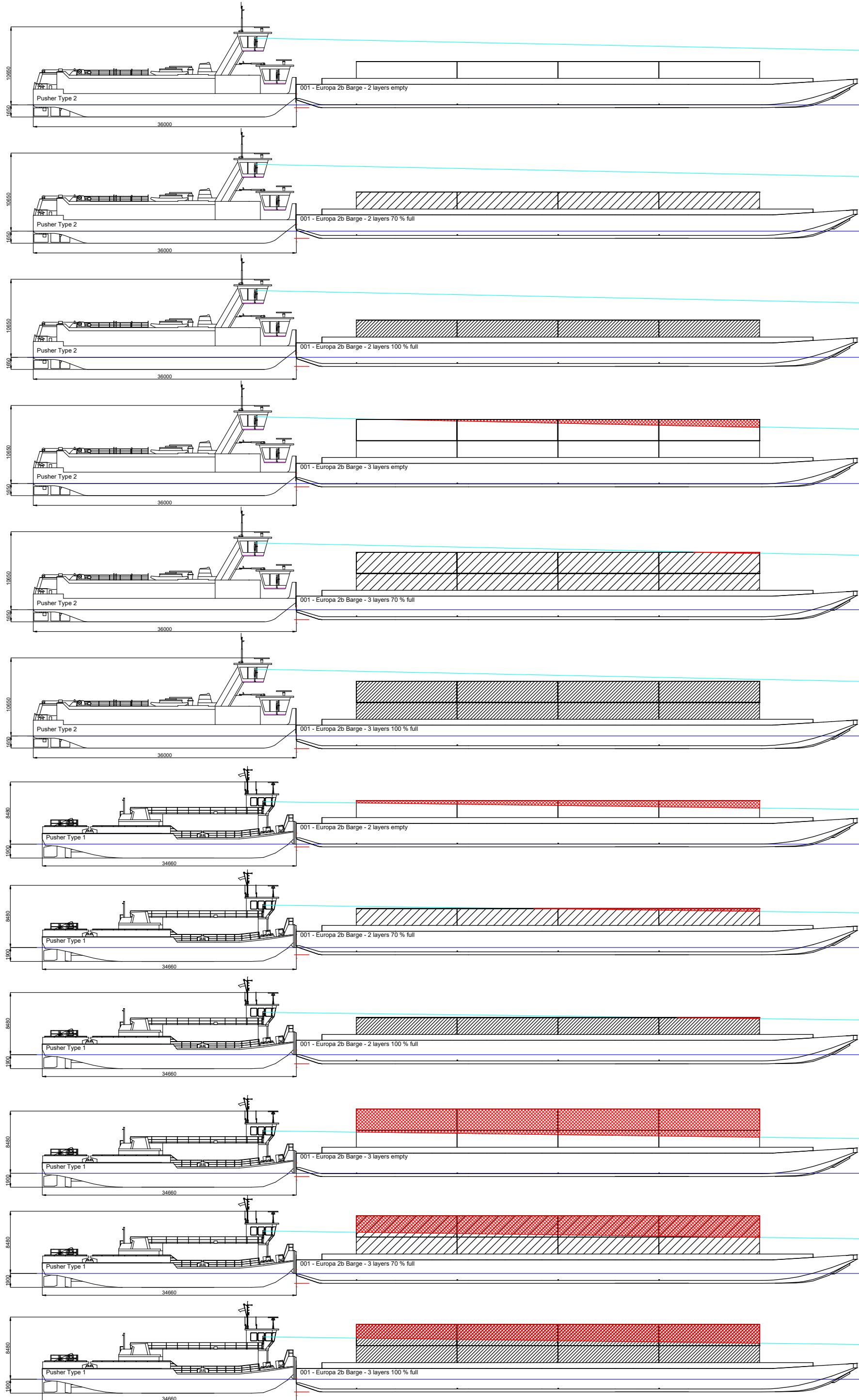
Frames 4 to 86 have the same shape as the outer contour



03				
02				
01				
---	Original Version	22.02.2021	KHANBILVERDI	Dipl.-Ing. Anzböck
Version	Description of the Amendment	Date	Created	Verified
Customer				
IW-NET A project co-funded by the Horizon 2020 programme of the European Union				
Vessel				
IW-NET 3 units abreast long shallow				
Project No. 2020.056		Drawing No. 008c		Area of Navigation EU inland waterways Zone 3
Designation Linesplan			Scale 1:100	Format A0
A. 1190 Wien office@anzboeck.com Guglgasse 8/29 Tel.: +43-1-320 88 93				

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03					
02					
01		01.03.2023	Potzmann	Dipl.-Ing. Anzböck	
---	Original Version	06.05.2021	DI Bieringer	Dipl.-Ing. Anzböck	
Version	Description of the Amendment	Date	Created	Verified	
Customer					
IW-NET A project co-funded by the Horizon 2020 programme of the European Union					
Vessel					
Europa 2b barge (steel version)					
Project No.	Drawing No.	Area of Navigation			
2020.056	001 d1	EU inland waterways Zone 3			
Designation				Scale	Format
Sightlines 2 and 3 layers of containers				1:500	A0 / 2
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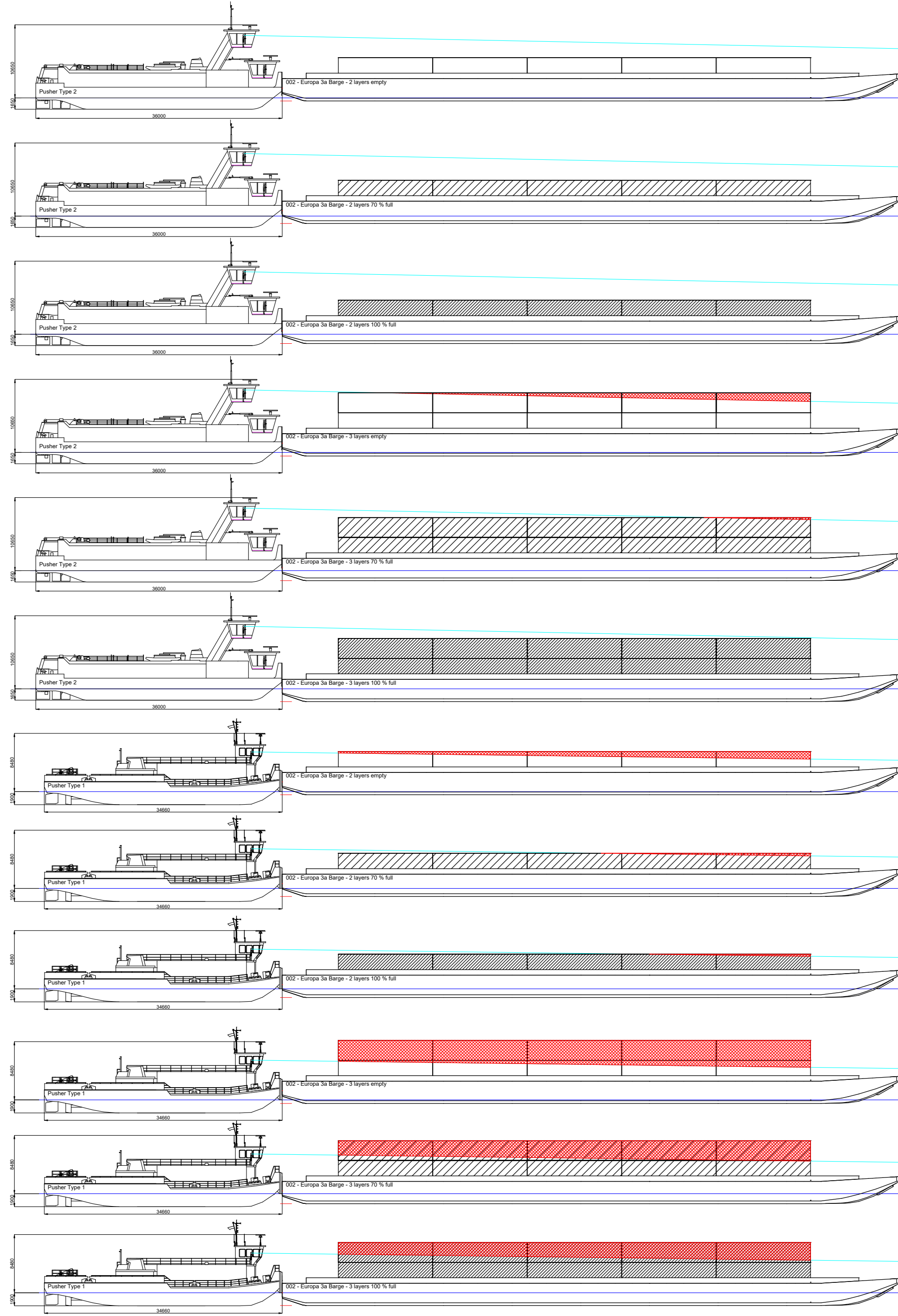
03				
02				
01		01.03.2023	Potzmann	Dipl.-Ing. Anzböck
---	Original Version	06.05.2021	DI Bieringer	Dipl.-Ing. Anzböck
Version	Description of the Amendment	Date	Created	Verified
Customer				
IW-NET A project co-funded by the Horizon 2020 programme of the European Union			 DIPL.-ING. RICHARD ANZBÖCK STAATLICH BEFUGTER UND BEEDETER ZIVILINGENIEUR FÜR SCHIFFSTECHNIK A 1190 Wien office@anzboeck.com Guglgasse 8/29 Tel.: +43-1-320 68 93	
Vessel Europa 2b barge (aluminium version)				
Project No.	Drawing No.	Area of Navigation		
2020.056	001 d2	EU inland waterways Zone 3		
Designation		Scale	Format	
Sightlines 2 and 3 layers of containers		1:500	A0 / 2 	

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03				
02				
01		01.03.2023	Potzmann	Dipl.-Ing. Anzböck
---	Original Version	06.05.2021	DI Bieringer	Dipl.-Ing. Anzböck
Version	Description of the Amendment	Date	Created	Verified
Customer				
IW-NET A project co-funded by the Horizon 2020 programme of the European Union		 DIPL.-ING. RICHARD ANZBÖCK STAATLICH BEFUGTER UND BEEIDETER ZIVILINGENIEUR FÜR SCHIFFSTECHNIK <small>A 1190 Wien office@anzboeck.com Guglgasse 8/29 Tel.: +43-1-320 68 93</small>		
Vessel				
Europa 3a barge (steel version)				
Project No.	Drawing No.	Area of Navigation		
2020.056	002 d1	EU inland waterways Zone 3		
Designation		Scale	Format	
Sightlines 2 and 3 layers of containers		1:500	A0 / 2 	



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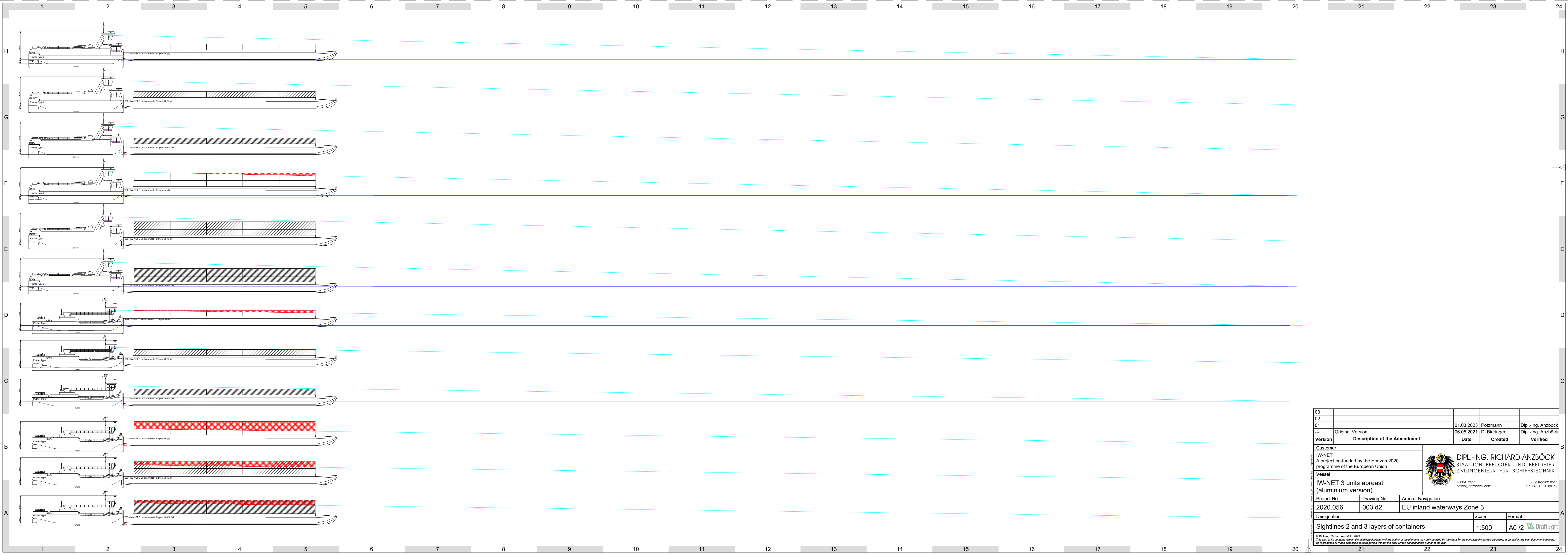
03				
02				
01		01.03.2023	Potzmann	Dipl.-Ing. Anzböck
---	Original Version	06.05.2021	DI Bieringer	Dipl.-Ing. Anzböck
Version	Description of the Amendment	Date	Created	Verified
Customer				
IW-NET A project co-funded by the Horizon 2020 programme of the European Union				
Vessel				
Europa 3a barge (aluminium version)				
Project No.	Drawing No.	Area of Navigation		
2020.056	002 d2	EU inland waterways Zone 3		
Designation				Scale
Sightlines 2 and 3 layers of containers				1:500
				Format
				A0 / 2
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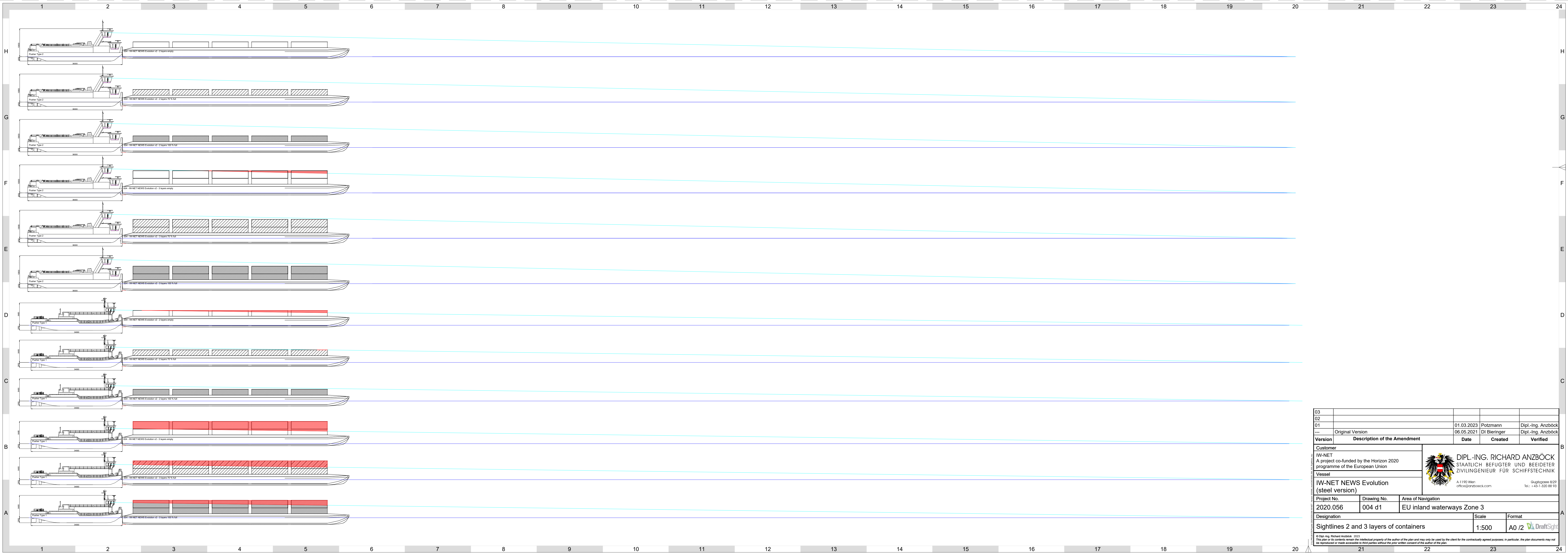
03				
02				
01		01.03.2023	Potzmann	Dipl.-Ing. Anzböck
---	Original Version	06.05.2021	DI Bieringer	Dipl.-Ing. Anzböck
Version	Description of the Amendment	Date	Created	Verified
Customer				
IW-NET A project co-funded by the Horizon 2020 programme of the European Union			 DIPL.-ING. RICHARD ANZBÖCK STAATLICH BEFUGTER UND BEEDETER ZIVILINGENIEUR FÜR SCHIFFSTECHNIK A 1190 Wien office@anzboeck.com Guglgasse 8/29 Tel.: +43-1-320 68 93	
Vessel				
IW-NET 3 units abreast (steel version)				
Project No.	Drawing No.	Area of Navigation		
2020.056	003 d1	EU inland waterways Zone 3		
Designation		Scale	Format	
Sightlines 2 and 3 layers of containers		1:500	A0 / 2 	



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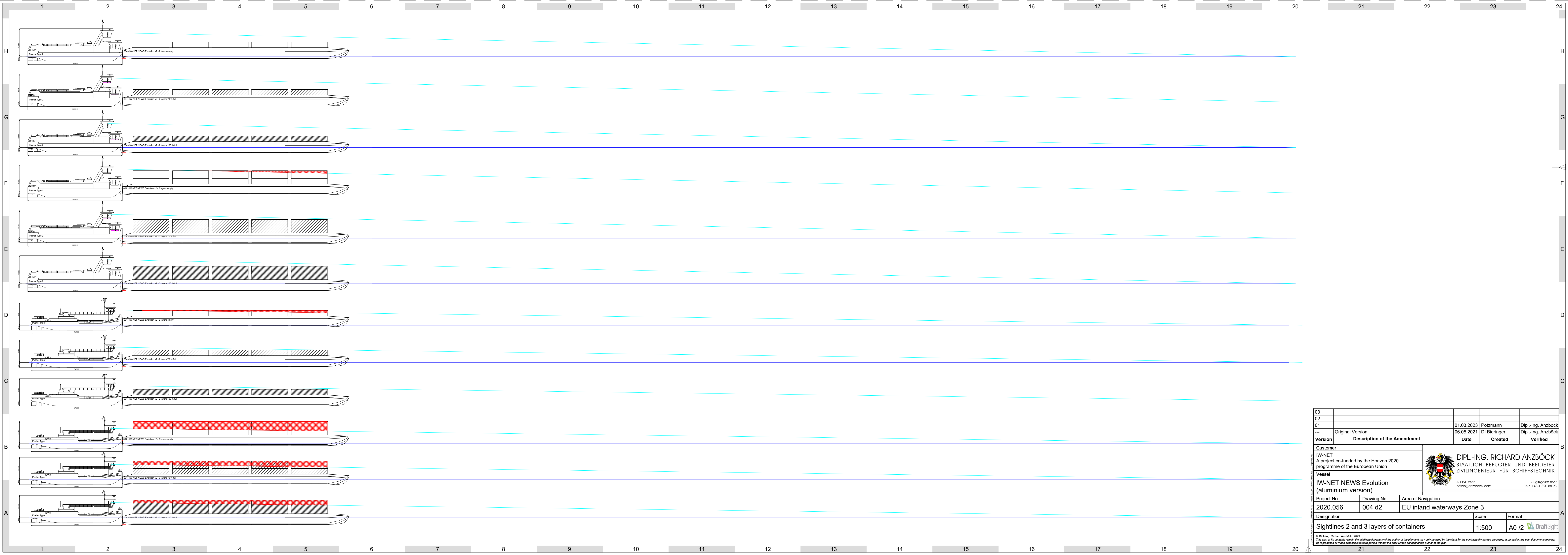
03				
02				
01		01.03.2023	Potzmann	Dipl.-Ing. Anzböck
---	Original Version	06.05.2021	DI Bieringer	Dipl.-Ing. Anzböck
Version	Description of the Amendment	Date	Created	Verified
Customer				
IW-NET A project co-funded by the Horizon 2020 programme of the European Union			 DIPL.-ING. RICHARD ANZBÖCK STAATLICH BEFUGTER UND BEEDITER ZIVILINGENIEUR FÜR SCHIFFSTECHNIK A 1190 Wien office@anzboeck.com Gurglgasse 8/29 Tel.: +43-1-320 68 93	
Vessel IW-NET 3 units abreast (aluminium version)				
Project No.	Drawing No.	Area of Navigation		
2020.056	003 d2	EU inland waterways Zone 3		
Designation		Scale	Format	
Sightlines 2 and 3 layers of containers		1:500	A0 /2 	

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03				
02				
01		01.03.2023	Potzmann	Dipl.-Ing. Anzböck
---	Original Version	06.05.2021	DI Bieringer	Dipl.-Ing. Anzböck
Version	Description of the Amendment	Date	Created	Verified
Customer				
IW-NET A project co-funded by the Horizon 2020 programme of the European Union		 DIPL.-ING. RICHARD ANZBÖCK STAATLICH BEFUGTER UND BEEDETER ZIVILINGENIEUR FÜR SCHIFFSTECHNIK <small>A 1190 Wien office@anzboeck.com Guglgasse 8/29 Tel.: +43-1-320 68 93</small>		
Vessel IW-NET NEWS Evolution (steel version)				
Project No.	Drawing No.	Area of Navigation		
2020.056	004 d1	EU inland waterways Zone 3		
Designation		Scale	Format	
Sightlines 2 and 3 layers of containers		1:500	A0 / 2 	

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03				
02				
01		01.03.2023	Potzmann	Dipl.-Ing. Anzböck
---	Original Version	06.05.2021	DI Bieringer	Dipl.-Ing. Anzböck
Version	Description of the Amendment	Date	Created	Verified
Customer				
IW-NET A project co-funded by the Horizon 2020 programme of the European Union				
Vessel				
IW-NET NEWS Evolution (aluminium version)				
Project No.	Drawing No.	Area of Navigation		
2020.056	004 d2	EU inland waterways Zone 3		
Designation				Scale
Sightlines 2 and 3 layers of containers				1:500
				Format
				A0 / 2




DIPL.-ING. RICHARD ANZBÖCK
 STAATLICH BEFUGTER UND BEEDETER
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03				
02				
01		01.03.2023	Potzmann	Dipl.-Ing. Anzböck
---	Original Version	06.05.2021	DI Bieringer	Dipl.-Ing. Anzböck
Version	Description of the Amendment	Date	Created	Verified
Customer				
IW-NET A project co-funded by the Horizon 2020 programme of the European Union		 DIPL.-ING. RICHARD ANZBÖCK STAATLICH BEFUGTER UND BEEDETER ZIVILINGENIEUR FÜR SCHIFFSTECHNIK <small>A 1190 Wien office@anzboeck.com Guglgasse 8/29 Tel.: +43-1-320 68 93</small>		
Vessel IW-NET Containers transverse (steel version)				
Project No.	Drawing No.	Area of Navigation		
2020.056	005 d1	EU inland waterways Zone 3		
Designation		Scale	Format	
Sightlines 2 and 3 layers of containers		1:500	A0 / 2 	
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03				
02				
01		01.03.2023	Potzmann	Dipl.-Ing. Anzböck
---	Original Version	06.05.2021	DI Bieringer	Dipl.-Ing. Anzböck
Version	Description of the Amendment	Date	Created	Verified
Customer				
IW-NET A project co-funded by the Horizon 2020 programme of the European Union		 DIPL.-ING. RICHARD ANZBÖCK STAATLICH BEFUGTER UND BEEIDETER ZIVILINGENIEUR FÜR SCHIFFSTECHNIK A-1190 Wien office@anzboeck.com Guglgasse 8/29 Tel.: +43-1-320 68 93		
Vessel				
IW-NET Containers transverse (aluminium version)				
Project No.	Drawing No.	Area of Navigation		
2020.056	005 d2	EU inland waterways Zone 3		
Designation		Scale	Format	
Sightlines 2 and 3 layers of containers		1:500	A0 / 2 	
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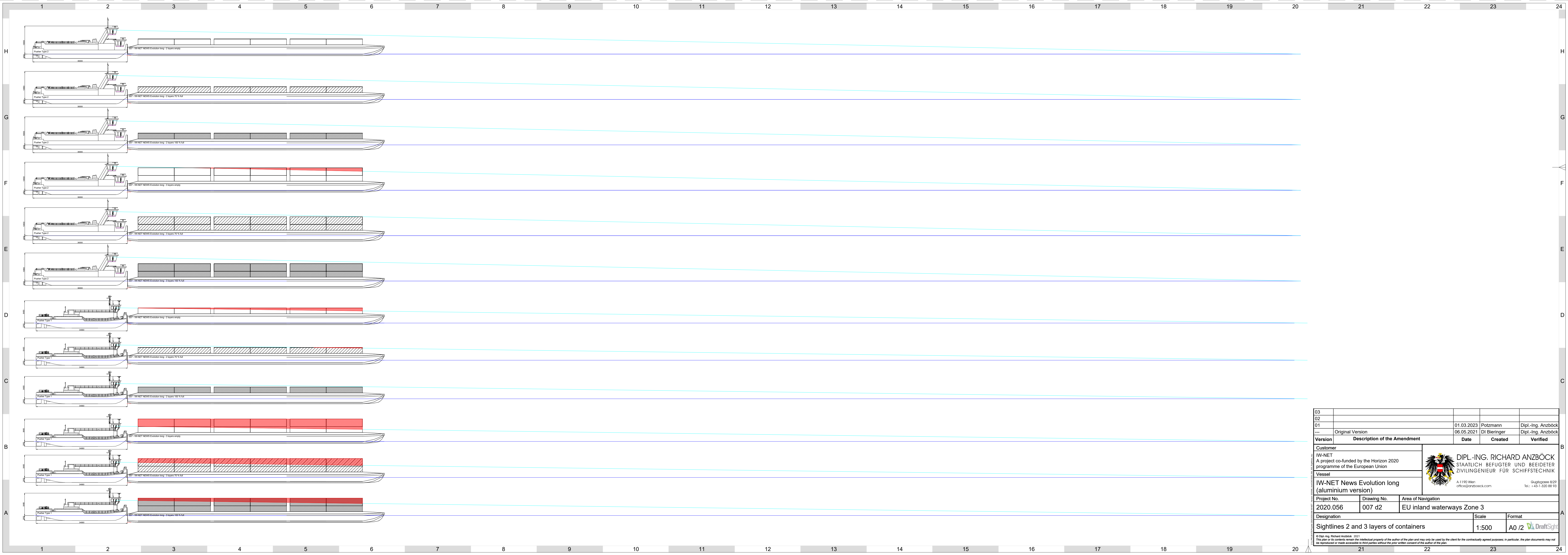
03				
02				
01		01.03.2023	Potzmann	Dipl.-Ing. Anzböck
---	Original Version	06.05.2021	DI Bieringer	Dipl.-Ing. Anzböck
Version	Description of the Amendment	Date	Created	Verified
Customer				
IW-NET A project co-funded by the Horizon 2020 programme of the European Union		 DIPL.-ING. RICHARD ANZBÖCK STAÄTTLICH BEFUGTER UND BEEIDETER ZIVILINGENIEUR FÜR SCHIFFSTECHNIK A 1190 Wien office@anzboeck.com Guglgasse 8/29 Tel.: +43-1-320 68 93		
Vessel				
IW-NET 3 units abreast long (steel version)				
Project No.	Drawing No.	Area of Navigation		
2020.056	006 d1	EU inland waterways Zone 3		
Designation		Scale	Format	
Sightlines 2 and 3 layers of containers		1:500	A0 / 2 	
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Customer				
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Vessel				
IW-NET 3 units abreast long (aluminium version)				
Project No.	Drawing No.	Area of Navigation		
2020.056	006 d2	EU inland waterways Zone 3		
Designation		Scale	Format	
Sightlines 2 and 3 layers of containers		1:500	A0 / 2 	
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01		01.03.2023	Potzmann	Dipl.-Ing. Anzböck
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Version	Description of the Amendment	Date	Created	Verified
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IW-NET A project co-funded by the Horizon 2020 programme of the European Union			 DIPL.-ING. RICHARD ANZBÖCK STAATLICH BEFUGTER UND BEEDETER ZIVILINGENIEUR FÜR SCHIFFSTECHNIK <small>A 1190 Wien office@anzboeck.com Guglgasse 8/29 Tel.: +43-1-320 68 93</small>	
Vessel IW-NET News Evolution long (steel version)				
Project No.	Drawing No.	Area of Navigation		
2020.056	007 d1	EU inland waterways Zone 3		
Designation		Scale	Format	
Sightlines 2 and 3 layers of containers		1:500	A0 / 2 	
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Customer				
IW-NET A project co-funded by the Horizon 2020 programme of the European Union			 DIPL.-ING. RICHARD ANZBÖCK STAATLICH BEFUGTER UND BEIEDETER ZIVILINGENIEUR FÜR SCHIFFSTECHNIK A 1190 Wien office@anzboeck.com Glogitzgasse 8/29 Tel.: +43-1-320 68 93	
Vessel				
IW-NET News Evolution long (aluminium version)				
Project No.	Drawing No.	Area of Navigation		
2020.056	007 d2	EU inland waterways Zone 3		
Designation		Scale	Format	
Sightlines 2 and 3 layers of containers		1:500	A0 / 2 	

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IW-NET A project co-funded by the Horizon 2020 programme of the European Union			 DIPL.-ING. RICHARD ANZBÖCK STAATLICH BEFUGTER UND BEEIDETER ZIVILINGENIEUR FÜR SCHIFFSTECHNIK A 1190 Wien office@anzboeck.com Guglgasse 8/29 Tel.: +43-1-320 68 93	
Vessel IW-NET 3 units abreast long/shallow (steel version)				
Project No.	Drawing No.	Area of Navigation		
2020.056	008 d1	EU inland waterways Zone 3		
Designation		Scale	Format	
Sightlines 2 and 3 layers of containers		1:500	A0 / 2 	

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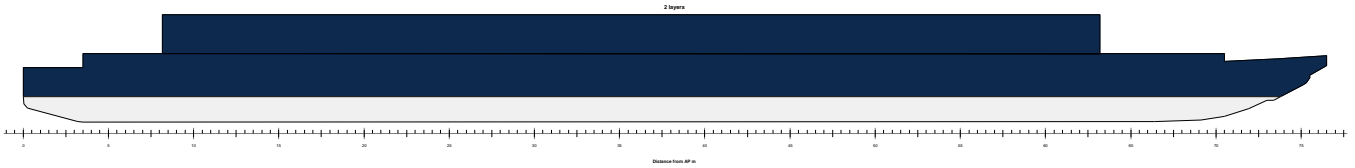


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Vessel				
IW-NET 3 units abreast long/shallow (aluminium version)				
Project No.	Drawing No.	Area of Navigation		
2020.056	008 d2	EU inland waterways Zone 3		
Designation				Scale
Sightlines 2 and 3 layers of containers				1:500
				Format
				A0 / 2
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Calculation of wind moments

Wind silhouette : 2 layers



Wind pressure 25,00 kg/m²

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
0,200	12,68	35,352	0,104	403,61	36,908	3,059	0,216	29,808	
0,210	13,36	35,392	0,109	402,94	36,909	3,063	0,205	29,755	
0,220	14,03	35,428	0,115	402,26	36,910	3,068	0,195	29,702	
0,230	14,71	35,462	0,120	401,59	36,911	3,073	0,185	29,650	
0,240	15,38	35,493	0,125	400,91	36,913	3,078	0,177	29,597	
0,250	16,06	35,522	0,130	400,24	36,914	3,082	0,169	29,544	
0,260	16,73	35,550	0,135	399,56	36,915	3,087	0,162	29,491	
0,270	17,41	35,576	0,140	398,88	36,916	3,092	0,155	29,438	
0,280	18,09	35,600	0,145	398,20	36,917	3,097	0,149	29,386	
0,290	18,77	35,624	0,150	397,52	36,919	3,102	0,143	29,333	
0,300	19,45	35,646	0,155	396,84	36,920	3,106	0,138	29,280	
0,310	20,14	35,667	0,160	396,16	36,921	3,111	0,133	29,227	
0,320	20,82	35,687	0,165	395,47	36,922	3,116	0,128	29,174	
0,330	21,50	35,707	0,170	394,79	36,923	3,121	0,124	29,121	
0,340	22,19	35,725	0,175	394,10	36,924	3,126	0,120	29,068	
0,350	22,87	35,742	0,181	393,42	36,925	3,131	0,116	29,016	
0,360	23,56	35,758	0,186	392,73	36,926	3,135	0,112	28,963	
0,370	24,25	35,773	0,191	392,05	36,927	3,140	0,109	28,910	
0,380	24,94	35,787	0,196	391,36	36,929	3,145	0,105	28,857	
0,390	25,62	35,800	0,201	390,67	36,930	3,150	0,102	28,804	
0,400	26,31	35,812	0,206	389,98	36,931	3,155	0,099	28,751	
0,410	27,00	35,824	0,211	389,29	36,932	3,160	0,097	28,698	
0,420	27,69	35,835	0,216	388,60	36,933	3,165	0,094	28,645	
0,430	28,38	35,845	0,221	387,91	36,934	3,170	0,091	28,592	
0,440	29,07	35,855	0,226	387,22	36,936	3,174	0,089	28,539	
0,450	29,77	35,865	0,231	386,53	36,937	3,179	0,087	28,486	
0,460	30,46	35,873	0,236	385,83	36,938	3,184	0,085	28,433	
0,470	31,15	35,882	0,242	385,14	36,939	3,189	0,082	28,381	
0,480	31,85	35,890	0,247	384,45	36,941	3,194	0,080	28,328	
0,490	32,54	35,897	0,252	383,75	36,942	3,199	0,079	28,275	
0,500	33,24	35,905	0,257	383,05	36,943	3,204	0,077	28,222	
0,510	33,93	35,911	0,262	382,36	36,944	3,209	0,075	28,169	
0,520	34,63	35,918	0,267	381,66	36,946	3,214	0,073	28,116	
0,530	35,33	35,924	0,272	380,96	36,947	3,219	0,072	28,063	
0,540	36,03	35,930	0,277	380,27	36,948	3,223	0,070	28,010	
0,550	36,73	35,936	0,282	379,57	36,950	3,228	0,069	27,956	
0,560	37,43	35,941	0,287	378,87	36,951	3,233	0,067	27,903	
0,570	38,13	35,946	0,292	378,17	36,952	3,238	0,066	27,850	
0,580	38,83	35,951	0,298	377,47	36,954	3,243	0,064	27,797	
0,590	39,53	35,956	0,303	376,76	36,955	3,248	0,063	27,744	
0,600	40,23	35,960	0,308	376,06	36,957	3,253	0,062	27,691	
0,610	40,93	35,964	0,313	375,36	36,958	3,258	0,061	27,638	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
0,620	41,64	35,968	0,318	374,66	36,959	3,263	0,060	27,585	
0,630	42,34	35,972	0,323	373,95	36,961	3,268	0,058	27,532	
0,640	43,05	35,976	0,328	373,25	36,962	3,273	0,057	27,479	
0,650	43,75	35,979	0,333	372,54	36,964	3,278	0,056	27,425	
0,660	44,46	35,983	0,338	371,83	36,965	3,283	0,055	27,372	
0,670	45,17	35,986	0,344	371,13	36,967	3,288	0,054	27,319	
0,680	45,87	35,989	0,349	370,42	36,968	3,293	0,053	27,266	
0,690	46,58	35,992	0,354	369,71	36,970	3,298	0,052	27,213	
0,700	47,29	35,994	0,359	369,00	36,971	3,303	0,052	27,159	
0,710	48,00	35,997	0,364	368,29	36,973	3,308	0,051	27,106	
0,720	48,71	36,000	0,369	367,58	36,974	3,313	0,050	27,053	
0,730	49,42	36,002	0,374	366,87	36,976	3,318	0,049	26,999	
0,740	50,13	36,004	0,379	366,16	36,977	3,323	0,048	26,946	
0,750	50,84	36,006	0,384	365,45	36,979	3,328	0,047	26,893	
0,760	51,56	36,009	0,390	364,74	36,981	3,333	0,047	26,840	
0,770	52,27	36,011	0,395	364,02	36,982	3,338	0,046	26,786	
0,780	52,99	36,012	0,400	363,31	36,984	3,343	0,045	26,733	
0,790	53,70	36,014	0,405	362,59	36,986	3,348	0,044	26,679	
0,800	54,42	36,016	0,410	361,88	36,987	3,353	0,044	26,626	
0,810	55,13	36,017	0,415	361,16	36,989	3,358	0,043	26,573	
0,820	55,85	36,019	0,420	360,44	36,991	3,363	0,042	26,519	
0,830	56,57	36,020	0,425	359,73	36,992	3,368	0,042	26,466	
0,840	57,28	36,022	0,431	359,01	36,994	3,373	0,041	26,413	
0,850	58,00	36,023	0,436	358,29	36,996	3,379	0,041	26,359	
0,860	58,72	36,025	0,441	357,57	36,997	3,384	0,040	26,306	
0,870	59,44	36,026	0,446	356,85	36,999	3,389	0,039	26,252	
0,880	60,16	36,028	0,451	356,13	37,001	3,394	0,039	26,199	
0,890	60,88	36,030	0,456	355,41	37,003	3,399	0,038	26,146	
0,900	61,60	36,031	0,461	354,69	37,004	3,404	0,038	26,092	
0,910	62,32	36,033	0,467	353,97	37,006	3,409	0,037	26,039	
0,920	63,04	36,035	0,472	353,25	37,008	3,414	0,037	25,985	
0,930	63,76	36,036	0,477	352,53	37,009	3,419	0,036	25,932	
0,940	64,48	36,038	0,482	351,81	37,011	3,424	0,036	25,879	
0,950	65,20	36,040	0,487	351,09	37,013	3,429	0,035	25,825	
0,960	65,93	36,042	0,492	350,37	37,014	3,434	0,035	25,772	
0,970	66,65	36,044	0,497	349,64	37,016	3,440	0,034	25,719	
0,980	67,37	36,046	0,502	348,92	37,017	3,445	0,034	25,665	
0,990	68,10	36,048	0,508	348,20	37,019	3,450	0,034	25,612	
1,000	68,82	36,050	0,513	347,47	37,021	3,455	0,033	25,559	
1,010	69,54	36,052	0,518	346,75	37,022	3,460	0,033	25,505	
1,020	70,27	36,055	0,523	346,03	37,024	3,465	0,032	25,452	
1,030	70,99	36,057	0,528	345,30	37,025	3,470	0,032	25,399	
1,040	71,72	36,059	0,533	344,58	37,027	3,475	0,032	25,345	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,050	72,44	36,062	0,538	343,85	37,028	3,480	0,031	25,292	
1,060	73,17	36,064	0,543	343,13	37,030	3,486	0,031	25,239	
1,070	73,89	36,067	0,549	342,40	37,031	3,491	0,030	25,185	
1,080	74,62	36,069	0,554	341,68	37,033	3,496	0,030	25,132	
1,090	75,34	36,072	0,559	340,95	37,034	3,501	0,030	25,079	
1,100	76,07	36,075	0,564	340,22	37,036	3,506	0,029	25,026	
1,110	76,80	36,077	0,569	339,50	37,037	3,511	0,029	24,972	
1,120	77,52	36,080	0,574	338,77	37,039	3,516	0,029	24,919	
1,130	78,25	36,083	0,579	338,04	37,040	3,522	0,028	24,866	
1,140	78,98	36,085	0,584	337,31	37,042	3,527	0,028	24,812	
1,150	79,71	36,088	0,589	336,59	37,043	3,532	0,028	24,759	
1,160	80,43	36,091	0,595	335,86	37,044	3,537	0,027	24,706	
1,170	81,16	36,094	0,600	335,13	37,046	3,542	0,027	24,653	
1,180	81,89	36,096	0,605	334,40	37,047	3,547	0,027	24,599	
1,190	82,62	36,099	0,610	333,68	37,049	3,552	0,026	24,546	
1,200	83,35	36,102	0,615	332,95	37,050	3,558	0,026	24,493	
1,210	84,07	36,105	0,620	332,22	37,051	3,563	0,026	24,440	
1,220	84,80	36,108	0,625	331,49	37,053	3,568	0,026	24,387	
1,230	85,53	36,111	0,630	330,76	37,054	3,573	0,025	24,333	
1,240	86,26	36,114	0,636	330,03	37,055	3,578	0,025	24,280	
1,250	86,99	36,117	0,641	329,30	37,057	3,583	0,025	24,227	
1,260	87,72	36,120	0,646	328,57	37,058	3,589	0,025	24,174	
1,270	88,45	36,123	0,651	327,84	37,059	3,594	0,024	24,121	
1,280	89,18	36,126	0,656	327,11	37,060	3,599	0,024	24,068	
1,290	89,92	36,131	0,661	326,38	37,061	3,604	0,024	24,014	
1,300	90,65	36,136	0,666	325,64	37,062	3,609	0,024	23,961	
1,310	91,38	36,140	0,671	324,91	37,063	3,615	0,023	23,907	
1,320	92,12	36,145	0,676	324,17	37,063	3,620	0,023	23,854	
1,330	92,85	36,150	0,682	323,44	37,064	3,625	0,023	23,800	
1,340	93,59	36,154	0,687	322,70	37,065	3,630	0,023	23,747	
1,350	94,32	36,159	0,692	321,97	37,066	3,635	0,022	23,694	
1,360	95,06	36,164	0,697	321,23	37,066	3,641	0,022	23,640	
1,370	95,79	36,169	0,702	320,50	37,067	3,646	0,022	23,587	
1,380	96,53	36,173	0,707	319,76	37,068	3,651	0,022	23,533	
1,390	97,27	36,178	0,712	319,03	37,068	3,656	0,021	23,480	
1,400	98,00	36,183	0,718	318,29	37,069	3,662	0,021	23,427	
1,410	98,74	36,187	0,723	317,56	37,069	3,667	0,021	23,373	
1,420	99,47	36,192	0,728	316,82	37,070	3,672	0,021	23,320	
1,430	100,21	36,197	0,733	316,08	37,071	3,677	0,021	23,267	
1,440	100,95	36,201	0,738	315,35	37,071	3,683	0,020	23,213	
1,450	101,68	36,206	0,743	314,61	37,072	3,688	0,020	23,160	
1,460	102,42	36,211	0,748	313,87	37,072	3,693	0,020	23,107	
1,470	103,16	36,215	0,753	313,13	37,073	3,698	0,020	23,053	
1,480	103,90	36,220	0,759	312,40	37,073	3,703	0,020	23,000	

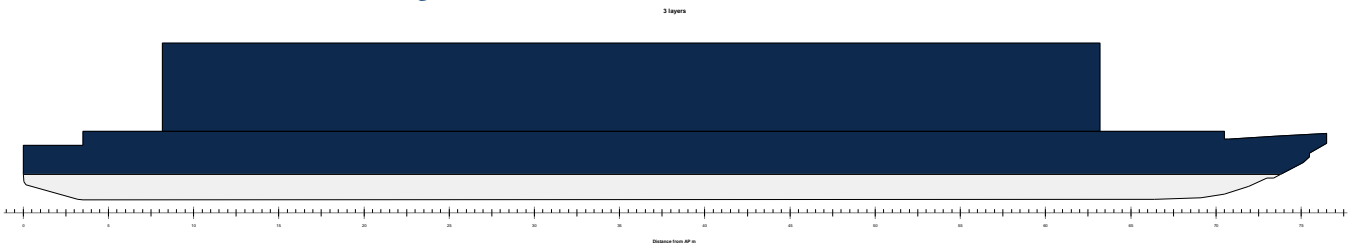
Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,490	104,63	36,224	0,764	311,66	37,074	3,709	0,019	22,947	
1,500	105,37	36,229	0,769	310,92	37,074	3,714	0,019	22,894	
1,510	106,11	36,234	0,774	310,18	37,075	3,719	0,019	22,840	
1,520	106,85	36,238	0,779	309,45	37,075	3,725	0,019	22,787	
1,530	107,59	36,243	0,784	308,71	37,075	3,730	0,019	22,734	
1,540	108,32	36,248	0,789	307,97	37,076	3,735	0,019	22,680	
1,550	109,06	36,252	0,794	307,23	37,076	3,740	0,018	22,627	
1,560	109,80	36,257	0,799	306,49	37,076	3,746	0,018	22,574	
1,570	110,54	36,262	0,805	305,75	37,077	3,751	0,018	22,521	
1,580	111,28	36,266	0,810	305,01	37,077	3,756	0,018	22,467	
1,590	112,02	36,271	0,815	304,27	37,077	3,761	0,018	22,414	
1,600	112,76	36,276	0,820	303,53	37,077	3,767	0,018	22,361	
1,610	113,50	36,281	0,825	302,79	37,077	3,772	0,017	22,308	
1,620	114,24	36,285	0,830	302,05	37,078	3,777	0,017	22,254	
1,630	114,98	36,290	0,835	301,31	37,078	3,783	0,017	22,201	
1,640	115,72	36,295	0,840	300,57	37,078	3,788	0,017	22,148	
1,650	116,46	36,299	0,846	299,83	37,078	3,793	0,017	22,094	
1,660	117,20	36,304	0,851	299,09	37,078	3,798	0,017	22,041	
1,670	117,94	36,309	0,856	298,35	37,078	3,804	0,017	21,988	
1,680	118,69	36,314	0,861	297,61	37,078	3,809	0,016	21,935	
1,690	119,43	36,318	0,866	296,87	37,078	3,814	0,016	21,881	
1,700	120,17	36,323	0,871	296,12	37,078	3,820	0,016	21,828	
1,710	120,91	36,328	0,876	295,38	37,078	3,825	0,016	21,775	
1,720	121,65	36,333	0,881	294,64	37,078	3,830	0,016	21,722	
1,730	122,40	36,338	0,886	293,90	37,078	3,836	0,016	21,668	
1,740	123,14	36,342	0,892	293,16	37,078	3,841	0,016	21,615	
1,750	123,88	36,347	0,897	292,41	37,078	3,846	0,015	21,562	
1,760	124,62	36,352	0,902	291,67	37,077	3,852	0,015	21,509	
1,770	125,37	36,357	0,907	290,93	37,077	3,857	0,015	21,455	
1,780	126,11	36,361	0,912	290,18	37,077	3,862	0,015	21,402	
1,790	126,85	36,366	0,917	289,44	37,077	3,868	0,015	21,349	
1,800	127,60	36,371	0,922	288,70	37,076	3,873	0,015	21,296	
1,810	128,34	36,376	0,927	287,95	37,076	3,878	0,015	21,242	
1,820	129,09	36,381	0,933	287,21	37,076	3,884	0,015	21,189	
1,830	129,83	36,385	0,938	286,46	37,075	3,889	0,014	21,136	
1,840	130,57	36,390	0,943	285,72	37,075	3,894	0,014	21,083	
1,850	131,32	36,395	0,948	284,97	37,075	3,900	0,014	21,029	
1,860	132,06	36,400	0,953	284,23	37,074	3,905	0,014	20,976	
1,870	132,81	36,405	0,958	283,48	37,074	3,910	0,014	20,923	
1,880	133,56	36,410	0,963	282,74	37,073	3,916	0,014	20,870	
1,890	134,30	36,414	0,968	281,99	37,073	3,921	0,014	20,816	
1,900	135,05	36,419	0,973	281,25	37,072	3,926	0,014	20,763	
1,910	135,79	36,424	0,979	280,50	37,071	3,932	0,014	20,710	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,920	136,54	36,429	0,984	279,75	37,071	3,937	0,013	20,657	
1,930	137,28	36,434	0,989	279,01	37,070	3,943	0,013	20,603	
1,940	138,03	36,438	0,994	278,26	37,069	3,948	0,013	20,550	
1,950	138,78	36,443	0,999	277,52	37,069	3,953	0,013	20,497	
1,960	139,52	36,448	1,004	276,77	37,068	3,959	0,013	20,444	
1,970	140,27	36,453	1,009	276,02	37,067	3,964	0,013	20,390	
1,980	141,02	36,458	1,014	275,27	37,066	3,970	0,013	20,337	
1,990	141,77	36,463	1,020	274,53	37,066	3,975	0,013	20,284	
2,000	142,51	36,467	1,025	273,78	37,065	3,980	0,013	20,230	
2,010	143,26	36,472	1,030	273,03	37,064	3,986	0,012	20,177	
2,020	144,01	36,477	1,035	272,28	37,063	3,991	0,012	20,124	
2,030	144,76	36,482	1,040	271,54	37,062	3,997	0,012	20,071	
2,040	145,51	36,487	1,045	270,79	37,061	4,002	0,012	20,017	
2,050	146,26	36,491	1,050	270,04	37,060	4,007	0,012	19,964	
2,060	147,00	36,496	1,055	269,29	37,059	4,013	0,012	19,911	
2,070	147,75	36,501	1,060	268,54	37,058	4,018	0,012	19,858	
2,080	148,50	36,506	1,066	267,79	37,057	4,024	0,012	19,804	
2,090	149,25	36,511	1,071	267,04	37,056	4,029	0,012	19,751	
2,100	150,00	36,515	1,076	266,29	37,054	4,035	0,012	19,698	
2,110	150,75	36,520	1,081	265,54	37,053	4,040	0,012	19,645	
2,120	151,50	36,525	1,086	264,79	37,052	4,046	0,011	19,591	
2,130	152,25	36,530	1,091	264,04	37,051	4,051	0,011	19,538	
2,140	153,00	36,535	1,096	263,29	37,049	4,056	0,011	19,485	
2,150	153,75	36,539	1,101	262,54	37,048	4,062	0,011	19,432	
2,160	154,50	36,544	1,107	261,79	37,047	4,067	0,011	19,378	
2,170	155,25	36,549	1,112	261,04	37,045	4,073	0,011	19,325	
2,180	156,00	36,554	1,117	260,29	37,044	4,078	0,011	19,272	
2,190	156,75	36,558	1,122	259,54	37,043	4,084	0,011	19,219	
2,200	157,50	36,563	1,127	258,79	37,041	4,089	0,011	19,165	
2,210	158,25	36,568	1,132	258,04	37,040	4,095	0,011	19,112	
2,220	159,01	36,573	1,137	257,29	37,038	4,100	0,011	19,059	
2,230	159,76	36,577	1,142	256,54	37,036	4,106	0,011	19,006	
2,240	160,51	36,582	1,147	255,78	37,035	4,111	0,010	18,952	
2,250	161,26	36,587	1,153	255,03	37,033	4,117	0,010	18,899	
2,260	162,01	36,591	1,158	254,28	37,032	4,122	0,010	18,846	
2,270	162,76	36,596	1,163	253,53	37,030	4,128	0,010	18,793	
2,280	163,52	36,601	1,168	252,78	37,028	4,133	0,010	18,739	
2,290	164,27	36,605	1,173	252,02	37,026	4,139	0,010	18,686	
2,300	165,02	36,610	1,178	251,27	37,025	4,144	0,010	18,633	
2,310	165,77	36,615	1,183	250,52	37,023	4,150	0,010	18,580	
2,320	166,53	36,619	1,188	249,77	37,021	4,155	0,010	18,526	
2,330	167,28	36,624	1,193	249,01	37,019	4,161	0,010	18,473	
2,340	168,03	36,628	1,199	248,26	37,017	4,166	0,010	18,420	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
2,350	168,79	36,633	1,204	247,51	37,015	4,172	0,010	18,367	
2,360	169,54	36,638	1,209	246,75	37,013	4,178	0,010	18,313	
2,370	170,29	36,642	1,214	246,00	37,011	4,183	0,010	18,260	
2,380	171,05	36,647	1,219	245,25	37,009	4,189	0,009	18,207	
2,390	171,80	36,651	1,224	244,49	37,007	4,194	0,009	18,154	
2,400	172,55	36,656	1,229	243,74	37,005	4,200	0,009	18,100	
2,410	173,31	36,660	1,234	242,99	37,003	4,205	0,009	18,047	
2,420	174,06	36,665	1,240	242,23	37,001	4,211	0,009	17,994	
2,430	174,82	36,669	1,245	241,48	36,998	4,216	0,009	17,941	
2,440	175,57	36,674	1,250	240,72	36,996	4,222	0,009	17,888	
2,450	176,32	36,678	1,255	239,97	36,994	4,228	0,009	17,834	
2,460	177,08	36,683	1,260	239,21	36,992	4,233	0,009	17,781	
2,470	177,83	36,687	1,265	238,46	36,989	4,239	0,009	17,728	
2,480	178,59	36,691	1,270	237,71	36,987	4,244	0,009	17,675	
2,490	179,34	36,696	1,275	236,95	36,985	4,250	0,009	17,622	
2,500	180,10	36,700	1,280	236,20	36,982	4,256	0,009	17,568	
2,510	180,85	36,704	1,286	235,44	36,980	4,261	0,009	17,515	
2,520	181,61	36,709	1,291	234,69	36,977	4,267	0,009	17,462	
2,530	182,36	36,713	1,296	233,93	36,975	4,272	0,008	17,409	
2,540	183,12	36,717	1,301	233,18	36,973	4,278	0,008	17,356	
2,550	183,87	36,721	1,306	232,42	36,970	4,284	0,008	17,303	
2,560	184,62	36,726	1,311	231,67	36,968	4,289	0,008	17,249	
2,570	185,38	36,730	1,316	230,91	36,965	4,295	0,008	17,196	
2,580	186,13	36,734	1,321	230,16	36,962	4,301	0,008	17,143	
2,590	186,89	36,738	1,326	229,40	36,960	4,306	0,008	17,090	
2,600	187,64	36,742	1,331	228,65	36,957	4,312	0,008	17,037	
2,610	188,40	36,746	1,337	227,89	36,955	4,318	0,008	16,984	
2,620	189,16	36,750	1,342	227,14	36,952	4,323	0,008	16,931	
2,630	189,91	36,754	1,347	226,38	36,949	4,329	0,008	16,878	
2,640	190,67	36,758	1,352	225,63	36,947	4,335	0,008	16,824	
2,650	191,42	36,762	1,357	224,87	36,944	4,340	0,008	16,771	
2,660	192,18	36,766	1,362	224,12	36,941	4,346	0,008	16,718	
2,670	192,93	36,770	1,367	223,36	36,938	4,352	0,008	16,665	
2,680	193,69	36,773	1,372	222,61	36,936	4,357	0,008	16,612	
2,690	194,44	36,777	1,377	221,85	36,933	4,363	0,008	16,559	
2,700	195,20	36,781	1,382	221,10	36,930	4,369	0,007	16,506	
2,710	195,95	36,785	1,388	220,34	36,927	4,374	0,007	16,453	
2,720	196,71	36,788	1,393	219,59	36,924	4,380	0,007	16,400	
2,730	197,46	36,792	1,398	218,83	36,922	4,386	0,007	16,347	
2,740	198,22	36,796	1,403	218,08	36,919	4,392	0,007	16,294	
2,750	198,97	36,800	1,408	217,32	36,916	4,397	0,007	16,241	
2,760	199,73	36,803	1,413	216,57	36,913	4,403	0,007	16,188	
2,770	200,48	36,807	1,418	215,81	36,910	4,409	0,007	16,135	
2,780	201,24	36,811	1,423	215,06	36,907	4,414	0,007	16,082	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
2,790	201,99	36,814	1,428	214,30	36,903	4,420	0,007	16,029	
2,800	202,75	36,818	1,433	213,54	36,900	4,426	0,007	15,976	

Wind silhouette : 3 layers



Wind pressure 25,00 kg/m²

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
0,200	12,68	35,352	0,104	563,36	36,558	4,387	0,437	60,317	
0,210	13,36	35,392	0,109	562,69	36,558	4,392	0,415	60,244	
0,220	14,03	35,428	0,115	562,02	36,559	4,397	0,394	60,171	
0,230	14,71	35,462	0,120	561,34	36,559	4,402	0,375	60,098	
0,240	15,38	35,493	0,125	560,67	36,560	4,407	0,358	60,025	
0,250	16,06	35,522	0,130	559,99	36,560	4,412	0,343	59,952	
0,260	16,73	35,550	0,135	559,31	36,561	4,417	0,328	59,879	
0,270	17,41	35,576	0,140	558,63	36,561	4,422	0,315	59,806	
0,280	18,09	35,600	0,145	557,95	36,561	4,427	0,303	59,733	
0,290	18,77	35,624	0,150	557,27	36,562	4,432	0,291	59,660	
0,300	19,45	35,646	0,155	556,59	36,562	4,437	0,280	59,586	
0,310	20,14	35,667	0,160	555,91	36,563	4,442	0,270	59,513	
0,320	20,82	35,687	0,165	555,23	36,563	4,447	0,261	59,440	
0,330	21,50	35,707	0,170	554,54	36,563	4,453	0,252	59,367	
0,340	22,19	35,725	0,175	553,86	36,564	4,458	0,244	59,294	
0,350	22,87	35,742	0,181	553,17	36,564	4,463	0,236	59,221	
0,360	23,56	35,758	0,186	552,49	36,564	4,468	0,229	59,147	
0,370	24,25	35,773	0,191	551,80	36,565	4,473	0,222	59,074	
0,380	24,94	35,787	0,196	551,11	36,565	4,478	0,215	59,001	
0,390	25,62	35,800	0,201	550,42	36,565	4,483	0,209	58,928	
0,400	26,31	35,812	0,206	549,73	36,566	4,488	0,203	58,855	
0,410	27,00	35,824	0,211	549,05	36,566	4,493	0,198	58,781	
0,420	27,69	35,835	0,216	548,35	36,566	4,499	0,192	58,708	
0,430	28,38	35,845	0,221	547,66	36,567	4,504	0,187	58,635	
0,440	29,07	35,855	0,226	546,97	36,567	4,509	0,183	58,562	
0,450	29,77	35,865	0,231	546,28	36,568	4,514	0,178	58,488	
0,460	30,46	35,873	0,236	545,59	36,568	4,519	0,174	58,415	
0,470	31,15	35,882	0,242	544,89	36,568	4,524	0,170	58,342	
0,480	31,85	35,890	0,247	544,20	36,569	4,529	0,166	58,269	
0,490	32,54	35,897	0,252	543,50	36,569	4,535	0,162	58,195	
0,500	33,24	35,905	0,257	542,81	36,570	4,540	0,158	58,122	
0,510	33,93	35,911	0,262	542,11	36,570	4,545	0,155	58,049	
0,520	34,63	35,918	0,267	541,42	36,570	4,550	0,151	57,975	
0,530	35,33	35,924	0,272	540,72	36,571	4,555	0,148	57,902	
0,540	36,03	35,930	0,277	540,02	36,571	4,561	0,145	57,828	
0,550	36,73	35,936	0,282	539,32	36,572	4,566	0,142	57,755	
0,560	37,43	35,941	0,287	538,62	36,572	4,571	0,139	57,682	
0,570	38,13	35,946	0,292	537,92	36,573	4,576	0,136	57,608	
0,580	38,83	35,951	0,298	537,22	36,573	4,581	0,133	57,535	
0,590	39,53	35,956	0,303	536,52	36,574	4,587	0,131	57,461	
0,600	40,23	35,960	0,308	535,82	36,574	4,592	0,128	57,388	
0,610	40,93	35,964	0,313	535,11	36,575	4,597	0,126	57,314	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
0,620	41,64	35,968	0,318	534,41	36,575	4,602	0,124	57,241	
0,630	42,34	35,972	0,323	533,71	36,576	4,608	0,121	57,167	
0,640	43,05	35,976	0,328	533,00	36,576	4,613	0,119	57,094	
0,650	43,75	35,979	0,333	532,30	36,577	4,618	0,117	57,020	
0,660	44,46	35,983	0,338	531,59	36,577	4,623	0,115	56,947	
0,670	45,17	35,986	0,344	530,88	36,578	4,629	0,113	56,873	
0,680	45,87	35,989	0,349	530,17	36,578	4,634	0,111	56,799	
0,690	46,58	35,992	0,354	529,47	36,579	4,639	0,109	56,726	
0,700	47,29	35,994	0,359	528,76	36,579	4,645	0,107	56,652	
0,710	48,00	35,997	0,364	528,05	36,580	4,650	0,106	56,578	
0,720	48,71	36,000	0,369	527,34	36,580	4,655	0,104	56,505	
0,730	49,42	36,002	0,374	526,63	36,581	4,660	0,102	56,431	
0,740	50,13	36,004	0,379	525,91	36,581	4,666	0,101	56,357	
0,750	50,84	36,006	0,384	525,20	36,582	4,671	0,099	56,283	
0,760	51,56	36,009	0,390	524,49	36,583	4,676	0,098	56,210	
0,770	52,27	36,011	0,395	523,78	36,583	4,682	0,096	56,136	
0,780	52,99	36,012	0,400	523,06	36,584	4,687	0,095	56,062	
0,790	53,70	36,014	0,405	522,35	36,584	4,692	0,093	55,988	
0,800	54,42	36,016	0,410	521,63	36,585	4,698	0,092	55,914	
0,810	55,13	36,017	0,415	520,92	36,586	4,703	0,091	55,840	
0,820	55,85	36,019	0,420	520,20	36,586	4,708	0,089	55,766	
0,830	56,57	36,020	0,425	519,48	36,587	4,714	0,088	55,693	
0,840	57,28	36,022	0,431	518,76	36,587	4,719	0,087	55,619	
0,850	58,00	36,023	0,436	518,04	36,588	4,725	0,086	55,545	
0,860	58,72	36,025	0,441	517,33	36,589	4,730	0,084	55,471	
0,870	59,44	36,026	0,446	516,61	36,589	4,735	0,083	55,397	
0,880	60,16	36,028	0,451	515,89	36,590	4,741	0,082	55,323	
0,890	60,88	36,030	0,456	515,17	36,591	4,746	0,081	55,249	
0,900	61,60	36,031	0,461	514,45	36,591	4,751	0,080	55,175	
0,910	62,32	36,033	0,467	513,73	36,592	4,757	0,079	55,102	
0,920	63,04	36,035	0,472	513,01	36,592	4,762	0,078	55,028	
0,930	63,76	36,036	0,477	512,29	36,593	4,768	0,077	54,954	
0,940	64,48	36,038	0,482	511,56	36,593	4,773	0,076	54,880	
0,950	65,20	36,040	0,487	510,84	36,594	4,778	0,075	54,806	
0,960	65,93	36,042	0,492	510,12	36,594	4,784	0,074	54,732	
0,970	66,65	36,044	0,497	509,40	36,595	4,789	0,073	54,659	
0,980	67,37	36,046	0,502	508,67	36,596	4,795	0,072	54,585	
0,990	68,10	36,048	0,508	507,95	36,596	4,800	0,071	54,511	
1,000	68,82	36,050	0,513	507,23	36,596	4,806	0,071	54,437	
1,010	69,54	36,052	0,518	506,50	36,597	4,811	0,070	54,363	
1,020	70,27	36,055	0,523	505,78	36,597	4,816	0,069	54,290	
1,030	70,99	36,057	0,528	505,06	36,598	4,822	0,068	54,216	
1,040	71,72	36,059	0,533	504,33	36,598	4,827	0,067	54,142	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,050	72,44	36,062	0,538	503,61	36,599	4,833	0,067	54,068	
1,060	73,17	36,064	0,543	502,88	36,599	4,838	0,066	53,994	
1,070	73,89	36,067	0,549	502,16	36,600	4,844	0,065	53,921	
1,080	74,62	36,069	0,554	501,43	36,600	4,849	0,064	53,847	
1,090	75,34	36,072	0,559	500,70	36,600	4,855	0,064	53,773	
1,100	76,07	36,075	0,564	499,98	36,601	4,860	0,063	53,699	
1,110	76,80	36,077	0,569	499,25	36,601	4,866	0,062	53,626	
1,120	77,52	36,080	0,574	498,52	36,601	4,871	0,062	53,552	
1,130	78,25	36,083	0,579	497,80	36,602	4,876	0,061	53,478	
1,140	78,98	36,085	0,584	497,07	36,602	4,882	0,060	53,405	
1,150	79,71	36,088	0,589	496,34	36,602	4,887	0,060	53,331	
1,160	80,43	36,091	0,595	495,61	36,603	4,893	0,059	53,257	
1,170	81,16	36,094	0,600	494,89	36,603	4,898	0,058	53,183	
1,180	81,89	36,096	0,605	494,16	36,603	4,904	0,058	53,110	
1,190	82,62	36,099	0,610	493,43	36,604	4,909	0,057	53,036	
1,200	83,35	36,102	0,615	492,70	36,604	4,915	0,057	52,963	
1,210	84,07	36,105	0,620	491,97	36,604	4,920	0,056	52,889	
1,220	84,80	36,108	0,625	491,24	36,604	4,926	0,055	52,815	
1,230	85,53	36,111	0,630	490,51	36,605	4,931	0,055	52,742	
1,240	86,26	36,114	0,636	489,79	36,605	4,937	0,054	52,668	
1,250	86,99	36,117	0,641	489,06	36,605	4,942	0,054	52,594	
1,260	87,72	36,120	0,646	488,33	36,605	4,948	0,053	52,521	
1,270	88,45	36,123	0,651	487,60	36,605	4,953	0,053	52,447	
1,280	89,18	36,126	0,656	486,87	36,605	4,959	0,052	52,374	
1,290	89,92	36,131	0,661	486,13	36,605	4,964	0,052	52,300	
1,300	90,65	36,136	0,666	485,40	36,605	4,970	0,051	52,226	
1,310	91,38	36,140	0,671	484,66	36,605	4,976	0,051	52,152	
1,320	92,12	36,145	0,676	483,93	36,605	4,981	0,050	52,078	
1,330	92,85	36,150	0,682	483,19	36,605	4,987	0,050	52,004	
1,340	93,59	36,154	0,687	482,46	36,604	4,992	0,049	51,930	
1,350	94,32	36,159	0,692	481,72	36,604	4,998	0,049	51,856	
1,360	95,06	36,164	0,697	480,99	36,604	5,003	0,048	51,782	
1,370	95,79	36,169	0,702	480,25	36,604	5,009	0,048	51,709	
1,380	96,53	36,173	0,707	479,52	36,603	5,014	0,048	51,635	
1,390	97,27	36,178	0,712	478,78	36,603	5,020	0,047	51,561	
1,400	98,00	36,183	0,718	478,05	36,603	5,026	0,047	51,487	
1,410	98,74	36,187	0,723	477,31	36,602	5,031	0,046	51,413	
1,420	99,47	36,192	0,728	476,57	36,602	5,037	0,046	51,339	
1,430	100,21	36,197	0,733	475,84	36,602	5,042	0,045	51,266	
1,440	100,95	36,201	0,738	475,10	36,601	5,048	0,045	51,192	
1,450	101,68	36,206	0,743	474,36	36,601	5,054	0,045	51,118	
1,460	102,42	36,211	0,748	473,63	36,601	5,059	0,044	51,044	
1,470	103,16	36,215	0,753	472,89	36,600	5,065	0,044	50,970	
1,480	103,90	36,220	0,759	472,15	36,600	5,070	0,044	50,897	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,490	104,63	36,224	0,764	471,41	36,599	5,076	0,043	50,823	
1,500	105,37	36,229	0,769	470,68	36,599	5,082	0,043	50,749	
1,510	106,11	36,234	0,774	469,94	36,598	5,087	0,042	50,675	
1,520	106,85	36,238	0,779	469,20	36,598	5,093	0,042	50,602	
1,530	107,59	36,243	0,784	468,46	36,597	5,098	0,042	50,528	
1,540	108,32	36,248	0,789	467,72	36,597	5,104	0,041	50,454	
1,550	109,06	36,252	0,794	466,98	36,596	5,110	0,041	50,381	
1,560	109,80	36,257	0,799	466,25	36,596	5,115	0,041	50,307	
1,570	110,54	36,262	0,805	465,51	36,595	5,121	0,040	50,233	
1,580	111,28	36,266	0,810	464,77	36,595	5,127	0,040	50,159	
1,590	112,02	36,271	0,815	464,03	36,594	5,132	0,040	50,086	
1,600	112,76	36,276	0,820	463,29	36,593	5,138	0,039	50,012	
1,610	113,50	36,281	0,825	462,55	36,593	5,144	0,039	49,938	
1,620	114,24	36,285	0,830	461,81	36,592	5,149	0,039	49,865	
1,630	114,98	36,290	0,835	461,07	36,591	5,155	0,038	49,791	
1,640	115,72	36,295	0,840	460,33	36,591	5,161	0,038	49,717	
1,650	116,46	36,299	0,846	459,59	36,590	5,166	0,038	49,643	
1,660	117,20	36,304	0,851	458,84	36,589	5,172	0,038	49,570	
1,670	117,94	36,309	0,856	458,10	36,588	5,178	0,037	49,496	
1,680	118,69	36,314	0,861	457,36	36,588	5,183	0,037	49,422	
1,690	119,43	36,318	0,866	456,62	36,587	5,189	0,037	49,349	
1,700	120,17	36,323	0,871	455,88	36,586	5,195	0,036	49,275	
1,710	120,91	36,328	0,876	455,14	36,585	5,200	0,036	49,201	
1,720	121,65	36,333	0,881	454,39	36,584	5,206	0,036	49,128	
1,730	122,40	36,338	0,886	453,65	36,584	5,212	0,036	49,054	
1,740	123,14	36,342	0,892	452,91	36,583	5,217	0,035	48,980	
1,750	123,88	36,347	0,897	452,17	36,582	5,223	0,035	48,907	
1,760	124,62	36,352	0,902	451,42	36,581	5,229	0,035	48,833	
1,770	125,37	36,357	0,907	450,68	36,580	5,235	0,035	48,759	
1,780	126,11	36,361	0,912	449,94	36,579	5,240	0,034	48,685	
1,790	126,85	36,366	0,917	449,19	36,578	5,246	0,034	48,612	
1,800	127,60	36,371	0,922	448,45	36,577	5,252	0,034	48,538	
1,810	128,34	36,376	0,927	447,71	36,576	5,257	0,034	48,464	
1,820	129,09	36,381	0,933	446,96	36,575	5,263	0,033	48,391	
1,830	129,83	36,385	0,938	446,22	36,574	5,269	0,033	48,317	
1,840	130,57	36,390	0,943	445,47	36,573	5,275	0,033	48,243	
1,850	131,32	36,395	0,948	444,73	36,571	5,280	0,033	48,170	
1,860	132,06	36,400	0,953	443,98	36,570	5,286	0,032	48,096	
1,870	132,81	36,405	0,958	443,24	36,569	5,292	0,032	48,022	
1,880	133,56	36,410	0,963	442,49	36,568	5,298	0,032	47,949	
1,890	134,30	36,414	0,968	441,75	36,567	5,303	0,032	47,875	
1,900	135,05	36,419	0,973	441,00	36,566	5,309	0,031	47,801	
1,910	135,79	36,424	0,979	440,25	36,564	5,315	0,031	47,727	

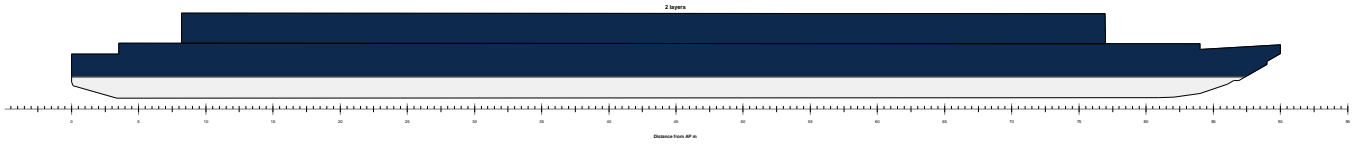
Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,920	136,54	36,429	0,984	439,51	36,563	5,321	0,031	47,654	
1,930	137,28	36,434	0,989	438,76	36,562	5,326	0,031	47,580	
1,940	138,03	36,438	0,994	438,02	36,560	5,332	0,031	47,506	
1,950	138,78	36,443	0,999	437,27	36,559	5,338	0,030	47,433	
1,960	139,52	36,448	1,004	436,52	36,558	5,344	0,030	47,359	
1,970	140,27	36,453	1,009	435,78	36,556	5,350	0,030	47,285	
1,980	141,02	36,458	1,014	435,03	36,555	5,355	0,030	47,212	
1,990	141,77	36,463	1,020	434,28	36,554	5,361	0,030	47,138	
2,000	142,51	36,467	1,025	433,53	36,552	5,367	0,029	47,064	
2,010	143,26	36,472	1,030	432,79	36,551	5,373	0,029	46,990	
2,020	144,01	36,477	1,035	432,04	36,549	5,379	0,029	46,917	
2,030	144,76	36,482	1,040	431,29	36,548	5,384	0,029	46,843	
2,040	145,51	36,487	1,045	430,54	36,546	5,390	0,029	46,769	
2,050	146,26	36,491	1,050	429,79	36,545	5,396	0,028	46,696	
2,060	147,00	36,496	1,055	429,04	36,543	5,402	0,028	46,622	
2,070	147,75	36,501	1,060	428,29	36,542	5,408	0,028	46,548	
2,080	148,50	36,506	1,066	427,55	36,540	5,414	0,028	46,475	
2,090	149,25	36,511	1,071	426,80	36,538	5,419	0,028	46,401	
2,100	150,00	36,515	1,076	426,05	36,537	5,425	0,027	46,327	
2,110	150,75	36,520	1,081	425,30	36,535	5,431	0,027	46,254	
2,120	151,50	36,525	1,086	424,55	36,533	5,437	0,027	46,180	
2,130	152,25	36,530	1,091	423,80	36,532	5,443	0,027	46,106	
2,140	153,00	36,535	1,096	423,05	36,530	5,449	0,027	46,032	
2,150	153,75	36,539	1,101	422,30	36,528	5,455	0,027	45,959	
2,160	154,50	36,544	1,107	421,55	36,527	5,460	0,026	45,885	
2,170	155,25	36,549	1,112	420,80	36,525	5,466	0,026	45,811	
2,180	156,00	36,554	1,117	420,05	36,523	5,472	0,026	45,738	
2,190	156,75	36,558	1,122	419,30	36,521	5,478	0,026	45,664	
2,200	157,50	36,563	1,127	418,54	36,519	5,484	0,026	45,590	
2,210	158,25	36,568	1,132	417,79	36,517	5,490	0,026	45,517	
2,220	159,01	36,573	1,137	417,04	36,516	5,496	0,025	45,443	
2,230	159,76	36,577	1,142	416,29	36,514	5,502	0,025	45,369	
2,240	160,51	36,582	1,147	415,54	36,512	5,508	0,025	45,295	
2,250	161,26	36,587	1,153	414,79	36,510	5,514	0,025	45,222	
2,260	162,01	36,591	1,158	414,03	36,508	5,519	0,025	45,148	
2,270	162,76	36,596	1,163	413,28	36,506	5,525	0,025	45,074	
2,280	163,52	36,601	1,168	412,53	36,504	5,531	0,024	45,001	
2,290	164,27	36,605	1,173	411,78	36,502	5,537	0,024	44,927	
2,300	165,02	36,610	1,178	411,03	36,500	5,543	0,024	44,853	
2,310	165,77	36,615	1,183	410,27	36,498	5,549	0,024	44,780	
2,320	166,53	36,619	1,188	409,52	36,495	5,555	0,024	44,706	
2,330	167,28	36,624	1,193	408,77	36,493	5,561	0,024	44,632	
2,340	168,03	36,628	1,199	408,01	36,491	5,567	0,024	44,559	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
2,350	168,79	36,633	1,204	407,26	36,489	5,573	0,023	44,485	
2,360	169,54	36,638	1,209	406,51	36,487	5,579	0,023	44,411	
2,370	170,29	36,642	1,214	405,75	36,485	5,585	0,023	44,338	
2,380	171,05	36,647	1,219	405,00	36,482	5,591	0,023	44,264	
2,390	171,80	36,651	1,224	404,25	36,480	5,597	0,023	44,190	
2,400	172,55	36,656	1,229	403,49	36,478	5,603	0,023	44,117	
2,410	173,31	36,660	1,234	402,74	36,476	5,609	0,023	44,043	
2,420	174,06	36,665	1,240	401,99	36,473	5,615	0,022	43,969	
2,430	174,82	36,669	1,245	401,23	36,471	5,621	0,022	43,896	
2,440	175,57	36,674	1,250	400,48	36,469	5,627	0,022	43,822	
2,450	176,32	36,678	1,255	399,72	36,466	5,633	0,022	43,749	
2,460	177,08	36,683	1,260	398,97	36,464	5,639	0,022	43,675	
2,470	177,83	36,687	1,265	398,21	36,462	5,645	0,022	43,601	
2,480	178,59	36,691	1,270	397,46	36,459	5,651	0,022	43,528	
2,490	179,34	36,696	1,275	396,71	36,457	5,657	0,021	43,454	
2,500	180,10	36,700	1,280	395,95	36,454	5,663	0,021	43,381	
2,510	180,85	36,704	1,286	395,20	36,452	5,669	0,021	43,307	
2,520	181,61	36,709	1,291	394,44	36,450	5,675	0,021	43,233	
2,530	182,36	36,713	1,296	393,69	36,447	5,681	0,021	43,160	
2,540	183,12	36,717	1,301	392,93	36,445	5,687	0,021	43,086	
2,550	183,87	36,721	1,306	392,18	36,442	5,693	0,021	43,013	
2,560	184,62	36,726	1,311	391,42	36,440	5,699	0,021	42,939	
2,570	185,38	36,730	1,316	390,67	36,437	5,705	0,020	42,866	
2,580	186,13	36,734	1,321	389,91	36,435	5,711	0,020	42,792	
2,590	186,89	36,738	1,326	389,16	36,432	5,717	0,020	42,719	
2,600	187,64	36,742	1,331	388,40	36,429	5,723	0,020	42,645	
2,610	188,40	36,746	1,337	387,65	36,427	5,729	0,020	42,571	
2,620	189,16	36,750	1,342	386,89	36,424	5,735	0,020	42,498	
2,630	189,91	36,754	1,347	386,14	36,422	5,742	0,020	42,425	
2,640	190,67	36,758	1,352	385,38	36,419	5,748	0,020	42,351	
2,650	191,42	36,762	1,357	384,63	36,416	5,754	0,020	42,278	
2,660	192,18	36,766	1,362	383,87	36,414	5,760	0,019	42,204	
2,670	192,93	36,770	1,367	383,12	36,411	5,766	0,019	42,131	
2,680	193,69	36,773	1,372	382,36	36,409	5,772	0,019	42,057	
2,690	194,44	36,777	1,377	381,61	36,406	5,778	0,019	41,984	
2,700	195,20	36,781	1,382	380,85	36,403	5,784	0,019	41,911	
2,710	195,95	36,785	1,388	380,10	36,401	5,790	0,019	41,837	
2,720	196,71	36,788	1,393	379,34	36,398	5,796	0,019	41,764	
2,730	197,46	36,792	1,398	378,59	36,395	5,803	0,019	41,690	
2,740	198,22	36,796	1,403	377,83	36,392	5,809	0,019	41,617	
2,750	198,97	36,800	1,408	377,08	36,390	5,815	0,018	41,544	
2,760	199,73	36,803	1,413	376,32	36,387	5,821	0,018	41,470	
2,770	200,48	36,807	1,418	375,57	36,384	5,827	0,018	41,397	
2,780	201,24	36,811	1,423	374,81	36,381	5,833	0,018	41,324	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
2,790	201,99	36,814	1,428	374,05	36,378	5,840	0,018	41,250	
2,800	202,75	36,818	1,433	373,30	36,375	5,846	0,018	41,177	

Calculation of wind moments

Wind silhouette : 2 layers



Wind pressure 25,00 kg/m²

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
0,200	14,47	41,408	0,109	487,39	43,698	3,096	0,219	36,394	
0,210	15,27	41,489	0,114	486,58	43,699	3,101	0,208	36,330	
0,220	16,08	41,562	0,119	485,77	43,700	3,106	0,197	36,267	
0,230	16,89	41,629	0,125	484,96	43,702	3,111	0,188	36,203	
0,240	17,71	41,690	0,130	484,15	43,703	3,115	0,179	36,140	
0,250	18,52	41,747	0,135	483,34	43,704	3,120	0,171	36,076	
0,260	19,33	41,798	0,140	482,52	43,705	3,125	0,164	36,013	
0,270	20,14	41,846	0,145	481,71	43,706	3,130	0,157	35,949	
0,280	20,96	41,890	0,150	480,90	43,708	3,135	0,151	35,886	
0,290	21,77	41,931	0,155	480,08	43,709	3,140	0,145	35,822	
0,300	22,59	41,970	0,160	479,26	43,710	3,144	0,140	35,759	
0,310	23,41	42,005	0,165	478,45	43,711	3,149	0,135	35,695	
0,320	24,23	42,039	0,170	477,63	43,713	3,154	0,130	35,632	
0,330	25,04	42,070	0,175	476,81	43,714	3,159	0,126	35,568	
0,340	25,86	42,100	0,180	475,99	43,715	3,164	0,121	35,505	
0,350	26,68	42,128	0,185	475,17	43,716	3,169	0,118	35,441	
0,360	27,50	42,154	0,190	474,35	43,717	3,174	0,114	35,377	
0,370	28,33	42,179	0,195	473,53	43,719	3,178	0,110	35,314	
0,380	29,15	42,202	0,200	472,71	43,720	3,183	0,107	35,250	
0,390	29,97	42,224	0,206	471,89	43,721	3,188	0,104	35,187	
0,400	30,79	42,245	0,211	471,06	43,722	3,193	0,101	35,123	
0,410	31,62	42,265	0,216	470,24	43,724	3,198	0,098	35,060	
0,420	32,44	42,284	0,221	469,41	43,725	3,203	0,095	34,996	
0,430	33,27	42,302	0,226	468,59	43,726	3,208	0,093	34,932	
0,440	34,09	42,319	0,231	467,76	43,727	3,213	0,090	34,869	
0,450	34,92	42,335	0,236	466,93	43,729	3,218	0,088	34,805	
0,460	35,75	42,350	0,241	466,11	43,730	3,222	0,086	34,741	
0,470	36,58	42,365	0,246	465,28	43,731	3,227	0,084	34,678	
0,480	37,41	42,379	0,251	464,45	43,733	3,232	0,082	34,614	
0,490	38,24	42,393	0,256	463,62	43,734	3,237	0,080	34,551	
0,500	39,07	42,406	0,261	462,79	43,735	3,242	0,078	34,487	
0,510	39,90	42,418	0,266	461,96	43,737	3,247	0,076	34,423	
0,520	40,73	42,430	0,271	461,12	43,738	3,252	0,075	34,359	
0,530	41,56	42,441	0,277	460,29	43,739	3,257	0,073	34,296	
0,540	42,40	42,452	0,282	459,46	43,741	3,262	0,071	34,232	
0,550	43,23	42,462	0,287	458,62	43,742	3,267	0,070	34,168	
0,560	44,07	42,472	0,292	457,79	43,743	3,272	0,068	34,104	
0,570	44,90	42,481	0,297	456,95	43,745	3,277	0,067	34,041	
0,580	45,74	42,490	0,302	456,12	43,746	3,282	0,066	33,977	
0,590	46,57	42,499	0,307	455,28	43,748	3,287	0,064	33,913	
0,600	47,41	42,508	0,312	454,44	43,749	3,292	0,063	33,849	
0,610	48,25	42,516	0,317	453,61	43,750	3,297	0,062	33,785	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
0,620	49,09	42,524	0,322	452,77	43,752	3,301	0,061	33,722	
0,630	49,93	42,531	0,327	451,93	43,753	3,306	0,060	33,658	
0,640	50,77	42,538	0,332	451,09	43,755	3,311	0,058	33,594	
0,650	51,61	42,545	0,338	450,25	43,756	3,316	0,057	33,530	
0,660	52,45	42,552	0,343	449,41	43,758	3,321	0,056	33,466	
0,670	53,29	42,558	0,348	448,56	43,759	3,326	0,055	33,402	
0,680	54,13	42,564	0,353	447,72	43,761	3,331	0,054	33,338	
0,690	54,98	42,570	0,358	446,88	43,762	3,336	0,053	33,274	
0,700	55,82	42,576	0,363	446,03	43,764	3,341	0,053	33,211	
0,710	56,67	42,581	0,368	445,19	43,765	3,346	0,052	33,147	
0,720	57,51	42,587	0,373	444,34	43,767	3,351	0,051	33,083	
0,730	58,36	42,592	0,378	443,50	43,769	3,356	0,050	33,019	
0,740	59,20	42,596	0,383	442,65	43,770	3,361	0,049	32,955	
0,750	60,05	42,601	0,389	441,80	43,772	3,366	0,048	32,891	
0,760	60,90	42,605	0,394	440,96	43,773	3,371	0,048	32,827	
0,770	61,75	42,609	0,399	440,11	43,775	3,376	0,047	32,763	
0,780	62,60	42,614	0,404	439,26	43,777	3,381	0,046	32,699	
0,790	63,44	42,617	0,409	438,41	43,779	3,386	0,045	32,635	
0,800	64,29	42,621	0,414	437,56	43,780	3,392	0,045	32,571	
0,810	65,15	42,625	0,419	436,71	43,782	3,397	0,044	32,507	
0,820	66,00	42,628	0,424	435,86	43,784	3,402	0,043	32,442	
0,830	66,85	42,631	0,429	435,01	43,785	3,407	0,043	32,378	
0,840	67,70	42,635	0,434	434,15	43,787	3,412	0,042	32,314	
0,850	68,55	42,638	0,440	433,30	43,789	3,417	0,042	32,250	
0,860	69,41	42,641	0,445	432,45	43,791	3,422	0,041	32,186	
0,870	70,26	42,644	0,450	431,59	43,793	3,427	0,040	32,122	
0,880	71,12	42,647	0,455	430,74	43,794	3,432	0,040	32,058	
0,890	71,97	42,650	0,460	429,88	43,796	3,437	0,039	31,994	
0,900	72,83	42,654	0,465	429,03	43,798	3,442	0,039	31,930	
0,910	73,68	42,657	0,470	428,17	43,800	3,447	0,038	31,866	
0,920	74,54	42,660	0,475	427,32	43,801	3,452	0,038	31,802	
0,930	75,39	42,663	0,480	426,46	43,803	3,457	0,037	31,738	
0,940	76,25	42,666	0,486	425,60	43,805	3,462	0,037	31,673	
0,950	77,11	42,670	0,491	424,75	43,806	3,467	0,036	31,609	
0,960	77,97	42,673	0,496	423,89	43,808	3,473	0,036	31,545	
0,970	78,82	42,677	0,501	423,03	43,810	3,478	0,035	31,481	
0,980	79,68	42,680	0,506	422,17	43,811	3,483	0,035	31,417	
0,990	80,54	42,683	0,511	421,32	43,813	3,488	0,034	31,353	
1,000	81,40	42,687	0,516	420,46	43,815	3,493	0,034	31,289	
1,010	82,26	42,690	0,521	419,60	43,816	3,498	0,033	31,225	
1,020	83,12	42,694	0,526	418,74	43,818	3,503	0,033	31,161	
1,030	83,98	42,697	0,532	417,88	43,819	3,508	0,033	31,097	
1,040	84,84	42,701	0,537	417,02	43,821	3,513	0,032	31,033	

Bilge type:		Round bilges						
Bilge keel area:		0,00 m ²						
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment
m	m ²	m	m	m ²	m	m	m	t*m
1,050	85,70	42,705	0,542	416,16	43,823	3,518	0,032	30,969
1,060	86,56	42,708	0,547	415,30	43,824	3,523	0,031	30,905
1,070	87,42	42,712	0,552	414,44	43,826	3,529	0,031	30,841
1,080	88,28	42,715	0,557	413,58	43,827	3,534	0,031	30,777
1,090	89,14	42,719	0,562	412,72	43,829	3,539	0,030	30,713
1,100	90,00	42,723	0,567	411,85	43,830	3,544	0,030	30,649
1,110	90,86	42,726	0,572	410,99	43,832	3,549	0,030	30,585
1,120	91,72	42,730	0,577	410,13	43,833	3,554	0,029	30,521
1,130	92,59	42,734	0,583	409,27	43,835	3,559	0,029	30,457
1,140	93,45	42,737	0,588	408,41	43,836	3,564	0,029	30,393
1,150	94,31	42,741	0,593	407,54	43,838	3,569	0,028	30,329
1,160	95,17	42,744	0,598	406,68	43,839	3,575	0,028	30,265
1,170	96,04	42,748	0,603	405,82	43,841	3,580	0,028	30,201
1,180	96,90	42,752	0,608	404,96	43,842	3,585	0,027	30,137
1,190	97,76	42,755	0,613	404,09	43,844	3,590	0,027	30,073
1,200	98,63	42,759	0,618	403,23	43,845	3,595	0,027	30,009
1,210	99,49	42,763	0,623	402,37	43,847	3,600	0,027	29,946
1,220	100,35	42,767	0,628	401,50	43,848	3,605	0,026	29,882
1,230	101,22	42,770	0,633	400,64	43,849	3,610	0,026	29,818
1,240	102,08	42,774	0,639	399,77	43,851	3,616	0,026	29,754
1,250	102,95	42,778	0,644	398,91	43,852	3,621	0,025	29,690
1,260	103,81	42,782	0,649	398,04	43,853	3,626	0,025	29,626
1,270	104,68	42,785	0,654	397,18	43,855	3,631	0,025	29,562
1,280	105,54	42,789	0,659	396,31	43,856	3,636	0,025	29,498
1,290	106,41	42,795	0,664	395,45	43,857	3,641	0,024	29,434
1,300	107,28	42,800	0,669	394,58	43,858	3,647	0,024	29,370
1,310	108,15	42,805	0,674	393,71	43,859	3,652	0,024	29,306
1,320	109,02	42,811	0,679	392,84	43,860	3,657	0,024	29,242
1,330	109,89	42,816	0,684	391,97	43,860	3,662	0,023	29,178
1,340	110,76	42,821	0,690	391,10	43,861	3,667	0,023	29,114
1,350	111,63	42,826	0,695	390,23	43,862	3,672	0,023	29,050
1,360	112,50	42,832	0,700	389,36	43,863	3,678	0,023	28,985
1,370	113,37	42,837	0,705	388,49	43,864	3,683	0,022	28,921
1,380	114,24	42,842	0,710	387,62	43,864	3,688	0,022	28,857
1,390	115,11	42,847	0,715	386,75	43,865	3,693	0,022	28,793
1,400	115,98	42,853	0,720	385,88	43,866	3,698	0,022	28,729
1,410	116,85	42,858	0,725	385,00	43,867	3,703	0,022	28,665
1,420	117,72	42,863	0,730	384,13	43,867	3,709	0,021	28,601
1,430	118,59	42,868	0,736	383,26	43,868	3,714	0,021	28,537
1,440	119,46	42,873	0,741	382,39	43,869	3,719	0,021	28,473
1,450	120,34	42,879	0,746	381,52	43,869	3,724	0,021	28,409
1,460	121,21	42,884	0,751	380,65	43,870	3,729	0,021	28,345
1,470	122,08	42,889	0,756	379,78	43,871	3,735	0,020	28,281
1,480	122,95	42,894	0,761	378,90	43,871	3,740	0,020	28,217

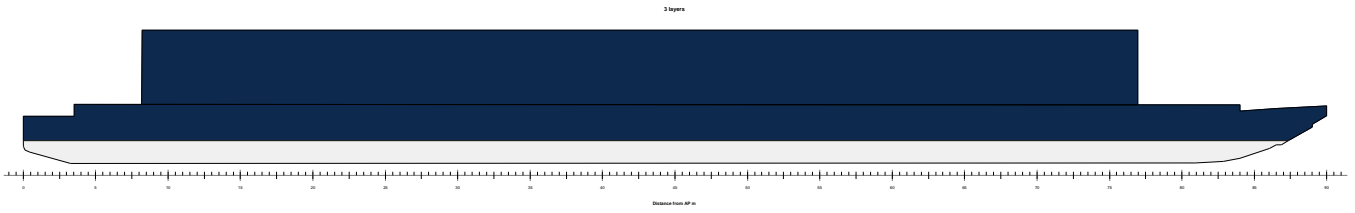
Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,490	123,82	42,899	0,766	378,03	43,872	3,745	0,020	28,153	
1,500	124,70	42,904	0,771	377,16	43,872	3,750	0,020	28,089	
1,510	125,57	42,909	0,776	376,29	43,873	3,755	0,020	28,025	
1,520	126,44	42,914	0,781	375,41	43,873	3,761	0,019	27,961	
1,530	127,32	42,920	0,787	374,54	43,874	3,766	0,019	27,897	
1,540	128,19	42,925	0,792	373,67	43,874	3,771	0,019	27,833	
1,550	129,06	42,930	0,797	372,79	43,875	3,776	0,019	27,769	
1,560	129,94	42,935	0,802	371,92	43,875	3,782	0,019	27,705	
1,570	130,81	42,940	0,807	371,05	43,876	3,787	0,019	27,641	
1,580	131,68	42,945	0,812	370,17	43,876	3,792	0,018	27,577	
1,590	132,56	42,950	0,817	369,30	43,876	3,797	0,018	27,513	
1,600	133,43	42,955	0,822	368,42	43,877	3,802	0,018	27,449	
1,610	134,31	42,960	0,827	367,55	43,877	3,808	0,018	27,385	
1,620	135,18	42,965	0,832	366,67	43,878	3,813	0,018	27,322	
1,630	136,06	42,970	0,838	365,80	43,878	3,818	0,018	27,258	
1,640	136,93	42,975	0,843	364,92	43,878	3,823	0,018	27,194	
1,650	137,81	42,980	0,848	364,05	43,878	3,829	0,017	27,130	
1,660	138,68	42,985	0,853	363,17	43,879	3,834	0,017	27,066	
1,670	139,56	42,990	0,858	362,30	43,879	3,839	0,017	27,002	
1,680	140,43	42,995	0,863	361,42	43,879	3,844	0,017	26,938	
1,690	141,31	43,000	0,868	360,55	43,879	3,850	0,017	26,874	
1,700	142,19	43,005	0,873	359,67	43,880	3,855	0,017	26,810	
1,710	143,06	43,010	0,878	358,79	43,880	3,860	0,016	26,746	
1,720	143,94	43,015	0,883	357,92	43,880	3,865	0,016	26,682	
1,730	144,81	43,020	0,888	357,04	43,880	3,871	0,016	26,618	
1,740	145,69	43,025	0,894	356,16	43,880	3,876	0,016	26,554	
1,750	146,57	43,030	0,899	355,29	43,880	3,881	0,016	26,490	
1,760	147,45	43,034	0,904	354,41	43,880	3,886	0,016	26,427	
1,770	148,32	43,039	0,909	353,53	43,880	3,892	0,016	26,363	
1,780	149,20	43,044	0,914	352,65	43,880	3,897	0,016	26,299	
1,790	150,08	43,049	0,919	351,78	43,880	3,902	0,015	26,235	
1,800	150,96	43,054	0,924	350,90	43,880	3,907	0,015	26,171	
1,810	151,83	43,059	0,929	350,02	43,880	3,913	0,015	26,107	
1,820	152,71	43,064	0,934	349,14	43,880	3,918	0,015	26,043	
1,830	153,59	43,069	0,939	348,26	43,880	3,923	0,015	25,979	
1,840	154,47	43,074	0,945	347,39	43,880	3,929	0,015	25,915	
1,850	155,35	43,079	0,950	346,51	43,880	3,934	0,015	25,851	
1,860	156,23	43,083	0,955	345,63	43,880	3,939	0,015	25,787	
1,870	157,11	43,088	0,960	344,75	43,879	3,944	0,014	25,724	
1,880	157,98	43,093	0,965	343,87	43,879	3,950	0,014	25,660	
1,890	158,86	43,098	0,970	342,99	43,879	3,955	0,014	25,596	
1,900	159,74	43,103	0,975	342,11	43,879	3,960	0,014	25,532	
1,910	160,62	43,108	0,980	341,23	43,878	3,966	0,014	25,468	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,920	161,50	43,113	0,985	340,35	43,878	3,971	0,014	25,404	
1,930	162,38	43,117	0,990	339,47	43,878	3,976	0,014	25,340	
1,940	163,26	43,122	0,995	338,59	43,877	3,981	0,014	25,276	
1,950	164,14	43,127	1,001	337,71	43,877	3,987	0,014	25,212	
1,960	165,03	43,132	1,006	336,83	43,877	3,992	0,013	25,148	
1,970	165,91	43,137	1,011	335,95	43,876	3,997	0,013	25,085	
1,980	166,79	43,142	1,016	335,07	43,876	4,003	0,013	25,021	
1,990	167,67	43,146	1,021	334,19	43,875	4,008	0,013	24,957	
2,000	168,55	43,151	1,026	333,31	43,875	4,013	0,013	24,893	
2,010	169,43	43,156	1,031	332,42	43,874	4,019	0,013	24,829	
2,020	170,31	43,161	1,036	331,54	43,874	4,024	0,013	24,765	
2,030	171,19	43,166	1,041	330,66	43,873	4,029	0,013	24,701	
2,040	172,08	43,170	1,046	329,78	43,872	4,035	0,013	24,637	
2,050	172,96	43,175	1,051	328,90	43,872	4,040	0,013	24,573	
2,060	173,84	43,180	1,057	328,01	43,871	4,045	0,012	24,509	
2,070	174,72	43,185	1,062	327,13	43,870	4,051	0,012	24,445	
2,080	175,61	43,190	1,067	326,25	43,870	4,056	0,012	24,382	
2,090	176,49	43,194	1,072	325,37	43,869	4,061	0,012	24,318	
2,100	177,37	43,199	1,077	324,48	43,868	4,067	0,012	24,254	
2,110	178,26	43,204	1,082	323,60	43,867	4,072	0,012	24,190	
2,120	179,14	43,209	1,087	322,72	43,867	4,077	0,012	24,126	
2,130	180,02	43,213	1,092	321,83	43,866	4,083	0,012	24,062	
2,140	180,91	43,218	1,097	320,95	43,865	4,088	0,012	23,998	
2,150	181,79	43,223	1,102	320,06	43,864	4,094	0,012	23,934	
2,160	182,67	43,228	1,108	319,18	43,863	4,099	0,012	23,870	
2,170	183,56	43,233	1,113	318,30	43,862	4,104	0,011	23,806	
2,180	184,44	43,237	1,118	317,41	43,861	4,110	0,011	23,742	
2,190	185,33	43,242	1,123	316,53	43,860	4,115	0,011	23,679	
2,200	186,21	43,247	1,128	315,64	43,859	4,120	0,011	23,615	
2,210	187,10	43,252	1,133	314,76	43,858	4,126	0,011	23,551	
2,220	187,98	43,256	1,138	313,87	43,857	4,131	0,011	23,487	
2,230	188,87	43,261	1,143	312,99	43,855	4,137	0,011	23,423	
2,240	189,75	43,266	1,148	312,10	43,854	4,142	0,011	23,359	
2,250	190,64	43,270	1,153	311,22	43,853	4,147	0,011	23,295	
2,260	191,53	43,275	1,158	310,33	43,852	4,153	0,011	23,231	
2,270	192,41	43,280	1,164	309,44	43,850	4,158	0,011	23,167	
2,280	193,30	43,285	1,169	308,56	43,849	4,164	0,011	23,103	
2,290	194,18	43,289	1,174	307,67	43,848	4,169	0,010	23,039	
2,300	195,07	43,294	1,179	306,78	43,846	4,174	0,010	22,975	
2,310	195,96	43,299	1,184	305,90	43,845	4,180	0,010	22,911	
2,320	196,84	43,304	1,189	305,01	43,844	4,185	0,010	22,847	
2,330	197,73	43,308	1,194	304,12	43,842	4,191	0,010	22,783	
2,340	198,62	43,313	1,199	303,24	43,841	4,196	0,010	22,720	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
2,350	199,51	43,318	1,204	302,35	43,839	4,202	0,010	22,656	
2,360	200,39	43,322	1,209	301,46	43,837	4,207	0,010	22,592	
2,370	201,28	43,327	1,215	300,57	43,836	4,212	0,010	22,528	
2,380	202,17	43,332	1,220	299,69	43,834	4,218	0,010	22,464	
2,390	203,06	43,337	1,225	298,80	43,832	4,223	0,010	22,400	
2,400	203,95	43,341	1,230	297,91	43,831	4,229	0,010	22,336	
2,410	204,83	43,346	1,235	297,02	43,829	4,234	0,010	22,272	
2,420	205,72	43,351	1,240	296,13	43,827	4,240	0,010	22,208	
2,430	206,61	43,355	1,245	295,24	43,825	4,245	0,009	22,144	
2,440	207,50	43,360	1,250	294,35	43,823	4,251	0,009	22,080	
2,450	208,39	43,365	1,255	293,46	43,821	4,256	0,009	22,016	
2,460	209,28	43,369	1,260	292,58	43,819	4,262	0,009	21,952	
2,470	210,17	43,374	1,265	291,69	43,817	4,267	0,009	21,888	
2,480	211,06	43,379	1,271	290,80	43,815	4,273	0,009	21,824	
2,490	211,95	43,384	1,276	289,91	43,813	4,278	0,009	21,760	
2,500	212,84	43,388	1,281	289,02	43,811	4,284	0,009	21,696	
2,510	213,73	43,393	1,286	288,13	43,809	4,289	0,009	21,632	
2,520	214,62	43,397	1,291	287,24	43,807	4,295	0,009	21,568	
2,530	215,51	43,402	1,296	286,35	43,805	4,300	0,009	21,504	
2,540	216,40	43,406	1,301	285,46	43,803	4,306	0,009	21,440	
2,550	217,29	43,411	1,306	284,57	43,800	4,311	0,009	21,376	
2,560	218,18	43,415	1,311	283,68	43,798	4,317	0,009	21,313	
2,570	219,07	43,420	1,316	282,79	43,796	4,322	0,009	21,249	
2,580	219,96	43,424	1,322	281,90	43,794	4,328	0,008	21,185	
2,590	220,85	43,429	1,327	281,01	43,791	4,333	0,008	21,121	
2,600	221,74	43,433	1,332	280,12	43,789	4,339	0,008	21,057	
2,610	222,63	43,437	1,337	279,23	43,787	4,344	0,008	20,993	
2,620	223,52	43,441	1,342	278,34	43,785	4,350	0,008	20,929	
2,630	224,41	43,446	1,347	277,45	43,782	4,355	0,008	20,865	
2,640	225,30	43,450	1,352	276,56	43,780	4,361	0,008	20,802	
2,650	226,19	43,454	1,357	275,67	43,778	4,366	0,008	20,738	
2,660	227,08	43,458	1,362	274,78	43,775	4,372	0,008	20,674	
2,670	227,97	43,462	1,367	273,89	43,773	4,377	0,008	20,610	
2,680	228,86	43,466	1,372	273,00	43,771	4,383	0,008	20,546	
2,690	229,75	43,470	1,378	272,11	43,768	4,388	0,008	20,483	
2,700	230,64	43,474	1,383	271,22	43,766	4,394	0,008	20,419	
2,710	231,53	43,478	1,388	270,33	43,763	4,400	0,008	20,355	
2,720	232,42	43,482	1,393	269,44	43,761	4,405	0,008	20,291	
2,730	233,31	43,486	1,398	268,55	43,758	4,411	0,008	20,227	
2,740	234,20	43,490	1,403	267,65	43,756	4,416	0,008	20,164	
2,750	235,09	43,494	1,408	266,76	43,753	4,422	0,008	20,100	
2,760	235,98	43,498	1,413	265,87	43,751	4,427	0,007	20,036	
2,770	236,87	43,502	1,418	264,98	43,748	4,433	0,007	19,972	
2,780	237,76	43,506	1,423	264,09	43,745	4,439	0,007	19,908	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
2,790	238,65	43,509	1,428	263,20	43,743	4,444	0,007	19,845	
2,800	239,55	43,513	1,433	262,31	43,740	4,450	0,007	19,781	

Wind silhouette : 3 layers



Wind pressure 25,00 kg/m²

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
0,200	14,47	41,408	0,109	686,55	43,384	4,445	0,448	74,412	
0,210	15,27	41,489	0,114	685,75	43,385	4,450	0,425	74,324	
0,220	16,08	41,562	0,119	684,94	43,385	4,455	0,404	74,235	
0,230	16,89	41,629	0,125	684,13	43,386	4,460	0,385	74,146	
0,240	17,71	41,690	0,130	683,32	43,386	4,465	0,367	74,058	
0,250	18,52	41,747	0,135	682,50	43,387	4,470	0,351	73,969	
0,260	19,33	41,798	0,140	681,69	43,387	4,475	0,336	73,880	
0,270	20,14	41,846	0,145	680,88	43,388	4,480	0,323	73,792	
0,280	20,96	41,890	0,150	680,06	43,388	4,485	0,310	73,703	
0,290	21,77	41,931	0,155	679,25	43,389	4,490	0,298	73,614	
0,300	22,59	41,970	0,160	678,43	43,389	4,495	0,288	73,525	
0,310	23,41	42,005	0,165	677,61	43,390	4,500	0,277	73,437	
0,320	24,23	42,039	0,170	676,80	43,390	4,505	0,268	73,348	
0,330	25,04	42,070	0,175	675,98	43,391	4,510	0,259	73,259	
0,340	25,86	42,100	0,180	675,16	43,391	4,515	0,250	73,171	
0,350	26,68	42,128	0,185	674,34	43,391	4,520	0,242	73,082	
0,360	27,50	42,154	0,190	673,52	43,392	4,525	0,235	72,993	
0,370	28,33	42,179	0,195	672,70	43,392	4,530	0,228	72,904	
0,380	29,15	42,202	0,200	671,87	43,393	4,536	0,221	72,815	
0,390	29,97	42,224	0,206	671,05	43,393	4,541	0,215	72,727	
0,400	30,79	42,245	0,211	670,23	43,394	4,546	0,209	72,638	
0,410	31,62	42,265	0,216	669,40	43,394	4,551	0,203	72,549	
0,420	32,44	42,284	0,221	668,58	43,395	4,556	0,198	72,460	
0,430	33,27	42,302	0,226	667,75	43,395	4,561	0,192	72,371	
0,440	34,09	42,319	0,231	666,93	43,396	4,566	0,188	72,282	
0,450	34,92	42,335	0,236	666,10	43,396	4,571	0,183	72,194	
0,460	35,75	42,350	0,241	665,27	43,397	4,576	0,178	72,105	
0,470	36,58	42,365	0,246	664,44	43,397	4,582	0,174	72,016	
0,480	37,41	42,379	0,251	663,61	43,398	4,587	0,170	71,927	
0,490	38,24	42,393	0,256	662,78	43,398	4,592	0,166	71,838	
0,500	39,07	42,406	0,261	661,95	43,399	4,597	0,162	71,749	
0,510	39,90	42,418	0,266	661,12	43,399	4,602	0,159	71,660	
0,520	40,73	42,430	0,271	660,29	43,400	4,607	0,155	71,571	
0,530	41,56	42,441	0,277	659,46	43,400	4,612	0,152	71,482	
0,540	42,40	42,452	0,282	658,62	43,401	4,618	0,149	71,393	
0,550	43,23	42,462	0,287	657,79	43,401	4,623	0,146	71,304	
0,560	44,07	42,472	0,292	656,96	43,402	4,628	0,143	71,215	
0,570	44,90	42,481	0,297	656,12	43,402	4,633	0,140	71,126	
0,580	45,74	42,490	0,302	655,28	43,403	4,638	0,137	71,037	
0,590	46,57	42,499	0,307	654,45	43,403	4,643	0,135	70,948	
0,600	47,41	42,508	0,312	653,61	43,404	4,649	0,132	70,858	
0,610	48,25	42,516	0,317	652,77	43,405	4,654	0,130	70,769	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
0,620	49,09	42,524	0,322	651,93	43,405	4,659	0,127	70,680	
0,630	49,93	42,531	0,327	651,09	43,406	4,664	0,125	70,591	
0,640	50,77	42,538	0,332	650,25	43,406	4,669	0,123	70,502	
0,650	51,61	42,545	0,338	649,41	43,407	4,675	0,121	70,412	
0,660	52,45	42,552	0,343	648,57	43,407	4,680	0,118	70,323	
0,670	53,29	42,558	0,348	647,73	43,408	4,685	0,116	70,234	
0,680	54,13	42,564	0,353	646,89	43,409	4,690	0,114	70,145	
0,690	54,98	42,570	0,358	646,04	43,409	4,695	0,113	70,055	
0,700	55,82	42,576	0,363	645,20	43,410	4,701	0,111	69,966	
0,710	56,67	42,581	0,368	644,36	43,410	4,706	0,109	69,877	
0,720	57,51	42,587	0,373	643,51	43,411	4,711	0,107	69,788	
0,730	58,36	42,592	0,378	642,66	43,412	4,716	0,105	69,698	
0,740	59,20	42,596	0,383	641,82	43,412	4,722	0,104	69,609	
0,750	60,05	42,601	0,389	640,97	43,413	4,727	0,102	69,519	
0,760	60,90	42,605	0,394	640,12	43,414	4,732	0,101	69,430	
0,770	61,75	42,609	0,399	639,27	43,414	4,737	0,099	69,341	
0,780	62,60	42,614	0,404	638,43	43,415	4,743	0,098	69,251	
0,790	63,44	42,617	0,409	637,58	43,416	4,748	0,096	69,162	
0,800	64,29	42,621	0,414	636,73	43,416	4,753	0,095	69,072	
0,810	65,15	42,625	0,419	635,88	43,417	4,759	0,093	68,983	
0,820	66,00	42,628	0,424	635,02	43,418	4,764	0,092	68,893	
0,830	66,85	42,631	0,429	634,17	43,418	4,769	0,091	68,804	
0,840	67,70	42,635	0,434	633,32	43,419	4,774	0,090	68,714	
0,850	68,55	42,638	0,440	632,47	43,420	4,780	0,088	68,625	
0,860	69,41	42,641	0,445	631,61	43,421	4,785	0,087	68,535	
0,870	70,26	42,644	0,450	630,76	43,421	4,790	0,086	68,446	
0,880	71,12	42,647	0,455	629,90	43,422	4,796	0,085	68,356	
0,890	71,97	42,650	0,460	629,05	43,423	4,801	0,084	68,267	
0,900	72,83	42,654	0,465	628,19	43,423	4,806	0,083	68,177	
0,910	73,68	42,657	0,470	627,34	43,424	4,812	0,082	68,088	
0,920	74,54	42,660	0,475	626,48	43,425	4,817	0,081	67,998	
0,930	75,39	42,663	0,480	625,63	43,425	4,822	0,079	67,909	
0,940	76,25	42,666	0,486	624,77	43,426	4,828	0,078	67,819	
0,950	77,11	42,670	0,491	623,91	43,427	4,833	0,078	67,730	
0,960	77,97	42,673	0,496	623,06	43,427	4,838	0,077	67,640	
0,970	78,82	42,677	0,501	622,20	43,428	4,844	0,076	67,551	
0,980	79,68	42,680	0,506	621,34	43,428	4,849	0,075	67,461	
0,990	80,54	42,683	0,511	620,48	43,429	4,854	0,074	67,372	
1,000	81,40	42,687	0,516	619,62	43,430	4,860	0,073	67,282	
1,010	82,26	42,690	0,521	618,76	43,430	4,865	0,072	67,193	
1,020	83,12	42,694	0,526	617,90	43,431	4,870	0,071	67,103	
1,030	83,98	42,697	0,532	617,05	43,431	4,876	0,070	67,014	
1,040	84,84	42,701	0,537	616,19	43,432	4,881	0,070	66,924	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,050	85,70	42,705	0,542	615,32	43,432	4,886	0,069	66,835	
1,060	86,56	42,708	0,547	614,46	43,433	4,892	0,068	66,746	
1,070	87,42	42,712	0,552	613,60	43,433	4,897	0,067	66,656	
1,080	88,28	42,715	0,557	612,74	43,434	4,903	0,067	66,567	
1,090	89,14	42,719	0,562	611,88	43,434	4,908	0,066	66,477	
1,100	90,00	42,723	0,567	611,02	43,435	4,913	0,065	66,388	
1,110	90,86	42,726	0,572	610,16	43,435	4,919	0,064	66,299	
1,120	91,72	42,730	0,577	609,30	43,436	4,924	0,064	66,209	
1,130	92,59	42,734	0,583	608,44	43,436	4,929	0,063	66,120	
1,140	93,45	42,737	0,588	607,57	43,437	4,935	0,062	66,031	
1,150	94,31	42,741	0,593	606,71	43,437	4,940	0,062	65,941	
1,160	95,17	42,744	0,598	605,85	43,437	4,946	0,061	65,852	
1,170	96,04	42,748	0,603	604,98	43,438	4,951	0,060	65,763	
1,180	96,90	42,752	0,608	604,12	43,438	4,956	0,060	65,673	
1,190	97,76	42,755	0,613	603,26	43,439	4,962	0,059	65,584	
1,200	98,63	42,759	0,618	602,39	43,439	4,967	0,059	65,495	
1,210	99,49	42,763	0,623	601,53	43,439	4,973	0,058	65,405	
1,220	100,35	42,767	0,628	600,67	43,440	4,978	0,057	65,316	
1,230	101,22	42,770	0,633	599,80	43,440	4,983	0,057	65,227	
1,240	102,08	42,774	0,639	598,94	43,440	4,989	0,056	65,138	
1,250	102,95	42,778	0,644	598,07	43,441	4,994	0,056	65,048	
1,260	103,81	42,782	0,649	597,21	43,441	5,000	0,055	64,959	
1,270	104,68	42,785	0,654	596,35	43,441	5,005	0,055	64,870	
1,280	105,54	42,789	0,659	595,48	43,442	5,010	0,054	64,781	
1,290	106,41	42,795	0,664	594,61	43,442	5,016	0,054	64,691	
1,300	107,28	42,800	0,669	593,74	43,442	5,021	0,053	64,602	
1,310	108,15	42,805	0,674	592,87	43,442	5,027	0,053	64,512	
1,320	109,02	42,811	0,679	592,00	43,441	5,032	0,052	64,422	
1,330	109,89	42,816	0,684	591,13	43,441	5,038	0,052	64,333	
1,340	110,76	42,821	0,690	590,26	43,441	5,043	0,051	64,243	
1,350	111,63	42,826	0,695	589,39	43,441	5,049	0,051	64,154	
1,360	112,50	42,832	0,700	588,52	43,441	5,054	0,050	64,064	
1,370	113,37	42,837	0,705	587,65	43,441	5,060	0,050	63,975	
1,380	114,24	42,842	0,710	586,78	43,441	5,065	0,049	63,885	
1,390	115,11	42,847	0,715	585,91	43,441	5,070	0,049	63,796	
1,400	115,98	42,853	0,720	585,04	43,441	5,076	0,048	63,706	
1,410	116,85	42,858	0,725	584,17	43,440	5,081	0,048	63,617	
1,420	117,72	42,863	0,730	583,30	43,440	5,087	0,048	63,527	
1,430	118,59	42,868	0,736	582,43	43,440	5,092	0,047	63,438	
1,440	119,46	42,873	0,741	581,56	43,440	5,098	0,047	63,349	
1,450	120,34	42,879	0,746	580,69	43,440	5,103	0,046	63,259	
1,460	121,21	42,884	0,751	579,81	43,439	5,109	0,046	63,170	
1,470	122,08	42,889	0,756	578,94	43,439	5,114	0,046	63,080	
1,480	122,95	42,894	0,761	578,07	43,439	5,120	0,045	62,991	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,490	123,82	42,899	0,766	577,20	43,439	5,125	0,045	62,902	
1,500	124,70	42,904	0,771	576,32	43,438	5,131	0,044	62,812	
1,510	125,57	42,909	0,776	575,45	43,438	5,136	0,044	62,723	
1,520	126,44	42,914	0,781	574,58	43,438	5,142	0,044	62,633	
1,530	127,32	42,920	0,787	573,71	43,437	5,147	0,043	62,544	
1,540	128,19	42,925	0,792	572,83	43,437	5,153	0,043	62,455	
1,550	129,06	42,930	0,797	571,96	43,437	5,158	0,043	62,365	
1,560	129,94	42,935	0,802	571,08	43,436	5,164	0,042	62,276	
1,570	130,81	42,940	0,807	570,21	43,436	5,169	0,042	62,187	
1,580	131,68	42,945	0,812	569,34	43,436	5,175	0,042	62,097	
1,590	132,56	42,950	0,817	568,46	43,435	5,180	0,041	62,008	
1,600	133,43	42,955	0,822	567,59	43,435	5,186	0,041	61,919	
1,610	134,31	42,960	0,827	566,71	43,434	5,191	0,041	61,829	
1,620	135,18	42,965	0,832	565,84	43,434	5,197	0,040	61,740	
1,630	136,06	42,970	0,838	564,96	43,433	5,202	0,040	61,651	
1,640	136,93	42,975	0,843	564,09	43,433	5,208	0,040	61,561	
1,650	137,81	42,980	0,848	563,21	43,432	5,214	0,039	61,472	
1,660	138,68	42,985	0,853	562,34	43,432	5,219	0,039	61,383	
1,670	139,56	42,990	0,858	561,46	43,431	5,225	0,039	61,294	
1,680	140,43	42,995	0,863	560,59	43,431	5,230	0,038	61,204	
1,690	141,31	43,000	0,868	559,71	43,430	5,236	0,038	61,115	
1,700	142,19	43,005	0,873	558,84	43,430	5,241	0,038	61,026	
1,710	143,06	43,010	0,878	557,96	43,429	5,247	0,038	60,936	
1,720	143,94	43,015	0,883	557,08	43,428	5,252	0,037	60,847	
1,730	144,81	43,020	0,888	556,21	43,428	5,258	0,037	60,758	
1,740	145,69	43,025	0,894	555,33	43,427	5,263	0,037	60,668	
1,750	146,57	43,030	0,899	554,45	43,426	5,269	0,036	60,579	
1,760	147,45	43,034	0,904	553,58	43,426	5,275	0,036	60,490	
1,770	148,32	43,039	0,909	552,70	43,425	5,280	0,036	60,401	
1,780	149,20	43,044	0,914	551,82	43,424	5,286	0,036	60,311	
1,790	150,08	43,049	0,919	550,94	43,424	5,291	0,035	60,222	
1,800	150,96	43,054	0,924	550,07	43,423	5,297	0,035	60,133	
1,810	151,83	43,059	0,929	549,19	43,422	5,302	0,035	60,044	
1,820	152,71	43,064	0,934	548,31	43,421	5,308	0,035	59,954	
1,830	153,59	43,069	0,939	547,43	43,420	5,314	0,034	59,865	
1,840	154,47	43,074	0,945	546,55	43,420	5,319	0,034	59,776	
1,850	155,35	43,079	0,950	545,67	43,419	5,325	0,034	59,686	
1,860	156,23	43,083	0,955	544,79	43,418	5,330	0,034	59,597	
1,870	157,11	43,088	0,960	543,92	43,417	5,336	0,033	59,508	
1,880	157,98	43,093	0,965	543,04	43,416	5,342	0,033	59,419	
1,890	158,86	43,098	0,970	542,16	43,415	5,347	0,033	59,329	
1,900	159,74	43,103	0,975	541,28	43,414	5,353	0,033	59,240	
1,910	160,62	43,108	0,980	540,40	43,413	5,358	0,032	59,151	

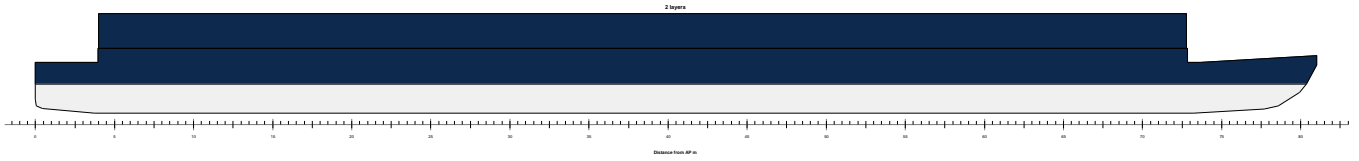
Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,920	161,50	43,113	0,985	539,52	43,412	5,364	0,032	59,062	
1,930	162,38	43,117	0,990	538,64	43,411	5,370	0,032	58,972	
1,940	163,26	43,122	0,995	537,76	43,411	5,375	0,032	58,883	
1,950	164,14	43,127	1,001	536,88	43,410	5,381	0,032	58,794	
1,960	165,03	43,132	1,006	536,00	43,408	5,387	0,031	58,705	
1,970	165,91	43,137	1,011	535,12	43,407	5,392	0,031	58,615	
1,980	166,79	43,142	1,016	534,23	43,406	5,398	0,031	58,526	
1,990	167,67	43,146	1,021	533,35	43,405	5,404	0,031	58,437	
2,000	168,55	43,151	1,026	532,47	43,404	5,409	0,031	58,348	
2,010	169,43	43,156	1,031	531,59	43,403	5,415	0,030	58,258	
2,020	170,31	43,161	1,036	530,71	43,402	5,420	0,030	58,169	
2,030	171,19	43,166	1,041	529,83	43,401	5,426	0,030	58,080	
2,040	172,08	43,170	1,046	528,94	43,400	5,432	0,030	57,990	
2,050	172,96	43,175	1,051	528,06	43,398	5,437	0,030	57,901	
2,060	173,84	43,180	1,057	527,18	43,397	5,443	0,029	57,812	
2,070	174,72	43,185	1,062	526,30	43,396	5,449	0,029	57,723	
2,080	175,61	43,190	1,067	525,41	43,395	5,454	0,029	57,633	
2,090	176,49	43,194	1,072	524,53	43,394	5,460	0,029	57,544	
2,100	177,37	43,199	1,077	523,65	43,392	5,466	0,029	57,455	
2,110	178,26	43,204	1,082	522,77	43,391	5,471	0,028	57,366	
2,120	179,14	43,209	1,087	521,88	43,390	5,477	0,028	57,276	
2,130	180,02	43,213	1,092	521,00	43,388	5,483	0,028	57,187	
2,140	180,91	43,218	1,097	520,11	43,387	5,488	0,028	57,098	
2,150	181,79	43,223	1,102	519,23	43,386	5,494	0,028	57,008	
2,160	182,67	43,228	1,108	518,35	43,384	5,500	0,027	56,919	
2,170	183,56	43,233	1,113	517,46	43,383	5,506	0,027	56,830	
2,180	184,44	43,237	1,118	516,58	43,381	5,511	0,027	56,741	
2,190	185,33	43,242	1,123	515,69	43,380	5,517	0,027	56,651	
2,200	186,21	43,247	1,128	514,81	43,378	5,523	0,027	56,562	
2,210	187,10	43,252	1,133	513,92	43,377	5,528	0,027	56,473	
2,220	187,98	43,256	1,138	513,04	43,375	5,534	0,026	56,383	
2,230	188,87	43,261	1,143	512,15	43,374	5,540	0,026	56,294	
2,240	189,75	43,266	1,148	511,27	43,372	5,546	0,026	56,205	
2,250	190,64	43,270	1,153	510,38	43,371	5,551	0,026	56,116	
2,260	191,53	43,275	1,158	509,50	43,369	5,557	0,026	56,026	
2,270	192,41	43,280	1,164	508,61	43,367	5,563	0,026	55,937	
2,280	193,30	43,285	1,169	507,72	43,366	5,568	0,025	55,848	
2,290	194,18	43,289	1,174	506,84	43,364	5,574	0,025	55,758	
2,300	195,07	43,294	1,179	505,95	43,362	5,580	0,025	55,669	
2,310	195,96	43,299	1,184	505,06	43,361	5,586	0,025	55,580	
2,320	196,84	43,304	1,189	504,18	43,359	5,591	0,025	55,490	
2,330	197,73	43,308	1,194	503,29	43,357	5,597	0,025	55,401	
2,340	198,62	43,313	1,199	502,40	43,355	5,603	0,025	55,312	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
2,350	199,51	43,318	1,204	501,52	43,354	5,609	0,024	55,222	
2,360	200,39	43,322	1,209	500,63	43,352	5,615	0,024	55,133	
2,370	201,28	43,327	1,215	499,74	43,350	5,620	0,024	55,044	
2,380	202,17	43,332	1,220	498,85	43,348	5,626	0,024	54,954	
2,390	203,06	43,337	1,225	497,96	43,346	5,632	0,024	54,865	
2,400	203,95	43,341	1,230	497,08	43,344	5,638	0,024	54,776	
2,410	204,83	43,346	1,235	496,19	43,342	5,643	0,024	54,686	
2,420	205,72	43,351	1,240	495,30	43,340	5,649	0,023	54,597	
2,430	206,61	43,355	1,245	494,41	43,338	5,655	0,023	54,508	
2,440	207,50	43,360	1,250	493,52	43,336	5,661	0,023	54,418	
2,450	208,39	43,365	1,255	492,63	43,334	5,667	0,023	54,329	
2,460	209,28	43,369	1,260	491,74	43,332	5,672	0,023	54,240	
2,470	210,17	43,374	1,265	490,85	43,330	5,678	0,023	54,150	
2,480	211,06	43,379	1,271	489,96	43,328	5,684	0,023	54,061	
2,490	211,95	43,384	1,276	489,07	43,326	5,690	0,022	53,972	
2,500	212,84	43,388	1,281	488,18	43,324	5,696	0,022	53,882	
2,510	213,73	43,393	1,286	487,29	43,322	5,702	0,022	53,793	
2,520	214,62	43,397	1,291	486,40	43,320	5,707	0,022	53,704	
2,530	215,51	43,402	1,296	485,51	43,317	5,713	0,022	53,614	
2,540	216,40	43,406	1,301	484,62	43,315	5,719	0,022	53,525	
2,550	217,29	43,411	1,306	483,73	43,313	5,725	0,022	53,436	
2,560	218,18	43,415	1,311	482,84	43,311	5,731	0,022	53,346	
2,570	219,07	43,420	1,316	481,95	43,309	5,737	0,021	53,257	
2,580	219,96	43,424	1,322	481,06	43,306	5,742	0,021	53,168	
2,590	220,85	43,429	1,327	480,17	43,304	5,748	0,021	53,079	
2,600	221,74	43,433	1,332	479,28	43,302	5,754	0,021	52,989	
2,610	222,63	43,437	1,337	478,39	43,300	5,760	0,021	52,900	
2,620	223,52	43,441	1,342	477,50	43,298	5,766	0,021	52,811	
2,630	224,41	43,446	1,347	476,61	43,295	5,772	0,021	52,722	
2,640	225,30	43,450	1,352	475,72	43,293	5,778	0,021	52,633	
2,650	226,19	43,454	1,357	474,83	43,291	5,783	0,020	52,543	
2,660	227,08	43,458	1,362	473,94	43,288	5,789	0,020	52,454	
2,670	227,97	43,462	1,367	473,05	43,286	5,795	0,020	52,365	
2,680	228,86	43,466	1,372	472,16	43,284	5,801	0,020	52,276	
2,690	229,75	43,470	1,378	471,27	43,282	5,807	0,020	52,187	
2,700	230,64	43,474	1,383	470,38	43,279	5,813	0,020	52,098	
2,710	231,53	43,478	1,388	469,49	43,277	5,819	0,020	52,009	
2,720	232,42	43,482	1,393	468,60	43,275	5,825	0,020	51,920	
2,730	233,31	43,486	1,398	467,71	43,272	5,831	0,020	51,831	
2,740	234,20	43,490	1,403	466,82	43,270	5,836	0,019	51,741	
2,750	235,09	43,494	1,408	465,93	43,268	5,842	0,019	51,652	
2,760	235,98	43,498	1,413	465,04	43,265	5,848	0,019	51,563	
2,770	236,87	43,502	1,418	464,15	43,263	5,854	0,019	51,474	
2,780	237,76	43,506	1,423	463,26	43,260	5,860	0,019	51,385	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
2,790	238,65	43,509	1,428	462,37	43,258	5,866	0,019	51,296	
2,800	239,55	43,513	1,433	461,48	43,255	5,872	0,019	51,207	

Calculation of wind moments

Wind silhouette : 2 layers



Wind pressure 25,00 kg/m²

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
0,200	14,70	38,878	0,100	453,87	39,384	3,139	0,274	34,483	
0,210	15,46	38,894	0,105	453,11	39,385	3,144	0,260	34,423	
0,220	16,21	38,909	0,110	452,36	39,385	3,149	0,247	34,363	
0,230	16,97	38,923	0,115	451,60	39,385	3,154	0,235	34,302	
0,240	17,73	38,936	0,120	450,84	39,386	3,159	0,225	34,242	
0,250	18,50	38,948	0,126	450,07	39,386	3,164	0,215	34,182	
0,260	19,26	38,958	0,131	449,31	39,386	3,168	0,206	34,122	
0,270	20,03	38,968	0,136	448,54	39,386	3,173	0,197	34,062	
0,280	20,80	38,978	0,141	447,77	39,387	3,178	0,189	34,001	
0,290	21,57	38,986	0,146	447,00	39,387	3,183	0,182	33,941	
0,300	22,34	38,992	0,151	446,23	39,387	3,188	0,175	33,881	
0,310	23,12	38,998	0,156	445,45	39,388	3,193	0,169	33,821	
0,320	23,89	39,004	0,162	444,68	39,388	3,198	0,163	33,760	
0,330	24,67	39,009	0,167	443,90	39,389	3,203	0,157	33,700	
0,340	25,44	39,014	0,172	443,12	39,389	3,209	0,152	33,640	
0,350	26,22	39,019	0,177	442,35	39,389	3,214	0,147	33,580	
0,360	27,00	39,024	0,182	441,57	39,390	3,219	0,142	33,519	
0,370	27,78	39,029	0,187	440,79	39,390	3,224	0,138	33,459	
0,380	28,57	39,034	0,192	440,00	39,390	3,229	0,134	33,399	
0,390	29,35	39,039	0,198	439,22	39,391	3,234	0,130	33,339	
0,400	30,13	39,044	0,203	438,44	39,391	3,239	0,126	33,279	
0,410	30,91	39,049	0,208	437,66	39,391	3,244	0,123	33,219	
0,420	31,70	39,054	0,213	436,87	39,391	3,249	0,119	33,159	
0,430	32,48	39,059	0,218	436,09	39,392	3,254	0,116	33,099	
0,440	33,26	39,065	0,223	435,31	39,392	3,259	0,113	33,039	
0,450	34,05	39,070	0,228	434,52	39,392	3,264	0,110	32,979	
0,460	34,83	39,075	0,233	433,74	39,392	3,269	0,107	32,920	
0,470	35,62	39,080	0,239	432,95	39,392	3,274	0,105	32,860	
0,480	36,40	39,085	0,244	432,17	39,392	3,279	0,102	32,800	
0,490	37,19	39,091	0,249	431,38	39,392	3,285	0,100	32,740	
0,500	37,97	39,096	0,254	430,60	39,393	3,290	0,097	32,680	
0,510	38,76	39,101	0,259	429,81	39,393	3,295	0,095	32,621	
0,520	39,55	39,106	0,264	429,02	39,393	3,300	0,093	32,561	
0,530	40,33	39,111	0,269	428,24	39,393	3,305	0,091	32,502	
0,540	41,12	39,116	0,274	427,45	39,393	3,310	0,089	32,442	
0,550	41,91	39,121	0,279	426,66	39,393	3,315	0,087	32,382	
0,560	42,69	39,126	0,284	425,88	39,393	3,320	0,085	32,323	
0,570	43,48	39,131	0,289	425,09	39,393	3,325	0,083	32,263	
0,580	44,27	39,136	0,295	424,30	39,393	3,330	0,082	32,204	
0,590	45,06	39,141	0,300	423,51	39,393	3,336	0,080	32,144	
0,600	45,85	39,146	0,305	422,72	39,393	3,341	0,078	32,085	
0,610	46,63	39,151	0,310	421,94	39,393	3,346	0,077	32,025	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
0,620	47,42	39,156	0,315	421,15	39,392	3,351	0,075	31,966	
0,630	48,21	39,161	0,320	420,36	39,392	3,356	0,074	31,906	
0,640	49,00	39,166	0,325	419,57	39,392	3,361	0,073	31,847	
0,650	49,79	39,170	0,330	418,78	39,392	3,366	0,071	31,787	
0,660	50,58	39,175	0,335	417,99	39,392	3,371	0,070	31,728	
0,670	51,37	39,180	0,340	417,20	39,392	3,376	0,069	31,669	
0,680	52,16	39,185	0,345	416,41	39,391	3,382	0,068	31,609	
0,690	52,95	39,190	0,350	415,62	39,391	3,387	0,066	31,550	
0,700	53,74	39,195	0,355	414,83	39,391	3,392	0,065	31,490	
0,710	54,53	39,200	0,360	414,04	39,391	3,397	0,064	31,431	
0,720	55,32	39,205	0,366	413,25	39,390	3,402	0,063	31,372	
0,730	56,11	39,210	0,371	412,46	39,390	3,407	0,062	31,312	
0,740	56,90	39,215	0,376	411,67	39,390	3,412	0,061	31,253	
0,750	57,69	39,220	0,381	410,88	39,389	3,418	0,060	31,194	
0,760	58,49	39,224	0,386	410,08	39,389	3,423	0,059	31,134	
0,770	59,28	39,229	0,391	409,29	39,389	3,428	0,058	31,075	
0,780	60,07	39,234	0,396	408,50	39,388	3,433	0,057	31,016	
0,790	60,86	39,239	0,401	407,71	39,388	3,438	0,056	30,956	
0,800	61,65	39,243	0,406	406,92	39,388	3,443	0,055	30,897	
0,810	62,45	39,248	0,411	406,12	39,387	3,448	0,055	30,838	
0,820	63,24	39,253	0,416	405,33	39,387	3,454	0,054	30,779	
0,830	64,03	39,257	0,421	404,54	39,386	3,459	0,053	30,719	
0,840	64,82	39,262	0,426	403,75	39,386	3,464	0,052	30,660	
0,850	65,62	39,267	0,431	402,95	39,385	3,469	0,052	30,601	
0,860	66,41	39,271	0,436	402,16	39,385	3,474	0,051	30,541	
0,870	67,20	39,276	0,441	401,37	39,384	3,479	0,050	30,482	
0,880	68,00	39,280	0,447	400,57	39,384	3,484	0,049	30,423	
0,890	68,79	39,285	0,452	399,78	39,383	3,490	0,049	30,364	
0,900	69,58	39,289	0,457	398,99	39,382	3,495	0,048	30,304	
0,910	70,38	39,294	0,462	398,19	39,382	3,500	0,047	30,245	
0,920	71,17	39,298	0,467	397,40	39,381	3,505	0,047	30,186	
0,930	71,97	39,303	0,472	396,60	39,380	3,510	0,046	30,127	
0,940	72,76	39,307	0,477	395,81	39,380	3,515	0,045	30,067	
0,950	73,55	39,312	0,482	395,02	39,379	3,521	0,045	30,008	
0,960	74,35	39,316	0,487	394,22	39,378	3,526	0,044	29,949	
0,970	75,14	39,321	0,492	393,43	39,378	3,531	0,044	29,890	
0,980	75,94	39,325	0,497	392,63	39,377	3,536	0,043	29,830	
0,990	76,73	39,330	0,502	391,84	39,376	3,541	0,043	29,771	
1,000	77,53	39,334	0,507	391,04	39,375	3,546	0,042	29,712	
1,010	78,33	39,339	0,512	390,24	39,375	3,552	0,042	29,653	
1,020	79,12	39,343	0,517	389,45	39,374	3,557	0,041	29,594	
1,030	79,92	39,347	0,522	388,65	39,373	3,562	0,041	29,534	
1,040	80,71	39,352	0,527	387,86	39,372	3,567	0,040	29,475	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,050	81,51	39,356	0,532	387,06	39,371	3,572	0,040	29,416	
1,060	82,30	39,360	0,538	386,27	39,370	3,578	0,039	29,357	
1,070	83,10	39,364	0,543	385,47	39,369	3,583	0,039	29,298	
1,080	83,90	39,369	0,548	384,67	39,369	3,588	0,038	29,238	
1,090	84,69	39,373	0,553	383,88	39,368	3,593	0,038	29,179	
1,100	85,49	39,377	0,558	383,08	39,367	3,598	0,037	29,120	
1,110	86,29	39,381	0,563	382,28	39,366	3,604	0,037	29,061	
1,120	87,08	39,385	0,568	381,49	39,365	3,609	0,036	29,002	
1,130	87,88	39,389	0,573	380,69	39,364	3,614	0,036	28,942	
1,140	88,68	39,393	0,578	379,89	39,363	3,619	0,036	28,883	
1,150	89,47	39,397	0,583	379,10	39,362	3,624	0,035	28,824	
1,160	90,27	39,401	0,588	378,30	39,361	3,630	0,035	28,765	
1,170	91,07	39,406	0,593	377,50	39,360	3,635	0,034	28,706	
1,180	91,87	39,410	0,598	376,70	39,359	3,640	0,034	28,647	
1,190	92,66	39,414	0,603	375,91	39,357	3,645	0,034	28,587	
1,200	93,46	39,418	0,608	375,11	39,356	3,650	0,033	28,528	
1,210	94,26	39,422	0,613	374,31	39,355	3,656	0,033	28,469	
1,220	95,06	39,425	0,618	373,51	39,354	3,661	0,033	28,410	
1,230	95,85	39,429	0,623	372,71	39,353	3,666	0,032	28,351	
1,240	96,65	39,433	0,628	371,92	39,352	3,671	0,032	28,292	
1,250	97,45	39,437	0,634	371,12	39,350	3,676	0,032	28,232	
1,260	98,25	39,441	0,639	370,32	39,349	3,682	0,031	28,173	
1,270	99,05	39,445	0,644	369,52	39,348	3,687	0,031	28,114	
1,280	99,85	39,449	0,649	368,72	39,347	3,692	0,031	28,055	
1,290	100,65	39,453	0,654	367,92	39,345	3,697	0,030	27,996	
1,300	101,44	39,457	0,659	367,13	39,344	3,703	0,030	27,937	
1,310	102,24	39,460	0,664	366,33	39,343	3,708	0,030	27,877	
1,320	103,04	39,464	0,669	365,53	39,342	3,713	0,029	27,818	
1,330	103,84	39,468	0,674	364,73	39,340	3,718	0,029	27,759	
1,340	104,64	39,472	0,679	363,93	39,339	3,724	0,029	27,700	
1,350	105,44	39,476	0,684	363,13	39,337	3,729	0,029	27,641	
1,360	106,24	39,479	0,689	362,33	39,336	3,734	0,028	27,582	
1,370	107,04	39,483	0,694	361,53	39,335	3,739	0,028	27,522	
1,380	107,84	39,487	0,699	360,73	39,333	3,744	0,028	27,463	
1,390	108,64	39,490	0,704	359,93	39,332	3,750	0,027	27,404	
1,400	109,44	39,494	0,709	359,13	39,330	3,755	0,027	27,345	
1,410	110,24	39,498	0,714	358,33	39,329	3,760	0,027	27,286	
1,420	111,04	39,501	0,719	357,53	39,327	3,765	0,027	27,227	
1,430	111,84	39,505	0,724	356,73	39,326	3,771	0,026	27,168	
1,440	112,64	39,508	0,729	355,93	39,324	3,776	0,026	27,109	
1,450	113,44	39,512	0,735	355,13	39,323	3,781	0,026	27,049	
1,460	114,24	39,515	0,740	354,33	39,321	3,786	0,026	26,990	
1,470	115,04	39,519	0,745	353,53	39,320	3,792	0,025	26,931	
1,480	115,84	39,522	0,750	352,73	39,318	3,797	0,025	26,872	

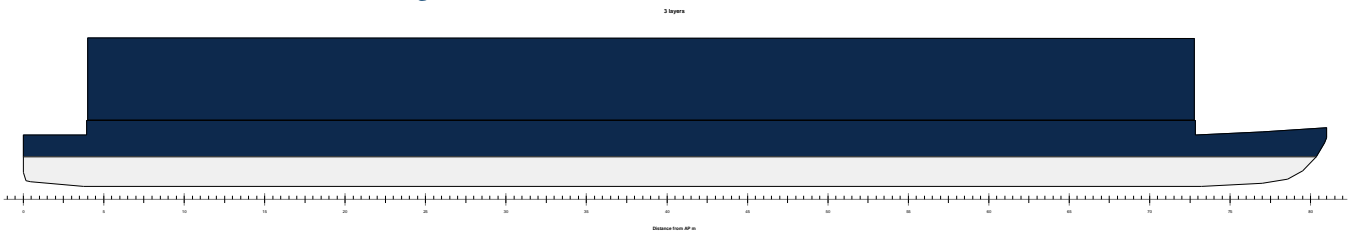
Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,490	116,64	39,526	0,755	351,93	39,316	3,802	0,025	26,813	
1,500	117,44	39,529	0,760	351,13	39,315	3,808	0,025	26,754	
1,510	118,24	39,533	0,765	350,33	39,313	3,813	0,025	26,695	
1,520	119,04	39,536	0,770	349,53	39,311	3,818	0,024	26,636	
1,530	119,85	39,540	0,775	348,72	39,310	3,823	0,024	26,576	
1,540	120,65	39,543	0,780	347,92	39,308	3,829	0,024	26,517	
1,550	121,45	39,546	0,785	347,12	39,306	3,834	0,024	26,458	
1,560	122,25	39,550	0,790	346,32	39,305	3,839	0,023	26,399	
1,570	123,05	39,553	0,795	345,52	39,303	3,844	0,023	26,340	
1,580	123,85	39,556	0,800	344,72	39,301	3,850	0,023	26,281	
1,590	124,65	39,560	0,805	343,92	39,299	3,855	0,023	26,222	
1,600	125,45	39,563	0,810	343,12	39,297	3,860	0,023	26,163	
1,610	126,26	39,566	0,815	342,31	39,296	3,865	0,022	26,103	
1,620	127,06	39,569	0,820	341,51	39,294	3,871	0,022	26,044	
1,630	127,86	39,573	0,825	340,71	39,292	3,876	0,022	25,985	
1,640	128,66	39,576	0,830	339,91	39,290	3,881	0,022	25,926	
1,650	129,46	39,579	0,835	339,11	39,288	3,887	0,022	25,867	
1,660	130,26	39,582	0,840	338,31	39,286	3,892	0,021	25,808	
1,670	131,07	39,585	0,846	337,50	39,284	3,897	0,021	25,749	
1,680	131,87	39,589	0,851	336,70	39,282	3,903	0,021	25,690	
1,690	132,67	39,592	0,856	335,90	39,280	3,908	0,021	25,631	
1,700	133,47	39,595	0,861	335,10	39,278	3,913	0,021	25,572	
1,710	134,28	39,598	0,866	334,29	39,276	3,918	0,021	25,512	
1,720	135,08	39,601	0,871	333,49	39,274	3,924	0,020	25,453	
1,730	135,88	39,604	0,876	332,69	39,272	3,929	0,020	25,394	
1,740	136,68	39,607	0,881	331,89	39,270	3,934	0,020	25,335	
1,750	137,49	39,610	0,886	331,08	39,268	3,940	0,020	25,276	
1,760	138,29	39,613	0,891	330,28	39,266	3,945	0,020	25,217	
1,770	139,09	39,617	0,896	329,48	39,264	3,950	0,020	25,158	
1,780	139,90	39,620	0,901	328,67	39,262	3,956	0,019	25,099	
1,790	140,70	39,623	0,906	327,87	39,260	3,961	0,019	25,040	
1,800	141,50	39,626	0,911	327,07	39,257	3,966	0,019	24,980	
1,810	142,30	39,629	0,916	326,27	39,255	3,972	0,019	24,921	
1,820	143,11	39,632	0,921	325,46	39,253	3,977	0,019	24,862	
1,830	143,91	39,635	0,926	324,66	39,251	3,982	0,019	24,803	
1,840	144,71	39,638	0,931	323,86	39,248	3,987	0,019	24,744	
1,850	145,52	39,641	0,936	323,05	39,246	3,993	0,018	24,685	
1,860	146,32	39,643	0,941	322,25	39,244	3,998	0,018	24,626	
1,870	147,13	39,646	0,946	321,44	39,241	4,003	0,018	24,567	
1,880	147,93	39,649	0,951	320,64	39,239	4,009	0,018	24,508	
1,890	148,73	39,652	0,957	319,84	39,237	4,014	0,018	24,449	
1,900	149,54	39,655	0,962	319,03	39,234	4,019	0,018	24,389	
1,910	150,34	39,658	0,967	318,23	39,232	4,025	0,018	24,330	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,920	151,14	39,661	0,972	317,43	39,229	4,030	0,017	24,271	
1,930	151,95	39,664	0,977	316,62	39,227	4,036	0,017	24,212	
1,940	152,75	39,666	0,982	315,82	39,224	4,041	0,017	24,153	
1,950	153,56	39,669	0,987	315,01	39,222	4,046	0,017	24,094	
1,960	154,36	39,672	0,992	314,21	39,219	4,052	0,017	24,035	
1,970	155,17	39,675	0,997	313,40	39,217	4,057	0,017	23,976	
1,980	155,97	39,678	1,002	312,60	39,214	4,062	0,017	23,917	
1,990	156,77	39,680	1,007	311,80	39,212	4,068	0,016	23,858	
2,000	157,58	39,683	1,012	310,99	39,209	4,073	0,016	23,799	
2,010	158,38	39,686	1,017	310,19	39,206	4,078	0,016	23,740	
2,020	159,19	39,689	1,022	309,38	39,204	4,084	0,016	23,680	
2,030	159,99	39,691	1,027	308,58	39,201	4,089	0,016	23,621	
2,040	160,80	39,694	1,032	307,77	39,198	4,094	0,016	23,562	
2,050	161,60	39,697	1,037	306,97	39,196	4,100	0,016	23,503	
2,060	162,41	39,699	1,042	306,16	39,193	4,105	0,016	23,444	
2,070	163,21	39,702	1,047	305,36	39,190	4,111	0,015	23,385	
2,080	164,02	39,705	1,052	304,55	39,187	4,116	0,015	23,326	
2,090	164,82	39,707	1,057	303,75	39,185	4,121	0,015	23,267	
2,100	165,63	39,710	1,062	302,94	39,182	4,127	0,015	23,208	
2,110	166,43	39,713	1,067	302,14	39,179	4,132	0,015	23,149	
2,120	167,24	39,715	1,073	301,33	39,176	4,138	0,015	23,090	
2,130	168,04	39,718	1,078	300,53	39,173	4,143	0,015	23,031	
2,140	168,85	39,721	1,083	299,72	39,170	4,148	0,015	22,971	
2,150	169,65	39,723	1,088	298,92	39,167	4,154	0,015	22,912	
2,160	170,46	39,726	1,093	298,11	39,164	4,159	0,014	22,853	
2,170	171,26	39,728	1,098	297,31	39,161	4,165	0,014	22,794	
2,180	172,07	39,731	1,103	296,50	39,158	4,170	0,014	22,735	
2,190	172,87	39,733	1,108	295,70	39,155	4,175	0,014	22,676	
2,200	173,68	39,736	1,113	294,89	39,152	4,181	0,014	22,617	
2,210	174,48	39,738	1,118	294,08	39,149	4,186	0,014	22,558	
2,220	175,29	39,741	1,123	293,28	39,146	4,192	0,014	22,499	
2,230	176,10	39,743	1,128	292,47	39,143	4,197	0,014	22,440	
2,240	176,90	39,746	1,133	291,67	39,140	4,202	0,014	22,381	
2,250	177,71	39,748	1,138	290,86	39,136	4,208	0,014	22,322	
2,260	178,51	39,751	1,143	290,06	39,133	4,213	0,013	22,263	
2,270	179,32	39,753	1,148	289,25	39,130	4,219	0,013	22,204	
2,280	180,13	39,756	1,153	288,44	39,127	4,224	0,013	22,144	
2,290	180,93	39,758	1,158	287,64	39,123	4,230	0,013	22,085	
2,300	181,74	39,761	1,163	286,83	39,120	4,235	0,013	22,026	
2,310	182,55	39,763	1,168	286,02	39,117	4,240	0,013	21,967	
2,320	183,35	39,766	1,173	285,22	39,113	4,246	0,013	21,908	
2,330	184,16	39,768	1,178	284,41	39,110	4,251	0,013	21,849	
2,340	184,96	39,771	1,183	283,61	39,106	4,257	0,013	21,790	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
2,350	185,77	39,773	1,189	282,80	39,103	4,262	0,013	21,731	
2,360	186,58	39,775	1,194	281,99	39,099	4,268	0,013	21,672	
2,370	187,38	39,778	1,199	281,19	39,096	4,273	0,012	21,613	
2,380	188,19	39,780	1,204	280,38	39,092	4,279	0,012	21,554	
2,390	189,00	39,783	1,209	279,57	39,089	4,284	0,012	21,495	
2,400	189,80	39,785	1,214	278,77	39,085	4,290	0,012	21,436	
2,410	190,61	39,787	1,219	277,96	39,081	4,295	0,012	21,377	
2,420	191,42	39,790	1,224	277,15	39,078	4,300	0,012	21,317	
2,430	192,22	39,792	1,229	276,35	39,074	4,306	0,012	21,258	
2,440	193,03	39,794	1,234	275,54	39,070	4,311	0,012	21,199	
2,450	193,84	39,797	1,239	274,73	39,067	4,317	0,012	21,140	
2,460	194,65	39,799	1,244	273,92	39,063	4,322	0,012	21,081	
2,470	195,45	39,801	1,249	273,12	39,059	4,328	0,012	21,022	
2,480	196,26	39,804	1,254	272,31	39,055	4,333	0,011	20,963	
2,490	197,07	39,806	1,259	271,50	39,051	4,339	0,011	20,904	
2,500	197,88	39,808	1,264	270,69	39,047	4,344	0,011	20,845	
2,510	198,68	39,810	1,269	269,89	39,043	4,350	0,011	20,786	
2,520	199,49	39,813	1,274	269,08	39,039	4,355	0,011	20,727	
2,530	200,30	39,815	1,279	268,27	39,035	4,361	0,011	20,668	
2,540	201,10	39,817	1,284	267,47	39,031	4,366	0,011	20,609	
2,550	201,91	39,819	1,289	266,66	39,027	4,372	0,011	20,550	
2,560	202,72	39,822	1,294	265,85	39,023	4,377	0,011	20,491	
2,570	203,53	39,824	1,299	265,04	39,019	4,383	0,011	20,431	
2,580	204,34	39,826	1,304	264,23	39,015	4,388	0,011	20,372	
2,590	205,14	39,828	1,310	263,43	39,010	4,394	0,011	20,313	
2,600	205,95	39,831	1,315	262,62	39,006	4,400	0,011	20,254	
2,610	206,76	39,833	1,320	261,81	39,002	4,405	0,011	20,195	
2,620	207,57	39,835	1,325	261,00	38,998	4,411	0,010	20,136	
2,630	208,38	39,837	1,330	260,19	38,993	4,416	0,010	20,077	
2,640	209,18	39,839	1,335	259,39	38,989	4,422	0,010	20,018	
2,650	209,99	39,842	1,340	258,58	38,984	4,427	0,010	19,959	
2,660	210,80	39,844	1,345	257,77	38,980	4,433	0,010	19,900	
2,670	211,61	39,846	1,350	256,96	38,975	4,438	0,010	19,841	
2,680	212,42	39,848	1,355	256,15	38,971	4,444	0,010	19,782	
2,690	213,22	39,850	1,360	255,35	38,966	4,450	0,010	19,723	
2,700	214,03	39,853	1,365	254,54	38,962	4,455	0,010	19,664	
2,710	214,84	39,855	1,370	253,73	38,957	4,461	0,010	19,604	
2,720	215,65	39,857	1,375	252,92	38,952	4,466	0,010	19,545	
2,730	216,46	39,859	1,380	252,11	38,947	4,472	0,010	19,486	
2,740	217,27	39,861	1,385	251,30	38,943	4,477	0,010	19,427	
2,750	218,08	39,863	1,390	250,49	38,938	4,483	0,010	19,368	
2,760	218,88	39,865	1,395	249,69	38,933	4,489	0,009	19,309	
2,770	219,69	39,867	1,400	248,88	38,928	4,494	0,009	19,250	
2,780	220,50	39,870	1,405	248,07	38,923	4,500	0,009	19,191	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
2,790	221,31	39,872	1,410	247,26	38,918	4,505	0,009	19,132	
2,800	222,12	39,874	1,415	246,45	38,913	4,511	0,009	19,073	

Wind silhouette : 3 layers



Wind pressure 25,00 kg/m²

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
0,200	14,70	38,878	0,100	653,48	39,075	4,547	0,578	72,654	
0,210	15,46	38,894	0,105	652,72	39,075	4,552	0,548	72,568	
0,220	16,21	38,909	0,110	651,97	39,075	4,557	0,522	72,482	
0,230	16,97	38,923	0,115	651,21	39,075	4,562	0,497	72,397	
0,240	17,73	38,936	0,120	650,45	39,075	4,567	0,474	72,311	
0,250	18,50	38,948	0,126	649,68	39,074	4,572	0,454	72,225	
0,260	19,26	38,958	0,131	648,92	39,074	4,577	0,435	72,139	
0,270	20,03	38,968	0,136	648,15	39,074	4,583	0,417	72,053	
0,280	20,80	38,978	0,141	647,38	39,074	4,588	0,401	71,967	
0,290	21,57	38,986	0,146	646,61	39,074	4,593	0,385	71,881	
0,300	22,34	38,992	0,151	645,84	39,074	4,598	0,371	71,795	
0,310	23,12	38,998	0,156	645,06	39,074	4,603	0,358	71,710	
0,320	23,89	39,004	0,162	644,29	39,073	4,608	0,346	71,624	
0,330	24,67	39,009	0,167	643,51	39,073	4,613	0,334	71,538	
0,340	25,44	39,014	0,172	642,73	39,073	4,619	0,323	71,452	
0,350	26,22	39,019	0,177	641,96	39,073	4,624	0,313	71,366	
0,360	27,00	39,024	0,182	641,18	39,073	4,629	0,303	71,280	
0,370	27,78	39,029	0,187	640,40	39,073	4,634	0,294	71,194	
0,380	28,57	39,034	0,192	639,61	39,073	4,639	0,285	71,108	
0,390	29,35	39,039	0,198	638,83	39,072	4,645	0,277	71,023	
0,400	30,13	39,044	0,203	638,05	39,072	4,650	0,269	70,937	
0,410	30,91	39,049	0,208	637,27	39,072	4,655	0,262	70,852	
0,420	31,70	39,054	0,213	636,48	39,072	4,660	0,255	70,766	
0,430	32,48	39,059	0,218	635,70	39,072	4,665	0,248	70,681	
0,440	33,26	39,065	0,223	634,92	39,071	4,671	0,241	70,595	
0,450	34,05	39,070	0,228	634,13	39,071	4,676	0,235	70,510	
0,460	34,83	39,075	0,233	633,35	39,071	4,681	0,230	70,425	
0,470	35,62	39,080	0,239	632,56	39,070	4,686	0,224	70,339	
0,480	36,40	39,085	0,244	631,78	39,070	4,692	0,219	70,254	
0,490	37,19	39,091	0,249	630,99	39,070	4,697	0,213	70,169	
0,500	37,97	39,096	0,254	630,21	39,069	4,702	0,209	70,084	
0,510	38,76	39,101	0,259	629,42	39,069	4,707	0,204	69,999	
0,520	39,55	39,106	0,264	628,63	39,069	4,713	0,199	69,914	
0,530	40,33	39,111	0,269	627,85	39,068	4,718	0,195	69,829	
0,540	41,12	39,116	0,274	627,06	39,068	4,723	0,191	69,744	
0,550	41,91	39,121	0,279	626,27	39,068	4,728	0,187	69,659	
0,560	42,69	39,126	0,284	625,49	39,067	4,734	0,183	69,574	
0,570	43,48	39,131	0,289	624,70	39,067	4,739	0,179	69,489	
0,580	44,27	39,136	0,295	623,91	39,066	4,744	0,176	69,404	
0,590	45,06	39,141	0,300	623,12	39,066	4,749	0,172	69,319	
0,600	45,85	39,146	0,305	622,33	39,065	4,755	0,169	69,234	
0,610	46,63	39,151	0,310	621,55	39,065	4,760	0,166	69,149	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
0,620	47,42	39,156	0,315	620,76	39,064	4,765	0,163	69,065	
0,630	48,21	39,161	0,320	619,97	39,064	4,770	0,160	68,980	
0,640	49,00	39,166	0,325	619,18	39,063	4,776	0,157	68,895	
0,650	49,79	39,170	0,330	618,39	39,063	4,781	0,154	68,810	
0,660	50,58	39,175	0,335	617,60	39,062	4,786	0,152	68,725	
0,670	51,37	39,180	0,340	616,81	39,062	4,792	0,149	68,641	
0,680	52,16	39,185	0,345	616,02	39,061	4,797	0,146	68,556	
0,690	52,95	39,190	0,350	615,23	39,061	4,802	0,144	68,471	
0,700	53,74	39,195	0,355	614,44	39,060	4,807	0,142	68,387	
0,710	54,53	39,200	0,360	613,65	39,059	4,813	0,139	68,302	
0,720	55,32	39,205	0,366	612,86	39,059	4,818	0,137	68,217	
0,730	56,11	39,210	0,371	612,07	39,058	4,823	0,135	68,133	
0,740	56,90	39,215	0,376	611,28	39,058	4,829	0,133	68,048	
0,750	57,69	39,220	0,381	610,49	39,057	4,834	0,131	67,964	
0,760	58,49	39,224	0,386	609,69	39,056	4,839	0,129	67,879	
0,770	59,28	39,229	0,391	608,90	39,056	4,844	0,127	67,794	
0,780	60,07	39,234	0,396	608,11	39,055	4,850	0,125	67,710	
0,790	60,86	39,239	0,401	607,32	39,054	4,855	0,123	67,625	
0,800	61,65	39,243	0,406	606,53	39,053	4,860	0,121	67,541	
0,810	62,45	39,248	0,411	605,73	39,053	4,866	0,120	67,456	
0,820	63,24	39,253	0,416	604,94	39,052	4,871	0,118	67,372	
0,830	64,03	39,257	0,421	604,15	39,051	4,876	0,116	67,287	
0,840	64,82	39,262	0,426	603,36	39,050	4,882	0,115	67,202	
0,850	65,62	39,267	0,431	602,56	39,050	4,887	0,113	67,118	
0,860	66,41	39,271	0,436	601,77	39,049	4,892	0,111	67,033	
0,870	67,20	39,276	0,441	600,98	39,048	4,897	0,110	66,949	
0,880	68,00	39,280	0,447	600,18	39,047	4,903	0,108	66,864	
0,890	68,79	39,285	0,452	599,39	39,046	4,908	0,107	66,780	
0,900	69,58	39,289	0,457	598,60	39,046	4,913	0,106	66,695	
0,910	70,38	39,294	0,462	597,80	39,045	4,919	0,104	66,611	
0,920	71,17	39,298	0,467	597,01	39,044	4,924	0,103	66,526	
0,930	71,97	39,303	0,472	596,21	39,043	4,929	0,102	66,442	
0,940	72,76	39,307	0,477	595,42	39,042	4,935	0,100	66,357	
0,950	73,55	39,312	0,482	594,63	39,041	4,940	0,099	66,273	
0,960	74,35	39,316	0,487	593,83	39,040	4,945	0,098	66,189	
0,970	75,14	39,321	0,492	593,04	39,039	4,951	0,097	66,104	
0,980	75,94	39,325	0,497	592,24	39,038	4,956	0,096	66,020	
0,990	76,73	39,330	0,502	591,45	39,037	4,961	0,094	65,935	
1,000	77,53	39,334	0,507	590,65	39,036	4,967	0,093	65,851	
1,010	78,33	39,339	0,512	589,85	39,035	4,972	0,092	65,766	
1,020	79,12	39,343	0,517	589,06	39,034	4,977	0,091	65,682	
1,030	79,92	39,347	0,522	588,26	39,033	4,983	0,090	65,597	
1,040	80,71	39,352	0,527	587,47	39,032	4,988	0,089	65,513	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,050	81,51	39,356	0,532	586,67	39,031	4,993	0,088	65,428	
1,060	82,30	39,360	0,538	585,88	39,030	4,999	0,087	65,344	
1,070	83,10	39,364	0,543	585,08	39,029	5,004	0,086	65,260	
1,080	83,90	39,369	0,548	584,28	39,028	5,010	0,085	65,175	
1,090	84,69	39,373	0,553	583,49	39,027	5,015	0,084	65,091	
1,100	85,49	39,377	0,558	582,69	39,026	5,020	0,083	65,006	
1,110	86,29	39,381	0,563	581,89	39,025	5,026	0,082	64,922	
1,120	87,08	39,385	0,568	581,10	39,024	5,031	0,082	64,838	
1,130	87,88	39,389	0,573	580,30	39,023	5,036	0,081	64,753	
1,140	88,68	39,393	0,578	579,50	39,022	5,042	0,080	64,669	
1,150	89,47	39,397	0,583	578,71	39,020	5,047	0,079	64,584	
1,160	90,27	39,401	0,588	577,91	39,019	5,052	0,078	64,500	
1,170	91,07	39,406	0,593	577,11	39,018	5,058	0,077	64,416	
1,180	91,87	39,410	0,598	576,31	39,017	5,063	0,077	64,331	
1,190	92,66	39,414	0,603	575,52	39,016	5,069	0,076	64,247	
1,200	93,46	39,418	0,608	574,72	39,015	5,074	0,075	64,163	
1,210	94,26	39,422	0,613	573,92	39,013	5,079	0,074	64,078	
1,220	95,06	39,425	0,618	573,12	39,012	5,085	0,074	63,994	
1,230	95,85	39,429	0,623	572,32	39,011	5,090	0,073	63,909	
1,240	96,65	39,433	0,628	571,53	39,010	5,095	0,072	63,825	
1,250	97,45	39,437	0,634	570,73	39,008	5,101	0,071	63,741	
1,260	98,25	39,441	0,639	569,93	39,007	5,106	0,071	63,656	
1,270	99,05	39,445	0,644	569,13	39,006	5,112	0,070	63,572	
1,280	99,85	39,449	0,649	568,33	39,005	5,117	0,069	63,488	
1,290	100,65	39,453	0,654	567,53	39,003	5,122	0,069	63,403	
1,300	101,44	39,457	0,659	566,73	39,002	5,128	0,068	63,319	
1,310	102,24	39,460	0,664	565,94	39,001	5,133	0,067	63,235	
1,320	103,04	39,464	0,669	565,14	38,999	5,139	0,067	63,150	
1,330	103,84	39,468	0,674	564,34	38,998	5,144	0,066	63,066	
1,340	104,64	39,472	0,679	563,54	38,996	5,149	0,066	62,981	
1,350	105,44	39,476	0,684	562,74	38,995	5,155	0,065	62,897	
1,360	106,24	39,479	0,689	561,94	38,994	5,160	0,064	62,813	
1,370	107,04	39,483	0,694	561,14	38,992	5,166	0,064	62,728	
1,380	107,84	39,487	0,699	560,34	38,991	5,171	0,063	62,644	
1,390	108,64	39,490	0,704	559,54	38,989	5,176	0,063	62,560	
1,400	109,44	39,494	0,709	558,74	38,988	5,182	0,062	62,475	
1,410	110,24	39,498	0,714	557,94	38,987	5,187	0,062	62,391	
1,420	111,04	39,501	0,719	557,14	38,985	5,193	0,061	62,307	
1,430	111,84	39,505	0,724	556,34	38,984	5,198	0,061	62,222	
1,440	112,64	39,508	0,729	555,54	38,982	5,204	0,060	62,138	
1,450	113,44	39,512	0,735	554,74	38,981	5,209	0,060	62,054	
1,460	114,24	39,515	0,740	553,94	38,979	5,214	0,059	61,969	
1,470	115,04	39,519	0,745	553,14	38,978	5,220	0,059	61,885	
1,480	115,84	39,522	0,750	552,34	38,976	5,225	0,058	61,801	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,490	116,64	39,526	0,755	551,54	38,975	5,231	0,058	61,717	
1,500	117,44	39,529	0,760	550,74	38,973	5,236	0,057	61,632	
1,510	118,24	39,533	0,765	549,94	38,972	5,242	0,057	61,548	
1,520	119,04	39,536	0,770	549,14	38,970	5,247	0,056	61,464	
1,530	119,85	39,540	0,775	548,33	38,969	5,252	0,056	61,379	
1,540	120,65	39,543	0,780	547,53	38,967	5,258	0,055	61,295	
1,550	121,45	39,546	0,785	546,73	38,965	5,263	0,055	61,211	
1,560	122,25	39,550	0,790	545,93	38,964	5,269	0,054	61,126	
1,570	123,05	39,553	0,795	545,13	38,962	5,274	0,054	61,042	
1,580	123,85	39,556	0,800	544,33	38,961	5,280	0,053	60,958	
1,590	124,65	39,560	0,805	543,53	38,959	5,285	0,053	60,874	
1,600	125,45	39,563	0,810	542,73	38,957	5,291	0,053	60,789	
1,610	126,26	39,566	0,815	541,92	38,956	5,296	0,052	60,705	
1,620	127,06	39,569	0,820	541,12	38,954	5,301	0,052	60,621	
1,630	127,86	39,573	0,825	540,32	38,952	5,307	0,051	60,536	
1,640	128,66	39,576	0,830	539,52	38,951	5,312	0,051	60,452	
1,650	129,46	39,579	0,835	538,72	38,949	5,318	0,051	60,368	
1,660	130,26	39,582	0,840	537,92	38,947	5,323	0,050	60,283	
1,670	131,07	39,585	0,846	537,11	38,945	5,329	0,050	60,199	
1,680	131,87	39,589	0,851	536,31	38,944	5,334	0,049	60,115	
1,690	132,67	39,592	0,856	535,51	38,942	5,340	0,049	60,031	
1,700	133,47	39,595	0,861	534,71	38,940	5,345	0,049	59,946	
1,710	134,28	39,598	0,866	533,90	38,938	5,351	0,048	59,862	
1,720	135,08	39,601	0,871	533,10	38,937	5,356	0,048	59,778	
1,730	135,88	39,604	0,876	532,30	38,935	5,362	0,048	59,693	
1,740	136,68	39,607	0,881	531,50	38,933	5,367	0,047	59,609	
1,750	137,49	39,610	0,886	530,69	38,931	5,372	0,047	59,525	
1,760	138,29	39,613	0,891	529,89	38,929	5,378	0,047	59,441	
1,770	139,09	39,617	0,896	529,09	38,928	5,383	0,046	59,356	
1,780	139,90	39,620	0,901	528,28	38,926	5,389	0,046	59,272	
1,790	140,70	39,623	0,906	527,48	38,924	5,394	0,046	59,188	
1,800	141,50	39,626	0,911	526,68	38,922	5,400	0,045	59,103	
1,810	142,30	39,629	0,916	525,87	38,920	5,405	0,045	59,019	
1,820	143,11	39,632	0,921	525,07	38,918	5,411	0,045	58,935	
1,830	143,91	39,635	0,926	524,27	38,916	5,416	0,044	58,851	
1,840	144,71	39,638	0,931	523,46	38,914	5,422	0,044	58,766	
1,850	145,52	39,641	0,936	522,66	38,912	5,427	0,044	58,682	
1,860	146,32	39,643	0,941	521,86	38,910	5,433	0,043	58,598	
1,870	147,13	39,646	0,946	521,05	38,908	5,438	0,043	58,514	
1,880	147,93	39,649	0,951	520,25	38,906	5,444	0,043	58,429	
1,890	148,73	39,652	0,957	519,45	38,904	5,449	0,042	58,345	
1,900	149,54	39,655	0,962	518,64	38,903	5,455	0,042	58,261	
1,910	150,34	39,658	0,967	517,84	38,901	5,460	0,042	58,176	

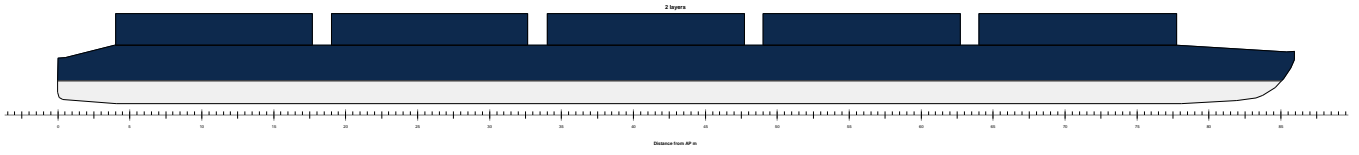
Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,920	151,14	39,661	0,972	517,04	38,898	5,466	0,042	58,092	
1,930	151,95	39,664	0,977	516,23	38,896	5,471	0,041	58,008	
1,940	152,75	39,666	0,982	515,43	38,894	5,477	0,041	57,924	
1,950	153,56	39,669	0,987	514,62	38,892	5,482	0,041	57,839	
1,960	154,36	39,672	0,992	513,82	38,890	5,488	0,040	57,755	
1,970	155,17	39,675	0,997	513,01	38,888	5,494	0,040	57,671	
1,980	155,97	39,678	1,002	512,21	38,886	5,499	0,040	57,587	
1,990	156,77	39,680	1,007	511,41	38,884	5,505	0,040	57,502	
2,000	157,58	39,683	1,012	510,60	38,882	5,510	0,039	57,418	
2,010	158,38	39,686	1,017	509,80	38,880	5,516	0,039	57,334	
2,020	159,19	39,689	1,022	508,99	38,878	5,521	0,039	57,250	
2,030	159,99	39,691	1,027	508,19	38,876	5,527	0,039	57,165	
2,040	160,80	39,694	1,032	507,38	38,873	5,532	0,038	57,081	
2,050	161,60	39,697	1,037	506,58	38,871	5,538	0,038	56,997	
2,060	162,41	39,699	1,042	505,77	38,869	5,543	0,038	56,913	
2,070	163,21	39,702	1,047	504,97	38,867	5,549	0,038	56,828	
2,080	164,02	39,705	1,052	504,16	38,865	5,554	0,037	56,744	
2,090	164,82	39,707	1,057	503,36	38,863	5,560	0,037	56,660	
2,100	165,63	39,710	1,062	502,55	38,860	5,566	0,037	56,576	
2,110	166,43	39,713	1,067	501,75	38,858	5,571	0,037	56,491	
2,120	167,24	39,715	1,073	500,94	38,856	5,577	0,036	56,407	
2,130	168,04	39,718	1,078	500,14	38,854	5,582	0,036	56,323	
2,140	168,85	39,721	1,083	499,33	38,851	5,588	0,036	56,239	
2,150	169,65	39,723	1,088	498,53	38,849	5,593	0,036	56,154	
2,160	170,46	39,726	1,093	497,72	38,847	5,599	0,036	56,070	
2,170	171,26	39,728	1,098	496,92	38,844	5,604	0,035	55,986	
2,180	172,07	39,731	1,103	496,11	38,842	5,610	0,035	55,902	
2,190	172,87	39,733	1,108	495,31	38,840	5,616	0,035	55,818	
2,200	173,68	39,736	1,113	494,50	38,837	5,621	0,035	55,733	
2,210	174,48	39,738	1,118	493,69	38,835	5,627	0,034	55,649	
2,220	175,29	39,741	1,123	492,89	38,833	5,632	0,034	55,565	
2,230	176,10	39,743	1,128	492,08	38,830	5,638	0,034	55,481	
2,240	176,90	39,746	1,133	491,28	38,828	5,643	0,034	55,396	
2,250	177,71	39,748	1,138	490,47	38,825	5,649	0,034	55,312	
2,260	178,51	39,751	1,143	489,67	38,823	5,655	0,033	55,228	
2,270	179,32	39,753	1,148	488,86	38,821	5,660	0,033	55,144	
2,280	180,13	39,756	1,153	488,05	38,818	5,666	0,033	55,059	
2,290	180,93	39,758	1,158	487,25	38,816	5,671	0,033	54,975	
2,300	181,74	39,761	1,163	486,44	38,813	5,677	0,033	54,891	
2,310	182,55	39,763	1,168	485,63	38,811	5,683	0,032	54,807	
2,320	183,35	39,766	1,173	484,83	38,808	5,688	0,032	54,722	
2,330	184,16	39,768	1,178	484,02	38,806	5,694	0,032	54,638	
2,340	184,96	39,771	1,183	483,22	38,803	5,699	0,032	54,554	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
2,350	185,77	39,773	1,189	482,41	38,801	5,705	0,032	54,470	
2,360	186,58	39,775	1,194	481,60	38,798	5,711	0,031	54,385	
2,370	187,38	39,778	1,199	480,80	38,795	5,716	0,031	54,301	
2,380	188,19	39,780	1,204	479,99	38,793	5,722	0,031	54,217	
2,390	189,00	39,783	1,209	479,18	38,790	5,727	0,031	54,133	
2,400	189,80	39,785	1,214	478,38	38,788	5,733	0,031	54,049	
2,410	190,61	39,787	1,219	477,57	38,785	5,739	0,030	53,964	
2,420	191,42	39,790	1,224	476,76	38,782	5,744	0,030	53,880	
2,430	192,22	39,792	1,229	475,95	38,780	5,750	0,030	53,796	
2,440	193,03	39,794	1,234	475,15	38,777	5,756	0,030	53,712	
2,450	193,84	39,797	1,239	474,34	38,774	5,761	0,030	53,627	
2,460	194,65	39,799	1,244	473,53	38,772	5,767	0,030	53,543	
2,470	195,45	39,801	1,249	472,73	38,769	5,772	0,029	53,459	
2,480	196,26	39,804	1,254	471,92	38,766	5,778	0,029	53,375	
2,490	197,07	39,806	1,259	471,11	38,764	5,784	0,029	53,290	
2,500	197,88	39,808	1,264	470,30	38,761	5,789	0,029	53,206	
2,510	198,68	39,810	1,269	469,50	38,758	5,795	0,029	53,122	
2,520	199,49	39,813	1,274	468,69	38,755	5,801	0,029	53,038	
2,530	200,30	39,815	1,279	467,88	38,752	5,806	0,028	52,954	
2,540	201,10	39,817	1,284	467,07	38,750	5,812	0,028	52,869	
2,550	201,91	39,819	1,289	466,27	38,747	5,818	0,028	52,785	
2,560	202,72	39,822	1,294	465,46	38,744	5,823	0,028	52,701	
2,570	203,53	39,824	1,299	464,65	38,741	5,829	0,028	52,617	
2,580	204,34	39,826	1,304	463,84	38,738	5,835	0,028	52,532	
2,590	205,14	39,828	1,310	463,04	38,735	5,840	0,028	52,448	
2,600	205,95	39,831	1,315	462,23	38,732	5,846	0,027	52,364	
2,610	206,76	39,833	1,320	461,42	38,730	5,852	0,027	52,280	
2,620	207,57	39,835	1,325	460,61	38,727	5,857	0,027	52,195	
2,630	208,38	39,837	1,330	459,80	38,724	5,863	0,027	52,111	
2,640	209,18	39,839	1,335	459,00	38,721	5,869	0,027	52,027	
2,650	209,99	39,842	1,340	458,19	38,718	5,874	0,027	51,943	
2,660	210,80	39,844	1,345	457,38	38,715	5,880	0,026	51,859	
2,670	211,61	39,846	1,350	456,57	38,712	5,886	0,026	51,774	
2,680	212,42	39,848	1,355	455,76	38,709	5,891	0,026	51,690	
2,690	213,22	39,850	1,360	454,96	38,706	5,897	0,026	51,606	
2,700	214,03	39,853	1,365	454,15	38,703	5,903	0,026	51,522	
2,710	214,84	39,855	1,370	453,34	38,700	5,909	0,026	51,437	
2,720	215,65	39,857	1,375	452,53	38,696	5,914	0,026	51,353	
2,730	216,46	39,859	1,380	451,72	38,693	5,920	0,025	51,269	
2,740	217,27	39,861	1,385	450,91	38,690	5,926	0,025	51,185	
2,750	218,08	39,863	1,390	450,10	38,687	5,931	0,025	51,100	
2,760	218,88	39,865	1,395	449,30	38,684	5,937	0,025	51,016	
2,770	219,69	39,867	1,400	448,49	38,681	5,943	0,025	50,932	
2,780	220,50	39,870	1,405	447,68	38,678	5,949	0,025	50,848	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
2,790	221,31	39,872	1,410	446,87	38,674	5,954	0,025	50,764	
2,800	222,12	39,874	1,415	446,06	38,671	5,960	0,025	50,679	

Calculation of wind moments

Wind silhouette : 2 layers



Wind pressure 25,00 kg/m²

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
0,200	15,07	40,974	0,104	478,38	42,034	3,104	0,218	35,888	
0,210	15,87	41,006	0,109	477,58	42,035	3,109	0,207	35,825	
0,220	16,68	41,038	0,114	476,78	42,036	3,114	0,197	35,761	
0,230	17,49	41,066	0,119	475,97	42,036	3,119	0,188	35,698	
0,240	18,30	41,092	0,124	475,16	42,037	3,124	0,179	35,635	
0,250	19,11	41,115	0,129	474,35	42,038	3,129	0,171	35,571	
0,260	19,92	41,136	0,134	473,53	42,038	3,134	0,164	35,508	
0,270	20,74	41,155	0,140	472,72	42,039	3,139	0,157	35,445	
0,280	21,56	41,172	0,145	471,90	42,040	3,144	0,151	35,381	
0,290	22,38	41,188	0,150	471,08	42,040	3,149	0,145	35,318	
0,300	23,20	41,203	0,155	470,26	42,041	3,154	0,140	35,255	
0,310	24,02	41,216	0,160	469,43	42,042	3,159	0,135	35,191	
0,320	24,85	41,228	0,165	468,61	42,043	3,164	0,130	35,128	
0,330	25,67	41,239	0,170	467,78	42,044	3,169	0,126	35,064	
0,340	26,50	41,250	0,176	466,96	42,045	3,174	0,121	35,001	
0,350	27,32	41,260	0,181	466,13	42,045	3,179	0,117	34,938	
0,360	28,15	41,270	0,186	465,30	42,046	3,184	0,114	34,875	
0,370	28,98	41,280	0,191	464,48	42,047	3,189	0,110	34,812	
0,380	29,81	41,290	0,196	463,65	42,048	3,194	0,107	34,748	
0,390	30,64	41,299	0,201	462,82	42,048	3,199	0,104	34,685	
0,400	31,47	41,308	0,206	461,99	42,049	3,204	0,101	34,622	
0,410	32,30	41,318	0,211	461,16	42,050	3,209	0,098	34,559	
0,420	33,13	41,327	0,216	460,33	42,050	3,214	0,095	34,496	
0,430	33,96	41,336	0,222	459,49	42,051	3,219	0,093	34,433	
0,440	34,79	41,345	0,227	458,66	42,052	3,224	0,090	34,370	
0,450	35,63	41,353	0,232	457,83	42,052	3,229	0,088	34,307	
0,460	36,46	41,362	0,237	457,00	42,053	3,234	0,086	34,244	
0,470	37,29	41,370	0,242	456,16	42,053	3,239	0,084	34,181	
0,480	38,13	41,378	0,247	455,33	42,054	3,244	0,082	34,119	
0,490	38,96	41,386	0,252	454,50	42,055	3,249	0,080	34,056	
0,500	39,79	41,394	0,257	453,66	42,055	3,254	0,078	33,993	
0,510	40,63	41,402	0,262	452,83	42,056	3,260	0,076	33,930	
0,520	41,46	41,410	0,267	451,99	42,056	3,265	0,074	33,868	
0,530	42,30	41,417	0,273	451,16	42,057	3,270	0,073	33,805	
0,540	43,13	41,425	0,278	450,32	42,057	3,275	0,071	33,742	
0,550	43,97	41,432	0,283	449,49	42,058	3,280	0,070	33,679	
0,560	44,80	41,439	0,288	448,65	42,058	3,285	0,068	33,617	
0,570	45,64	41,447	0,293	447,82	42,058	3,290	0,067	33,554	
0,580	46,48	41,454	0,298	446,98	42,059	3,295	0,065	33,492	
0,590	47,31	41,461	0,303	446,14	42,059	3,300	0,064	33,429	
0,600	48,15	41,468	0,308	445,31	42,060	3,305	0,063	33,366	
0,610	48,99	41,475	0,313	444,47	42,060	3,310	0,062	33,304	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
0,620	49,82	41,482	0,318	443,63	42,060	3,315	0,061	33,241	
0,630	50,66	41,489	0,323	442,79	42,061	3,320	0,059	33,179	
0,640	51,50	41,495	0,328	441,96	42,061	3,326	0,058	33,116	
0,650	52,34	41,502	0,333	441,12	42,061	3,331	0,057	33,053	
0,660	53,18	41,508	0,339	440,28	42,061	3,336	0,056	32,991	
0,670	54,01	41,514	0,344	439,44	42,062	3,341	0,055	32,928	
0,680	54,85	41,521	0,349	438,60	42,062	3,346	0,054	32,866	
0,690	55,69	41,527	0,354	437,76	42,062	3,351	0,053	32,803	
0,700	56,53	41,533	0,359	436,92	42,062	3,356	0,052	32,741	
0,710	57,37	41,539	0,364	436,09	42,063	3,361	0,052	32,678	
0,720	58,21	41,546	0,369	435,25	42,063	3,366	0,051	32,616	
0,730	59,05	41,552	0,374	434,41	42,063	3,371	0,050	32,553	
0,740	59,89	41,558	0,379	433,57	42,063	3,377	0,049	32,491	
0,750	60,73	41,564	0,384	432,73	42,063	3,382	0,048	32,429	
0,760	61,57	41,569	0,389	431,89	42,063	3,387	0,047	32,366	
0,770	62,41	41,575	0,394	431,05	42,064	3,392	0,047	32,304	
0,780	63,25	41,581	0,399	430,21	42,064	3,397	0,046	32,241	
0,790	64,09	41,587	0,404	429,37	42,064	3,402	0,045	32,179	
0,800	64,93	41,593	0,409	428,52	42,064	3,407	0,045	32,116	
0,810	65,77	41,599	0,414	427,68	42,064	3,412	0,044	32,054	
0,820	66,61	41,604	0,420	426,84	42,064	3,417	0,043	31,992	
0,830	67,45	41,610	0,425	426,00	42,064	3,423	0,043	31,929	
0,840	68,30	41,616	0,430	425,16	42,064	3,428	0,042	31,867	
0,850	69,14	41,621	0,435	424,32	42,064	3,433	0,041	31,804	
0,860	69,98	41,627	0,440	423,48	42,064	3,438	0,041	31,742	
0,870	70,82	41,632	0,445	422,63	42,064	3,443	0,040	31,680	
0,880	71,66	41,638	0,450	421,79	42,064	3,448	0,040	31,617	
0,890	72,51	41,643	0,455	420,95	42,064	3,453	0,039	31,555	
0,900	73,35	41,649	0,460	420,11	42,064	3,458	0,039	31,493	
0,910	74,19	41,654	0,465	419,26	42,063	3,464	0,038	31,430	
0,920	75,03	41,659	0,470	418,42	42,063	3,469	0,038	31,368	
0,930	75,88	41,665	0,475	417,58	42,063	3,474	0,037	31,306	
0,940	76,72	41,670	0,480	416,73	42,063	3,479	0,037	31,243	
0,950	77,56	41,675	0,485	415,89	42,063	3,484	0,036	31,181	
0,960	78,41	41,680	0,490	415,05	42,063	3,489	0,036	31,119	
0,970	79,25	41,685	0,495	414,20	42,062	3,494	0,035	31,056	
0,980	80,09	41,691	0,500	413,36	42,062	3,500	0,035	30,994	
0,990	80,94	41,696	0,505	412,52	42,062	3,505	0,034	30,932	
1,000	81,78	41,701	0,510	411,67	42,062	3,510	0,034	30,869	
1,010	82,63	41,706	0,516	410,83	42,061	3,515	0,033	30,807	
1,020	83,47	41,711	0,521	409,98	42,061	3,520	0,033	30,745	
1,030	84,32	41,716	0,526	409,14	42,061	3,525	0,033	30,682	
1,040	85,16	41,721	0,531	408,30	42,060	3,530	0,032	30,620	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,050	86,00	41,726	0,536	407,45	42,060	3,536	0,032	30,558	
1,060	86,85	41,731	0,541	406,61	42,060	3,541	0,032	30,495	
1,070	87,69	41,736	0,546	405,76	42,059	3,546	0,031	30,433	
1,080	88,54	41,741	0,551	404,92	42,059	3,551	0,031	30,371	
1,090	89,38	41,745	0,556	404,07	42,059	3,556	0,030	30,308	
1,100	90,23	41,750	0,561	403,23	42,058	3,561	0,030	30,246	
1,110	91,08	41,755	0,566	402,38	42,058	3,567	0,030	30,184	
1,120	91,92	41,760	0,571	401,53	42,057	3,572	0,029	30,121	
1,130	92,77	41,765	0,576	400,69	42,057	3,577	0,029	30,059	
1,140	93,61	41,769	0,581	399,84	42,056	3,582	0,029	29,997	
1,150	94,46	41,774	0,586	399,00	42,056	3,587	0,028	29,935	
1,160	95,31	41,779	0,591	398,15	42,055	3,592	0,028	29,872	
1,170	96,15	41,784	0,596	397,30	42,055	3,598	0,028	29,810	
1,180	97,00	41,788	0,601	396,46	42,054	3,603	0,027	29,748	
1,190	97,85	41,793	0,606	395,61	42,054	3,608	0,027	29,685	
1,200	98,69	41,797	0,612	394,76	42,053	3,613	0,027	29,623	
1,210	99,54	41,802	0,617	393,92	42,052	3,618	0,027	29,561	
1,220	100,39	41,806	0,622	393,07	42,052	3,623	0,026	29,498	
1,230	101,23	41,811	0,627	392,22	42,051	3,629	0,026	29,436	
1,240	102,08	41,815	0,632	391,38	42,051	3,634	0,026	29,374	
1,250	102,93	41,820	0,637	390,53	42,050	3,639	0,025	29,312	
1,260	103,77	41,824	0,642	389,68	42,049	3,644	0,025	29,249	
1,270	104,62	41,828	0,647	388,83	42,049	3,649	0,025	29,187	
1,280	105,47	41,833	0,652	387,99	42,048	3,655	0,025	29,125	
1,290	106,32	41,837	0,657	387,14	42,047	3,660	0,024	29,063	
1,300	107,16	41,841	0,662	386,29	42,046	3,665	0,024	29,000	
1,310	108,01	41,845	0,667	385,44	42,046	3,670	0,024	28,938	
1,320	108,86	41,850	0,672	384,60	42,045	3,675	0,024	28,876	
1,330	109,71	41,854	0,677	383,75	42,044	3,681	0,023	28,813	
1,340	110,56	41,858	0,682	382,90	42,043	3,686	0,023	28,751	
1,350	111,40	41,862	0,687	382,05	42,043	3,691	0,023	28,689	
1,360	112,25	41,866	0,692	381,20	42,042	3,696	0,023	28,627	
1,370	113,10	41,870	0,697	380,35	42,041	3,701	0,023	28,564	
1,380	113,95	41,875	0,702	379,51	42,040	3,706	0,022	28,502	
1,390	114,80	41,879	0,707	378,66	42,039	3,712	0,022	28,440	
1,400	115,65	41,883	0,712	377,81	42,038	3,717	0,022	28,378	
1,410	116,50	41,887	0,717	376,96	42,037	3,722	0,022	28,315	
1,420	117,35	41,891	0,723	376,11	42,037	3,727	0,022	28,253	
1,430	118,19	41,895	0,728	375,26	42,036	3,733	0,021	28,191	
1,440	119,04	41,899	0,733	374,41	42,035	3,738	0,021	28,129	
1,450	119,89	41,903	0,738	373,56	42,034	3,743	0,021	28,066	
1,460	120,74	41,906	0,743	372,71	42,033	3,748	0,021	28,004	
1,470	121,59	41,910	0,748	371,86	42,032	3,753	0,021	27,942	
1,480	122,44	41,914	0,753	371,01	42,031	3,759	0,020	27,880	

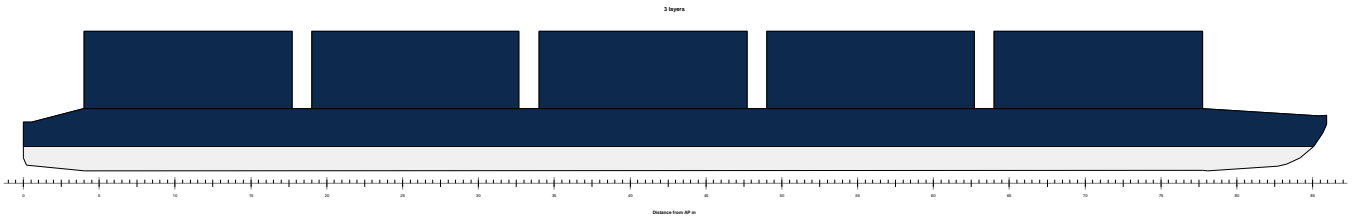
Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,490	123,29	41,918	0,758	370,17	42,030	3,764	0,020	27,817	
1,500	124,14	41,922	0,763	369,32	42,029	3,769	0,020	27,755	
1,510	124,99	41,926	0,768	368,47	42,028	3,774	0,020	27,693	
1,520	125,84	41,929	0,773	367,62	42,027	3,779	0,020	27,631	
1,530	126,69	41,933	0,778	366,77	42,026	3,785	0,019	27,569	
1,540	127,54	41,937	0,783	365,92	42,025	3,790	0,019	27,506	
1,550	128,39	41,940	0,788	365,07	42,023	3,795	0,019	27,444	
1,560	129,24	41,944	0,793	364,22	42,022	3,800	0,019	27,382	
1,570	130,09	41,948	0,798	363,37	42,021	3,806	0,019	27,320	
1,580	130,94	41,951	0,803	362,52	42,020	3,811	0,019	27,257	
1,590	131,79	41,955	0,808	361,67	42,019	3,816	0,018	27,195	
1,600	132,64	41,959	0,813	360,81	42,018	3,821	0,018	27,133	
1,610	133,49	41,962	0,818	359,96	42,017	3,827	0,018	27,071	
1,620	134,34	41,966	0,823	359,11	42,015	3,832	0,018	27,008	
1,630	135,19	41,969	0,828	358,26	42,014	3,837	0,018	26,946	
1,640	136,04	41,973	0,834	357,41	42,013	3,842	0,018	26,884	
1,650	136,89	41,976	0,839	356,56	42,012	3,848	0,017	26,822	
1,660	137,75	41,980	0,844	355,71	42,010	3,853	0,017	26,760	
1,670	138,60	41,983	0,849	354,86	42,009	3,858	0,017	26,697	
1,680	139,45	41,987	0,854	354,01	42,008	3,863	0,017	26,635	
1,690	140,30	41,990	0,859	353,16	42,006	3,869	0,017	26,573	
1,700	141,15	41,994	0,864	352,31	42,005	3,874	0,017	26,511	
1,710	142,00	41,997	0,869	351,45	42,004	3,879	0,017	26,448	
1,720	142,85	42,000	0,874	350,60	42,002	3,884	0,016	26,386	
1,730	143,70	42,004	0,879	349,75	42,001	3,890	0,016	26,324	
1,740	144,56	42,007	0,884	348,90	42,000	3,895	0,016	26,262	
1,750	145,41	42,010	0,889	348,05	41,998	3,900	0,016	26,200	
1,760	146,26	42,014	0,894	347,20	41,997	3,905	0,016	26,137	
1,770	147,11	42,017	0,899	346,34	41,995	3,911	0,016	26,075	
1,780	147,96	42,020	0,904	345,49	41,994	3,916	0,016	26,013	
1,790	148,82	42,024	0,909	344,64	41,992	3,921	0,016	25,951	
1,800	149,67	42,027	0,914	343,79	41,991	3,926	0,015	25,889	
1,810	150,52	42,030	0,919	342,94	41,989	3,932	0,015	25,826	
1,820	151,37	42,033	0,924	342,08	41,988	3,937	0,015	25,764	
1,830	152,22	42,037	0,929	341,23	41,986	3,942	0,015	25,702	
1,840	153,08	42,040	0,934	340,38	41,985	3,947	0,015	25,640	
1,850	153,93	42,043	0,939	339,53	41,983	3,953	0,015	25,577	
1,860	154,78	42,046	0,944	338,67	41,982	3,958	0,015	25,515	
1,870	155,63	42,049	0,950	337,82	41,980	3,963	0,015	25,453	
1,880	156,49	42,052	0,955	336,97	41,978	3,969	0,014	25,391	
1,890	157,34	42,056	0,960	336,12	41,977	3,974	0,014	25,329	
1,900	158,19	42,059	0,965	335,26	41,975	3,979	0,014	25,266	
1,910	159,05	42,062	0,970	334,41	41,973	3,984	0,014	25,204	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,920	159,90	42,065	0,975	333,56	41,972	3,990	0,014	25,142	
1,930	160,75	42,068	0,980	332,70	41,970	3,995	0,014	25,080	
1,940	161,60	42,071	0,985	331,85	41,968	4,000	0,014	25,018	
1,950	162,46	42,074	0,990	331,00	41,966	4,006	0,014	24,955	
1,960	163,31	42,077	0,995	330,15	41,965	4,011	0,014	24,893	
1,970	164,16	42,080	1,000	329,29	41,963	4,016	0,013	24,831	
1,980	165,02	42,083	1,005	328,44	41,961	4,022	0,013	24,769	
1,990	165,87	42,086	1,010	327,59	41,959	4,027	0,013	24,707	
2,000	166,72	42,089	1,015	326,73	41,957	4,032	0,013	24,644	
2,010	167,58	42,092	1,020	325,88	41,956	4,037	0,013	24,582	
2,020	168,43	42,095	1,025	325,03	41,954	4,043	0,013	24,520	
2,030	169,28	42,098	1,030	324,17	41,952	4,048	0,013	24,458	
2,040	170,14	42,100	1,035	323,32	41,950	4,053	0,013	24,396	
2,050	170,99	42,103	1,040	322,46	41,948	4,059	0,013	24,333	
2,060	171,85	42,106	1,045	321,61	41,946	4,064	0,013	24,271	
2,070	172,70	42,109	1,050	320,76	41,944	4,069	0,012	24,209	
2,080	173,55	42,112	1,055	319,90	41,942	4,075	0,012	24,147	
2,090	174,41	42,115	1,060	319,05	41,940	4,080	0,012	24,085	
2,100	175,26	42,118	1,065	318,19	41,938	4,085	0,012	24,022	
2,110	176,12	42,120	1,071	317,34	41,936	4,091	0,012	23,960	
2,120	176,97	42,123	1,076	316,49	41,934	4,096	0,012	23,898	
2,130	177,82	42,126	1,081	315,63	41,932	4,101	0,012	23,836	
2,140	178,68	42,129	1,086	314,78	41,930	4,107	0,012	23,774	
2,150	179,53	42,132	1,091	313,92	41,928	4,112	0,012	23,712	
2,160	180,39	42,134	1,096	313,07	41,925	4,117	0,012	23,649	
2,170	181,24	42,137	1,101	312,21	41,923	4,123	0,012	23,587	
2,180	182,10	42,140	1,106	311,36	41,921	4,128	0,011	23,525	
2,190	182,95	42,143	1,111	310,51	41,919	4,133	0,011	23,463	
2,200	183,81	42,145	1,116	309,65	41,917	4,139	0,011	23,401	
2,210	184,66	42,148	1,121	308,80	41,914	4,144	0,011	23,338	
2,220	185,51	42,151	1,126	307,94	41,912	4,149	0,011	23,276	
2,230	186,37	42,154	1,131	307,09	41,910	4,155	0,011	23,214	
2,240	187,22	42,156	1,136	306,23	41,907	4,160	0,011	23,152	
2,250	188,08	42,159	1,141	305,38	41,905	4,166	0,011	23,090	
2,260	188,93	42,162	1,146	304,52	41,903	4,171	0,011	23,027	
2,270	189,79	42,164	1,151	303,67	41,900	4,176	0,011	22,965	
2,280	190,65	42,167	1,156	302,81	41,898	4,182	0,011	22,903	
2,290	191,50	42,169	1,161	301,96	41,896	4,187	0,011	22,841	
2,300	192,36	42,172	1,166	301,10	41,893	4,192	0,011	22,779	
2,310	193,21	42,175	1,171	300,24	41,891	4,198	0,010	22,716	
2,320	194,07	42,177	1,176	299,39	41,888	4,203	0,010	22,654	
2,330	194,92	42,180	1,181	298,53	41,886	4,209	0,010	22,592	
2,340	195,78	42,183	1,186	297,68	41,883	4,214	0,010	22,530	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
2,350	196,63	42,185	1,192	296,82	41,880	4,219	0,010	22,468	
2,360	197,49	42,188	1,197	295,97	41,878	4,225	0,010	22,406	
2,370	198,34	42,190	1,202	295,11	41,875	4,230	0,010	22,343	
2,380	199,20	42,193	1,207	294,25	41,873	4,235	0,010	22,281	
2,390	200,06	42,195	1,212	293,40	41,870	4,241	0,010	22,219	
2,400	200,91	42,198	1,217	292,54	41,867	4,246	0,010	22,157	
2,410	201,77	42,200	1,222	291,69	41,864	4,252	0,010	22,095	
2,420	202,62	42,203	1,227	290,83	41,862	4,257	0,010	22,032	
2,430	203,48	42,206	1,232	289,97	41,859	4,262	0,010	21,970	
2,440	204,34	42,208	1,237	289,12	41,856	4,268	0,010	21,908	
2,450	205,19	42,211	1,242	288,26	41,853	4,273	0,009	21,846	
2,460	206,05	42,213	1,247	287,41	41,850	4,279	0,009	21,784	
2,470	206,91	42,216	1,252	286,55	41,848	4,284	0,009	21,721	
2,480	207,76	42,218	1,257	285,69	41,845	4,290	0,009	21,659	
2,490	208,62	42,221	1,262	284,84	41,842	4,295	0,009	21,597	
2,500	209,48	42,223	1,267	283,98	41,839	4,300	0,009	21,535	
2,510	210,33	42,225	1,272	283,12	41,836	4,306	0,009	21,473	
2,520	211,19	42,228	1,277	282,27	41,833	4,311	0,009	21,410	
2,530	212,05	42,230	1,282	281,41	41,830	4,317	0,009	21,348	
2,540	212,90	42,233	1,287	280,55	41,827	4,322	0,009	21,286	
2,550	213,76	42,235	1,292	279,70	41,823	4,328	0,009	21,224	
2,560	214,62	42,238	1,297	278,84	41,820	4,333	0,009	21,162	
2,570	215,47	42,240	1,302	277,98	41,817	4,339	0,009	21,099	
2,580	216,33	42,242	1,307	277,12	41,814	4,344	0,009	21,037	
2,590	217,19	42,245	1,313	276,27	41,811	4,349	0,009	20,975	
2,600	218,04	42,247	1,318	275,41	41,808	4,355	0,009	20,913	
2,610	218,90	42,250	1,323	274,55	41,804	4,360	0,008	20,851	
2,620	219,76	42,252	1,328	273,70	41,801	4,366	0,008	20,788	
2,630	220,62	42,254	1,333	272,84	41,798	4,371	0,008	20,726	
2,640	221,47	42,257	1,338	271,98	41,794	4,377	0,008	20,664	
2,650	222,33	42,259	1,343	271,12	41,791	4,382	0,008	20,602	
2,660	223,19	42,261	1,348	270,27	41,788	4,388	0,008	20,540	
2,670	224,05	42,264	1,353	269,41	41,784	4,393	0,008	20,478	
2,680	224,90	42,266	1,358	268,55	41,781	4,399	0,008	20,415	
2,690	225,76	42,268	1,363	267,69	41,777	4,404	0,008	20,353	
2,700	226,62	42,271	1,368	266,84	41,774	4,410	0,008	20,291	
2,710	227,48	42,273	1,373	265,98	41,770	4,415	0,008	20,229	
2,720	228,33	42,275	1,378	265,12	41,766	4,421	0,008	20,167	
2,730	229,19	42,277	1,383	264,26	41,763	4,426	0,008	20,104	
2,740	230,05	42,280	1,388	263,41	41,759	4,432	0,008	20,042	
2,750	230,91	42,282	1,393	262,55	41,756	4,437	0,008	19,980	
2,760	231,76	42,284	1,398	261,69	41,752	4,443	0,008	19,918	
2,770	232,62	42,286	1,403	260,83	41,748	4,448	0,008	19,856	
2,780	233,48	42,289	1,408	259,98	41,744	4,454	0,008	19,794	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
2,790	234,34	42,291	1,413	259,12	41,741	4,459	0,007	19,731	
2,800	235,20	42,293	1,418	258,26	41,737	4,465	0,007	19,669	

Wind silhouette : 3 layers



Wind pressure 25,00 kg/m²

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
0,200	15,07	40,974	0,104	674,98	41,699	4,453	0,446	73,395	
0,210	15,87	41,006	0,109	674,17	41,699	4,458	0,424	73,306	
0,220	16,68	41,038	0,114	673,37	41,699	4,463	0,403	73,218	
0,230	17,49	41,066	0,119	672,56	41,699	4,468	0,384	73,129	
0,240	18,30	41,092	0,124	671,75	41,699	4,473	0,367	73,041	
0,250	19,11	41,115	0,129	670,94	41,699	4,479	0,351	72,952	
0,260	19,92	41,136	0,134	670,13	41,699	4,484	0,336	72,864	
0,270	20,74	41,155	0,140	669,31	41,699	4,489	0,323	72,775	
0,280	21,56	41,172	0,145	668,49	41,700	4,494	0,310	72,686	
0,290	22,38	41,188	0,150	667,67	41,700	4,499	0,298	72,598	
0,300	23,20	41,203	0,155	666,85	41,700	4,504	0,287	72,509	
0,310	24,02	41,216	0,160	666,03	41,700	4,510	0,277	72,420	
0,320	24,85	41,228	0,165	665,20	41,700	4,515	0,268	72,332	
0,330	25,67	41,239	0,170	664,38	41,700	4,520	0,259	72,243	
0,340	26,50	41,250	0,176	663,55	41,700	4,525	0,250	72,155	
0,350	27,32	41,260	0,181	662,72	41,701	4,530	0,242	72,066	
0,360	28,15	41,270	0,186	661,90	41,701	4,536	0,235	71,978	
0,370	28,98	41,280	0,191	661,07	41,701	4,541	0,228	71,889	
0,380	29,81	41,290	0,196	660,24	41,701	4,546	0,221	71,801	
0,390	30,64	41,299	0,201	659,41	41,701	4,551	0,215	71,713	
0,400	31,47	41,308	0,206	658,58	41,701	4,557	0,209	71,625	
0,410	32,30	41,318	0,211	657,75	41,701	4,562	0,203	71,537	
0,420	33,13	41,327	0,216	656,92	41,701	4,567	0,198	71,448	
0,430	33,96	41,336	0,222	656,09	41,701	4,572	0,192	71,360	
0,440	34,79	41,345	0,227	655,25	41,701	4,578	0,188	71,272	
0,450	35,63	41,353	0,232	654,42	41,701	4,583	0,183	71,184	
0,460	36,46	41,362	0,237	653,59	41,701	4,588	0,178	71,096	
0,470	37,29	41,370	0,242	652,76	41,701	4,593	0,174	71,008	
0,480	38,13	41,378	0,247	651,92	41,701	4,599	0,170	70,921	
0,490	38,96	41,386	0,252	651,09	41,701	4,604	0,166	70,833	
0,500	39,79	41,394	0,257	650,26	41,701	4,609	0,162	70,745	
0,510	40,63	41,402	0,262	649,42	41,701	4,614	0,159	70,657	
0,520	41,46	41,410	0,267	648,59	41,701	4,620	0,155	70,569	
0,530	42,30	41,417	0,273	647,75	41,700	4,625	0,152	70,482	
0,540	43,13	41,425	0,278	646,92	41,700	4,630	0,149	70,394	
0,550	43,97	41,432	0,283	646,08	41,700	4,635	0,145	70,306	
0,560	44,80	41,439	0,288	645,25	41,700	4,641	0,143	70,219	
0,570	45,64	41,447	0,293	644,41	41,700	4,646	0,140	70,131	
0,580	46,48	41,454	0,298	643,57	41,700	4,651	0,137	70,044	
0,590	47,31	41,461	0,303	642,74	41,699	4,657	0,134	69,956	
0,600	48,15	41,468	0,308	641,90	41,699	4,662	0,132	69,868	
0,610	48,99	41,475	0,313	641,06	41,699	4,667	0,129	69,781	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
0,620	49,82	41,482	0,318	640,22	41,699	4,673	0,127	69,693	
0,630	50,66	41,489	0,323	639,39	41,699	4,678	0,125	69,606	
0,640	51,50	41,495	0,328	638,55	41,698	4,683	0,122	69,518	
0,650	52,34	41,502	0,333	637,71	41,698	4,688	0,120	69,431	
0,660	53,18	41,508	0,339	636,87	41,698	4,694	0,118	69,343	
0,670	54,01	41,514	0,344	636,03	41,697	4,699	0,116	69,256	
0,680	54,85	41,521	0,349	635,20	41,697	4,704	0,114	69,169	
0,690	55,69	41,527	0,354	634,36	41,697	4,710	0,112	69,081	
0,700	56,53	41,533	0,359	633,52	41,696	4,715	0,110	68,994	
0,710	57,37	41,539	0,364	632,68	41,696	4,720	0,109	68,906	
0,720	58,21	41,546	0,369	631,84	41,696	4,726	0,107	68,819	
0,730	59,05	41,552	0,374	631,00	41,695	4,731	0,105	68,732	
0,740	59,89	41,558	0,379	630,16	41,695	4,736	0,104	68,644	
0,750	60,73	41,564	0,384	629,32	41,695	4,742	0,102	68,557	
0,760	61,57	41,569	0,389	628,48	41,694	4,747	0,100	68,470	
0,770	62,41	41,575	0,394	627,64	41,694	4,752	0,099	68,383	
0,780	63,25	41,581	0,399	626,80	41,693	4,758	0,097	68,295	
0,790	64,09	41,587	0,404	625,96	41,693	4,763	0,096	68,208	
0,800	64,93	41,593	0,409	625,12	41,693	4,768	0,095	68,121	
0,810	65,77	41,599	0,414	624,28	41,692	4,774	0,093	68,033	
0,820	66,61	41,604	0,420	623,44	41,692	4,779	0,092	67,946	
0,830	67,45	41,610	0,425	622,59	41,691	4,784	0,091	67,859	
0,840	68,30	41,616	0,430	621,75	41,691	4,790	0,089	67,772	
0,850	69,14	41,621	0,435	620,91	41,690	4,795	0,088	67,684	
0,860	69,98	41,627	0,440	620,07	41,689	4,800	0,087	67,597	
0,870	70,82	41,632	0,445	619,23	41,689	4,806	0,086	67,510	
0,880	71,66	41,638	0,450	618,38	41,688	4,811	0,085	67,423	
0,890	72,51	41,643	0,455	617,54	41,688	4,816	0,084	67,335	
0,900	73,35	41,649	0,460	616,70	41,687	4,822	0,083	67,248	
0,910	74,19	41,654	0,465	615,86	41,687	4,827	0,081	67,161	
0,920	75,03	41,659	0,470	615,01	41,686	4,832	0,080	67,074	
0,930	75,88	41,665	0,475	614,17	41,685	4,838	0,079	66,987	
0,940	76,72	41,670	0,480	613,33	41,685	4,843	0,078	66,900	
0,950	77,56	41,675	0,485	612,49	41,684	4,849	0,077	66,812	
0,960	78,41	41,680	0,490	611,64	41,683	4,854	0,077	66,725	
0,970	79,25	41,685	0,495	610,80	41,683	4,859	0,076	66,638	
0,980	80,09	41,691	0,500	609,95	41,682	4,865	0,075	66,551	
0,990	80,94	41,696	0,505	609,11	41,681	4,870	0,074	66,464	
1,000	81,78	41,701	0,510	608,27	41,681	4,875	0,073	66,377	
1,010	82,63	41,706	0,516	607,42	41,680	4,881	0,072	66,289	
1,020	83,47	41,711	0,521	606,58	41,679	4,886	0,071	66,202	
1,030	84,32	41,716	0,526	605,73	41,679	4,892	0,070	66,115	
1,040	85,16	41,721	0,531	604,89	41,678	4,897	0,070	66,028	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,050	86,00	41,726	0,536	604,04	41,677	4,902	0,069	65,941	
1,060	86,85	41,731	0,541	603,20	41,676	4,908	0,068	65,854	
1,070	87,69	41,736	0,546	602,36	41,675	4,913	0,067	65,767	
1,080	88,54	41,741	0,551	601,51	41,675	4,919	0,067	65,679	
1,090	89,38	41,745	0,556	600,66	41,674	4,924	0,066	65,592	
1,100	90,23	41,750	0,561	599,82	41,673	4,929	0,065	65,505	
1,110	91,08	41,755	0,566	598,97	41,672	4,935	0,064	65,418	
1,120	91,92	41,760	0,571	598,13	41,671	4,940	0,064	65,331	
1,130	92,77	41,765	0,576	597,28	41,670	4,946	0,063	65,244	
1,140	93,61	41,769	0,581	596,44	41,670	4,951	0,062	65,157	
1,150	94,46	41,774	0,586	595,59	41,669	4,956	0,062	65,069	
1,160	95,31	41,779	0,591	594,74	41,668	4,962	0,061	64,982	
1,170	96,15	41,784	0,596	593,90	41,667	4,967	0,060	64,895	
1,180	97,00	41,788	0,601	593,05	41,666	4,973	0,060	64,808	
1,190	97,85	41,793	0,606	592,20	41,665	4,978	0,059	64,721	
1,200	98,69	41,797	0,612	591,36	41,664	4,983	0,059	64,634	
1,210	99,54	41,802	0,617	590,51	41,663	4,989	0,058	64,547	
1,220	100,39	41,806	0,622	589,66	41,662	4,994	0,058	64,460	
1,230	101,23	41,811	0,627	588,82	41,661	5,000	0,057	64,373	
1,240	102,08	41,815	0,632	587,97	41,660	5,005	0,056	64,286	
1,250	102,93	41,820	0,637	587,12	41,659	5,011	0,056	64,198	
1,260	103,77	41,824	0,642	586,28	41,658	5,016	0,055	64,111	
1,270	104,62	41,828	0,647	585,43	41,657	5,021	0,055	64,024	
1,280	105,47	41,833	0,652	584,58	41,656	5,027	0,054	63,937	
1,290	106,32	41,837	0,657	583,73	41,655	5,032	0,054	63,850	
1,300	107,16	41,841	0,662	582,88	41,654	5,038	0,053	63,763	
1,310	108,01	41,845	0,667	582,04	41,653	5,043	0,053	63,676	
1,320	108,86	41,850	0,672	581,19	41,652	5,049	0,052	63,589	
1,330	109,71	41,854	0,677	580,34	41,651	5,054	0,052	63,502	
1,340	110,56	41,858	0,682	579,49	41,650	5,059	0,051	63,415	
1,350	111,40	41,862	0,687	578,64	41,649	5,065	0,051	63,328	
1,360	112,25	41,866	0,692	577,80	41,648	5,070	0,050	63,241	
1,370	113,10	41,870	0,697	576,95	41,646	5,076	0,050	63,154	
1,380	113,95	41,875	0,702	576,10	41,645	5,081	0,049	63,067	
1,390	114,80	41,879	0,707	575,25	41,644	5,087	0,049	62,979	
1,400	115,65	41,883	0,712	574,40	41,643	5,092	0,049	62,892	
1,410	116,50	41,887	0,717	573,55	41,642	5,098	0,048	62,805	
1,420	117,35	41,891	0,723	572,70	41,641	5,103	0,048	62,718	
1,430	118,19	41,895	0,728	571,85	41,639	5,109	0,047	62,631	
1,440	119,04	41,899	0,733	571,01	41,638	5,114	0,047	62,544	
1,450	119,89	41,903	0,738	570,16	41,637	5,119	0,047	62,457	
1,460	120,74	41,906	0,743	569,31	41,636	5,125	0,046	62,370	
1,470	121,59	41,910	0,748	568,46	41,635	5,130	0,046	62,283	
1,480	122,44	41,914	0,753	567,61	41,633	5,136	0,045	62,196	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,490	123,29	41,918	0,758	566,76	41,632	5,141	0,045	62,109	
1,500	124,14	41,922	0,763	565,91	41,631	5,147	0,045	62,022	
1,510	124,99	41,926	0,768	565,06	41,630	5,152	0,044	61,935	
1,520	125,84	41,929	0,773	564,21	41,628	5,158	0,044	61,848	
1,530	126,69	41,933	0,778	563,36	41,627	5,163	0,044	61,761	
1,540	127,54	41,937	0,783	562,51	41,626	5,169	0,043	61,674	
1,550	128,39	41,940	0,788	561,66	41,624	5,174	0,043	61,587	
1,560	129,24	41,944	0,793	560,81	41,623	5,180	0,042	61,500	
1,570	130,09	41,948	0,798	559,96	41,622	5,185	0,042	61,413	
1,580	130,94	41,951	0,803	559,11	41,620	5,191	0,042	61,326	
1,590	131,79	41,955	0,808	558,26	41,619	5,196	0,041	61,239	
1,600	132,64	41,959	0,813	557,41	41,618	5,202	0,041	61,152	
1,610	133,49	41,962	0,818	556,56	41,616	5,207	0,041	61,065	
1,620	134,34	41,966	0,823	555,71	41,615	5,213	0,040	60,978	
1,630	135,19	41,969	0,828	554,86	41,613	5,218	0,040	60,891	
1,640	136,04	41,973	0,834	554,01	41,612	5,224	0,040	60,804	
1,650	136,89	41,976	0,839	553,15	41,611	5,229	0,040	60,717	
1,660	137,75	41,980	0,844	552,30	41,609	5,235	0,039	60,630	
1,670	138,60	41,983	0,849	551,45	41,608	5,240	0,039	60,543	
1,680	139,45	41,987	0,854	550,60	41,606	5,246	0,039	60,456	
1,690	140,30	41,990	0,859	549,75	41,605	5,251	0,038	60,369	
1,700	141,15	41,994	0,864	548,90	41,603	5,257	0,038	60,282	
1,710	142,00	41,997	0,869	548,05	41,602	5,262	0,038	60,195	
1,720	142,85	42,000	0,874	547,20	41,600	5,268	0,038	60,108	
1,730	143,70	42,004	0,879	546,34	41,599	5,273	0,037	60,021	
1,740	144,56	42,007	0,884	545,49	41,597	5,279	0,037	59,934	
1,750	145,41	42,010	0,889	544,64	41,596	5,284	0,037	59,847	
1,760	146,26	42,014	0,894	543,79	41,594	5,290	0,036	59,760	
1,770	147,11	42,017	0,899	542,94	41,593	5,295	0,036	59,673	
1,780	147,96	42,020	0,904	542,09	41,591	5,301	0,036	59,586	
1,790	148,82	42,024	0,909	541,23	41,589	5,306	0,036	59,499	
1,800	149,67	42,027	0,914	540,38	41,588	5,312	0,035	59,412	
1,810	150,52	42,030	0,919	539,53	41,586	5,318	0,035	59,325	
1,820	151,37	42,033	0,924	538,68	41,585	5,323	0,035	59,238	
1,830	152,22	42,037	0,929	537,82	41,583	5,329	0,035	59,151	
1,840	153,08	42,040	0,934	536,97	41,581	5,334	0,034	59,064	
1,850	153,93	42,043	0,939	536,12	41,580	5,340	0,034	58,977	
1,860	154,78	42,046	0,944	535,27	41,578	5,345	0,034	58,890	
1,870	155,63	42,049	0,950	534,41	41,576	5,351	0,034	58,803	
1,880	156,49	42,052	0,955	533,56	41,575	5,356	0,033	58,716	
1,890	157,34	42,056	0,960	532,71	41,573	5,362	0,033	58,629	
1,900	158,19	42,059	0,965	531,86	41,571	5,367	0,033	58,542	
1,910	159,05	42,062	0,970	531,00	41,570	5,373	0,033	58,455	

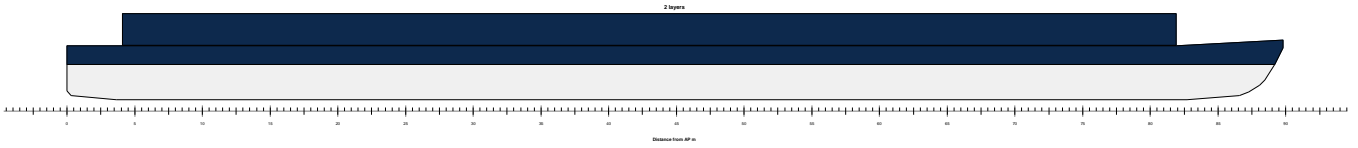
Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,920	159,90	42,065	0,975	530,15	41,568	5,379	0,032	58,368	
1,930	160,75	42,068	0,980	529,30	41,566	5,384	0,032	58,281	
1,940	161,60	42,071	0,985	528,45	41,565	5,390	0,032	58,194	
1,950	162,46	42,074	0,990	527,59	41,563	5,395	0,032	58,107	
1,960	163,31	42,077	0,995	526,74	41,561	5,401	0,032	58,020	
1,970	164,16	42,080	1,000	525,89	41,559	5,406	0,031	57,933	
1,980	165,02	42,083	1,005	525,03	41,557	5,412	0,031	57,846	
1,990	165,87	42,086	1,010	524,18	41,556	5,418	0,031	57,759	
2,000	166,72	42,089	1,015	523,33	41,554	5,423	0,031	57,672	
2,010	167,58	42,092	1,020	522,47	41,552	5,429	0,031	57,585	
2,020	168,43	42,095	1,025	521,62	41,550	5,434	0,030	57,498	
2,030	169,28	42,098	1,030	520,77	41,548	5,440	0,030	57,411	
2,040	170,14	42,100	1,035	519,91	41,547	5,446	0,030	57,324	
2,050	170,99	42,103	1,040	519,06	41,545	5,451	0,030	57,237	
2,060	171,85	42,106	1,045	518,20	41,543	5,457	0,030	57,150	
2,070	172,70	42,109	1,050	517,35	41,541	5,462	0,029	57,063	
2,080	173,55	42,112	1,055	516,50	41,539	5,468	0,029	56,976	
2,090	174,41	42,115	1,060	515,64	41,537	5,474	0,029	56,889	
2,100	175,26	42,118	1,065	514,79	41,535	5,479	0,029	56,802	
2,110	176,12	42,120	1,071	513,93	41,533	5,485	0,029	56,715	
2,120	176,97	42,123	1,076	513,08	41,531	5,490	0,028	56,628	
2,130	177,82	42,126	1,081	512,23	41,529	5,496	0,028	56,541	
2,140	178,68	42,129	1,086	511,37	41,527	5,502	0,028	56,454	
2,150	179,53	42,132	1,091	510,52	41,525	5,507	0,028	56,367	
2,160	180,39	42,134	1,096	509,66	41,523	5,513	0,028	56,280	
2,170	181,24	42,137	1,101	508,81	41,521	5,518	0,028	56,193	
2,180	182,10	42,140	1,106	507,95	41,519	5,524	0,027	56,106	
2,190	182,95	42,143	1,111	507,10	41,517	5,530	0,027	56,019	
2,200	183,81	42,145	1,116	506,24	41,515	5,535	0,027	55,932	
2,210	184,66	42,148	1,121	505,39	41,513	5,541	0,027	55,845	
2,220	185,51	42,151	1,126	504,53	41,511	5,547	0,027	55,758	
2,230	186,37	42,154	1,131	503,68	41,509	5,552	0,027	55,671	
2,240	187,22	42,156	1,136	502,82	41,507	5,558	0,026	55,585	
2,250	188,08	42,159	1,141	501,97	41,505	5,563	0,026	55,498	
2,260	188,93	42,162	1,146	501,11	41,503	5,569	0,026	55,411	
2,270	189,79	42,164	1,151	500,26	41,501	5,575	0,026	55,324	
2,280	190,65	42,167	1,156	499,40	41,498	5,580	0,026	55,237	
2,290	191,50	42,169	1,161	498,55	41,496	5,586	0,026	55,150	
2,300	192,36	42,172	1,166	497,69	41,494	5,592	0,025	55,063	
2,310	193,21	42,175	1,171	496,84	41,492	5,597	0,025	54,976	
2,320	194,07	42,177	1,176	495,98	41,490	5,603	0,025	54,889	
2,330	194,92	42,180	1,181	495,13	41,488	5,609	0,025	54,802	
2,340	195,78	42,183	1,186	494,27	41,485	5,614	0,025	54,715	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
2,350	196,63	42,185	1,192	493,42	41,483	5,620	0,025	54,628	
2,360	197,49	42,188	1,197	492,56	41,481	5,626	0,025	54,541	
2,370	198,34	42,190	1,202	491,70	41,479	5,631	0,024	54,454	
2,380	199,20	42,193	1,207	490,85	41,476	5,637	0,024	54,367	
2,390	200,06	42,195	1,212	489,99	41,474	5,643	0,024	54,280	
2,400	200,91	42,198	1,217	489,14	41,472	5,648	0,024	54,193	
2,410	201,77	42,200	1,222	488,28	41,469	5,654	0,024	54,106	
2,420	202,62	42,203	1,227	487,42	41,467	5,660	0,024	54,019	
2,430	203,48	42,206	1,232	486,57	41,465	5,666	0,024	53,932	
2,440	204,34	42,208	1,237	485,71	41,462	5,671	0,023	53,845	
2,450	205,19	42,211	1,242	484,86	41,460	5,677	0,023	53,758	
2,460	206,05	42,213	1,247	484,00	41,458	5,683	0,023	53,671	
2,470	206,91	42,216	1,252	483,14	41,455	5,688	0,023	53,584	
2,480	207,76	42,218	1,257	482,29	41,453	5,694	0,023	53,497	
2,490	208,62	42,221	1,262	481,43	41,450	5,700	0,023	53,410	
2,500	209,48	42,223	1,267	480,57	41,448	5,705	0,023	53,323	
2,510	210,33	42,225	1,272	479,72	41,445	5,711	0,022	53,236	
2,520	211,19	42,228	1,277	478,86	41,443	5,717	0,022	53,149	
2,530	212,05	42,230	1,282	478,00	41,440	5,723	0,022	53,062	
2,540	212,90	42,233	1,287	477,15	41,438	5,728	0,022	52,975	
2,550	213,76	42,235	1,292	476,29	41,435	5,734	0,022	52,888	
2,560	214,62	42,238	1,297	475,43	41,433	5,740	0,022	52,801	
2,570	215,47	42,240	1,302	474,58	41,430	5,746	0,022	52,714	
2,580	216,33	42,242	1,307	473,72	41,428	5,751	0,022	52,627	
2,590	217,19	42,245	1,313	472,86	41,425	5,757	0,021	52,541	
2,600	218,04	42,247	1,318	472,00	41,423	5,763	0,021	52,454	
2,610	218,90	42,250	1,323	471,15	41,420	5,768	0,021	52,367	
2,620	219,76	42,252	1,328	470,29	41,417	5,774	0,021	52,280	
2,630	220,62	42,254	1,333	469,43	41,415	5,780	0,021	52,193	
2,640	221,47	42,257	1,338	468,58	41,412	5,786	0,021	52,106	
2,650	222,33	42,259	1,343	467,72	41,409	5,791	0,021	52,019	
2,660	223,19	42,261	1,348	466,86	41,407	5,797	0,021	51,932	
2,670	224,05	42,264	1,353	466,00	41,404	5,803	0,021	51,845	
2,680	224,90	42,266	1,358	465,15	41,401	5,809	0,020	51,758	
2,690	225,76	42,268	1,363	464,29	41,399	5,815	0,020	51,671	
2,700	226,62	42,271	1,368	463,43	41,396	5,820	0,020	51,584	
2,710	227,48	42,273	1,373	462,57	41,393	5,826	0,020	51,497	
2,720	228,33	42,275	1,378	461,72	41,390	5,832	0,020	51,410	
2,730	229,19	42,277	1,383	460,86	41,388	5,838	0,020	51,323	
2,740	230,05	42,280	1,388	460,00	41,385	5,843	0,020	51,236	
2,750	230,91	42,282	1,393	459,14	41,382	5,849	0,020	51,149	
2,760	231,76	42,284	1,398	458,28	41,379	5,855	0,020	51,062	
2,770	232,62	42,286	1,403	457,43	41,376	5,861	0,019	50,975	
2,780	233,48	42,289	1,408	456,57	41,374	5,867	0,019	50,888	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
2,790	234,34	42,291	1,413	455,71	41,371	5,872	0,019	50,801	
2,800	235,20	42,293	1,418	454,85	41,368	5,878	0,019	50,714	

Calculation of wind moments

Wind silhouette : 2 layers



Wind pressure 25,00 kg/m²

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
0,200	16,26	43,502	0,101	523,21	44,021	3,211	0,164	40,680	
0,210	17,10	43,493	0,106	522,37	44,022	3,216	0,156	40,612	
0,220	17,94	43,486	0,111	521,53	44,023	3,221	0,148	40,543	
0,230	18,78	43,479	0,116	520,69	44,025	3,226	0,141	40,474	
0,240	19,63	43,474	0,121	519,84	44,026	3,230	0,135	40,405	
0,250	20,47	43,470	0,126	519,00	44,027	3,235	0,129	40,336	
0,260	21,32	43,467	0,132	518,15	44,028	3,240	0,124	40,267	
0,270	22,17	43,464	0,137	517,30	44,029	3,245	0,119	40,198	
0,280	23,02	43,461	0,142	516,45	44,030	3,250	0,114	40,129	
0,290	23,88	43,458	0,147	515,59	44,031	3,255	0,110	40,060	
0,300	24,73	43,456	0,152	514,74	44,032	3,260	0,106	39,991	
0,310	25,59	43,454	0,157	513,88	44,033	3,265	0,102	39,922	
0,320	26,45	43,452	0,162	513,02	44,034	3,270	0,098	39,853	
0,330	27,31	43,450	0,167	512,16	44,035	3,275	0,095	39,784	
0,340	28,17	43,449	0,173	511,30	44,036	3,280	0,092	39,715	
0,350	29,04	43,448	0,178	510,43	44,037	3,284	0,089	39,645	
0,360	29,90	43,447	0,183	509,57	44,038	3,289	0,086	39,576	
0,370	30,76	43,446	0,188	508,71	44,039	3,294	0,084	39,507	
0,380	31,63	43,446	0,193	507,84	44,040	3,299	0,081	39,438	
0,390	32,50	43,445	0,198	506,97	44,042	3,304	0,079	39,369	
0,400	33,36	43,445	0,203	506,11	44,043	3,309	0,077	39,300	
0,410	34,23	43,445	0,208	505,24	44,044	3,314	0,075	39,231	
0,420	35,10	43,445	0,213	504,37	44,045	3,319	0,073	39,162	
0,430	35,96	43,446	0,219	503,51	44,046	3,324	0,071	39,094	
0,440	36,83	43,447	0,224	502,64	44,047	3,329	0,069	39,025	
0,450	37,70	43,448	0,229	501,77	44,047	3,334	0,067	38,956	
0,460	38,57	43,450	0,234	500,90	44,048	3,339	0,065	38,887	
0,470	39,44	43,452	0,239	500,03	44,049	3,344	0,064	38,819	
0,480	40,31	43,453	0,244	499,16	44,050	3,349	0,062	38,750	
0,490	41,18	43,455	0,249	498,29	44,051	3,354	0,061	38,681	
0,500	42,05	43,457	0,254	497,42	44,052	3,359	0,059	38,613	
0,510	42,92	43,459	0,259	496,55	44,053	3,364	0,058	38,544	
0,520	43,79	43,461	0,264	495,68	44,054	3,369	0,057	38,476	
0,530	44,66	43,464	0,270	494,81	44,055	3,374	0,056	38,407	
0,540	45,53	43,466	0,275	493,94	44,055	3,379	0,054	38,339	
0,550	46,40	43,469	0,280	493,07	44,056	3,384	0,053	38,270	
0,560	47,27	43,471	0,285	492,20	44,057	3,389	0,052	38,202	
0,570	48,15	43,474	0,290	491,32	44,058	3,394	0,051	38,133	
0,580	49,02	43,477	0,295	490,45	44,058	3,399	0,050	38,065	
0,590	49,89	43,480	0,300	489,58	44,059	3,404	0,049	37,996	
0,600	50,76	43,483	0,305	488,71	44,060	3,409	0,048	37,928	
0,610	51,64	43,486	0,310	487,83	44,061	3,414	0,047	37,860	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
0,620	52,51	43,489	0,315	486,96	44,061	3,419	0,046	37,791	
0,630	53,38	43,492	0,320	486,09	44,062	3,424	0,045	37,723	
0,640	54,26	43,495	0,325	485,21	44,063	3,429	0,045	37,655	
0,650	55,13	43,498	0,330	484,34	44,063	3,434	0,044	37,586	
0,660	56,00	43,501	0,335	483,47	44,064	3,440	0,043	37,518	
0,670	56,88	43,504	0,341	482,59	44,065	3,445	0,042	37,450	
0,680	57,75	43,507	0,346	481,72	44,065	3,450	0,042	37,381	
0,690	58,63	43,510	0,351	480,84	44,066	3,455	0,041	37,313	
0,700	59,50	43,514	0,356	479,97	44,067	3,460	0,040	37,245	
0,710	60,38	43,517	0,361	479,09	44,067	3,465	0,039	37,176	
0,720	61,25	43,520	0,366	478,22	44,068	3,470	0,039	37,108	
0,730	62,13	43,523	0,371	477,34	44,068	3,475	0,038	37,040	
0,740	63,00	43,527	0,376	476,47	44,069	3,480	0,038	36,972	
0,750	63,88	43,530	0,381	475,59	44,069	3,485	0,037	36,904	
0,760	64,75	43,534	0,386	474,72	44,070	3,490	0,036	36,835	
0,770	65,63	43,537	0,391	473,84	44,071	3,495	0,036	36,767	
0,780	66,50	43,540	0,396	472,97	44,071	3,500	0,035	36,699	
0,790	67,38	43,544	0,401	472,09	44,071	3,505	0,035	36,631	
0,800	68,26	43,547	0,406	471,21	44,072	3,510	0,034	36,563	
0,810	69,13	43,551	0,411	470,34	44,072	3,515	0,034	36,494	
0,820	70,01	43,554	0,416	469,46	44,073	3,520	0,033	36,426	
0,830	70,89	43,558	0,421	468,58	44,073	3,525	0,033	36,358	
0,840	71,76	43,562	0,426	467,71	44,074	3,530	0,032	36,290	
0,850	72,64	43,565	0,432	466,83	44,074	3,535	0,032	36,222	
0,860	73,52	43,569	0,437	465,95	44,075	3,540	0,031	36,154	
0,870	74,39	43,572	0,442	465,08	44,075	3,545	0,031	36,085	
0,880	75,27	43,576	0,447	464,20	44,075	3,550	0,030	36,017	
0,890	76,15	43,579	0,452	463,32	44,076	3,555	0,030	35,949	
0,900	77,03	43,583	0,457	462,44	44,076	3,560	0,030	35,881	
0,910	77,91	43,587	0,462	461,56	44,076	3,565	0,029	35,813	
0,920	78,78	43,590	0,467	460,69	44,077	3,571	0,029	35,745	
0,930	79,66	43,594	0,472	459,81	44,077	3,576	0,028	35,677	
0,940	80,54	43,597	0,477	458,93	44,077	3,581	0,028	35,609	
0,950	81,42	43,601	0,482	458,05	44,078	3,586	0,028	35,541	
0,960	82,30	43,604	0,487	457,17	44,078	3,591	0,027	35,472	
0,970	83,18	43,608	0,492	456,29	44,078	3,596	0,027	35,404	
0,980	84,06	43,612	0,497	455,41	44,078	3,601	0,027	35,336	
0,990	84,93	43,615	0,502	454,54	44,079	3,606	0,026	35,268	
1,000	85,81	43,619	0,507	453,66	44,079	3,611	0,026	35,200	
1,010	86,69	43,623	0,512	452,78	44,079	3,616	0,026	35,132	
1,020	87,57	43,626	0,517	451,90	44,079	3,621	0,025	35,064	
1,030	88,45	43,630	0,522	451,02	44,079	3,626	0,025	34,996	
1,040	89,33	43,633	0,527	450,14	44,079	3,631	0,025	34,928	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,050	90,21	43,637	0,533	449,26	44,080	3,636	0,025	34,860	
1,060	91,09	43,641	0,538	448,38	44,080	3,641	0,024	34,791	
1,070	91,97	43,644	0,543	447,50	44,080	3,646	0,024	34,723	
1,080	92,85	43,648	0,548	446,62	44,080	3,651	0,024	34,655	
1,090	93,73	43,652	0,553	445,74	44,080	3,657	0,023	34,587	
1,100	94,62	43,655	0,558	444,85	44,080	3,662	0,023	34,519	
1,110	95,50	43,659	0,563	443,97	44,080	3,667	0,023	34,451	
1,120	96,38	43,662	0,568	443,09	44,080	3,672	0,023	34,383	
1,130	97,26	43,666	0,573	442,21	44,080	3,677	0,022	34,315	
1,140	98,14	43,670	0,578	441,33	44,080	3,682	0,022	34,247	
1,150	99,02	43,673	0,583	440,45	44,080	3,687	0,022	34,179	
1,160	99,90	43,677	0,588	439,57	44,080	3,692	0,022	34,111	
1,170	100,78	43,680	0,593	438,69	44,080	3,697	0,021	34,043	
1,180	101,67	43,684	0,598	437,80	44,080	3,702	0,021	33,975	
1,190	102,55	43,687	0,603	436,92	44,080	3,707	0,021	33,907	
1,200	103,43	43,690	0,608	436,04	44,080	3,712	0,021	33,839	
1,210	104,31	43,694	0,613	435,16	44,080	3,717	0,020	33,770	
1,220	105,19	43,697	0,618	434,28	44,080	3,723	0,020	33,702	
1,230	106,07	43,701	0,623	433,40	44,080	3,728	0,020	33,634	
1,240	106,96	43,704	0,628	432,51	44,080	3,733	0,020	33,566	
1,250	107,84	43,707	0,633	431,63	44,080	3,738	0,020	33,498	
1,260	108,72	43,711	0,639	430,75	44,080	3,743	0,019	33,430	
1,270	109,60	43,714	0,644	429,87	44,080	3,748	0,019	33,362	
1,280	110,49	43,717	0,649	428,98	44,080	3,753	0,019	33,294	
1,290	111,37	43,721	0,654	428,10	44,080	3,758	0,019	33,226	
1,300	112,25	43,724	0,659	427,22	44,080	3,763	0,019	33,158	
1,310	113,13	43,727	0,664	426,34	44,080	3,768	0,018	33,090	
1,320	114,02	43,730	0,669	425,45	44,079	3,773	0,018	33,022	
1,330	114,90	43,734	0,674	424,57	44,079	3,779	0,018	32,954	
1,340	115,78	43,737	0,679	423,69	44,079	3,784	0,018	32,886	
1,350	116,67	43,740	0,684	422,80	44,079	3,789	0,018	32,818	
1,360	117,55	43,743	0,689	421,92	44,079	3,794	0,018	32,750	
1,370	118,43	43,746	0,694	421,04	44,079	3,799	0,017	32,682	
1,380	119,32	43,749	0,699	420,15	44,078	3,804	0,017	32,614	
1,390	120,20	43,753	0,704	419,27	44,078	3,809	0,017	32,546	
1,400	121,08	43,756	0,709	418,39	44,078	3,814	0,017	32,478	
1,410	121,97	43,759	0,714	417,50	44,078	3,819	0,017	32,410	
1,420	122,85	43,762	0,719	416,62	44,077	3,824	0,017	32,342	
1,430	123,74	43,765	0,724	415,73	44,077	3,830	0,016	32,274	
1,440	124,62	43,768	0,729	414,85	44,077	3,835	0,016	32,206	
1,450	125,50	43,771	0,734	413,97	44,077	3,840	0,016	32,138	
1,460	126,39	43,774	0,739	413,08	44,076	3,845	0,016	32,070	
1,470	127,27	43,777	0,744	412,20	44,076	3,850	0,016	32,002	
1,480	128,16	43,781	0,749	411,31	44,076	3,855	0,016	31,934	

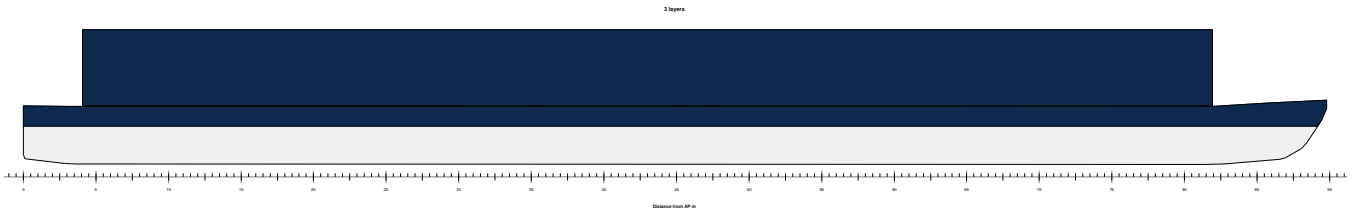
Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,490	129,04	43,784	0,754	410,43	44,075	3,860	0,016	31,866	
1,500	129,93	43,787	0,760	409,54	44,075	3,865	0,015	31,798	
1,510	130,81	43,790	0,765	408,66	44,075	3,870	0,015	31,730	
1,520	131,70	43,793	0,770	407,77	44,074	3,875	0,015	31,662	
1,530	132,58	43,796	0,775	406,89	44,074	3,881	0,015	31,594	
1,540	133,46	43,799	0,780	406,01	44,074	3,886	0,015	31,526	
1,550	134,35	43,802	0,785	405,12	44,073	3,891	0,015	31,458	
1,560	135,23	43,804	0,790	404,24	44,073	3,896	0,015	31,390	
1,570	136,12	43,807	0,795	403,35	44,072	3,901	0,014	31,322	
1,580	137,00	43,810	0,800	402,47	44,072	3,906	0,014	31,254	
1,590	137,89	43,813	0,805	401,58	44,072	3,911	0,014	31,186	
1,600	138,78	43,816	0,810	400,69	44,071	3,916	0,014	31,118	
1,610	139,66	43,819	0,815	399,81	44,071	3,921	0,014	31,050	
1,620	140,55	43,822	0,820	398,92	44,070	3,927	0,014	30,982	
1,630	141,43	43,825	0,825	398,04	44,070	3,932	0,014	30,914	
1,640	142,32	43,827	0,830	397,15	44,069	3,937	0,014	30,846	
1,650	143,20	43,830	0,835	396,27	44,069	3,942	0,014	30,778	
1,660	144,09	43,833	0,840	395,38	44,069	3,947	0,013	30,710	
1,670	144,97	43,836	0,845	394,50	44,068	3,952	0,013	30,643	
1,680	145,86	43,839	0,850	393,61	44,068	3,957	0,013	30,575	
1,690	146,75	43,841	0,855	392,72	44,067	3,962	0,013	30,507	
1,700	147,63	43,844	0,860	391,84	44,066	3,968	0,013	30,439	
1,710	148,52	43,847	0,865	390,95	44,066	3,973	0,013	30,371	
1,720	149,40	43,849	0,870	390,07	44,065	3,978	0,013	30,303	
1,730	150,29	43,852	0,875	389,18	44,065	3,983	0,013	30,235	
1,740	151,18	43,855	0,880	388,29	44,064	3,988	0,013	30,167	
1,750	152,06	43,858	0,886	387,41	44,064	3,993	0,012	30,099	
1,760	152,95	43,860	0,891	386,52	44,063	3,998	0,012	30,031	
1,770	153,84	43,863	0,896	385,63	44,063	4,004	0,012	29,963	
1,780	154,72	43,865	0,901	384,75	44,062	4,009	0,012	29,895	
1,790	155,61	43,868	0,906	383,86	44,061	4,014	0,012	29,827	
1,800	156,50	43,871	0,911	382,97	44,061	4,019	0,012	29,759	
1,810	157,38	43,873	0,916	382,09	44,060	4,024	0,012	29,691	
1,820	158,27	43,876	0,921	381,20	44,059	4,029	0,012	29,623	
1,830	159,16	43,879	0,926	380,31	44,059	4,034	0,012	29,555	
1,840	160,04	43,881	0,931	379,43	44,058	4,039	0,012	29,487	
1,850	160,93	43,884	0,936	378,54	44,057	4,045	0,011	29,419	
1,860	161,82	43,886	0,941	377,65	44,057	4,050	0,011	29,351	
1,870	162,70	43,889	0,946	376,77	44,056	4,055	0,011	29,283	
1,880	163,59	43,891	0,951	375,88	44,055	4,060	0,011	29,215	
1,890	164,48	43,894	0,956	374,99	44,055	4,065	0,011	29,147	
1,900	165,37	43,896	0,961	374,10	44,054	4,070	0,011	29,080	
1,910	166,25	43,899	0,966	373,22	44,053	4,076	0,011	29,012	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,920	167,14	43,902	0,971	372,33	44,052	4,081	0,011	28,944	
1,930	168,03	43,904	0,976	371,44	44,052	4,086	0,011	28,876	
1,940	168,92	43,907	0,981	370,55	44,051	4,091	0,011	28,808	
1,950	169,80	43,909	0,986	369,67	44,050	4,096	0,011	28,740	
1,960	170,69	43,911	0,991	368,78	44,049	4,101	0,011	28,672	
1,970	171,58	43,914	0,996	367,89	44,048	4,106	0,010	28,604	
1,980	172,47	43,916	1,001	367,00	44,048	4,112	0,010	28,536	
1,990	173,35	43,919	1,006	366,12	44,047	4,117	0,010	28,468	
2,000	174,24	43,921	1,011	365,23	44,046	4,122	0,010	28,400	
2,010	175,13	43,924	1,017	364,34	44,045	4,127	0,010	28,332	
2,020	176,02	43,926	1,022	363,45	44,044	4,132	0,010	28,264	
2,030	176,91	43,929	1,027	362,56	44,043	4,137	0,010	28,196	
2,040	177,80	43,931	1,032	361,67	44,042	4,143	0,010	28,128	
2,050	178,68	43,933	1,037	360,79	44,041	4,148	0,010	28,060	
2,060	179,57	43,936	1,042	359,90	44,040	4,153	0,010	27,992	
2,070	180,46	43,938	1,047	359,01	44,040	4,158	0,010	27,924	
2,080	181,35	43,940	1,052	358,12	44,039	4,163	0,010	27,857	
2,090	182,24	43,943	1,057	357,23	44,038	4,168	0,010	27,789	
2,100	183,13	43,945	1,062	356,34	44,037	4,174	0,009	27,721	
2,110	184,01	43,948	1,067	355,46	44,036	4,179	0,009	27,653	
2,120	184,90	43,950	1,072	354,57	44,035	4,184	0,009	27,585	
2,130	185,79	43,952	1,077	353,68	44,034	4,189	0,009	27,517	
2,140	186,68	43,955	1,082	352,79	44,033	4,194	0,009	27,449	
2,150	187,57	43,957	1,087	351,90	44,032	4,199	0,009	27,381	
2,160	188,46	43,959	1,092	351,01	44,030	4,205	0,009	27,313	
2,170	189,35	43,962	1,097	350,12	44,029	4,210	0,009	27,245	
2,180	190,24	43,964	1,102	349,23	44,028	4,215	0,009	27,177	
2,190	191,13	43,966	1,107	348,34	44,027	4,220	0,009	27,109	
2,200	192,02	43,968	1,112	347,45	44,026	4,225	0,009	27,041	
2,210	192,91	43,971	1,117	346,57	44,025	4,231	0,009	26,973	
2,220	193,79	43,973	1,122	345,68	44,024	4,236	0,009	26,905	
2,230	194,68	43,975	1,127	344,79	44,023	4,241	0,009	26,837	
2,240	195,57	43,978	1,132	343,90	44,022	4,246	0,009	26,769	
2,250	196,46	43,980	1,137	343,01	44,020	4,251	0,009	26,701	
2,260	197,35	43,982	1,142	342,12	44,019	4,256	0,008	26,634	
2,270	198,24	43,984	1,148	341,23	44,018	4,262	0,008	26,566	
2,280	199,13	43,987	1,153	340,34	44,017	4,267	0,008	26,498	
2,290	200,02	43,989	1,158	339,45	44,015	4,272	0,008	26,430	
2,300	200,91	43,991	1,163	338,56	44,014	4,277	0,008	26,362	
2,310	201,80	43,993	1,168	337,67	44,013	4,282	0,008	26,294	
2,320	202,69	43,996	1,173	336,78	44,012	4,288	0,008	26,226	
2,330	203,58	43,998	1,178	335,89	44,010	4,293	0,008	26,158	
2,340	204,47	44,000	1,183	335,00	44,009	4,298	0,008	26,090	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
2,350	205,36	44,002	1,188	334,11	44,008	4,303	0,008	26,022	
2,360	206,25	44,004	1,193	333,22	44,006	4,308	0,008	25,954	
2,370	207,14	44,007	1,198	332,33	44,005	4,314	0,008	25,886	
2,380	208,03	44,009	1,203	331,44	44,004	4,319	0,008	25,818	
2,390	208,92	44,011	1,208	330,55	44,002	4,324	0,008	25,750	
2,400	209,81	44,013	1,213	329,66	44,001	4,329	0,008	25,682	
2,410	210,71	44,015	1,218	328,77	43,999	4,334	0,008	25,614	
2,420	211,60	44,017	1,223	327,87	43,998	4,340	0,008	25,546	
2,430	212,49	44,020	1,228	326,98	43,997	4,345	0,007	25,478	
2,440	213,38	44,022	1,233	326,09	43,995	4,350	0,007	25,410	
2,450	214,27	44,024	1,238	325,20	43,994	4,355	0,007	25,343	
2,460	215,16	44,026	1,243	324,31	43,992	4,361	0,007	25,275	
2,470	216,05	44,028	1,248	323,42	43,991	4,366	0,007	25,207	
2,480	216,94	44,030	1,253	322,53	43,989	4,371	0,007	25,139	
2,490	217,83	44,032	1,258	321,64	43,987	4,376	0,007	25,071	
2,500	218,72	44,034	1,263	320,75	43,986	4,381	0,007	25,003	
2,510	219,61	44,037	1,268	319,86	43,984	4,387	0,007	24,935	
2,520	220,51	44,039	1,273	318,96	43,983	4,392	0,007	24,867	
2,530	221,40	44,041	1,279	318,07	43,981	4,397	0,007	24,799	
2,540	222,29	44,043	1,284	317,18	43,979	4,402	0,007	24,731	
2,550	223,18	44,045	1,289	316,29	43,978	4,408	0,007	24,663	
2,560	224,07	44,047	1,294	315,40	43,976	4,413	0,007	24,595	
2,570	224,96	44,049	1,299	314,51	43,974	4,418	0,007	24,527	
2,580	225,85	44,051	1,304	313,62	43,973	4,423	0,007	24,459	
2,590	226,75	44,053	1,309	312,72	43,971	4,429	0,007	24,391	
2,600	227,64	44,055	1,314	311,83	43,969	4,434	0,007	24,323	
2,610	228,53	44,057	1,319	310,94	43,968	4,439	0,007	24,255	
2,620	229,42	44,059	1,324	310,05	43,966	4,444	0,007	24,187	
2,630	230,31	44,061	1,329	309,16	43,964	4,450	0,007	24,119	
2,640	231,20	44,064	1,334	308,27	43,962	4,455	0,006	24,052	
2,650	232,10	44,066	1,339	307,37	43,960	4,460	0,006	23,984	
2,660	232,99	44,068	1,344	306,48	43,958	4,465	0,006	23,916	
2,670	233,88	44,070	1,349	305,59	43,957	4,471	0,006	23,848	
2,680	234,77	44,072	1,354	304,70	43,955	4,476	0,006	23,780	
2,690	235,66	44,074	1,359	303,81	43,953	4,481	0,006	23,712	
2,700	236,56	44,076	1,364	302,91	43,951	4,486	0,006	23,644	
2,710	237,45	44,078	1,369	302,02	43,949	4,492	0,006	23,576	
2,720	238,34	44,080	1,374	301,13	43,947	4,497	0,006	23,508	
2,730	239,23	44,082	1,379	300,24	43,945	4,502	0,006	23,440	
2,740	240,13	44,084	1,384	299,34	43,943	4,507	0,006	23,372	
2,750	241,02	44,086	1,389	298,45	43,941	4,513	0,006	23,304	
2,760	241,91	44,088	1,394	297,56	43,939	4,518	0,006	23,236	
2,770	242,80	44,090	1,399	296,67	43,937	4,523	0,006	23,168	
2,780	243,70	44,092	1,404	295,77	43,935	4,528	0,006	23,100	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
2,790	244,59	44,094	1,410	294,88	43,933	4,534	0,006	23,032	
2,800	245,48	44,096	1,415	293,99	43,930	4,539	0,006	22,964	

Wind silhouette : 3 layers



Wind pressure 25,00 kg/m²

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
0,200	16,26	43,502	0,101	748,62	43,714	4,605	0,340	84,293	
0,210	17,10	43,493	0,106	747,79	43,714	4,610	0,323	84,196	
0,220	17,94	43,486	0,111	746,95	43,715	4,615	0,308	84,099	
0,230	18,78	43,479	0,116	746,11	43,715	4,620	0,293	84,001	
0,240	19,63	43,474	0,121	745,26	43,715	4,625	0,280	83,903	
0,250	20,47	43,470	0,126	744,42	43,716	4,630	0,268	83,806	
0,260	21,32	43,467	0,132	743,57	43,716	4,635	0,257	83,708	
0,270	22,17	43,464	0,137	742,72	43,717	4,640	0,247	83,610	
0,280	23,02	43,461	0,142	741,87	43,717	4,645	0,237	83,512	
0,290	23,88	43,458	0,147	741,01	43,717	4,650	0,229	83,414	
0,300	24,73	43,456	0,152	740,16	43,718	4,655	0,220	83,316	
0,310	25,59	43,454	0,157	739,30	43,718	4,660	0,213	83,218	
0,320	26,45	43,452	0,162	738,44	43,718	4,665	0,205	83,120	
0,330	27,31	43,450	0,167	737,58	43,719	4,670	0,198	83,022	
0,340	28,17	43,449	0,173	736,72	43,719	4,675	0,192	82,924	
0,350	29,04	43,448	0,178	735,85	43,720	4,680	0,186	82,826	
0,360	29,90	43,447	0,183	734,99	43,720	4,685	0,180	82,728	
0,370	30,76	43,446	0,188	734,12	43,720	4,690	0,175	82,630	
0,380	31,63	43,446	0,193	733,26	43,721	4,695	0,170	82,532	
0,390	32,50	43,445	0,198	732,39	43,721	4,700	0,165	82,434	
0,400	33,36	43,445	0,203	731,53	43,721	4,705	0,161	82,337	
0,410	34,23	43,445	0,208	730,66	43,722	4,711	0,156	82,239	
0,420	35,10	43,445	0,213	729,79	43,722	4,716	0,152	82,141	
0,430	35,96	43,446	0,219	728,92	43,722	4,721	0,148	82,044	
0,440	36,83	43,447	0,224	728,06	43,723	4,726	0,145	81,946	
0,450	37,70	43,448	0,229	727,19	43,723	4,731	0,141	81,849	
0,460	38,57	43,450	0,234	726,32	43,723	4,736	0,138	81,751	
0,470	39,44	43,452	0,239	725,45	43,723	4,741	0,134	81,654	
0,480	40,31	43,453	0,244	724,58	43,723	4,746	0,131	81,557	
0,490	41,18	43,455	0,249	723,71	43,724	4,751	0,128	81,459	
0,500	42,05	43,457	0,254	722,84	43,724	4,757	0,125	81,362	
0,510	42,92	43,459	0,259	721,97	43,724	4,762	0,123	81,265	
0,520	43,79	43,461	0,264	721,10	43,724	4,767	0,120	81,168	
0,530	44,66	43,464	0,270	720,23	43,724	4,772	0,117	81,070	
0,540	45,53	43,466	0,275	719,36	43,725	4,777	0,115	80,973	
0,550	46,40	43,469	0,280	718,49	43,725	4,782	0,113	80,876	
0,560	47,27	43,471	0,285	717,61	43,725	4,787	0,110	80,779	
0,570	48,15	43,474	0,290	716,74	43,725	4,793	0,108	80,682	
0,580	49,02	43,477	0,295	715,87	43,725	4,798	0,106	80,585	
0,590	49,89	43,480	0,300	715,00	43,725	4,803	0,104	80,488	
0,600	50,76	43,483	0,305	714,13	43,725	4,808	0,102	80,391	
0,610	51,64	43,486	0,310	713,25	43,725	4,813	0,100	80,294	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
0,620	52,51	43,489	0,315	712,38	43,726	4,818	0,098	80,197	
0,630	53,38	43,492	0,320	711,51	43,726	4,823	0,096	80,100	
0,640	54,26	43,495	0,325	710,63	43,726	4,829	0,095	80,003	
0,650	55,13	43,498	0,330	709,76	43,726	4,834	0,093	79,906	
0,660	56,00	43,501	0,335	708,89	43,726	4,839	0,092	79,810	
0,670	56,88	43,504	0,341	708,01	43,726	4,844	0,090	79,713	
0,680	57,75	43,507	0,346	707,14	43,726	4,849	0,088	79,616	
0,690	58,63	43,510	0,351	706,26	43,726	4,854	0,087	79,519	
0,700	59,50	43,514	0,356	705,39	43,726	4,859	0,086	79,422	
0,710	60,38	43,517	0,361	704,51	43,726	4,865	0,084	79,326	
0,720	61,25	43,520	0,366	703,64	43,726	4,870	0,083	79,229	
0,730	62,13	43,523	0,371	702,76	43,726	4,875	0,082	79,132	
0,740	63,00	43,527	0,376	701,89	43,726	4,880	0,080	79,035	
0,750	63,88	43,530	0,381	701,01	43,726	4,885	0,079	78,939	
0,760	64,75	43,534	0,386	700,14	43,725	4,890	0,078	78,842	
0,770	65,63	43,537	0,391	699,26	43,725	4,896	0,077	78,745	
0,780	66,50	43,540	0,396	698,39	43,725	4,901	0,076	78,649	
0,790	67,38	43,544	0,401	697,51	43,725	4,906	0,074	78,552	
0,800	68,26	43,547	0,406	696,63	43,725	4,911	0,073	78,455	
0,810	69,13	43,551	0,411	695,76	43,725	4,916	0,072	78,359	
0,820	70,01	43,554	0,416	694,88	43,725	4,921	0,071	78,262	
0,830	70,89	43,558	0,421	694,00	43,725	4,927	0,070	78,165	
0,840	71,76	43,562	0,426	693,13	43,725	4,932	0,069	78,069	
0,850	72,64	43,565	0,432	692,25	43,724	4,937	0,068	77,972	
0,860	73,52	43,569	0,437	691,37	43,724	4,942	0,068	77,875	
0,870	74,39	43,572	0,442	690,49	43,724	4,947	0,067	77,779	
0,880	75,27	43,576	0,447	689,62	43,724	4,953	0,066	77,682	
0,890	76,15	43,579	0,452	688,74	43,724	4,958	0,065	77,585	
0,900	77,03	43,583	0,457	687,86	43,723	4,963	0,064	77,489	
0,910	77,91	43,587	0,462	686,98	43,723	4,968	0,063	77,392	
0,920	78,78	43,590	0,467	686,11	43,723	4,973	0,062	77,296	
0,930	79,66	43,594	0,472	685,23	43,723	4,978	0,062	77,199	
0,940	80,54	43,597	0,477	684,35	43,722	4,984	0,061	77,103	
0,950	81,42	43,601	0,482	683,47	43,722	4,989	0,060	77,006	
0,960	82,30	43,604	0,487	682,59	43,722	4,994	0,059	76,909	
0,970	83,18	43,608	0,492	681,71	43,722	4,999	0,059	76,813	
0,980	84,06	43,612	0,497	680,83	43,721	5,004	0,058	76,716	
0,990	84,93	43,615	0,502	679,95	43,721	5,010	0,057	76,620	
1,000	85,81	43,619	0,507	679,08	43,721	5,015	0,057	76,523	
1,010	86,69	43,623	0,512	678,20	43,720	5,020	0,056	76,427	
1,020	87,57	43,626	0,517	677,32	43,720	5,025	0,055	76,330	
1,030	88,45	43,630	0,522	676,44	43,720	5,030	0,055	76,234	
1,040	89,33	43,633	0,527	675,56	43,719	5,036	0,054	76,137	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,050	90,21	43,637	0,533	674,68	43,719	5,041	0,053	76,040	
1,060	91,09	43,641	0,538	673,80	43,719	5,046	0,053	75,944	
1,070	91,97	43,644	0,543	672,92	43,718	5,051	0,052	75,847	
1,080	92,85	43,648	0,548	672,04	43,718	5,056	0,052	75,751	
1,090	93,73	43,652	0,553	671,15	43,717	5,062	0,051	75,654	
1,100	94,62	43,655	0,558	670,27	43,717	5,067	0,051	75,558	
1,110	95,50	43,659	0,563	669,39	43,716	5,072	0,050	75,461	
1,120	96,38	43,662	0,568	668,51	43,716	5,077	0,050	75,365	
1,130	97,26	43,666	0,573	667,63	43,716	5,083	0,049	75,268	
1,140	98,14	43,670	0,578	666,75	43,715	5,088	0,049	75,172	
1,150	99,02	43,673	0,583	665,87	43,715	5,093	0,048	75,075	
1,160	99,90	43,677	0,588	664,99	43,714	5,098	0,048	74,979	
1,170	100,78	43,680	0,593	664,11	43,714	5,103	0,047	74,882	
1,180	101,67	43,684	0,598	663,22	43,713	5,109	0,047	74,786	
1,190	102,55	43,687	0,603	662,34	43,713	5,114	0,046	74,689	
1,200	103,43	43,690	0,608	661,46	43,712	5,119	0,046	74,593	
1,210	104,31	43,694	0,613	660,58	43,712	5,124	0,045	74,496	
1,220	105,19	43,697	0,618	659,70	43,711	5,130	0,045	74,400	
1,230	106,07	43,701	0,623	658,81	43,711	5,135	0,044	74,303	
1,240	106,96	43,704	0,628	657,93	43,710	5,140	0,044	74,207	
1,250	107,84	43,707	0,633	657,05	43,710	5,145	0,043	74,111	
1,260	108,72	43,711	0,639	656,17	43,709	5,150	0,043	74,014	
1,270	109,60	43,714	0,644	655,29	43,708	5,156	0,043	73,918	
1,280	110,49	43,717	0,649	654,40	43,708	5,161	0,042	73,821	
1,290	111,37	43,721	0,654	653,52	43,707	5,166	0,042	73,725	
1,300	112,25	43,724	0,659	652,64	43,707	5,171	0,041	73,628	
1,310	113,13	43,727	0,664	651,75	43,706	5,177	0,041	73,532	
1,320	114,02	43,730	0,669	650,87	43,706	5,182	0,041	73,435	
1,330	114,90	43,734	0,674	649,99	43,705	5,187	0,040	73,339	
1,340	115,78	43,737	0,679	649,11	43,704	5,192	0,040	73,243	
1,350	116,67	43,740	0,684	648,22	43,704	5,198	0,040	73,146	
1,360	117,55	43,743	0,689	647,34	43,703	5,203	0,039	73,050	
1,370	118,43	43,746	0,694	646,46	43,702	5,208	0,039	72,953	
1,380	119,32	43,749	0,699	645,57	43,702	5,213	0,039	72,857	
1,390	120,20	43,753	0,704	644,69	43,701	5,219	0,038	72,760	
1,400	121,08	43,756	0,709	643,80	43,700	5,224	0,038	72,664	
1,410	121,97	43,759	0,714	642,92	43,700	5,229	0,038	72,568	
1,420	122,85	43,762	0,719	642,04	43,699	5,234	0,037	72,471	
1,430	123,74	43,765	0,724	641,15	43,698	5,240	0,037	72,375	
1,440	124,62	43,768	0,729	640,27	43,698	5,245	0,037	72,278	
1,450	125,50	43,771	0,734	639,39	43,697	5,250	0,036	72,182	
1,460	126,39	43,774	0,739	638,50	43,696	5,255	0,036	72,085	
1,470	127,27	43,777	0,744	637,62	43,696	5,261	0,036	71,989	
1,480	128,16	43,781	0,749	636,73	43,695	5,266	0,035	71,893	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,490	129,04	43,784	0,754	635,85	43,694	5,271	0,035	71,796	
1,500	129,93	43,787	0,760	634,96	43,693	5,276	0,035	71,700	
1,510	130,81	43,790	0,765	634,08	43,693	5,282	0,034	71,603	
1,520	131,70	43,793	0,770	633,19	43,692	5,287	0,034	71,507	
1,530	132,58	43,796	0,775	632,31	43,691	5,292	0,034	71,411	
1,540	133,46	43,799	0,780	631,42	43,690	5,297	0,034	71,314	
1,550	134,35	43,802	0,785	630,54	43,690	5,303	0,033	71,218	
1,560	135,23	43,804	0,790	629,65	43,689	5,308	0,033	71,121	
1,570	136,12	43,807	0,795	628,77	43,688	5,313	0,033	71,025	
1,580	137,00	43,810	0,800	627,88	43,687	5,318	0,033	70,929	
1,590	137,89	43,813	0,805	627,00	43,686	5,324	0,032	70,832	
1,600	138,78	43,816	0,810	626,11	43,686	5,329	0,032	70,736	
1,610	139,66	43,819	0,815	625,23	43,685	5,334	0,032	70,640	
1,620	140,55	43,822	0,820	624,34	43,684	5,340	0,032	70,543	
1,630	141,43	43,825	0,825	623,46	43,683	5,345	0,031	70,447	
1,640	142,32	43,827	0,830	622,57	43,682	5,350	0,031	70,350	
1,650	143,20	43,830	0,835	621,69	43,681	5,355	0,031	70,254	
1,660	144,09	43,833	0,840	620,80	43,681	5,361	0,031	70,158	
1,670	144,97	43,836	0,845	619,91	43,680	5,366	0,030	70,061	
1,680	145,86	43,839	0,850	619,03	43,679	5,371	0,030	69,965	
1,690	146,75	43,841	0,855	618,14	43,678	5,376	0,030	69,869	
1,700	147,63	43,844	0,860	617,26	43,677	5,382	0,030	69,772	
1,710	148,52	43,847	0,865	616,37	43,676	5,387	0,029	69,676	
1,720	149,40	43,849	0,870	615,48	43,675	5,392	0,029	69,580	
1,730	150,29	43,852	0,875	614,60	43,674	5,398	0,029	69,483	
1,740	151,18	43,855	0,880	613,71	43,673	5,403	0,029	69,387	
1,750	152,06	43,858	0,886	612,83	43,672	5,408	0,029	69,290	
1,760	152,95	43,860	0,891	611,94	43,672	5,414	0,028	69,194	
1,770	153,84	43,863	0,896	611,05	43,671	5,419	0,028	69,098	
1,780	154,72	43,865	0,901	610,17	43,670	5,424	0,028	69,001	
1,790	155,61	43,868	0,906	609,28	43,669	5,429	0,028	68,905	
1,800	156,50	43,871	0,911	608,39	43,668	5,435	0,028	68,809	
1,810	157,38	43,873	0,916	607,51	43,667	5,440	0,027	68,712	
1,820	158,27	43,876	0,921	606,62	43,666	5,445	0,027	68,616	
1,830	159,16	43,879	0,926	605,73	43,665	5,451	0,027	68,520	
1,840	160,04	43,881	0,931	604,85	43,664	5,456	0,027	68,423	
1,850	160,93	43,884	0,936	603,96	43,663	5,461	0,027	68,327	
1,860	161,82	43,886	0,941	603,07	43,662	5,467	0,026	68,231	
1,870	162,70	43,889	0,946	602,19	43,661	5,472	0,026	68,134	
1,880	163,59	43,891	0,951	601,30	43,660	5,477	0,026	68,038	
1,890	164,48	43,894	0,956	600,41	43,659	5,482	0,026	67,942	
1,900	165,37	43,896	0,961	599,52	43,658	5,488	0,026	67,845	
1,910	166,25	43,899	0,966	598,64	43,657	5,493	0,026	67,749	

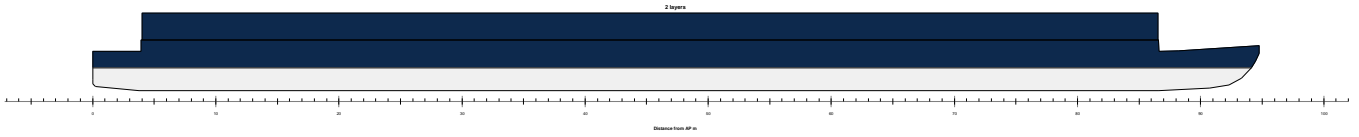
Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,920	167,14	43,902	0,971	597,75	43,655	5,498	0,025	67,653	
1,930	168,03	43,904	0,976	596,86	43,654	5,504	0,025	67,556	
1,940	168,92	43,907	0,981	595,97	43,653	5,509	0,025	67,460	
1,950	169,80	43,909	0,986	595,09	43,652	5,514	0,025	67,364	
1,960	170,69	43,911	0,991	594,20	43,651	5,520	0,025	67,267	
1,970	171,58	43,914	0,996	593,31	43,650	5,525	0,025	67,171	
1,980	172,47	43,916	1,001	592,42	43,649	5,530	0,024	67,075	
1,990	173,35	43,919	1,006	591,53	43,648	5,536	0,024	66,978	
2,000	174,24	43,921	1,011	590,65	43,647	5,541	0,024	66,882	
2,010	175,13	43,924	1,017	589,76	43,646	5,546	0,024	66,786	
2,020	176,02	43,926	1,022	588,87	43,644	5,552	0,024	66,689	
2,030	176,91	43,929	1,027	587,98	43,643	5,557	0,024	66,593	
2,040	177,80	43,931	1,032	587,09	43,642	5,562	0,023	66,497	
2,050	178,68	43,933	1,037	586,21	43,641	5,568	0,023	66,400	
2,060	179,57	43,936	1,042	585,32	43,640	5,573	0,023	66,304	
2,070	180,46	43,938	1,047	584,43	43,639	5,578	0,023	66,208	
2,080	181,35	43,940	1,052	583,54	43,637	5,584	0,023	66,111	
2,090	182,24	43,943	1,057	582,65	43,636	5,589	0,023	66,015	
2,100	183,13	43,945	1,062	581,76	43,635	5,594	0,023	65,919	
2,110	184,01	43,948	1,067	580,87	43,634	5,600	0,022	65,822	
2,120	184,90	43,950	1,072	579,99	43,633	5,605	0,022	65,726	
2,130	185,79	43,952	1,077	579,10	43,631	5,610	0,022	65,630	
2,140	186,68	43,955	1,082	578,21	43,630	5,616	0,022	65,533	
2,150	187,57	43,957	1,087	577,32	43,629	5,621	0,022	65,437	
2,160	188,46	43,959	1,092	576,43	43,628	5,626	0,022	65,341	
2,170	189,35	43,962	1,097	575,54	43,626	5,632	0,022	65,244	
2,180	190,24	43,964	1,102	574,65	43,625	5,637	0,021	65,148	
2,190	191,13	43,966	1,107	573,76	43,624	5,642	0,021	65,052	
2,200	192,02	43,968	1,112	572,87	43,622	5,648	0,021	64,955	
2,210	192,91	43,971	1,117	571,98	43,621	5,653	0,021	64,859	
2,220	193,79	43,973	1,122	571,09	43,620	5,658	0,021	64,763	
2,230	194,68	43,975	1,127	570,21	43,618	5,664	0,021	64,666	
2,240	195,57	43,978	1,132	569,32	43,617	5,669	0,021	64,570	
2,250	196,46	43,980	1,137	568,43	43,616	5,674	0,021	64,474	
2,260	197,35	43,982	1,142	567,54	43,614	5,680	0,020	64,377	
2,270	198,24	43,984	1,148	566,65	43,613	5,685	0,020	64,281	
2,280	199,13	43,987	1,153	565,76	43,612	5,691	0,020	64,185	
2,290	200,02	43,989	1,158	564,87	43,610	5,696	0,020	64,088	
2,300	200,91	43,991	1,163	563,98	43,609	5,701	0,020	63,992	
2,310	201,80	43,993	1,168	563,09	43,607	5,707	0,020	63,896	
2,320	202,69	43,996	1,173	562,20	43,606	5,712	0,020	63,799	
2,330	203,58	43,998	1,178	561,31	43,605	5,717	0,020	63,703	
2,340	204,47	44,000	1,183	560,42	43,603	5,723	0,019	63,607	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
2,350	205,36	44,002	1,188	559,53	43,602	5,728	0,019	63,510	
2,360	206,25	44,004	1,193	558,64	43,600	5,733	0,019	63,414	
2,370	207,14	44,007	1,198	557,75	43,599	5,739	0,019	63,318	
2,380	208,03	44,009	1,203	556,86	43,597	5,744	0,019	63,221	
2,390	208,92	44,011	1,208	555,96	43,596	5,750	0,019	63,125	
2,400	209,81	44,013	1,213	555,07	43,594	5,755	0,019	63,029	
2,410	210,71	44,015	1,218	554,18	43,593	5,760	0,019	62,932	
2,420	211,60	44,017	1,223	553,29	43,591	5,766	0,019	62,836	
2,430	212,49	44,020	1,228	552,40	43,590	5,771	0,018	62,739	
2,440	213,38	44,022	1,233	551,51	43,588	5,777	0,018	62,643	
2,450	214,27	44,024	1,238	550,62	43,587	5,782	0,018	62,547	
2,460	215,16	44,026	1,243	549,73	43,585	5,787	0,018	62,450	
2,470	216,05	44,028	1,248	548,84	43,584	5,793	0,018	62,354	
2,480	216,94	44,030	1,253	547,95	43,582	5,798	0,018	62,258	
2,490	217,83	44,032	1,258	547,06	43,581	5,804	0,018	62,161	
2,500	218,72	44,034	1,263	546,17	43,579	5,809	0,018	62,065	
2,510	219,61	44,037	1,268	545,27	43,577	5,814	0,018	61,969	
2,520	220,51	44,039	1,273	544,38	43,576	5,820	0,018	61,872	
2,530	221,40	44,041	1,279	543,49	43,574	5,825	0,017	61,776	
2,540	222,29	44,043	1,284	542,60	43,573	5,831	0,017	61,680	
2,550	223,18	44,045	1,289	541,71	43,571	5,836	0,017	61,583	
2,560	224,07	44,047	1,294	540,82	43,569	5,841	0,017	61,487	
2,570	224,96	44,049	1,299	539,93	43,568	5,847	0,017	61,391	
2,580	225,85	44,051	1,304	539,04	43,566	5,852	0,017	61,294	
2,590	226,75	44,053	1,309	538,14	43,564	5,858	0,017	61,198	
2,600	227,64	44,055	1,314	537,25	43,563	5,863	0,017	61,102	
2,610	228,53	44,057	1,319	536,36	43,561	5,868	0,017	61,005	
2,620	229,42	44,059	1,324	535,47	43,559	5,874	0,017	60,909	
2,630	230,31	44,061	1,329	534,58	43,557	5,879	0,016	60,813	
2,640	231,20	44,064	1,334	533,68	43,556	5,885	0,016	60,716	
2,650	232,10	44,066	1,339	532,79	43,554	5,890	0,016	60,620	
2,660	232,99	44,068	1,344	531,90	43,552	5,895	0,016	60,524	
2,670	233,88	44,070	1,349	531,01	43,551	5,901	0,016	60,427	
2,680	234,77	44,072	1,354	530,12	43,549	5,906	0,016	60,331	
2,690	235,66	44,074	1,359	529,22	43,547	5,912	0,016	60,235	
2,700	236,56	44,076	1,364	528,33	43,545	5,917	0,016	60,138	
2,710	237,45	44,078	1,369	527,44	43,543	5,923	0,016	60,042	
2,720	238,34	44,080	1,374	526,55	43,542	5,928	0,016	59,945	
2,730	239,23	44,082	1,379	525,66	43,540	5,934	0,016	59,849	
2,740	240,13	44,084	1,384	524,76	43,538	5,939	0,016	59,753	
2,750	241,02	44,086	1,389	523,87	43,536	5,944	0,015	59,656	
2,760	241,91	44,088	1,394	522,98	43,534	5,950	0,015	59,560	
2,770	242,80	44,090	1,399	522,08	43,532	5,955	0,015	59,464	
2,780	243,70	44,092	1,404	521,19	43,530	5,961	0,015	59,367	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
2,790	244,59	44,094	1,410	520,30	43,529	5,966	0,015	59,271	
2,800	245,48	44,096	1,415	519,41	43,527	5,972	0,015	59,175	

Calculation of wind moments

Wind silhouette : 2 layers



Wind pressure 25,00 kg/m²

Bilge type:		Round bilges								
Bilge keel area:		0,00 m ²								
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment		
m	m ²	m	m	m ²	m	m	m	t*m		
0,200	17,30	45,756	0,101	538,72	46,264	3,159	0,275	41,180		
0,210	18,19	45,770	0,106	537,83	46,265	3,163	0,261	41,109		
0,220	19,09	45,784	0,111	536,93	46,265	3,168	0,248	41,038		
0,230	19,98	45,796	0,116	536,04	46,265	3,173	0,236	40,967		
0,240	20,88	45,807	0,121	535,14	46,266	3,178	0,226	40,896		
0,250	21,78	45,818	0,126	534,24	46,266	3,183	0,216	40,825		
0,260	22,69	45,827	0,132	533,34	46,266	3,188	0,207	40,754		
0,270	23,59	45,836	0,137	532,43	46,267	3,193	0,198	40,683		
0,280	24,50	45,844	0,142	531,53	46,267	3,198	0,190	40,612		
0,290	25,41	45,852	0,147	530,62	46,267	3,203	0,183	40,541		
0,300	26,32	45,859	0,152	529,71	46,268	3,208	0,176	40,470		
0,310	27,23	45,866	0,157	528,79	46,268	3,213	0,170	40,398		
0,320	28,14	45,872	0,162	527,88	46,268	3,218	0,164	40,327		
0,330	29,06	45,878	0,167	526,97	46,269	3,223	0,158	40,256		
0,340	29,97	45,884	0,173	526,05	46,269	3,228	0,153	40,185		
0,350	30,89	45,890	0,178	525,13	46,269	3,233	0,148	40,114		
0,360	31,81	45,896	0,183	524,21	46,270	3,238	0,143	40,042		
0,370	32,73	45,901	0,188	523,30	46,270	3,243	0,139	39,971		
0,380	33,64	45,907	0,193	522,38	46,270	3,248	0,135	39,900		
0,390	34,56	45,912	0,198	521,46	46,271	3,253	0,131	39,829		
0,400	35,48	45,918	0,203	520,54	46,271	3,258	0,127	39,758		
0,410	36,40	45,923	0,208	519,62	46,271	3,263	0,124	39,687		
0,420	37,33	45,928	0,213	518,70	46,271	3,268	0,120	39,617		
0,430	38,25	45,934	0,219	517,78	46,272	3,274	0,117	39,546		
0,440	39,17	45,939	0,224	516,85	46,272	3,279	0,114	39,475		
0,450	40,09	45,944	0,229	515,93	46,272	3,284	0,111	39,404		
0,460	41,01	45,950	0,234	515,01	46,272	3,289	0,108	39,333		
0,470	41,94	45,955	0,239	514,09	46,272	3,294	0,106	39,263		
0,480	42,86	45,960	0,244	513,16	46,272	3,299	0,103	39,192		
0,490	43,78	45,965	0,249	512,24	46,273	3,304	0,100	39,121		
0,500	44,70	45,970	0,254	511,32	46,273	3,309	0,098	39,051		
0,510	45,63	45,976	0,259	510,39	46,273	3,314	0,096	38,980		
0,520	46,55	45,981	0,264	509,47	46,273	3,319	0,094	38,909		
0,530	47,48	45,986	0,269	508,54	46,273	3,324	0,092	38,839		
0,540	48,40	45,991	0,274	507,62	46,273	3,329	0,090	38,768		
0,550	49,33	45,996	0,279	506,70	46,273	3,334	0,088	38,698		
0,560	50,25	46,001	0,285	505,77	46,273	3,340	0,086	38,627		
0,570	51,18	46,007	0,290	504,85	46,273	3,345	0,084	38,557		
0,580	52,10	46,012	0,295	503,92	46,273	3,350	0,082	38,486		
0,590	53,03	46,017	0,300	502,99	46,273	3,355	0,081	38,416		
0,600	53,95	46,022	0,305	502,07	46,273	3,360	0,079	38,346		
0,610	54,88	46,027	0,310	501,14	46,273	3,365	0,078	38,275		

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
0,620	55,81	46,032	0,315	500,22	46,273	3,370	0,076	38,205	
0,630	56,73	46,037	0,320	499,29	46,272	3,375	0,075	38,134	
0,640	57,66	46,042	0,325	498,36	46,272	3,380	0,073	38,064	
0,650	58,59	46,047	0,330	497,44	46,272	3,385	0,072	37,994	
0,660	59,51	46,052	0,335	496,51	46,272	3,390	0,071	37,923	
0,670	60,44	46,057	0,340	495,58	46,272	3,396	0,069	37,853	
0,680	61,37	46,062	0,345	494,65	46,272	3,401	0,068	37,783	
0,690	62,30	46,067	0,350	493,73	46,271	3,406	0,067	37,712	
0,700	63,22	46,072	0,355	492,80	46,271	3,411	0,066	37,642	
0,710	64,15	46,076	0,361	491,87	46,271	3,416	0,065	37,572	
0,720	65,08	46,081	0,366	490,94	46,271	3,421	0,064	37,501	
0,730	66,01	46,086	0,371	490,01	46,270	3,426	0,063	37,431	
0,740	66,94	46,091	0,376	489,08	46,270	3,431	0,062	37,361	
0,750	67,87	46,096	0,381	488,15	46,270	3,436	0,061	37,291	
0,760	68,80	46,101	0,386	487,23	46,269	3,441	0,060	37,220	
0,770	69,73	46,106	0,391	486,30	46,269	3,447	0,059	37,150	
0,780	70,65	46,110	0,396	485,37	46,268	3,452	0,058	37,080	
0,790	71,58	46,115	0,401	484,44	46,268	3,457	0,057	37,010	
0,800	72,51	46,120	0,406	483,51	46,268	3,462	0,056	36,939	
0,810	73,44	46,125	0,411	482,58	46,267	3,467	0,055	36,869	
0,820	74,37	46,129	0,416	481,65	46,267	3,472	0,054	36,799	
0,830	75,30	46,134	0,421	480,72	46,266	3,477	0,054	36,729	
0,840	76,23	46,139	0,426	479,79	46,266	3,482	0,053	36,659	
0,850	77,16	46,144	0,431	478,86	46,265	3,488	0,052	36,588	
0,860	78,10	46,148	0,436	477,93	46,265	3,493	0,051	36,518	
0,870	79,03	46,153	0,441	477,00	46,264	3,498	0,051	36,448	
0,880	79,96	46,158	0,446	476,06	46,264	3,503	0,050	36,378	
0,890	80,89	46,162	0,451	475,13	46,263	3,508	0,049	36,308	
0,900	81,82	46,167	0,457	474,20	46,262	3,513	0,049	36,237	
0,910	82,75	46,172	0,462	473,27	46,262	3,518	0,048	36,167	
0,920	83,68	46,176	0,467	472,34	46,261	3,523	0,047	36,097	
0,930	84,62	46,181	0,472	471,41	46,261	3,529	0,047	36,027	
0,940	85,55	46,185	0,477	470,47	46,260	3,534	0,046	35,957	
0,950	86,48	46,190	0,482	469,54	46,259	3,539	0,045	35,887	
0,960	87,41	46,194	0,487	468,61	46,258	3,544	0,045	35,816	
0,970	88,34	46,199	0,492	467,68	46,258	3,549	0,044	35,746	
0,980	89,28	46,203	0,497	466,75	46,257	3,554	0,044	35,676	
0,990	90,21	46,208	0,502	465,81	46,256	3,559	0,043	35,606	
1,000	91,14	46,212	0,507	464,88	46,255	3,565	0,043	35,536	
1,010	92,08	46,217	0,512	463,95	46,255	3,570	0,042	35,466	
1,020	93,01	46,221	0,517	463,01	46,254	3,575	0,042	35,395	
1,030	93,94	46,226	0,522	462,08	46,253	3,580	0,041	35,325	
1,040	94,88	46,230	0,527	461,15	46,252	3,585	0,041	35,255	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,050	95,81	46,235	0,532	460,21	46,251	3,590	0,040	35,185	
1,060	96,74	46,239	0,537	459,28	46,250	3,596	0,040	35,115	
1,070	97,68	46,243	0,542	458,34	46,249	3,601	0,039	35,045	
1,080	98,61	46,248	0,547	457,41	46,249	3,606	0,039	34,975	
1,090	99,55	46,252	0,552	456,48	46,248	3,611	0,038	34,904	
1,100	100,48	46,256	0,557	455,54	46,247	3,616	0,038	34,834	
1,110	101,41	46,261	0,562	454,61	46,246	3,621	0,037	34,764	
1,120	102,35	46,265	0,568	453,67	46,245	3,626	0,037	34,694	
1,130	103,28	46,269	0,573	452,74	46,244	3,632	0,037	34,624	
1,140	104,22	46,273	0,578	451,80	46,243	3,637	0,036	34,554	
1,150	105,15	46,277	0,583	450,87	46,242	3,642	0,036	34,484	
1,160	106,09	46,282	0,588	449,93	46,241	3,647	0,035	34,414	
1,170	107,02	46,286	0,593	449,00	46,239	3,652	0,035	34,343	
1,180	107,96	46,290	0,598	448,06	46,238	3,657	0,035	34,273	
1,190	108,89	46,294	0,603	447,13	46,237	3,663	0,034	34,203	
1,200	109,83	46,298	0,608	446,19	46,236	3,668	0,034	34,133	
1,210	110,76	46,302	0,613	445,26	46,235	3,673	0,033	34,063	
1,220	111,70	46,306	0,618	444,32	46,234	3,678	0,033	33,993	
1,230	112,64	46,310	0,623	443,39	46,233	3,683	0,033	33,923	
1,240	113,57	46,314	0,628	442,45	46,232	3,689	0,032	33,853	
1,250	114,51	46,318	0,633	441,51	46,230	3,694	0,032	33,783	
1,260	115,44	46,322	0,638	440,58	46,229	3,699	0,032	33,713	
1,270	116,38	46,326	0,643	439,64	46,228	3,704	0,031	33,642	
1,280	117,32	46,330	0,648	438,71	46,227	3,709	0,031	33,572	
1,290	118,25	46,334	0,653	437,77	46,225	3,714	0,031	33,502	
1,300	119,19	46,338	0,658	436,83	46,224	3,720	0,030	33,432	
1,310	120,13	46,342	0,663	435,90	46,223	3,725	0,030	33,362	
1,320	121,06	46,346	0,668	434,96	46,221	3,730	0,030	33,292	
1,330	122,00	46,349	0,673	434,02	46,220	3,735	0,030	33,222	
1,340	122,94	46,353	0,678	433,09	46,219	3,740	0,029	33,152	
1,350	123,87	46,357	0,684	432,15	46,217	3,746	0,029	33,082	
1,360	124,81	46,361	0,689	431,21	46,216	3,751	0,029	33,012	
1,370	125,75	46,365	0,694	430,27	46,214	3,756	0,028	32,942	
1,380	126,69	46,368	0,699	429,34	46,213	3,761	0,028	32,871	
1,390	127,62	46,372	0,704	428,40	46,212	3,766	0,028	32,801	
1,400	128,56	46,376	0,709	427,46	46,210	3,772	0,028	32,731	
1,410	129,50	46,379	0,714	426,52	46,209	3,777	0,027	32,661	
1,420	130,44	46,383	0,719	425,59	46,207	3,782	0,027	32,591	
1,430	131,37	46,387	0,724	424,65	46,206	3,787	0,027	32,521	
1,440	132,31	46,390	0,729	423,71	46,204	3,792	0,027	32,451	
1,450	133,25	46,394	0,734	422,77	46,203	3,798	0,026	32,381	
1,460	134,19	46,397	0,739	421,83	46,201	3,803	0,026	32,311	
1,470	135,13	46,401	0,744	420,90	46,199	3,808	0,026	32,241	
1,480	136,06	46,404	0,749	419,96	46,198	3,813	0,026	32,171	

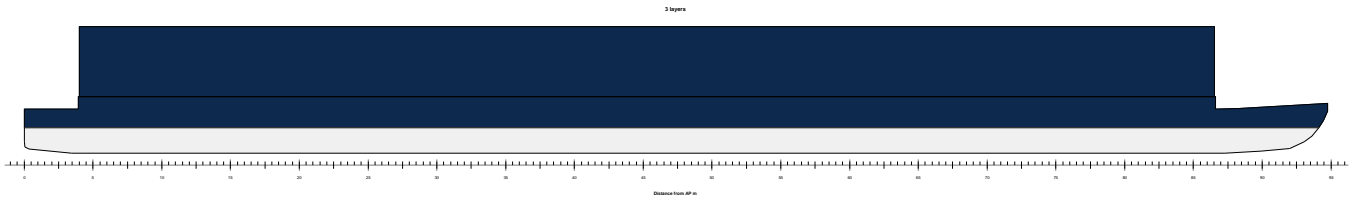
Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,490	137,00	46,408	0,754	419,02	46,196	3,818	0,025	32,101	
1,500	137,94	46,411	0,759	418,08	46,195	3,824	0,025	32,031	
1,510	138,88	46,415	0,764	417,14	46,193	3,829	0,025	31,961	
1,520	139,82	46,418	0,769	416,20	46,191	3,834	0,025	31,890	
1,530	140,76	46,422	0,774	415,27	46,190	3,839	0,024	31,820	
1,540	141,69	46,425	0,779	414,33	46,188	3,845	0,024	31,750	
1,550	142,63	46,429	0,784	413,39	46,186	3,850	0,024	31,680	
1,560	143,57	46,432	0,789	412,45	46,184	3,855	0,024	31,610	
1,570	144,51	46,435	0,794	411,51	46,183	3,860	0,024	31,540	
1,580	145,45	46,439	0,799	410,57	46,181	3,865	0,023	31,470	
1,590	146,39	46,442	0,804	409,63	46,179	3,871	0,023	31,400	
1,600	147,33	46,445	0,810	408,69	46,177	3,876	0,023	31,330	
1,610	148,27	46,449	0,815	407,75	46,176	3,881	0,023	31,260	
1,620	149,21	46,452	0,820	406,81	46,174	3,886	0,023	31,190	
1,630	150,15	46,455	0,825	405,87	46,172	3,892	0,022	31,120	
1,640	151,09	46,459	0,830	404,94	46,170	3,897	0,022	31,050	
1,650	152,03	46,462	0,835	404,00	46,168	3,902	0,022	30,980	
1,660	152,97	46,465	0,840	403,06	46,166	3,907	0,022	30,910	
1,670	153,91	46,468	0,845	402,12	46,164	3,913	0,022	30,840	
1,680	154,85	46,471	0,850	401,18	46,162	3,918	0,021	30,770	
1,690	155,79	46,475	0,855	400,24	46,160	3,923	0,021	30,700	
1,700	156,73	46,478	0,860	399,30	46,158	3,928	0,021	30,630	
1,710	157,67	46,481	0,865	398,36	46,156	3,934	0,021	30,560	
1,720	158,61	46,484	0,870	397,42	46,154	3,939	0,021	30,489	
1,730	159,55	46,487	0,875	396,48	46,152	3,944	0,021	30,419	
1,740	160,49	46,490	0,880	395,54	46,150	3,949	0,020	30,349	
1,750	161,43	46,493	0,885	394,60	46,148	3,955	0,020	30,279	
1,760	162,37	46,496	0,890	393,65	46,146	3,960	0,020	30,209	
1,770	163,31	46,499	0,895	392,71	46,144	3,965	0,020	30,139	
1,780	164,25	46,503	0,900	391,77	46,142	3,970	0,020	30,069	
1,790	165,19	46,506	0,905	390,83	46,140	3,976	0,020	29,999	
1,800	166,13	46,509	0,910	389,89	46,138	3,981	0,019	29,929	
1,810	167,07	46,512	0,915	388,95	46,135	3,986	0,019	29,859	
1,820	168,01	46,515	0,920	388,01	46,133	3,991	0,019	29,789	
1,830	168,95	46,518	0,925	387,07	46,131	3,997	0,019	29,719	
1,840	169,89	46,520	0,930	386,13	46,129	4,002	0,019	29,649	
1,850	170,83	46,523	0,936	385,19	46,126	4,007	0,019	29,579	
1,860	171,78	46,526	0,941	384,25	46,124	4,012	0,019	29,509	
1,870	172,72	46,529	0,946	383,31	46,122	4,018	0,018	29,439	
1,880	173,66	46,532	0,951	382,36	46,120	4,023	0,018	29,369	
1,890	174,60	46,535	0,956	381,42	46,117	4,028	0,018	29,299	
1,900	175,54	46,538	0,961	380,48	46,115	4,034	0,018	29,229	
1,910	176,48	46,541	0,966	379,54	46,112	4,039	0,018	29,159	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,920	177,42	46,544	0,971	378,60	46,110	4,044	0,018	29,089	
1,930	178,36	46,547	0,976	377,66	46,108	4,049	0,018	29,019	
1,940	179,31	46,549	0,981	376,72	46,105	4,055	0,017	28,949	
1,950	180,25	46,552	0,986	375,77	46,103	4,060	0,017	28,879	
1,960	181,19	46,555	0,991	374,83	46,100	4,065	0,017	28,809	
1,970	182,13	46,558	0,996	373,89	46,098	4,071	0,017	28,739	
1,980	183,07	46,561	1,001	372,95	46,095	4,076	0,017	28,669	
1,990	184,02	46,563	1,006	372,01	46,093	4,081	0,017	28,599	
2,000	184,96	46,566	1,011	371,06	46,090	4,086	0,017	28,529	
2,010	185,90	46,569	1,016	370,12	46,087	4,092	0,017	28,459	
2,020	186,84	46,572	1,021	369,18	46,085	4,097	0,016	28,389	
2,030	187,78	46,574	1,026	368,24	46,082	4,102	0,016	28,319	
2,040	188,73	46,577	1,031	367,30	46,080	4,108	0,016	28,249	
2,050	189,67	46,580	1,036	366,35	46,077	4,113	0,016	28,179	
2,060	190,61	46,582	1,041	365,41	46,074	4,118	0,016	28,109	
2,070	191,55	46,585	1,046	364,47	46,071	4,124	0,016	28,039	
2,080	192,50	46,588	1,051	363,53	46,069	4,129	0,016	27,969	
2,090	193,44	46,590	1,056	362,58	46,066	4,134	0,016	27,899	
2,100	194,38	46,593	1,061	361,64	46,063	4,139	0,015	27,829	
2,110	195,32	46,596	1,066	360,70	46,060	4,145	0,015	27,759	
2,120	196,27	46,598	1,072	359,75	46,057	4,150	0,015	27,688	
2,130	197,21	46,601	1,077	358,81	46,055	4,155	0,015	27,618	
2,140	198,15	46,604	1,082	357,87	46,052	4,161	0,015	27,548	
2,150	199,10	46,606	1,087	356,93	46,049	4,166	0,015	27,478	
2,160	200,04	46,609	1,092	355,98	46,046	4,171	0,015	27,408	
2,170	200,98	46,611	1,097	355,04	46,043	4,177	0,015	27,338	
2,180	201,93	46,614	1,102	354,10	46,040	4,182	0,015	27,268	
2,190	202,87	46,617	1,107	353,15	46,037	4,187	0,014	27,198	
2,200	203,81	46,619	1,112	352,21	46,034	4,193	0,014	27,128	
2,210	204,76	46,622	1,117	351,27	46,031	4,198	0,014	27,058	
2,220	205,70	46,624	1,122	350,32	46,028	4,203	0,014	26,988	
2,230	206,64	46,627	1,127	349,38	46,025	4,209	0,014	26,918	
2,240	207,59	46,629	1,132	348,44	46,022	4,214	0,014	26,848	
2,250	208,53	46,632	1,137	347,49	46,018	4,219	0,014	26,778	
2,260	209,47	46,634	1,142	346,55	46,015	4,225	0,014	26,708	
2,270	210,42	46,637	1,147	345,61	46,012	4,230	0,014	26,638	
2,280	211,36	46,639	1,152	344,66	46,009	4,236	0,014	26,568	
2,290	212,30	46,642	1,157	343,72	46,006	4,241	0,013	26,498	
2,300	213,25	46,644	1,162	342,77	46,002	4,246	0,013	26,428	
2,310	214,19	46,647	1,167	341,83	45,999	4,252	0,013	26,358	
2,320	215,14	46,649	1,172	340,89	45,996	4,257	0,013	26,288	
2,330	216,08	46,651	1,177	339,94	45,992	4,262	0,013	26,218	
2,340	217,02	46,654	1,182	339,00	45,989	4,268	0,013	26,148	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
2,350	217,97	46,656	1,187	338,05	45,985	4,273	0,013	26,078	
2,360	218,91	46,659	1,192	337,11	45,982	4,278	0,013	26,008	
2,370	219,86	46,661	1,197	336,16	45,979	4,284	0,013	25,938	
2,380	220,80	46,663	1,202	335,22	45,975	4,289	0,013	25,868	
2,390	221,75	46,666	1,207	334,28	45,971	4,295	0,013	25,798	
2,400	222,69	46,668	1,213	333,33	45,968	4,300	0,012	25,728	
2,410	223,64	46,671	1,218	332,39	45,964	4,305	0,012	25,658	
2,420	224,58	46,673	1,223	331,44	45,961	4,311	0,012	25,588	
2,430	225,52	46,675	1,228	330,50	45,957	4,316	0,012	25,518	
2,440	226,47	46,678	1,233	329,55	45,953	4,321	0,012	25,448	
2,450	227,41	46,680	1,238	328,61	45,950	4,327	0,012	25,378	
2,460	228,36	46,682	1,243	327,66	45,946	4,332	0,012	25,308	
2,470	229,30	46,685	1,248	326,72	45,942	4,338	0,012	25,238	
2,480	230,25	46,687	1,253	325,77	45,938	4,343	0,012	25,168	
2,490	231,19	46,689	1,258	324,83	45,935	4,348	0,012	25,098	
2,500	232,14	46,692	1,263	323,88	45,931	4,354	0,012	25,028	
2,510	233,08	46,694	1,268	322,94	45,927	4,359	0,011	24,958	
2,520	234,03	46,696	1,273	321,99	45,923	4,365	0,011	24,888	
2,530	234,97	46,698	1,278	321,05	45,919	4,370	0,011	24,818	
2,540	235,92	46,701	1,283	320,10	45,915	4,376	0,011	24,748	
2,550	236,86	46,703	1,288	319,16	45,911	4,381	0,011	24,678	
2,560	237,81	46,705	1,293	318,21	45,907	4,386	0,011	24,608	
2,570	238,75	46,708	1,298	317,27	45,903	4,392	0,011	24,538	
2,580	239,70	46,710	1,303	316,32	45,899	4,397	0,011	24,468	
2,590	240,65	46,712	1,308	315,38	45,895	4,403	0,011	24,398	
2,600	241,59	46,714	1,313	314,43	45,891	4,408	0,011	24,328	
2,610	242,54	46,716	1,318	313,49	45,886	4,414	0,011	24,258	
2,620	243,48	46,719	1,323	312,54	45,882	4,419	0,011	24,188	
2,630	244,43	46,721	1,328	311,59	45,878	4,424	0,011	24,118	
2,640	245,37	46,723	1,333	310,65	45,873	4,430	0,011	24,048	
2,650	246,32	46,725	1,338	309,70	45,869	4,435	0,010	23,978	
2,660	247,27	46,727	1,343	308,76	45,865	4,441	0,010	23,908	
2,670	248,21	46,730	1,349	307,81	45,860	4,446	0,010	23,838	
2,680	249,16	46,732	1,354	306,86	45,856	4,452	0,010	23,768	
2,690	250,10	46,734	1,359	305,92	45,851	4,457	0,010	23,698	
2,700	251,05	46,736	1,364	304,97	45,847	4,463	0,010	23,628	
2,710	252,00	46,738	1,369	304,03	45,842	4,468	0,010	23,558	
2,720	252,94	46,740	1,374	303,08	45,838	4,474	0,010	23,488	
2,730	253,89	46,743	1,379	302,13	45,833	4,479	0,010	23,418	
2,740	254,83	46,745	1,384	301,19	45,828	4,485	0,010	23,348	
2,750	255,78	46,747	1,389	300,24	45,824	4,490	0,010	23,278	
2,760	256,73	46,749	1,394	299,29	45,819	4,496	0,010	23,208	
2,770	257,67	46,751	1,399	298,35	45,814	4,501	0,010	23,138	
2,780	258,62	46,753	1,404	297,40	45,809	4,507	0,010	23,068	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
2,790	259,57	46,755	1,409	296,46	45,805	4,512	0,009	22,998	
2,800	260,51	46,757	1,414	295,51	45,800	4,518	0,009	22,928	

Wind silhouette : 3 layers



Wind pressure 25,00 kg/m²

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
0,200	17,30	45,756	0,101	777,77	45,960	4,569	0,581	86,882	
0,210	18,19	45,770	0,106	776,88	45,959	4,574	0,551	86,781	
0,220	19,09	45,784	0,111	775,99	45,959	4,579	0,524	86,679	
0,230	19,98	45,796	0,116	775,09	45,959	4,584	0,500	86,578	
0,240	20,88	45,807	0,121	774,19	45,959	4,589	0,477	86,476	
0,250	21,78	45,818	0,126	773,29	45,959	4,594	0,456	86,374	
0,260	22,69	45,827	0,132	772,39	45,959	4,599	0,437	86,273	
0,270	23,59	45,836	0,137	771,49	45,959	4,604	0,420	86,171	
0,280	24,50	45,844	0,142	770,58	45,959	4,610	0,403	86,069	
0,290	25,41	45,852	0,147	769,67	45,959	4,615	0,388	85,967	
0,300	26,32	45,859	0,152	768,76	45,958	4,620	0,374	85,866	
0,310	27,23	45,866	0,157	767,85	45,958	4,625	0,361	85,764	
0,320	28,14	45,872	0,162	766,93	45,958	4,630	0,348	85,662	
0,330	29,06	45,878	0,167	766,02	45,958	4,635	0,336	85,560	
0,340	29,97	45,884	0,173	765,10	45,958	4,640	0,325	85,458	
0,350	30,89	45,890	0,178	764,19	45,958	4,645	0,315	85,356	
0,360	31,81	45,896	0,183	763,27	45,958	4,651	0,305	85,255	
0,370	32,73	45,901	0,188	762,35	45,957	4,656	0,296	85,153	
0,380	33,64	45,907	0,193	761,43	45,957	4,661	0,287	85,052	
0,390	34,56	45,912	0,198	760,51	45,957	4,666	0,279	84,950	
0,400	35,48	45,918	0,203	759,59	45,957	4,671	0,271	84,849	
0,410	36,40	45,923	0,208	758,67	45,957	4,676	0,264	84,747	
0,420	37,33	45,928	0,213	757,75	45,956	4,682	0,257	84,646	
0,430	38,25	45,934	0,219	756,83	45,956	4,687	0,250	84,544	
0,440	39,17	45,939	0,224	755,91	45,956	4,692	0,244	84,443	
0,450	40,09	45,944	0,229	754,99	45,956	4,697	0,238	84,342	
0,460	41,01	45,950	0,234	754,06	45,955	4,702	0,232	84,241	
0,470	41,94	45,955	0,239	753,14	45,955	4,708	0,226	84,140	
0,480	42,86	45,960	0,244	752,22	45,955	4,713	0,221	84,039	
0,490	43,78	45,965	0,249	751,29	45,955	4,718	0,216	83,938	
0,500	44,70	45,970	0,254	750,37	45,954	4,723	0,211	83,837	
0,510	45,63	45,976	0,259	749,45	45,954	4,728	0,206	83,736	
0,520	46,55	45,981	0,264	748,52	45,954	4,734	0,201	83,635	
0,530	47,48	45,986	0,269	747,60	45,953	4,739	0,197	83,534	
0,540	48,40	45,991	0,274	746,67	45,953	4,744	0,193	83,433	
0,550	49,33	45,996	0,279	745,75	45,952	4,749	0,189	83,332	
0,560	50,25	46,001	0,285	744,82	45,952	4,754	0,185	83,231	
0,570	51,18	46,007	0,290	743,90	45,952	4,760	0,181	83,131	
0,580	52,10	46,012	0,295	742,97	45,951	4,765	0,178	83,030	
0,590	53,03	46,017	0,300	742,05	45,951	4,770	0,174	82,929	
0,600	53,95	46,022	0,305	741,12	45,950	4,775	0,171	82,828	
0,610	54,88	46,027	0,310	740,20	45,950	4,780	0,168	82,728	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
0,620	55,81	46,032	0,315	739,27	45,949	4,786	0,165	82,627	
0,630	56,73	46,037	0,320	738,34	45,949	4,791	0,162	82,526	
0,640	57,66	46,042	0,325	737,42	45,948	4,796	0,159	82,426	
0,650	58,59	46,047	0,330	736,49	45,948	4,801	0,156	82,325	
0,660	59,51	46,052	0,335	735,56	45,947	4,807	0,153	82,225	
0,670	60,44	46,057	0,340	734,63	45,947	4,812	0,151	82,124	
0,680	61,37	46,062	0,345	733,71	45,946	4,817	0,148	82,023	
0,690	62,30	46,067	0,350	732,78	45,946	4,822	0,146	81,923	
0,700	63,22	46,072	0,355	731,85	45,945	4,828	0,143	81,822	
0,710	64,15	46,076	0,361	730,92	45,944	4,833	0,141	81,722	
0,720	65,08	46,081	0,366	729,99	45,944	4,838	0,139	81,621	
0,730	66,01	46,086	0,371	729,07	45,943	4,843	0,137	81,521	
0,740	66,94	46,091	0,376	728,14	45,943	4,848	0,134	81,420	
0,750	67,87	46,096	0,381	727,21	45,942	4,854	0,132	81,320	
0,760	68,80	46,101	0,386	726,28	45,941	4,859	0,130	81,219	
0,770	69,73	46,106	0,391	725,35	45,941	4,864	0,128	81,119	
0,780	70,65	46,110	0,396	724,42	45,940	4,869	0,126	81,019	
0,790	71,58	46,115	0,401	723,49	45,939	4,875	0,125	80,918	
0,800	72,51	46,120	0,406	722,56	45,939	4,880	0,123	80,818	
0,810	73,44	46,125	0,411	721,63	45,938	4,885	0,121	80,717	
0,820	74,37	46,129	0,416	720,70	45,937	4,890	0,119	80,617	
0,830	75,30	46,134	0,421	719,77	45,936	4,896	0,118	80,516	
0,840	76,23	46,139	0,426	718,84	45,936	4,901	0,116	80,416	
0,850	77,16	46,144	0,431	717,91	45,935	4,906	0,114	80,316	
0,860	78,10	46,148	0,436	716,98	45,934	4,911	0,113	80,215	
0,870	79,03	46,153	0,441	716,05	45,933	4,917	0,111	80,115	
0,880	79,96	46,158	0,446	715,12	45,932	4,922	0,110	80,015	
0,890	80,89	46,162	0,451	714,19	45,932	4,927	0,108	79,914	
0,900	81,82	46,167	0,457	713,26	45,931	4,933	0,107	79,814	
0,910	82,75	46,172	0,462	712,32	45,930	4,938	0,106	79,713	
0,920	83,68	46,176	0,467	711,39	45,929	4,943	0,104	79,613	
0,930	84,62	46,181	0,472	710,46	45,928	4,948	0,103	79,513	
0,940	85,55	46,185	0,477	709,53	45,927	4,954	0,102	79,412	
0,950	86,48	46,190	0,482	708,60	45,926	4,959	0,101	79,312	
0,960	87,41	46,194	0,487	707,66	45,926	4,964	0,099	79,212	
0,970	88,34	46,199	0,492	706,73	45,925	4,969	0,098	79,111	
0,980	89,28	46,203	0,497	705,80	45,924	4,975	0,097	79,011	
0,990	90,21	46,208	0,502	704,87	45,923	4,980	0,096	78,911	
1,000	91,14	46,212	0,507	703,93	45,922	4,985	0,095	78,810	
1,010	92,08	46,217	0,512	703,00	45,921	4,991	0,094	78,710	
1,020	93,01	46,221	0,517	702,07	45,920	4,996	0,092	78,610	
1,030	93,94	46,226	0,522	701,13	45,919	5,001	0,091	78,510	
1,040	94,88	46,230	0,527	700,20	45,918	5,006	0,090	78,409	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,050	95,81	46,235	0,532	699,27	45,917	5,012	0,089	78,309	
1,060	96,74	46,239	0,537	698,33	45,916	5,017	0,088	78,209	
1,070	97,68	46,243	0,542	697,40	45,915	5,022	0,087	78,108	
1,080	98,61	46,248	0,547	696,46	45,914	5,028	0,086	78,008	
1,090	99,55	46,252	0,552	695,53	45,913	5,033	0,085	77,908	
1,100	100,48	46,256	0,557	694,60	45,912	5,038	0,085	77,807	
1,110	101,41	46,261	0,562	693,66	45,910	5,043	0,084	77,707	
1,120	102,35	46,265	0,568	692,73	45,909	5,049	0,083	77,607	
1,130	103,28	46,269	0,573	691,79	45,908	5,054	0,082	77,507	
1,140	104,22	46,273	0,578	690,86	45,907	5,059	0,081	77,406	
1,150	105,15	46,277	0,583	689,92	45,906	5,065	0,080	77,306	
1,160	106,09	46,282	0,588	688,99	45,905	5,070	0,079	77,206	
1,170	107,02	46,286	0,593	688,05	45,904	5,075	0,079	77,106	
1,180	107,96	46,290	0,598	687,12	45,903	5,081	0,078	77,005	
1,190	108,89	46,294	0,603	686,18	45,901	5,086	0,077	76,905	
1,200	109,83	46,298	0,608	685,25	45,900	5,091	0,076	76,805	
1,210	110,76	46,302	0,613	684,31	45,899	5,097	0,075	76,705	
1,220	111,70	46,306	0,618	683,38	45,898	5,102	0,075	76,604	
1,230	112,64	46,310	0,623	682,44	45,897	5,107	0,074	76,504	
1,240	113,57	46,314	0,628	681,50	45,895	5,112	0,073	76,404	
1,250	114,51	46,318	0,633	680,57	45,894	5,118	0,073	76,304	
1,260	115,44	46,322	0,638	679,63	45,893	5,123	0,072	76,203	
1,270	116,38	46,326	0,643	678,70	45,892	5,128	0,071	76,103	
1,280	117,32	46,330	0,648	677,76	45,890	5,134	0,070	76,003	
1,290	118,25	46,334	0,653	676,82	45,889	5,139	0,070	75,903	
1,300	119,19	46,338	0,658	675,89	45,888	5,144	0,069	75,802	
1,310	120,13	46,342	0,663	674,95	45,886	5,150	0,069	75,702	
1,320	121,06	46,346	0,668	674,01	45,885	5,155	0,068	75,602	
1,330	122,00	46,349	0,673	673,08	45,884	5,160	0,067	75,502	
1,340	122,94	46,353	0,678	672,14	45,882	5,166	0,067	75,402	
1,350	123,87	46,357	0,684	671,20	45,881	5,171	0,066	75,301	
1,360	124,81	46,361	0,689	670,26	45,880	5,176	0,065	75,201	
1,370	125,75	46,365	0,694	669,33	45,878	5,182	0,065	75,101	
1,380	126,69	46,368	0,699	668,39	45,877	5,187	0,064	75,001	
1,390	127,62	46,372	0,704	667,45	45,875	5,192	0,064	74,900	
1,400	128,56	46,376	0,709	666,52	45,874	5,198	0,063	74,800	
1,410	129,50	46,379	0,714	665,58	45,873	5,203	0,063	74,700	
1,420	130,44	46,383	0,719	664,64	45,871	5,208	0,062	74,600	
1,430	131,37	46,387	0,724	663,70	45,870	5,214	0,062	74,500	
1,440	132,31	46,390	0,729	662,76	45,868	5,219	0,061	74,399	
1,450	133,25	46,394	0,734	661,83	45,867	5,224	0,060	74,299	
1,460	134,19	46,397	0,739	660,89	45,865	5,230	0,060	74,199	
1,470	135,13	46,401	0,744	659,95	45,864	5,235	0,059	74,099	
1,480	136,06	46,404	0,749	659,01	45,862	5,241	0,059	73,999	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,490	137,00	46,408	0,754	658,07	45,861	5,246	0,058	73,899	
1,500	137,94	46,411	0,759	657,13	45,859	5,251	0,058	73,798	
1,510	138,88	46,415	0,764	656,20	45,858	5,257	0,058	73,698	
1,520	139,82	46,418	0,769	655,26	45,856	5,262	0,057	73,598	
1,530	140,76	46,422	0,774	654,32	45,855	5,267	0,057	73,498	
1,540	141,69	46,425	0,779	653,38	45,853	5,273	0,056	73,398	
1,550	142,63	46,429	0,784	652,44	45,852	5,278	0,056	73,297	
1,560	143,57	46,432	0,789	651,50	45,850	5,283	0,055	73,197	
1,570	144,51	46,435	0,794	650,56	45,848	5,289	0,055	73,097	
1,580	145,45	46,439	0,799	649,62	45,847	5,294	0,054	72,997	
1,590	146,39	46,442	0,804	648,69	45,845	5,300	0,054	72,897	
1,600	147,33	46,445	0,810	647,75	45,844	5,305	0,053	72,797	
1,610	148,27	46,449	0,815	646,81	45,842	5,310	0,053	72,696	
1,620	149,21	46,452	0,820	645,87	45,840	5,316	0,053	72,596	
1,630	150,15	46,455	0,825	644,93	45,839	5,321	0,052	72,496	
1,640	151,09	46,459	0,830	643,99	45,837	5,326	0,052	72,396	
1,650	152,03	46,462	0,835	643,05	45,835	5,332	0,051	72,296	
1,660	152,97	46,465	0,840	642,11	45,834	5,337	0,051	72,196	
1,670	153,91	46,468	0,845	641,17	45,832	5,343	0,051	72,095	
1,680	154,85	46,471	0,850	640,23	45,830	5,348	0,050	71,995	
1,690	155,79	46,475	0,855	639,29	45,829	5,353	0,050	71,895	
1,700	156,73	46,478	0,860	638,35	45,827	5,359	0,050	71,795	
1,710	157,67	46,481	0,865	637,41	45,825	5,364	0,049	71,695	
1,720	158,61	46,484	0,870	636,47	45,823	5,369	0,049	71,595	
1,730	159,55	46,487	0,875	635,53	45,822	5,375	0,048	71,494	
1,740	160,49	46,490	0,880	634,59	45,820	5,380	0,048	71,394	
1,750	161,43	46,493	0,885	633,65	45,818	5,386	0,048	71,294	
1,760	162,37	46,496	0,890	632,71	45,816	5,391	0,047	71,194	
1,770	163,31	46,499	0,895	631,77	45,814	5,396	0,047	71,094	
1,780	164,25	46,503	0,900	630,83	45,813	5,402	0,047	70,994	
1,790	165,19	46,506	0,905	629,89	45,811	5,407	0,046	70,894	
1,800	166,13	46,509	0,910	628,95	45,809	5,413	0,046	70,793	
1,810	167,07	46,512	0,915	628,01	45,807	5,418	0,046	70,693	
1,820	168,01	46,515	0,920	627,06	45,805	5,423	0,045	70,593	
1,830	168,95	46,518	0,925	626,12	45,803	5,429	0,045	70,493	
1,840	169,89	46,520	0,930	625,18	45,801	5,434	0,045	70,393	
1,850	170,83	46,523	0,936	624,24	45,800	5,440	0,044	70,293	
1,860	171,78	46,526	0,941	623,30	45,798	5,445	0,044	70,193	
1,870	172,72	46,529	0,946	622,36	45,796	5,451	0,044	70,093	
1,880	173,66	46,532	0,951	621,42	45,794	5,456	0,043	69,992	
1,890	174,60	46,535	0,956	620,48	45,792	5,461	0,043	69,892	
1,900	175,54	46,538	0,961	619,53	45,790	5,467	0,043	69,792	
1,910	176,48	46,541	0,966	618,59	45,788	5,472	0,043	69,692	

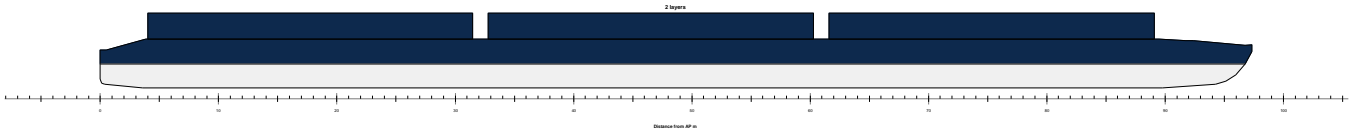
Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,920	177,42	46,544	0,971	617,65	45,786	5,478	0,042	69,592	
1,930	178,36	46,547	0,976	616,71	45,784	5,483	0,042	69,492	
1,940	179,31	46,549	0,981	615,77	45,782	5,488	0,042	69,392	
1,950	180,25	46,552	0,986	614,83	45,780	5,494	0,041	69,291	
1,960	181,19	46,555	0,991	613,89	45,778	5,499	0,041	69,191	
1,970	182,13	46,558	0,996	612,94	45,776	5,505	0,041	69,091	
1,980	183,07	46,561	1,001	612,00	45,774	5,510	0,041	68,991	
1,990	184,02	46,563	1,006	611,06	45,772	5,516	0,040	68,891	
2,000	184,96	46,566	1,011	610,12	45,770	5,521	0,040	68,791	
2,010	185,90	46,569	1,016	609,18	45,768	5,527	0,040	68,691	
2,020	186,84	46,572	1,021	608,23	45,766	5,532	0,040	68,591	
2,030	187,78	46,574	1,026	607,29	45,764	5,537	0,039	68,490	
2,040	188,73	46,577	1,031	606,35	45,762	5,543	0,039	68,390	
2,050	189,67	46,580	1,036	605,41	45,759	5,548	0,039	68,290	
2,060	190,61	46,582	1,041	604,46	45,757	5,554	0,039	68,190	
2,070	191,55	46,585	1,046	603,52	45,755	5,559	0,038	68,090	
2,080	192,50	46,588	1,051	602,58	45,753	5,565	0,038	67,990	
2,090	193,44	46,590	1,056	601,64	45,751	5,570	0,038	67,890	
2,100	194,38	46,593	1,061	600,69	45,749	5,576	0,038	67,790	
2,110	195,32	46,596	1,066	599,75	45,746	5,581	0,037	67,690	
2,120	196,27	46,598	1,072	598,81	45,744	5,586	0,037	67,589	
2,130	197,21	46,601	1,077	597,86	45,742	5,592	0,037	67,489	
2,140	198,15	46,604	1,082	596,92	45,740	5,597	0,037	67,389	
2,150	199,10	46,606	1,087	595,98	45,738	5,603	0,036	67,289	
2,160	200,04	46,609	1,092	595,04	45,735	5,608	0,036	67,189	
2,170	200,98	46,611	1,097	594,09	45,733	5,614	0,036	67,089	
2,180	201,93	46,614	1,102	593,15	45,731	5,619	0,036	66,989	
2,190	202,87	46,617	1,107	592,21	45,729	5,625	0,035	66,889	
2,200	203,81	46,619	1,112	591,26	45,726	5,630	0,035	66,789	
2,210	204,76	46,622	1,117	590,32	45,724	5,636	0,035	66,688	
2,220	205,70	46,624	1,122	589,38	45,722	5,641	0,035	66,588	
2,230	206,64	46,627	1,127	588,43	45,719	5,647	0,035	66,488	
2,240	207,59	46,629	1,132	587,49	45,717	5,652	0,034	66,388	
2,250	208,53	46,632	1,137	586,55	45,715	5,658	0,034	66,288	
2,260	209,47	46,634	1,142	585,60	45,712	5,663	0,034	66,188	
2,270	210,42	46,637	1,147	584,66	45,710	5,669	0,034	66,088	
2,280	211,36	46,639	1,152	583,71	45,707	5,674	0,034	65,988	
2,290	212,30	46,642	1,157	582,77	45,705	5,679	0,033	65,888	
2,300	213,25	46,644	1,162	581,83	45,703	5,685	0,033	65,787	
2,310	214,19	46,647	1,167	580,88	45,700	5,690	0,033	65,687	
2,320	215,14	46,649	1,172	579,94	45,698	5,696	0,033	65,587	
2,330	216,08	46,651	1,177	578,99	45,695	5,701	0,033	65,487	
2,340	217,02	46,654	1,182	578,05	45,693	5,707	0,032	65,387	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
2,350	217,97	46,656	1,187	577,11	45,690	5,712	0,032	65,287	
2,360	218,91	46,659	1,192	576,16	45,688	5,718	0,032	65,187	
2,370	219,86	46,661	1,197	575,22	45,685	5,723	0,032	65,087	
2,380	220,80	46,663	1,202	574,27	45,683	5,729	0,032	64,987	
2,390	221,75	46,666	1,207	573,33	45,680	5,734	0,031	64,886	
2,400	222,69	46,668	1,213	572,38	45,678	5,740	0,031	64,786	
2,410	223,64	46,671	1,218	571,44	45,675	5,746	0,031	64,686	
2,420	224,58	46,673	1,223	570,50	45,673	5,751	0,031	64,586	
2,430	225,52	46,675	1,228	569,55	45,670	5,757	0,031	64,486	
2,440	226,47	46,678	1,233	568,61	45,667	5,762	0,031	64,386	
2,450	227,41	46,680	1,238	567,66	45,665	5,768	0,030	64,286	
2,460	228,36	46,682	1,243	566,72	45,662	5,773	0,030	64,186	
2,470	229,30	46,685	1,248	565,77	45,659	5,779	0,030	64,086	
2,480	230,25	46,687	1,253	564,83	45,657	5,784	0,030	63,985	
2,490	231,19	46,689	1,258	563,88	45,654	5,790	0,030	63,885	
2,500	232,14	46,692	1,263	562,94	45,651	5,795	0,030	63,785	
2,510	233,08	46,694	1,268	561,99	45,649	5,801	0,029	63,685	
2,520	234,03	46,696	1,273	561,05	45,646	5,806	0,029	63,585	
2,530	234,97	46,698	1,278	560,10	45,643	5,812	0,029	63,485	
2,540	235,92	46,701	1,283	559,16	45,641	5,817	0,029	63,385	
2,550	236,86	46,703	1,288	558,21	45,638	5,823	0,029	63,285	
2,560	237,81	46,705	1,293	557,27	45,635	5,828	0,029	63,185	
2,570	238,75	46,708	1,298	556,32	45,632	5,834	0,028	63,085	
2,580	239,70	46,710	1,303	555,37	45,629	5,840	0,028	62,984	
2,590	240,65	46,712	1,308	554,43	45,627	5,845	0,028	62,884	
2,600	241,59	46,714	1,313	553,48	45,624	5,851	0,028	62,784	
2,610	242,54	46,716	1,318	552,54	45,621	5,856	0,028	62,684	
2,620	243,48	46,719	1,323	551,59	45,618	5,862	0,028	62,584	
2,630	244,43	46,721	1,328	550,65	45,615	5,867	0,027	62,484	
2,640	245,37	46,723	1,333	549,70	45,612	5,873	0,027	62,384	
2,650	246,32	46,725	1,338	548,76	45,609	5,878	0,027	62,284	
2,660	247,27	46,727	1,343	547,81	45,607	5,884	0,027	62,184	
2,670	248,21	46,730	1,349	546,86	45,604	5,890	0,027	62,083	
2,680	249,16	46,732	1,354	545,92	45,601	5,895	0,027	61,983	
2,690	250,10	46,734	1,359	544,97	45,598	5,901	0,027	61,883	
2,700	251,05	46,736	1,364	544,03	45,595	5,906	0,026	61,783	
2,710	252,00	46,738	1,369	543,08	45,592	5,912	0,026	61,683	
2,720	252,94	46,740	1,374	542,13	45,589	5,917	0,026	61,583	
2,730	253,89	46,743	1,379	541,19	45,586	5,923	0,026	61,483	
2,740	254,83	46,745	1,384	540,24	45,583	5,929	0,026	61,383	
2,750	255,78	46,747	1,389	539,29	45,580	5,934	0,026	61,283	
2,760	256,73	46,749	1,394	538,35	45,577	5,940	0,026	61,183	
2,770	257,67	46,751	1,399	537,40	45,573	5,945	0,025	61,082	
2,780	258,62	46,753	1,404	536,45	45,570	5,951	0,025	60,982	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
2,790	259,57	46,755	1,409	535,51	45,567	5,957	0,025	60,882	
2,800	260,51	46,757	1,414	534,56	45,564	5,962	0,025	60,782	

Calculation of wind moments

Wind silhouette : 2 layers



Wind pressure 25,00 kg/m²

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
0,200	17,79	47,000	0,101	554,00	47,732	3,144	0,223	42,149	
0,210	18,71	47,016	0,106	553,08	47,733	3,149	0,212	42,076	
0,220	19,63	47,032	0,111	552,16	47,734	3,154	0,202	42,003	
0,230	20,55	47,047	0,116	551,24	47,734	3,159	0,192	41,930	
0,240	21,47	47,061	0,121	550,32	47,735	3,164	0,183	41,857	
0,250	22,40	47,073	0,126	549,39	47,735	3,169	0,175	41,784	
0,260	23,33	47,085	0,132	548,46	47,736	3,174	0,168	41,710	
0,270	24,26	47,095	0,137	547,53	47,737	3,179	0,161	41,637	
0,280	25,19	47,104	0,142	546,60	47,737	3,183	0,155	41,564	
0,290	26,12	47,113	0,147	545,67	47,738	3,188	0,149	41,491	
0,300	27,06	47,120	0,152	544,73	47,739	3,193	0,143	41,418	
0,310	28,00	47,128	0,157	543,79	47,739	3,198	0,138	41,345	
0,320	28,93	47,134	0,162	542,85	47,740	3,203	0,133	41,272	
0,330	29,87	47,141	0,167	541,91	47,741	3,208	0,129	41,198	
0,340	30,82	47,147	0,173	540,97	47,742	3,213	0,125	41,125	
0,350	31,76	47,153	0,178	540,03	47,742	3,218	0,121	41,052	
0,360	32,70	47,159	0,183	539,09	47,743	3,223	0,117	40,979	
0,370	33,65	47,165	0,188	538,14	47,744	3,228	0,113	40,906	
0,380	34,59	47,171	0,193	537,20	47,744	3,233	0,110	40,833	
0,390	35,53	47,176	0,198	536,25	47,745	3,238	0,107	40,760	
0,400	36,48	47,182	0,203	535,31	47,745	3,243	0,104	40,687	
0,410	37,43	47,188	0,208	534,36	47,746	3,249	0,101	40,614	
0,420	38,37	47,193	0,213	533,42	47,747	3,254	0,098	40,541	
0,430	39,32	47,199	0,219	532,47	47,747	3,259	0,095	40,468	
0,440	40,27	47,204	0,224	531,52	47,748	3,264	0,093	40,395	
0,450	41,21	47,210	0,229	530,57	47,748	3,269	0,091	40,323	
0,460	42,16	47,215	0,234	529,63	47,749	3,274	0,088	40,250	
0,470	43,11	47,221	0,239	528,68	47,749	3,279	0,086	40,177	
0,480	44,06	47,226	0,244	527,73	47,750	3,284	0,084	40,105	
0,490	45,01	47,231	0,249	526,78	47,750	3,289	0,082	40,032	
0,500	45,96	47,237	0,254	525,83	47,751	3,294	0,080	39,959	
0,510	46,91	47,242	0,259	524,88	47,751	3,299	0,078	39,887	
0,520	47,86	47,247	0,264	523,93	47,752	3,304	0,077	39,814	
0,530	48,80	47,253	0,269	522,98	47,752	3,309	0,075	39,742	
0,540	49,75	47,258	0,274	522,03	47,753	3,314	0,073	39,669	
0,550	50,71	47,263	0,279	521,08	47,753	3,319	0,072	39,597	
0,560	51,66	47,268	0,285	520,13	47,753	3,324	0,070	39,524	
0,570	52,61	47,274	0,290	519,18	47,754	3,329	0,069	39,452	
0,580	53,56	47,279	0,295	518,23	47,754	3,334	0,067	39,379	
0,590	54,51	47,284	0,300	517,28	47,754	3,339	0,066	39,307	
0,600	55,46	47,289	0,305	516,33	47,755	3,344	0,065	39,234	
0,610	56,41	47,295	0,310	515,38	47,755	3,349	0,064	39,162	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
0,620	57,36	47,300	0,315	514,42	47,755	3,354	0,062	39,090	
0,630	58,32	47,305	0,320	513,47	47,755	3,360	0,061	39,017	
0,640	59,27	47,310	0,325	512,52	47,756	3,365	0,060	38,945	
0,650	60,22	47,315	0,330	511,57	47,756	3,370	0,059	38,873	
0,660	61,17	47,320	0,335	510,61	47,756	3,375	0,058	38,800	
0,670	62,13	47,325	0,340	509,66	47,756	3,380	0,057	38,728	
0,680	63,08	47,330	0,345	508,71	47,757	3,385	0,056	38,656	
0,690	64,03	47,335	0,350	507,76	47,757	3,390	0,055	38,583	
0,700	64,99	47,340	0,355	506,80	47,757	3,395	0,054	38,511	
0,710	65,94	47,345	0,360	505,85	47,757	3,400	0,053	38,439	
0,720	66,89	47,350	0,366	504,89	47,757	3,405	0,052	38,367	
0,730	67,85	47,355	0,371	503,94	47,757	3,410	0,051	38,294	
0,740	68,80	47,360	0,376	502,99	47,757	3,415	0,051	38,222	
0,750	69,76	47,365	0,381	502,03	47,757	3,420	0,050	38,150	
0,760	70,71	47,370	0,386	501,08	47,757	3,425	0,049	38,078	
0,770	71,67	47,375	0,391	500,12	47,757	3,430	0,048	38,005	
0,780	72,62	47,380	0,396	499,17	47,758	3,436	0,047	37,933	
0,790	73,58	47,384	0,401	498,21	47,758	3,441	0,047	37,861	
0,800	74,53	47,389	0,406	497,26	47,757	3,446	0,046	37,789	
0,810	75,49	47,394	0,411	496,30	47,757	3,451	0,045	37,717	
0,820	76,44	47,399	0,416	495,35	47,757	3,456	0,045	37,644	
0,830	77,40	47,404	0,421	494,39	47,757	3,461	0,044	37,572	
0,840	78,35	47,409	0,426	493,43	47,757	3,466	0,043	37,500	
0,850	79,31	47,413	0,431	492,48	47,757	3,471	0,043	37,428	
0,860	80,27	47,418	0,436	491,52	47,757	3,476	0,042	37,356	
0,870	81,22	47,423	0,441	490,57	47,757	3,481	0,042	37,284	
0,880	82,18	47,428	0,446	489,61	47,757	3,486	0,041	37,211	
0,890	83,14	47,432	0,451	488,65	47,757	3,492	0,040	37,139	
0,900	84,09	47,437	0,456	487,70	47,756	3,497	0,040	37,067	
0,910	85,05	47,442	0,461	486,74	47,756	3,502	0,039	36,995	
0,920	86,01	47,447	0,467	485,78	47,756	3,507	0,039	36,923	
0,930	86,96	47,451	0,472	484,82	47,756	3,512	0,038	36,851	
0,940	87,92	47,456	0,477	483,87	47,756	3,517	0,038	36,778	
0,950	88,88	47,460	0,482	482,91	47,755	3,522	0,037	36,706	
0,960	89,84	47,465	0,487	481,95	47,755	3,527	0,037	36,634	
0,970	90,80	47,470	0,492	480,99	47,755	3,532	0,036	36,562	
0,980	91,75	47,474	0,497	480,03	47,754	3,537	0,036	36,490	
0,990	92,71	47,479	0,502	479,08	47,754	3,543	0,035	36,418	
1,000	93,67	47,483	0,507	478,12	47,754	3,548	0,035	36,346	
1,010	94,63	47,488	0,512	477,16	47,753	3,553	0,035	36,273	
1,020	95,59	47,492	0,517	476,20	47,753	3,558	0,034	36,201	
1,030	96,55	47,497	0,522	475,24	47,753	3,563	0,034	36,129	
1,040	97,51	47,501	0,527	474,28	47,752	3,568	0,033	36,057	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,050	98,47	47,506	0,532	473,32	47,752	3,573	0,033	35,985	
1,060	99,43	47,510	0,537	472,36	47,751	3,578	0,033	35,913	
1,070	100,39	47,515	0,542	471,40	47,751	3,583	0,032	35,841	
1,080	101,34	47,519	0,547	470,44	47,750	3,589	0,032	35,769	
1,090	102,30	47,524	0,552	469,48	47,750	3,594	0,031	35,696	
1,100	103,26	47,528	0,557	468,52	47,749	3,599	0,031	35,624	
1,110	104,22	47,533	0,562	467,56	47,749	3,604	0,031	35,552	
1,120	105,18	47,537	0,567	466,60	47,748	3,609	0,030	35,480	
1,130	106,14	47,541	0,573	465,64	47,748	3,614	0,030	35,408	
1,140	107,11	47,545	0,578	464,68	47,747	3,619	0,030	35,336	
1,150	108,07	47,550	0,583	463,72	47,747	3,624	0,029	35,264	
1,160	109,03	47,554	0,588	462,76	47,746	3,630	0,029	35,192	
1,170	109,99	47,558	0,593	461,80	47,746	3,635	0,029	35,120	
1,180	110,95	47,562	0,598	460,84	47,745	3,640	0,028	35,048	
1,190	111,91	47,566	0,603	459,88	47,744	3,645	0,028	34,976	
1,200	112,87	47,571	0,608	458,92	47,744	3,650	0,028	34,903	
1,210	113,83	47,575	0,613	457,96	47,743	3,655	0,028	34,831	
1,220	114,79	47,579	0,618	457,00	47,742	3,660	0,027	34,759	
1,230	115,75	47,583	0,623	456,04	47,742	3,665	0,027	34,687	
1,240	116,71	47,587	0,628	455,07	47,741	3,671	0,027	34,615	
1,250	117,68	47,591	0,633	454,11	47,740	3,676	0,026	34,543	
1,260	118,64	47,595	0,638	453,15	47,740	3,681	0,026	34,471	
1,270	119,60	47,599	0,643	452,19	47,739	3,686	0,026	34,399	
1,280	120,56	47,603	0,648	451,23	47,738	3,691	0,026	34,327	
1,290	121,52	47,606	0,653	450,26	47,737	3,696	0,025	34,255	
1,300	122,49	47,610	0,658	449,30	47,737	3,701	0,025	34,183	
1,310	123,45	47,614	0,663	448,34	47,736	3,707	0,025	34,111	
1,320	124,41	47,618	0,668	447,38	47,735	3,712	0,025	34,039	
1,330	125,37	47,622	0,673	446,42	47,734	3,717	0,024	33,967	
1,340	126,33	47,626	0,678	445,45	47,733	3,722	0,024	33,895	
1,350	127,30	47,629	0,683	444,49	47,732	3,727	0,024	33,822	
1,360	128,26	47,633	0,688	443,53	47,732	3,732	0,024	33,750	
1,370	129,22	47,637	0,694	442,57	47,731	3,737	0,023	33,678	
1,380	130,19	47,641	0,699	441,60	47,730	3,743	0,023	33,606	
1,390	131,15	47,644	0,704	440,64	47,729	3,748	0,023	33,534	
1,400	132,11	47,648	0,709	439,68	47,728	3,753	0,023	33,462	
1,410	133,07	47,652	0,714	438,71	47,727	3,758	0,022	33,390	
1,420	134,04	47,655	0,719	437,75	47,726	3,763	0,022	33,318	
1,430	135,00	47,659	0,724	436,79	47,725	3,768	0,022	33,246	
1,440	135,96	47,663	0,729	435,82	47,724	3,774	0,022	33,174	
1,450	136,93	47,666	0,734	434,86	47,723	3,779	0,022	33,102	
1,460	137,89	47,670	0,739	433,90	47,722	3,784	0,021	33,030	
1,470	138,85	47,673	0,744	432,93	47,721	3,789	0,021	32,958	
1,480	139,82	47,677	0,749	431,97	47,720	3,794	0,021	32,886	

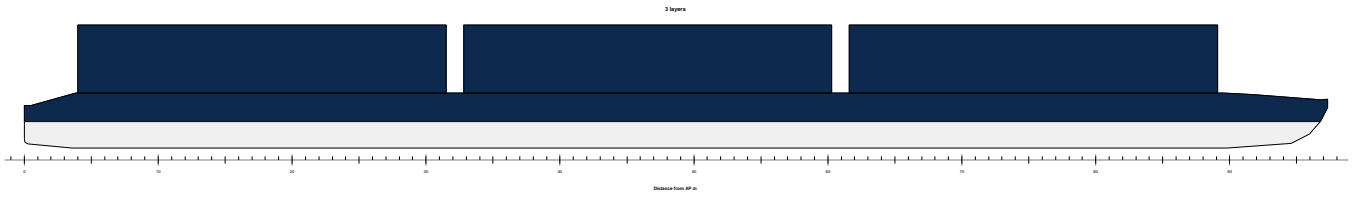
Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,490	140,78	47,680	0,754	431,01	47,719	3,799	0,021	32,814	
1,500	141,75	47,684	0,759	430,04	47,718	3,804	0,021	32,742	
1,510	142,71	47,687	0,764	429,08	47,717	3,810	0,020	32,670	
1,520	143,67	47,691	0,769	428,11	47,716	3,815	0,020	32,598	
1,530	144,64	47,694	0,774	427,15	47,715	3,820	0,020	32,526	
1,540	145,60	47,697	0,779	426,19	47,714	3,825	0,020	32,454	
1,550	146,57	47,701	0,784	425,22	47,713	3,830	0,020	32,382	
1,560	147,53	47,704	0,789	424,26	47,711	3,835	0,020	32,310	
1,570	148,49	47,707	0,794	423,29	47,710	3,841	0,019	32,238	
1,580	149,46	47,711	0,799	422,33	47,709	3,846	0,019	32,166	
1,590	150,42	47,714	0,804	421,36	47,708	3,851	0,019	32,094	
1,600	151,39	47,717	0,809	420,40	47,707	3,856	0,019	32,022	
1,610	152,35	47,721	0,814	419,44	47,705	3,861	0,019	31,950	
1,620	153,32	47,724	0,819	418,47	47,704	3,867	0,019	31,878	
1,630	154,28	47,727	0,825	417,51	47,703	3,872	0,018	31,806	
1,640	155,25	47,731	0,830	416,54	47,702	3,877	0,018	31,734	
1,650	156,21	47,734	0,835	415,58	47,700	3,882	0,018	31,662	
1,660	157,18	47,737	0,840	414,61	47,699	3,887	0,018	31,590	
1,670	158,14	47,740	0,845	413,64	47,698	3,892	0,018	31,518	
1,680	159,11	47,743	0,850	412,68	47,696	3,898	0,018	31,446	
1,690	160,07	47,747	0,855	411,71	47,695	3,903	0,018	31,374	
1,700	161,04	47,750	0,860	410,75	47,694	3,908	0,017	31,302	
1,710	162,01	47,753	0,865	409,78	47,692	3,913	0,017	31,230	
1,720	162,97	47,756	0,870	408,82	47,691	3,918	0,017	31,158	
1,730	163,94	47,759	0,875	407,85	47,690	3,924	0,017	31,086	
1,740	164,90	47,762	0,880	406,89	47,688	3,929	0,017	31,014	
1,750	165,87	47,765	0,885	405,92	47,687	3,934	0,017	30,941	
1,760	166,83	47,768	0,890	404,95	47,685	3,939	0,017	30,869	
1,770	167,80	47,771	0,895	403,99	47,684	3,944	0,016	30,797	
1,780	168,77	47,774	0,900	403,02	47,682	3,950	0,016	30,725	
1,790	169,73	47,777	0,905	402,06	47,681	3,955	0,016	30,653	
1,800	170,70	47,781	0,910	401,09	47,679	3,960	0,016	30,581	
1,810	171,66	47,784	0,915	400,12	47,678	3,965	0,016	30,509	
1,820	172,63	47,787	0,920	399,16	47,676	3,970	0,016	30,437	
1,830	173,60	47,789	0,925	398,19	47,675	3,976	0,016	30,365	
1,840	174,56	47,792	0,930	397,22	47,673	3,981	0,015	30,293	
1,850	175,53	47,795	0,935	396,26	47,671	3,986	0,015	30,221	
1,860	176,50	47,798	0,940	395,29	47,670	3,991	0,015	30,149	
1,870	177,46	47,801	0,945	394,32	47,668	3,996	0,015	30,077	
1,880	178,43	47,804	0,950	393,36	47,667	4,002	0,015	30,005	
1,890	179,40	47,807	0,955	392,39	47,665	4,007	0,015	29,933	
1,900	180,36	47,810	0,961	391,42	47,663	4,012	0,015	29,861	
1,910	181,33	47,813	0,966	390,46	47,661	4,017	0,015	29,789	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,920	182,30	47,816	0,971	389,49	47,660	4,023	0,015	29,717	
1,930	183,27	47,819	0,976	388,52	47,658	4,028	0,014	29,645	
1,940	184,23	47,822	0,981	387,55	47,656	4,033	0,014	29,573	
1,950	185,20	47,824	0,986	386,59	47,654	4,038	0,014	29,501	
1,960	186,17	47,827	0,991	385,62	47,653	4,043	0,014	29,429	
1,970	187,14	47,830	0,996	384,65	47,651	4,049	0,014	29,357	
1,980	188,10	47,833	1,001	383,68	47,649	4,054	0,014	29,285	
1,990	189,07	47,836	1,006	382,72	47,647	4,059	0,014	29,213	
2,000	190,04	47,838	1,011	381,75	47,645	4,064	0,014	29,141	
2,010	191,01	47,841	1,016	380,78	47,643	4,070	0,014	29,069	
2,020	191,97	47,844	1,021	379,81	47,642	4,075	0,013	28,997	
2,030	192,94	47,847	1,026	378,85	47,640	4,080	0,013	28,925	
2,040	193,91	47,850	1,031	377,88	47,638	4,085	0,013	28,853	
2,050	194,88	47,852	1,036	376,91	47,636	4,091	0,013	28,781	
2,060	195,85	47,855	1,041	375,94	47,634	4,096	0,013	28,709	
2,070	196,81	47,858	1,046	374,97	47,632	4,101	0,013	28,637	
2,080	197,78	47,860	1,051	374,01	47,630	4,106	0,013	28,565	
2,090	198,75	47,863	1,056	373,04	47,628	4,112	0,013	28,493	
2,100	199,72	47,866	1,061	372,07	47,626	4,117	0,013	28,421	
2,110	200,69	47,869	1,066	371,10	47,623	4,122	0,013	28,349	
2,120	201,66	47,871	1,071	370,13	47,621	4,127	0,012	28,277	
2,130	202,63	47,874	1,076	369,16	47,619	4,133	0,012	28,205	
2,140	203,59	47,877	1,081	368,19	47,617	4,138	0,012	28,133	
2,150	204,56	47,879	1,086	367,23	47,615	4,143	0,012	28,061	
2,160	205,53	47,882	1,091	366,26	47,613	4,148	0,012	27,989	
2,170	206,50	47,884	1,097	365,29	47,611	4,154	0,012	27,917	
2,180	207,47	47,887	1,102	364,32	47,608	4,159	0,012	27,845	
2,190	208,44	47,890	1,107	363,35	47,606	4,164	0,012	27,773	
2,200	209,41	47,892	1,112	362,38	47,604	4,169	0,012	27,701	
2,210	210,38	47,895	1,117	361,41	47,602	4,175	0,012	27,629	
2,220	211,34	47,897	1,122	360,44	47,599	4,180	0,012	27,557	
2,230	212,31	47,900	1,127	359,47	47,597	4,185	0,012	27,486	
2,240	213,28	47,902	1,132	358,51	47,595	4,190	0,011	27,414	
2,250	214,25	47,905	1,137	357,54	47,592	4,196	0,011	27,342	
2,260	215,22	47,907	1,142	356,57	47,590	4,201	0,011	27,270	
2,270	216,19	47,910	1,147	355,60	47,588	4,206	0,011	27,198	
2,280	217,16	47,912	1,152	354,63	47,585	4,212	0,011	27,126	
2,290	218,13	47,915	1,157	353,66	47,583	4,217	0,011	27,054	
2,300	219,10	47,917	1,162	352,69	47,580	4,222	0,011	26,982	
2,310	220,07	47,920	1,167	351,72	47,578	4,227	0,011	26,910	
2,320	221,04	47,922	1,172	350,75	47,575	4,233	0,011	26,838	
2,330	222,01	47,925	1,177	349,78	47,573	4,238	0,011	26,766	
2,340	222,98	47,927	1,182	348,81	47,570	4,243	0,011	26,694	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
2,350	223,95	47,930	1,187	347,84	47,568	4,249	0,011	26,622	
2,360	224,92	47,932	1,192	346,87	47,565	4,254	0,010	26,550	
2,370	225,89	47,935	1,197	345,90	47,562	4,259	0,010	26,478	
2,380	226,86	47,937	1,202	344,93	47,560	4,264	0,010	26,406	
2,390	227,83	47,939	1,207	343,96	47,557	4,270	0,010	26,334	
2,400	228,80	47,942	1,212	342,99	47,555	4,275	0,010	26,262	
2,410	229,77	47,944	1,217	342,02	47,552	4,280	0,010	26,190	
2,420	230,74	47,947	1,222	341,05	47,549	4,286	0,010	26,118	
2,430	231,71	47,949	1,227	340,08	47,546	4,291	0,010	26,046	
2,440	232,68	47,951	1,232	339,11	47,544	4,296	0,010	25,974	
2,450	233,65	47,954	1,238	338,14	47,541	4,302	0,010	25,902	
2,460	234,62	47,956	1,243	337,17	47,538	4,307	0,010	25,830	
2,470	235,59	47,958	1,248	336,20	47,535	4,312	0,010	25,758	
2,480	236,56	47,961	1,253	335,23	47,532	4,318	0,010	25,686	
2,490	237,53	47,963	1,258	334,26	47,529	4,323	0,010	25,614	
2,500	238,50	47,965	1,263	333,29	47,526	4,328	0,010	25,542	
2,510	239,47	47,968	1,268	332,32	47,523	4,333	0,009	25,470	
2,520	240,44	47,970	1,273	331,34	47,520	4,339	0,009	25,398	
2,530	241,41	47,972	1,278	330,37	47,517	4,344	0,009	25,326	
2,540	242,39	47,975	1,283	329,40	47,514	4,349	0,009	25,254	
2,550	243,36	47,977	1,288	328,43	47,511	4,355	0,009	25,182	
2,560	244,33	47,979	1,293	327,46	47,508	4,360	0,009	25,110	
2,570	245,30	47,981	1,298	326,49	47,505	4,365	0,009	25,038	
2,580	246,27	47,984	1,303	325,52	47,502	4,371	0,009	24,966	
2,590	247,24	47,986	1,308	324,55	47,499	4,376	0,009	24,894	
2,600	248,21	47,988	1,313	323,58	47,496	4,382	0,009	24,822	
2,610	249,18	47,990	1,318	322,61	47,493	4,387	0,009	24,750	
2,620	250,15	47,993	1,323	321,63	47,489	4,392	0,009	24,678	
2,630	251,13	47,995	1,328	320,66	47,486	4,398	0,009	24,606	
2,640	252,10	47,997	1,333	319,69	47,483	4,403	0,009	24,534	
2,650	253,07	47,999	1,338	318,72	47,479	4,408	0,009	24,462	
2,660	254,04	48,001	1,343	317,75	47,476	4,414	0,009	24,390	
2,670	255,01	48,004	1,348	316,78	47,473	4,419	0,008	24,318	
2,680	255,98	48,006	1,353	315,81	47,469	4,424	0,008	24,246	
2,690	256,95	48,008	1,358	314,83	47,466	4,430	0,008	24,174	
2,700	257,93	48,010	1,363	313,86	47,462	4,435	0,008	24,102	
2,710	258,90	48,012	1,368	312,89	47,459	4,440	0,008	24,030	
2,720	259,87	48,015	1,373	311,92	47,455	4,446	0,008	23,958	
2,730	260,84	48,017	1,379	310,95	47,452	4,451	0,008	23,886	
2,740	261,81	48,019	1,384	309,97	47,448	4,457	0,008	23,814	
2,750	262,79	48,021	1,389	309,00	47,445	4,462	0,008	23,742	
2,760	263,76	48,023	1,394	308,03	47,441	4,467	0,008	23,670	
2,770	264,73	48,025	1,399	307,06	47,437	4,473	0,008	23,598	
2,780	265,70	48,027	1,404	306,09	47,434	4,478	0,008	23,526	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
2,790	266,67	48,029	1,409	305,11	47,430	4,484	0,008	23,454	
2,800	267,65	48,032	1,414	304,14	47,426	4,489	0,008	23,382	

Wind silhouette : 3 layers



Wind pressure 25,00 kg/m²

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
0,200	17,79	47,000	0,101	792,75	47,374	4,531	0,465	87,792	
0,210	18,71	47,016	0,106	791,83	47,374	4,536	0,442	87,688	
0,220	19,63	47,032	0,111	790,91	47,374	4,541	0,420	87,585	
0,230	20,55	47,047	0,116	789,99	47,374	4,546	0,401	87,481	
0,240	21,47	47,061	0,121	789,06	47,374	4,551	0,383	87,378	
0,250	22,40	47,073	0,126	788,14	47,374	4,556	0,366	87,274	
0,260	23,33	47,085	0,132	787,21	47,374	4,561	0,351	87,171	
0,270	24,26	47,095	0,137	786,28	47,374	4,566	0,337	87,067	
0,280	25,19	47,104	0,142	785,35	47,374	4,571	0,324	86,963	
0,290	26,12	47,113	0,147	784,41	47,374	4,576	0,312	86,860	
0,300	27,06	47,120	0,152	783,48	47,374	4,581	0,300	86,756	
0,310	28,00	47,128	0,157	782,54	47,374	4,586	0,290	86,652	
0,320	28,93	47,134	0,162	781,60	47,374	4,592	0,280	86,548	
0,330	29,87	47,141	0,167	780,66	47,374	4,597	0,270	86,445	
0,340	30,82	47,147	0,173	779,72	47,374	4,602	0,262	86,341	
0,350	31,76	47,153	0,178	778,78	47,374	4,607	0,253	86,237	
0,360	32,70	47,159	0,183	777,83	47,374	4,612	0,245	86,134	
0,370	33,65	47,165	0,188	776,89	47,374	4,617	0,238	86,030	
0,380	34,59	47,171	0,193	775,94	47,374	4,623	0,231	85,927	
0,390	35,53	47,176	0,198	775,00	47,374	4,628	0,225	85,823	
0,400	36,48	47,182	0,203	774,05	47,374	4,633	0,218	85,720	
0,410	37,43	47,188	0,208	773,11	47,374	4,638	0,212	85,616	
0,420	38,37	47,193	0,213	772,16	47,374	4,643	0,207	85,513	
0,430	39,32	47,199	0,219	771,21	47,374	4,648	0,201	85,410	
0,440	40,27	47,204	0,224	770,27	47,374	4,654	0,196	85,307	
0,450	41,21	47,210	0,229	769,32	47,374	4,659	0,191	85,203	
0,460	42,16	47,215	0,234	768,37	47,374	4,664	0,187	85,100	
0,470	43,11	47,221	0,239	767,42	47,374	4,669	0,182	84,997	
0,480	44,06	47,226	0,244	766,48	47,373	4,674	0,178	84,894	
0,490	45,01	47,231	0,249	765,53	47,373	4,680	0,174	84,791	
0,500	45,96	47,237	0,254	764,58	47,373	4,685	0,170	84,688	
0,510	46,91	47,242	0,259	763,63	47,373	4,690	0,166	84,586	
0,520	47,86	47,247	0,264	762,68	47,373	4,695	0,162	84,483	
0,530	48,80	47,253	0,269	761,73	47,373	4,700	0,159	84,380	
0,540	49,75	47,258	0,274	760,78	47,372	4,706	0,156	84,277	
0,550	50,71	47,263	0,279	759,83	47,372	4,711	0,152	84,174	
0,560	51,66	47,268	0,285	758,88	47,372	4,716	0,149	84,072	
0,570	52,61	47,274	0,290	757,93	47,372	4,721	0,146	83,969	
0,580	53,56	47,279	0,295	756,98	47,372	4,726	0,144	83,866	
0,590	54,51	47,284	0,300	756,03	47,371	4,732	0,141	83,764	
0,600	55,46	47,289	0,305	755,07	47,371	4,737	0,138	83,661	
0,610	56,41	47,295	0,310	754,12	47,371	4,742	0,136	83,558	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
0,620	57,36	47,300	0,315	753,17	47,370	4,747	0,133	83,456	
0,630	58,32	47,305	0,320	752,22	47,370	4,752	0,131	83,353	
0,640	59,27	47,310	0,325	751,27	47,370	4,758	0,128	83,251	
0,650	60,22	47,315	0,330	750,31	47,369	4,763	0,126	83,148	
0,660	61,17	47,320	0,335	749,36	47,369	4,768	0,124	83,045	
0,670	62,13	47,325	0,340	748,41	47,369	4,773	0,122	82,943	
0,680	63,08	47,330	0,345	747,45	47,368	4,779	0,120	82,840	
0,690	64,03	47,335	0,350	746,50	47,368	4,784	0,118	82,738	
0,700	64,99	47,340	0,355	745,55	47,368	4,789	0,116	82,636	
0,710	65,94	47,345	0,360	744,59	47,367	4,794	0,114	82,533	
0,720	66,89	47,350	0,366	743,64	47,367	4,799	0,112	82,431	
0,730	67,85	47,355	0,371	742,69	47,366	4,805	0,110	82,328	
0,740	68,80	47,360	0,376	741,73	47,366	4,810	0,109	82,226	
0,750	69,76	47,365	0,381	740,78	47,365	4,815	0,107	82,123	
0,760	70,71	47,370	0,386	739,82	47,365	4,820	0,105	82,021	
0,770	71,67	47,375	0,391	738,87	47,365	4,826	0,104	81,919	
0,780	72,62	47,380	0,396	737,91	47,364	4,831	0,102	81,816	
0,790	73,58	47,384	0,401	736,96	47,364	4,836	0,101	81,714	
0,800	74,53	47,389	0,406	736,00	47,363	4,841	0,099	81,612	
0,810	75,49	47,394	0,411	735,05	47,362	4,847	0,098	81,509	
0,820	76,44	47,399	0,416	734,09	47,362	4,852	0,097	81,407	
0,830	77,40	47,404	0,421	733,14	47,361	4,857	0,095	81,305	
0,840	78,35	47,409	0,426	732,18	47,361	4,862	0,094	81,202	
0,850	79,31	47,413	0,431	731,22	47,360	4,868	0,093	81,100	
0,860	80,27	47,418	0,436	730,27	47,360	4,873	0,091	80,998	
0,870	81,22	47,423	0,441	729,31	47,359	4,878	0,090	80,895	
0,880	82,18	47,428	0,446	728,35	47,358	4,883	0,089	80,793	
0,890	83,14	47,432	0,451	727,40	47,358	4,889	0,088	80,691	
0,900	84,09	47,437	0,456	726,44	47,357	4,894	0,087	80,588	
0,910	85,05	47,442	0,461	725,48	47,356	4,899	0,086	80,486	
0,920	86,01	47,447	0,467	724,53	47,356	4,904	0,085	80,384	
0,930	86,96	47,451	0,472	723,57	47,355	4,910	0,083	80,282	
0,940	87,92	47,456	0,477	722,61	47,354	4,915	0,082	80,179	
0,950	88,88	47,460	0,482	721,65	47,354	4,920	0,081	80,077	
0,960	89,84	47,465	0,487	720,70	47,353	4,925	0,080	79,975	
0,970	90,80	47,470	0,492	719,74	47,352	4,931	0,079	79,872	
0,980	91,75	47,474	0,497	718,78	47,352	4,936	0,078	79,770	
0,990	92,71	47,479	0,502	717,82	47,351	4,941	0,078	79,668	
1,000	93,67	47,483	0,507	716,86	47,350	4,947	0,077	79,566	
1,010	94,63	47,488	0,512	715,90	47,349	4,952	0,076	79,463	
1,020	95,59	47,492	0,517	714,95	47,348	4,957	0,075	79,361	
1,030	96,55	47,497	0,522	713,99	47,348	4,962	0,074	79,259	
1,040	97,51	47,501	0,527	713,03	47,347	4,968	0,073	79,157	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,050	98,47	47,506	0,532	712,07	47,346	4,973	0,072	79,055	
1,060	99,43	47,510	0,537	711,11	47,345	4,978	0,072	78,952	
1,070	100,39	47,515	0,542	710,15	47,344	4,984	0,071	78,850	
1,080	101,34	47,519	0,547	709,19	47,343	4,989	0,070	78,748	
1,090	102,30	47,524	0,552	708,23	47,343	4,994	0,069	78,646	
1,100	103,26	47,528	0,557	707,27	47,342	4,999	0,068	78,543	
1,110	104,22	47,533	0,562	706,31	47,341	5,005	0,068	78,441	
1,120	105,18	47,537	0,567	705,35	47,340	5,010	0,067	78,339	
1,130	106,14	47,541	0,573	704,39	47,339	5,015	0,066	78,237	
1,140	107,11	47,545	0,578	703,43	47,338	5,021	0,066	78,135	
1,150	108,07	47,550	0,583	702,47	47,337	5,026	0,065	78,032	
1,160	109,03	47,554	0,588	701,51	47,336	5,031	0,064	77,930	
1,170	109,99	47,558	0,593	700,55	47,335	5,037	0,064	77,828	
1,180	110,95	47,562	0,598	699,59	47,334	5,042	0,063	77,726	
1,190	111,91	47,566	0,603	698,63	47,333	5,047	0,062	77,624	
1,200	112,87	47,571	0,608	697,66	47,332	5,052	0,062	77,521	
1,210	113,83	47,575	0,613	696,70	47,331	5,058	0,061	77,419	
1,220	114,79	47,579	0,618	695,74	47,330	5,063	0,061	77,317	
1,230	115,75	47,583	0,623	694,78	47,329	5,068	0,060	77,215	
1,240	116,71	47,587	0,628	693,82	47,328	5,074	0,059	77,113	
1,250	117,68	47,591	0,633	692,86	47,327	5,079	0,059	77,011	
1,260	118,64	47,595	0,638	691,90	47,326	5,084	0,058	76,908	
1,270	119,60	47,599	0,643	690,93	47,325	5,090	0,058	76,806	
1,280	120,56	47,603	0,648	689,97	47,324	5,095	0,057	76,704	
1,290	121,52	47,606	0,653	689,01	47,323	5,100	0,057	76,602	
1,300	122,49	47,610	0,658	688,05	47,322	5,106	0,056	76,500	
1,310	123,45	47,614	0,663	687,09	47,321	5,111	0,056	76,398	
1,320	124,41	47,618	0,668	686,12	47,320	5,116	0,055	76,296	
1,330	125,37	47,622	0,673	685,16	47,319	5,122	0,055	76,193	
1,340	126,33	47,626	0,678	684,20	47,317	5,127	0,054	76,091	
1,350	127,30	47,629	0,683	683,24	47,316	5,132	0,054	75,989	
1,360	128,26	47,633	0,688	682,27	47,315	5,138	0,053	75,887	
1,370	129,22	47,637	0,694	681,31	47,314	5,143	0,053	75,785	
1,380	130,19	47,641	0,699	680,35	47,313	5,148	0,052	75,683	
1,390	131,15	47,644	0,704	679,39	47,312	5,154	0,052	75,581	
1,400	132,11	47,648	0,709	678,42	47,310	5,159	0,051	75,478	
1,410	133,07	47,652	0,714	677,46	47,309	5,164	0,051	75,376	
1,420	134,04	47,655	0,719	676,50	47,308	5,170	0,050	75,274	
1,430	135,00	47,659	0,724	675,53	47,307	5,175	0,050	75,172	
1,440	135,96	47,663	0,729	674,57	47,306	5,180	0,049	75,070	
1,450	136,93	47,666	0,734	673,61	47,304	5,186	0,049	74,968	
1,460	137,89	47,670	0,739	672,64	47,303	5,191	0,049	74,866	
1,470	138,85	47,673	0,744	671,68	47,302	5,196	0,048	74,764	
1,480	139,82	47,677	0,749	670,72	47,301	5,202	0,048	74,662	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,490	140,78	47,680	0,754	669,75	47,299	5,207	0,047	74,559	
1,500	141,75	47,684	0,759	668,79	47,298	5,212	0,047	74,457	
1,510	142,71	47,687	0,764	667,82	47,297	5,218	0,047	74,355	
1,520	143,67	47,691	0,769	666,86	47,295	5,223	0,046	74,253	
1,530	144,64	47,694	0,774	665,90	47,294	5,228	0,046	74,151	
1,540	145,60	47,697	0,779	664,93	47,293	5,234	0,046	74,049	
1,550	146,57	47,701	0,784	663,97	47,291	5,239	0,045	73,947	
1,560	147,53	47,704	0,789	663,00	47,290	5,244	0,045	73,845	
1,570	148,49	47,707	0,794	662,04	47,289	5,250	0,044	73,743	
1,580	149,46	47,711	0,799	661,08	47,287	5,255	0,044	73,641	
1,590	150,42	47,714	0,804	660,11	47,286	5,260	0,044	73,538	
1,600	151,39	47,717	0,809	659,15	47,285	5,266	0,043	73,436	
1,610	152,35	47,721	0,814	658,18	47,283	5,271	0,043	73,334	
1,620	153,32	47,724	0,819	657,22	47,282	5,277	0,043	73,232	
1,630	154,28	47,727	0,825	656,25	47,280	5,282	0,042	73,130	
1,640	155,25	47,731	0,830	655,29	47,279	5,287	0,042	73,028	
1,650	156,21	47,734	0,835	654,32	47,278	5,293	0,042	72,926	
1,660	157,18	47,737	0,840	653,36	47,276	5,298	0,041	72,824	
1,670	158,14	47,740	0,845	652,39	47,275	5,303	0,041	72,722	
1,680	159,11	47,743	0,850	651,43	47,273	5,309	0,041	72,620	
1,690	160,07	47,747	0,855	650,46	47,272	5,314	0,040	72,518	
1,700	161,04	47,750	0,860	649,49	47,270	5,320	0,040	72,416	
1,710	162,01	47,753	0,865	648,53	47,269	5,325	0,040	72,313	
1,720	162,97	47,756	0,870	647,56	47,267	5,330	0,040	72,211	
1,730	163,94	47,759	0,875	646,60	47,266	5,336	0,039	72,109	
1,740	164,90	47,762	0,880	645,63	47,264	5,341	0,039	72,007	
1,750	165,87	47,765	0,885	644,67	47,263	5,347	0,039	71,905	
1,760	166,83	47,768	0,890	643,70	47,261	5,352	0,038	71,803	
1,770	167,80	47,771	0,895	642,73	47,259	5,357	0,038	71,701	
1,780	168,77	47,774	0,900	641,77	47,258	5,363	0,038	71,599	
1,790	169,73	47,777	0,905	640,80	47,256	5,368	0,038	71,497	
1,800	170,70	47,781	0,910	639,84	47,255	5,373	0,037	71,395	
1,810	171,66	47,784	0,915	638,87	47,253	5,379	0,037	71,293	
1,820	172,63	47,787	0,920	637,90	47,251	5,384	0,037	71,191	
1,830	173,60	47,789	0,925	636,94	47,250	5,390	0,037	71,089	
1,840	174,56	47,792	0,930	635,97	47,248	5,395	0,036	70,987	
1,850	175,53	47,795	0,935	635,00	47,247	5,400	0,036	70,884	
1,860	176,50	47,798	0,940	634,04	47,245	5,406	0,036	70,782	
1,870	177,46	47,801	0,945	633,07	47,243	5,411	0,036	70,680	
1,880	178,43	47,804	0,950	632,10	47,242	5,417	0,035	70,578	
1,890	179,40	47,807	0,955	631,14	47,240	5,422	0,035	70,476	
1,900	180,36	47,810	0,961	630,17	47,238	5,428	0,035	70,374	
1,910	181,33	47,813	0,966	629,20	47,236	5,433	0,035	70,272	

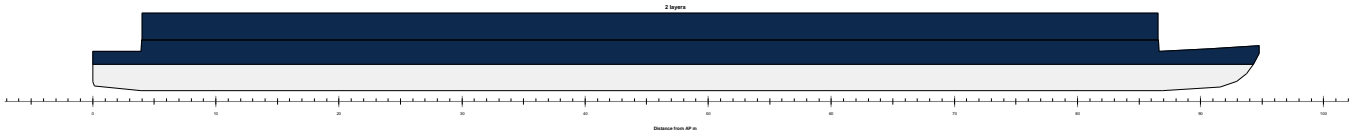
Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,920	182,30	47,816	0,971	628,24	47,235	5,438	0,034	70,170	
1,930	183,27	47,819	0,976	627,27	47,233	5,444	0,034	70,068	
1,940	184,23	47,822	0,981	626,30	47,231	5,449	0,034	69,966	
1,950	185,20	47,824	0,986	625,33	47,230	5,455	0,034	69,864	
1,960	186,17	47,827	0,991	624,37	47,228	5,460	0,033	69,762	
1,970	187,14	47,830	0,996	623,40	47,226	5,465	0,033	69,660	
1,980	188,10	47,833	1,001	622,43	47,224	5,471	0,033	69,558	
1,990	189,07	47,836	1,006	621,46	47,222	5,476	0,033	69,456	
2,000	190,04	47,838	1,011	620,50	47,221	5,482	0,033	69,354	
2,010	191,01	47,841	1,016	619,53	47,219	5,487	0,032	69,251	
2,020	191,97	47,844	1,021	618,56	47,217	5,493	0,032	69,149	
2,030	192,94	47,847	1,026	617,59	47,215	5,498	0,032	69,047	
2,040	193,91	47,850	1,031	616,62	47,213	5,503	0,032	68,945	
2,050	194,88	47,852	1,036	615,66	47,211	5,509	0,031	68,843	
2,060	195,85	47,855	1,041	614,69	47,209	5,514	0,031	68,741	
2,070	196,81	47,858	1,046	613,72	47,208	5,520	0,031	68,639	
2,080	197,78	47,860	1,051	612,75	47,206	5,525	0,031	68,537	
2,090	198,75	47,863	1,056	611,78	47,204	5,531	0,031	68,435	
2,100	199,72	47,866	1,061	610,81	47,202	5,536	0,030	68,333	
2,110	200,69	47,869	1,066	609,85	47,200	5,542	0,030	68,231	
2,120	201,66	47,871	1,071	608,88	47,198	5,547	0,030	68,129	
2,130	202,63	47,874	1,076	607,91	47,196	5,552	0,030	68,027	
2,140	203,59	47,877	1,081	606,94	47,194	5,558	0,030	67,925	
2,150	204,56	47,879	1,086	605,97	47,192	5,563	0,030	67,823	
2,160	205,53	47,882	1,091	605,00	47,190	5,569	0,029	67,721	
2,170	206,50	47,884	1,097	604,03	47,188	5,574	0,029	67,618	
2,180	207,47	47,887	1,102	603,07	47,186	5,580	0,029	67,516	
2,190	208,44	47,890	1,107	602,10	47,184	5,585	0,029	67,414	
2,200	209,41	47,892	1,112	601,13	47,182	5,591	0,029	67,312	
2,210	210,38	47,895	1,117	600,16	47,180	5,596	0,028	67,210	
2,220	211,34	47,897	1,122	599,19	47,178	5,602	0,028	67,108	
2,230	212,31	47,900	1,127	598,22	47,176	5,607	0,028	67,006	
2,240	213,28	47,902	1,132	597,25	47,174	5,613	0,028	66,904	
2,250	214,25	47,905	1,137	596,28	47,172	5,618	0,028	66,802	
2,260	215,22	47,907	1,142	595,31	47,169	5,624	0,028	66,700	
2,270	216,19	47,910	1,147	594,34	47,167	5,629	0,027	66,598	
2,280	217,16	47,912	1,152	593,37	47,165	5,634	0,027	66,496	
2,290	218,13	47,915	1,157	592,40	47,163	5,640	0,027	66,394	
2,300	219,10	47,917	1,162	591,43	47,161	5,645	0,027	66,292	
2,310	220,07	47,920	1,167	590,47	47,159	5,651	0,027	66,190	
2,320	221,04	47,922	1,172	589,50	47,157	5,656	0,027	66,088	
2,330	222,01	47,925	1,177	588,53	47,154	5,662	0,026	65,986	
2,340	222,98	47,927	1,182	587,56	47,152	5,667	0,026	65,884	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
2,350	223,95	47,930	1,187	586,59	47,150	5,673	0,026	65,782	
2,360	224,92	47,932	1,192	585,62	47,148	5,678	0,026	65,680	
2,370	225,89	47,935	1,197	584,65	47,146	5,684	0,026	65,578	
2,380	226,86	47,937	1,202	583,68	47,143	5,689	0,026	65,475	
2,390	227,83	47,939	1,207	582,71	47,141	5,695	0,026	65,373	
2,400	228,80	47,942	1,212	581,74	47,139	5,700	0,025	65,271	
2,410	229,77	47,944	1,217	580,77	47,136	5,706	0,025	65,169	
2,420	230,74	47,947	1,222	579,80	47,134	5,711	0,025	65,067	
2,430	231,71	47,949	1,227	578,83	47,132	5,717	0,025	64,965	
2,440	232,68	47,951	1,232	577,86	47,130	5,722	0,025	64,863	
2,450	233,65	47,954	1,238	576,88	47,127	5,728	0,025	64,761	
2,460	234,62	47,956	1,243	575,91	47,125	5,733	0,024	64,659	
2,470	235,59	47,958	1,248	574,94	47,122	5,739	0,024	64,557	
2,480	236,56	47,961	1,253	573,97	47,120	5,744	0,024	64,455	
2,490	237,53	47,963	1,258	573,00	47,118	5,750	0,024	64,353	
2,500	238,50	47,965	1,263	572,03	47,115	5,756	0,024	64,251	
2,510	239,47	47,968	1,268	571,06	47,113	5,761	0,024	64,149	
2,520	240,44	47,970	1,273	570,09	47,110	5,767	0,024	64,047	
2,530	241,41	47,972	1,278	569,12	47,108	5,772	0,024	63,945	
2,540	242,39	47,975	1,283	568,15	47,106	5,778	0,023	63,843	
2,550	243,36	47,977	1,288	567,18	47,103	5,783	0,023	63,741	
2,560	244,33	47,979	1,293	566,21	47,101	5,789	0,023	63,639	
2,570	245,30	47,981	1,298	565,24	47,098	5,794	0,023	63,537	
2,580	246,27	47,984	1,303	564,26	47,096	5,800	0,023	63,435	
2,590	247,24	47,986	1,308	563,29	47,093	5,805	0,023	63,333	
2,600	248,21	47,988	1,313	562,32	47,091	5,811	0,023	63,231	
2,610	249,18	47,990	1,318	561,35	47,088	5,816	0,022	63,129	
2,620	250,15	47,993	1,323	560,38	47,085	5,822	0,022	63,027	
2,630	251,13	47,995	1,328	559,41	47,083	5,828	0,022	62,924	
2,640	252,10	47,997	1,333	558,44	47,080	5,833	0,022	62,822	
2,650	253,07	47,999	1,338	557,47	47,078	5,839	0,022	62,720	
2,660	254,04	48,001	1,343	556,49	47,075	5,844	0,022	62,618	
2,670	255,01	48,004	1,348	555,52	47,072	5,850	0,022	62,516	
2,680	255,98	48,006	1,353	554,55	47,070	5,855	0,022	62,414	
2,690	256,95	48,008	1,358	553,58	47,067	5,861	0,022	62,312	
2,700	257,93	48,010	1,363	552,61	47,065	5,866	0,021	62,210	
2,710	258,90	48,012	1,368	551,64	47,062	5,872	0,021	62,108	
2,720	259,87	48,015	1,373	550,66	47,059	5,878	0,021	62,006	
2,730	260,84	48,017	1,379	549,69	47,056	5,883	0,021	61,904	
2,740	261,81	48,019	1,384	548,72	47,054	5,889	0,021	61,802	
2,750	262,79	48,021	1,389	547,75	47,051	5,894	0,021	61,700	
2,760	263,76	48,023	1,394	546,78	47,048	5,900	0,021	61,598	
2,770	264,73	48,025	1,399	545,80	47,045	5,905	0,021	61,496	
2,780	265,70	48,027	1,404	544,83	47,043	5,911	0,020	61,394	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
2,790	266,67	48,029	1,409	543,86	47,040	5,917	0,020	61,292	
2,800	267,65	48,032	1,414	542,89	47,037	5,922	0,020	61,190	

Calculation of wind moments

Wind silhouette : 2 layers



Wind pressure 25,00 kg/m²

Bilge type:		Round bilges								
Bilge keel area:		0,00 m ²								
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment		
m	m ²	m	m	m ²	m	m	m	t*m		
0,200	17,21	45,804	0,101	538,97	46,268	3,159	0,225	41,200		
0,210	18,10	45,815	0,106	538,07	46,269	3,164	0,213	41,129		
0,220	18,99	45,826	0,111	537,18	46,269	3,169	0,203	41,058		
0,230	19,89	45,838	0,117	536,29	46,269	3,174	0,193	40,987		
0,240	20,79	45,848	0,122	535,39	46,270	3,179	0,185	40,916		
0,250	21,69	45,858	0,127	534,49	46,270	3,184	0,177	40,845		
0,260	22,59	45,868	0,132	533,58	46,270	3,189	0,169	40,774		
0,270	23,49	45,876	0,137	532,68	46,271	3,193	0,162	40,702		
0,280	24,40	45,884	0,142	531,77	46,271	3,198	0,156	40,631		
0,290	25,31	45,892	0,147	530,87	46,271	3,203	0,150	40,560		
0,300	26,22	45,898	0,152	529,96	46,272	3,208	0,144	40,489		
0,310	27,13	45,903	0,158	529,04	46,272	3,213	0,139	40,417		
0,320	28,04	45,908	0,163	528,13	46,272	3,218	0,134	40,346		
0,330	28,96	45,913	0,168	527,22	46,273	3,223	0,130	40,275		
0,340	29,87	45,917	0,173	526,30	46,273	3,228	0,125	40,204		
0,350	30,79	45,921	0,178	525,38	46,273	3,234	0,121	40,132		
0,360	31,71	45,926	0,183	524,47	46,274	3,239	0,118	40,061		
0,370	32,63	45,931	0,188	523,55	46,274	3,244	0,114	39,990		
0,380	33,54	45,935	0,193	522,63	46,274	3,249	0,111	39,919		
0,390	34,46	45,940	0,199	521,71	46,275	3,254	0,107	39,848		
0,400	35,38	45,945	0,204	520,79	46,275	3,259	0,104	39,777		
0,410	36,30	45,949	0,209	519,87	46,275	3,264	0,101	39,706		
0,420	37,22	45,954	0,214	518,95	46,276	3,269	0,099	39,635		
0,430	38,15	45,959	0,219	518,03	46,276	3,274	0,096	39,564		
0,440	39,07	45,963	0,224	517,11	46,276	3,279	0,094	39,493		
0,450	39,99	45,968	0,229	516,18	46,276	3,284	0,091	39,422		
0,460	40,91	45,973	0,234	515,26	46,276	3,289	0,089	39,351		
0,470	41,83	45,978	0,239	514,34	46,276	3,294	0,087	39,281		
0,480	42,76	45,983	0,244	513,42	46,277	3,299	0,085	39,210		
0,490	43,68	45,987	0,249	512,49	46,277	3,304	0,083	39,139		
0,500	44,60	45,992	0,255	511,57	46,277	3,309	0,081	39,068		
0,510	45,53	45,997	0,260	510,65	46,277	3,314	0,079	38,998		
0,520	46,45	46,002	0,265	509,72	46,277	3,320	0,077	38,927		
0,530	47,38	46,006	0,270	508,80	46,277	3,325	0,075	38,857		
0,540	48,30	46,011	0,275	507,87	46,277	3,330	0,074	38,786		
0,550	49,23	46,016	0,280	506,95	46,277	3,335	0,072	38,715		
0,560	50,15	46,021	0,285	506,02	46,277	3,340	0,071	38,645		
0,570	51,08	46,026	0,290	505,10	46,277	3,345	0,069	38,574		
0,580	52,00	46,030	0,295	504,17	46,277	3,350	0,068	38,504		
0,590	52,93	46,035	0,300	503,25	46,277	3,355	0,067	38,433		
0,600	53,85	46,040	0,305	502,32	46,277	3,360	0,065	38,363		
0,610	54,78	46,045	0,310	501,39	46,277	3,365	0,064	38,292		

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
0,620	55,71	46,050	0,315	500,47	46,277	3,370	0,063	38,222	
0,630	56,63	46,054	0,321	499,54	46,277	3,375	0,062	38,152	
0,640	57,56	46,059	0,326	498,61	46,276	3,381	0,060	38,081	
0,650	58,49	46,064	0,331	497,69	46,276	3,386	0,059	38,011	
0,660	59,41	46,068	0,336	496,76	46,276	3,391	0,058	37,940	
0,670	60,34	46,073	0,341	495,83	46,276	3,396	0,057	37,870	
0,680	61,27	46,078	0,346	494,91	46,276	3,401	0,056	37,800	
0,690	62,20	46,083	0,351	493,98	46,276	3,406	0,055	37,729	
0,700	63,12	46,087	0,356	493,05	46,275	3,411	0,054	37,659	
0,710	64,05	46,092	0,361	492,12	46,275	3,416	0,053	37,589	
0,720	64,98	46,097	0,366	491,19	46,275	3,421	0,053	37,518	
0,730	65,91	46,101	0,371	490,26	46,275	3,426	0,052	37,448	
0,740	66,84	46,106	0,376	489,34	46,274	3,432	0,051	37,378	
0,750	67,77	46,111	0,381	488,41	46,274	3,437	0,050	37,307	
0,760	68,70	46,115	0,386	487,48	46,274	3,442	0,049	37,237	
0,770	69,63	46,120	0,391	486,55	46,273	3,447	0,049	37,167	
0,780	70,56	46,125	0,396	485,62	46,273	3,452	0,048	37,097	
0,790	71,49	46,129	0,401	484,69	46,272	3,457	0,047	37,026	
0,800	72,42	46,134	0,406	483,76	46,272	3,462	0,046	36,956	
0,810	73,35	46,138	0,412	482,83	46,272	3,467	0,046	36,886	
0,820	74,28	46,143	0,417	481,90	46,271	3,472	0,045	36,815	
0,830	75,21	46,148	0,422	480,97	46,271	3,478	0,044	36,745	
0,840	76,14	46,152	0,427	480,04	46,270	3,483	0,044	36,675	
0,850	77,07	46,157	0,432	479,11	46,270	3,488	0,043	36,605	
0,860	78,00	46,161	0,437	478,18	46,269	3,493	0,042	36,535	
0,870	78,93	46,166	0,442	477,25	46,269	3,498	0,042	36,464	
0,880	79,86	46,170	0,447	476,31	46,268	3,503	0,041	36,394	
0,890	80,79	46,175	0,452	475,38	46,267	3,508	0,041	36,324	
0,900	81,72	46,179	0,457	474,45	46,267	3,513	0,040	36,254	
0,910	82,65	46,184	0,462	473,52	46,266	3,519	0,040	36,183	
0,920	83,59	46,188	0,467	472,59	46,266	3,524	0,039	36,113	
0,930	84,52	46,193	0,472	471,66	46,265	3,529	0,039	36,043	
0,940	85,45	46,197	0,477	470,73	46,264	3,534	0,038	35,973	
0,950	86,38	46,201	0,482	469,79	46,264	3,539	0,038	35,903	
0,960	87,31	46,206	0,487	468,86	46,263	3,544	0,037	35,833	
0,970	88,25	46,210	0,492	467,93	46,262	3,549	0,037	35,762	
0,980	89,18	46,215	0,497	467,00	46,262	3,555	0,036	35,692	
0,990	90,11	46,219	0,502	466,06	46,261	3,560	0,036	35,622	
1,000	91,04	46,223	0,507	465,13	46,260	3,565	0,035	35,552	
1,010	91,98	46,228	0,513	464,20	46,259	3,570	0,035	35,482	
1,020	92,91	46,232	0,518	463,26	46,258	3,575	0,034	35,411	
1,030	93,84	46,236	0,523	462,33	46,258	3,580	0,034	35,341	
1,040	94,78	46,240	0,528	461,40	46,257	3,585	0,034	35,271	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,050	95,71	46,245	0,533	460,46	46,256	3,591	0,033	35,201	
1,060	96,64	46,249	0,538	459,53	46,255	3,596	0,033	35,131	
1,070	97,58	46,253	0,543	458,60	46,254	3,601	0,032	35,061	
1,080	98,51	46,257	0,548	457,66	46,253	3,606	0,032	34,990	
1,090	99,45	46,261	0,553	456,73	46,252	3,611	0,032	34,920	
1,100	100,38	46,266	0,558	455,79	46,251	3,616	0,031	34,850	
1,110	101,31	46,270	0,563	454,86	46,250	3,622	0,031	34,780	
1,120	102,25	46,274	0,568	453,93	46,249	3,627	0,031	34,710	
1,130	103,18	46,278	0,573	452,99	46,249	3,632	0,030	34,640	
1,140	104,12	46,282	0,578	452,06	46,248	3,637	0,030	34,570	
1,150	105,05	46,286	0,583	451,12	46,246	3,642	0,030	34,499	
1,160	105,99	46,290	0,588	450,19	46,245	3,647	0,029	34,429	
1,170	106,92	46,294	0,593	449,25	46,244	3,652	0,029	34,359	
1,180	107,86	46,298	0,598	448,32	46,243	3,658	0,029	34,289	
1,190	108,79	46,302	0,603	447,38	46,242	3,663	0,028	34,219	
1,200	109,73	46,306	0,608	446,44	46,241	3,668	0,028	34,149	
1,210	110,67	46,311	0,613	445,51	46,240	3,673	0,028	34,079	
1,220	111,60	46,314	0,618	444,57	46,239	3,678	0,027	34,009	
1,230	112,54	46,318	0,624	443,64	46,238	3,684	0,027	33,938	
1,240	113,47	46,322	0,629	442,70	46,236	3,689	0,027	33,868	
1,250	114,41	46,326	0,634	441,77	46,235	3,694	0,027	33,798	
1,260	115,34	46,330	0,639	440,83	46,234	3,699	0,026	33,728	
1,270	116,28	46,334	0,644	439,89	46,233	3,704	0,026	33,658	
1,280	117,22	46,338	0,649	438,96	46,232	3,709	0,026	33,588	
1,290	118,15	46,342	0,654	438,02	46,230	3,715	0,025	33,518	
1,300	119,09	46,346	0,659	437,08	46,229	3,720	0,025	33,448	
1,310	120,03	46,349	0,664	436,15	46,228	3,725	0,025	33,377	
1,320	120,96	46,353	0,669	435,21	46,226	3,730	0,025	33,307	
1,330	121,90	46,357	0,674	434,27	46,225	3,735	0,024	33,237	
1,340	122,84	46,361	0,679	433,34	46,224	3,741	0,024	33,167	
1,350	123,77	46,364	0,684	432,40	46,222	3,746	0,024	33,097	
1,360	124,71	46,368	0,689	431,46	46,221	3,751	0,024	33,027	
1,370	125,65	46,372	0,694	430,52	46,220	3,756	0,024	32,957	
1,380	126,59	46,376	0,699	429,59	46,218	3,761	0,023	32,887	
1,390	127,52	46,379	0,704	428,65	46,217	3,767	0,023	32,817	
1,400	128,46	46,383	0,709	427,71	46,215	3,772	0,023	32,746	
1,410	129,40	46,386	0,714	426,77	46,214	3,777	0,023	32,676	
1,420	130,34	46,390	0,719	425,84	46,212	3,782	0,022	32,606	
1,430	131,28	46,394	0,724	424,90	46,211	3,787	0,022	32,536	
1,440	132,21	46,397	0,729	423,96	46,209	3,793	0,022	32,466	
1,450	133,15	46,401	0,734	423,02	46,208	3,798	0,022	32,396	
1,460	134,09	46,404	0,739	422,09	46,206	3,803	0,022	32,326	
1,470	135,03	46,408	0,745	421,15	46,205	3,808	0,021	32,256	
1,480	135,97	46,411	0,750	420,21	46,203	3,813	0,021	32,186	

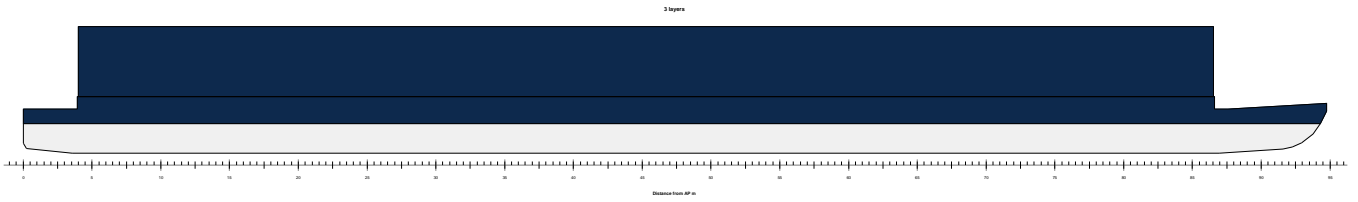
Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,490	136,90	46,415	0,755	419,27	46,201	3,819	0,021	32,116	
1,500	137,84	46,418	0,760	418,33	46,200	3,824	0,021	32,045	
1,510	138,78	46,422	0,765	417,39	46,198	3,829	0,021	31,975	
1,520	139,72	46,425	0,770	416,45	46,197	3,834	0,020	31,905	
1,530	140,66	46,428	0,775	415,52	46,195	3,839	0,020	31,835	
1,540	141,60	46,432	0,780	414,58	46,193	3,845	0,020	31,765	
1,550	142,54	46,435	0,785	413,64	46,192	3,850	0,020	31,695	
1,560	143,47	46,438	0,790	412,70	46,190	3,855	0,020	31,625	
1,570	144,41	46,442	0,795	411,76	46,188	3,860	0,020	31,555	
1,580	145,35	46,445	0,800	410,82	46,186	3,866	0,019	31,485	
1,590	146,29	46,448	0,805	409,88	46,185	3,871	0,019	31,415	
1,600	147,23	46,452	0,810	408,94	46,183	3,876	0,019	31,345	
1,610	148,17	46,455	0,815	408,00	46,181	3,881	0,019	31,275	
1,620	149,11	46,458	0,820	407,06	46,179	3,886	0,019	31,205	
1,630	150,05	46,461	0,825	406,12	46,177	3,892	0,019	31,135	
1,640	150,99	46,465	0,830	405,19	46,175	3,897	0,018	31,064	
1,650	151,93	46,468	0,835	404,25	46,174	3,902	0,018	30,994	
1,660	152,87	46,471	0,840	403,31	46,172	3,907	0,018	30,924	
1,670	153,81	46,474	0,845	402,37	46,170	3,913	0,018	30,854	
1,680	154,75	46,477	0,850	401,43	46,168	3,918	0,018	30,784	
1,690	155,69	46,480	0,855	400,49	46,166	3,923	0,018	30,714	
1,700	156,63	46,484	0,860	399,55	46,164	3,928	0,017	30,644	
1,710	157,57	46,487	0,865	398,61	46,162	3,934	0,017	30,574	
1,720	158,51	46,490	0,871	397,67	46,160	3,939	0,017	30,504	
1,730	159,45	46,493	0,876	396,73	46,158	3,944	0,017	30,434	
1,740	160,39	46,496	0,881	395,79	46,156	3,949	0,017	30,364	
1,750	161,33	46,499	0,886	394,84	46,154	3,955	0,017	30,294	
1,760	162,27	46,502	0,891	393,90	46,152	3,960	0,017	30,224	
1,770	163,21	46,505	0,896	392,96	46,150	3,965	0,017	30,154	
1,780	164,15	46,508	0,901	392,02	46,148	3,970	0,016	30,084	
1,790	165,09	46,511	0,906	391,08	46,145	3,976	0,016	30,014	
1,800	166,03	46,514	0,911	390,14	46,143	3,981	0,016	29,943	
1,810	166,97	46,517	0,916	389,20	46,141	3,986	0,016	29,873	
1,820	167,91	46,520	0,921	388,26	46,139	3,991	0,016	29,803	
1,830	168,85	46,523	0,926	387,32	46,137	3,997	0,016	29,733	
1,840	169,80	46,526	0,931	386,38	46,135	4,002	0,016	29,663	
1,850	170,74	46,529	0,936	385,44	46,132	4,007	0,015	29,593	
1,860	171,68	46,532	0,941	384,50	46,130	4,012	0,015	29,523	
1,870	172,62	46,534	0,946	383,55	46,128	4,018	0,015	29,453	
1,880	173,56	46,537	0,951	382,61	46,125	4,023	0,015	29,383	
1,890	174,50	46,540	0,956	381,67	46,123	4,028	0,015	29,313	
1,900	175,44	46,543	0,961	380,73	46,121	4,034	0,015	29,243	
1,910	176,38	46,546	0,966	379,79	46,118	4,039	0,015	29,173	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,920	177,33	46,549	0,971	378,85	46,116	4,044	0,015	29,103	
1,930	178,27	46,552	0,976	377,91	46,114	4,049	0,015	29,033	
1,940	179,21	46,554	0,981	376,96	46,111	4,055	0,014	28,963	
1,950	180,15	46,557	0,986	376,02	46,109	4,060	0,014	28,893	
1,960	181,09	46,560	0,991	375,08	46,106	4,065	0,014	28,823	
1,970	182,04	46,563	0,996	374,14	46,104	4,070	0,014	28,753	
1,980	182,98	46,565	1,002	373,20	46,101	4,076	0,014	28,683	
1,990	183,92	46,568	1,007	372,26	46,099	4,081	0,014	28,613	
2,000	184,86	46,571	1,012	371,31	46,096	4,086	0,014	28,543	
2,010	185,80	46,574	1,017	370,37	46,094	4,092	0,014	28,473	
2,020	186,75	46,576	1,022	369,43	46,091	4,097	0,014	28,402	
2,030	187,69	46,579	1,027	368,49	46,088	4,102	0,013	28,332	
2,040	188,63	46,582	1,032	367,54	46,086	4,108	0,013	28,262	
2,050	189,57	46,584	1,037	366,60	46,083	4,113	0,013	28,192	
2,060	190,52	46,587	1,042	365,66	46,080	4,118	0,013	28,122	
2,070	191,46	46,590	1,047	364,72	46,078	4,123	0,013	28,052	
2,080	192,40	46,592	1,052	363,77	46,075	4,129	0,013	27,982	
2,090	193,34	46,595	1,057	362,83	46,072	4,134	0,013	27,912	
2,100	194,29	46,598	1,062	361,89	46,069	4,139	0,013	27,842	
2,110	195,23	46,600	1,067	360,95	46,067	4,145	0,013	27,772	
2,120	196,17	46,603	1,072	360,00	46,064	4,150	0,013	27,702	
2,130	197,11	46,605	1,077	359,06	46,061	4,155	0,012	27,632	
2,140	198,06	46,608	1,082	358,12	46,058	4,161	0,012	27,562	
2,150	199,00	46,611	1,087	357,17	46,055	4,166	0,012	27,492	
2,160	199,94	46,613	1,092	356,23	46,052	4,171	0,012	27,422	
2,170	200,89	46,616	1,097	355,29	46,049	4,177	0,012	27,352	
2,180	201,83	46,618	1,102	354,34	46,046	4,182	0,012	27,282	
2,190	202,77	46,621	1,107	353,40	46,043	4,187	0,012	27,212	
2,200	203,72	46,623	1,112	352,46	46,040	4,193	0,012	27,142	
2,210	204,66	46,626	1,117	351,51	46,037	4,198	0,012	27,072	
2,220	205,60	46,628	1,122	350,57	46,034	4,203	0,012	27,002	
2,230	206,55	46,631	1,127	349,63	46,031	4,209	0,012	26,932	
2,240	207,49	46,633	1,132	348,68	46,028	4,214	0,012	26,862	
2,250	208,43	46,636	1,138	347,74	46,025	4,219	0,011	26,792	
2,260	209,38	46,638	1,143	346,80	46,022	4,225	0,011	26,722	
2,270	210,32	46,641	1,148	345,85	46,019	4,230	0,011	26,652	
2,280	211,27	46,643	1,153	344,91	46,015	4,235	0,011	26,582	
2,290	212,21	46,646	1,158	343,96	46,012	4,241	0,011	26,511	
2,300	213,15	46,648	1,163	343,02	46,009	4,246	0,011	26,441	
2,310	214,10	46,651	1,168	342,08	46,006	4,251	0,011	26,371	
2,320	215,04	46,653	1,173	341,13	46,002	4,257	0,011	26,301	
2,330	215,99	46,656	1,178	340,19	45,999	4,262	0,011	26,231	
2,340	216,93	46,658	1,183	339,24	45,996	4,268	0,011	26,161	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
2,350	217,87	46,660	1,188	338,30	45,992	4,273	0,011	26,091	
2,360	218,82	46,663	1,193	337,36	45,989	4,278	0,011	26,021	
2,370	219,76	46,665	1,198	336,41	45,985	4,284	0,011	25,951	
2,380	220,71	46,668	1,203	335,47	45,982	4,289	0,010	25,881	
2,390	221,65	46,670	1,208	334,52	45,978	4,294	0,010	25,811	
2,400	222,60	46,672	1,213	333,58	45,975	4,300	0,010	25,741	
2,410	223,54	46,675	1,218	332,63	45,971	4,305	0,010	25,671	
2,420	224,49	46,677	1,223	331,69	45,968	4,311	0,010	25,601	
2,430	225,43	46,679	1,228	330,74	45,964	4,316	0,010	25,531	
2,440	226,38	46,682	1,233	329,80	45,960	4,321	0,010	25,461	
2,450	227,32	46,684	1,238	328,85	45,957	4,327	0,010	25,391	
2,460	228,27	46,686	1,243	327,91	45,953	4,332	0,010	25,321	
2,470	229,21	46,689	1,248	326,96	45,949	4,337	0,010	25,251	
2,480	230,16	46,691	1,253	326,02	45,945	4,343	0,010	25,181	
2,490	231,10	46,693	1,258	325,07	45,942	4,348	0,010	25,111	
2,500	232,05	46,696	1,263	324,13	45,938	4,354	0,010	25,041	
2,510	232,99	46,698	1,268	323,18	45,934	4,359	0,010	24,971	
2,520	233,94	46,700	1,274	322,24	45,930	4,364	0,009	24,901	
2,530	234,88	46,702	1,279	321,29	45,926	4,370	0,009	24,831	
2,540	235,83	46,705	1,284	320,35	45,922	4,375	0,009	24,761	
2,550	236,77	46,707	1,289	319,40	45,918	4,381	0,009	24,691	
2,560	237,72	46,709	1,294	318,46	45,914	4,386	0,009	24,621	
2,570	238,66	46,711	1,299	317,51	45,910	4,392	0,009	24,551	
2,580	239,61	46,714	1,304	316,57	45,906	4,397	0,009	24,481	
2,590	240,55	46,716	1,309	315,62	45,902	4,402	0,009	24,411	
2,600	241,50	46,718	1,314	314,67	45,898	4,408	0,009	24,341	
2,610	242,45	46,720	1,319	313,73	45,894	4,413	0,009	24,270	
2,620	243,39	46,723	1,324	312,78	45,889	4,419	0,009	24,200	
2,630	244,34	46,725	1,329	311,84	45,885	4,424	0,009	24,130	
2,640	245,28	46,727	1,334	310,89	45,881	4,430	0,009	24,060	
2,650	246,23	46,729	1,339	309,95	45,877	4,435	0,009	23,990	
2,660	247,17	46,731	1,344	309,00	45,872	4,441	0,009	23,920	
2,670	248,12	46,733	1,349	308,05	45,868	4,446	0,009	23,850	
2,680	249,07	46,736	1,354	307,11	45,863	4,451	0,008	23,780	
2,690	250,01	46,738	1,359	306,16	45,859	4,457	0,008	23,710	
2,700	250,96	46,740	1,364	305,22	45,854	4,462	0,008	23,640	
2,710	251,90	46,742	1,369	304,27	45,850	4,468	0,008	23,570	
2,720	252,85	46,744	1,374	303,32	45,845	4,473	0,008	23,500	
2,730	253,80	46,746	1,379	302,38	45,841	4,479	0,008	23,430	
2,740	254,74	46,748	1,384	301,43	45,836	4,484	0,008	23,360	
2,750	255,69	46,751	1,389	300,48	45,831	4,490	0,008	23,290	
2,760	256,64	46,753	1,394	299,54	45,827	4,495	0,008	23,220	
2,770	257,58	46,755	1,399	298,59	45,822	4,501	0,008	23,150	
2,780	258,53	46,757	1,404	297,65	45,817	4,506	0,008	23,080	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
2,790	259,48	46,759	1,409	296,70	45,812	4,512	0,008	23,010	
2,800	260,42	46,761	1,415	295,75	45,807	4,517	0,008	22,940	

Wind silhouette : 3 layers



Wind pressure 25,00 kg/m²

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
0,200	17,21	45,804	0,101	778,02	45,963	4,569	0,475	86,900	
0,210	18,10	45,815	0,106	777,13	45,962	4,574	0,451	86,798	
0,220	18,99	45,826	0,111	776,23	45,962	4,579	0,429	86,697	
0,230	19,89	45,838	0,117	775,34	45,962	4,584	0,409	86,595	
0,240	20,79	45,848	0,122	774,44	45,962	4,589	0,390	86,493	
0,250	21,69	45,858	0,127	773,54	45,962	4,594	0,373	86,391	
0,260	22,59	45,868	0,132	772,64	45,962	4,599	0,358	86,290	
0,270	23,49	45,876	0,137	771,73	45,962	4,604	0,344	86,188	
0,280	24,40	45,884	0,142	770,83	45,961	4,609	0,330	86,086	
0,290	25,31	45,892	0,147	769,92	45,961	4,614	0,318	85,984	
0,300	26,22	45,898	0,152	769,01	45,961	4,620	0,306	85,882	
0,310	27,13	45,903	0,158	768,10	45,961	4,625	0,295	85,780	
0,320	28,04	45,908	0,163	767,18	45,961	4,630	0,285	85,678	
0,330	28,96	45,913	0,168	766,27	45,961	4,635	0,276	85,576	
0,340	29,87	45,917	0,173	765,35	45,961	4,640	0,267	85,475	
0,350	30,79	45,921	0,178	764,44	45,961	4,645	0,258	85,373	
0,360	31,71	45,926	0,183	763,52	45,960	4,650	0,250	85,271	
0,370	32,63	45,931	0,188	762,60	45,960	4,656	0,243	85,169	
0,380	33,54	45,935	0,193	761,68	45,960	4,661	0,236	85,068	
0,390	34,46	45,940	0,199	760,76	45,960	4,666	0,229	84,966	
0,400	35,38	45,945	0,204	759,84	45,960	4,671	0,223	84,864	
0,410	36,30	45,949	0,209	758,92	45,960	4,676	0,217	84,763	
0,420	37,22	45,954	0,214	758,00	45,959	4,681	0,211	84,661	
0,430	38,15	45,959	0,219	757,08	45,959	4,687	0,205	84,560	
0,440	39,07	45,963	0,224	756,16	45,959	4,692	0,200	84,459	
0,450	39,99	45,968	0,229	755,24	45,959	4,697	0,195	84,357	
0,460	40,91	45,973	0,234	754,32	45,958	4,702	0,190	84,256	
0,470	41,83	45,978	0,239	753,39	45,958	4,707	0,186	84,155	
0,480	42,76	45,983	0,244	752,47	45,958	4,713	0,181	84,054	
0,490	43,68	45,987	0,249	751,55	45,957	4,718	0,177	83,953	
0,500	44,60	45,992	0,255	750,62	45,957	4,723	0,173	83,852	
0,510	45,53	45,997	0,260	749,70	45,957	4,728	0,169	83,751	
0,520	46,45	46,002	0,265	748,78	45,956	4,733	0,166	83,650	
0,530	47,38	46,006	0,270	747,85	45,956	4,739	0,162	83,549	
0,540	48,30	46,011	0,275	746,93	45,956	4,744	0,159	83,448	
0,550	49,23	46,016	0,280	746,00	45,955	4,749	0,155	83,347	
0,560	50,15	46,021	0,285	745,08	45,955	4,754	0,152	83,246	
0,570	51,08	46,026	0,290	744,15	45,955	4,759	0,149	83,145	
0,580	52,00	46,030	0,295	743,23	45,954	4,765	0,146	83,044	
0,590	52,93	46,035	0,300	742,30	45,954	4,770	0,144	82,944	
0,600	53,85	46,040	0,305	741,37	45,953	4,775	0,141	82,843	
0,610	54,78	46,045	0,310	740,45	45,953	4,780	0,138	82,742	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
0,620	55,71	46,050	0,315	739,52	45,952	4,785	0,136	82,641	
0,630	56,63	46,054	0,321	738,59	45,952	4,791	0,133	82,541	
0,640	57,56	46,059	0,326	737,67	45,951	4,796	0,131	82,440	
0,650	58,49	46,064	0,331	736,74	45,951	4,801	0,129	82,339	
0,660	59,41	46,068	0,336	735,81	45,950	4,806	0,126	82,239	
0,670	60,34	46,073	0,341	734,89	45,950	4,812	0,124	82,138	
0,680	61,27	46,078	0,346	733,96	45,949	4,817	0,122	82,038	
0,690	62,20	46,083	0,351	733,03	45,949	4,822	0,120	81,937	
0,700	63,12	46,087	0,356	732,10	45,948	4,827	0,118	81,836	
0,710	64,05	46,092	0,361	731,17	45,947	4,832	0,116	81,736	
0,720	64,98	46,097	0,366	730,25	45,947	4,838	0,114	81,635	
0,730	65,91	46,101	0,371	729,32	45,946	4,843	0,113	81,535	
0,740	66,84	46,106	0,376	728,39	45,946	4,848	0,111	81,434	
0,750	67,77	46,111	0,381	727,46	45,945	4,853	0,109	81,334	
0,760	68,70	46,115	0,386	726,53	45,944	4,859	0,107	81,233	
0,770	69,63	46,120	0,391	725,60	45,944	4,864	0,106	81,133	
0,780	70,56	46,125	0,396	724,67	45,943	4,869	0,104	81,032	
0,790	71,49	46,129	0,401	723,74	45,942	4,874	0,103	80,932	
0,800	72,42	46,134	0,406	722,81	45,942	4,880	0,101	80,831	
0,810	73,35	46,138	0,412	721,88	45,941	4,885	0,100	80,731	
0,820	74,28	46,143	0,417	720,95	45,940	4,890	0,098	80,630	
0,830	75,21	46,148	0,422	720,02	45,939	4,895	0,097	80,530	
0,840	76,14	46,152	0,427	719,09	45,939	4,901	0,096	80,429	
0,850	77,07	46,157	0,432	718,16	45,938	4,906	0,094	80,329	
0,860	78,00	46,161	0,437	717,23	45,937	4,911	0,093	80,229	
0,870	78,93	46,166	0,442	716,30	45,936	4,916	0,092	80,128	
0,880	79,86	46,170	0,447	715,37	45,936	4,922	0,091	80,028	
0,890	80,79	46,175	0,452	714,44	45,935	4,927	0,090	79,927	
0,900	81,72	46,179	0,457	713,51	45,934	4,932	0,088	79,827	
0,910	82,65	46,184	0,462	712,57	45,933	4,937	0,087	79,727	
0,920	83,59	46,188	0,467	711,64	45,932	4,943	0,086	79,626	
0,930	84,52	46,193	0,472	710,71	45,931	4,948	0,085	79,526	
0,940	85,45	46,197	0,477	709,78	45,930	4,953	0,084	79,426	
0,950	86,38	46,201	0,482	708,85	45,930	4,959	0,083	79,325	
0,960	87,31	46,206	0,487	707,91	45,929	4,964	0,082	79,225	
0,970	88,25	46,210	0,492	706,98	45,928	4,969	0,081	79,125	
0,980	89,18	46,215	0,497	706,05	45,927	4,974	0,080	79,024	
0,990	90,11	46,219	0,502	705,12	45,926	4,980	0,079	78,924	
1,000	91,04	46,223	0,507	704,18	45,925	4,985	0,078	78,823	
1,010	91,98	46,228	0,513	703,25	45,924	4,990	0,077	78,723	
1,020	92,91	46,232	0,518	702,32	45,923	4,995	0,076	78,623	
1,030	93,84	46,236	0,523	701,38	45,922	5,001	0,075	78,523	
1,040	94,78	46,240	0,528	700,45	45,921	5,006	0,075	78,422	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,050	95,71	46,245	0,533	699,52	45,920	5,011	0,074	78,322	
1,060	96,64	46,249	0,538	698,58	45,919	5,017	0,073	78,222	
1,070	97,58	46,253	0,543	697,65	45,918	5,022	0,072	78,121	
1,080	98,51	46,257	0,548	696,72	45,917	5,027	0,071	78,021	
1,090	99,45	46,261	0,553	695,78	45,916	5,033	0,071	77,921	
1,100	100,38	46,266	0,558	694,85	45,915	5,038	0,070	77,820	
1,110	101,31	46,270	0,563	693,91	45,914	5,043	0,069	77,720	
1,120	102,25	46,274	0,568	692,98	45,913	5,048	0,068	77,620	
1,130	103,18	46,278	0,573	692,04	45,912	5,054	0,068	77,519	
1,140	104,12	46,282	0,578	691,11	45,910	5,059	0,067	77,419	
1,150	105,05	46,286	0,583	690,17	45,909	5,064	0,066	77,319	
1,160	105,99	46,290	0,588	689,24	45,908	5,070	0,066	77,219	
1,170	106,92	46,294	0,593	688,30	45,907	5,075	0,065	77,118	
1,180	107,86	46,298	0,598	687,37	45,906	5,080	0,064	77,018	
1,190	108,79	46,302	0,603	686,43	45,905	5,086	0,064	76,918	
1,200	109,73	46,306	0,608	685,50	45,903	5,091	0,063	76,817	
1,210	110,67	46,311	0,613	684,56	45,902	5,096	0,062	76,717	
1,220	111,60	46,314	0,618	683,63	45,901	5,101	0,062	76,617	
1,230	112,54	46,318	0,624	682,69	45,900	5,107	0,061	76,517	
1,240	113,47	46,322	0,629	681,75	45,899	5,112	0,061	76,416	
1,250	114,41	46,326	0,634	680,82	45,897	5,117	0,060	76,316	
1,260	115,34	46,330	0,639	679,88	45,896	5,123	0,059	76,216	
1,270	116,28	46,334	0,644	678,95	45,895	5,128	0,059	76,116	
1,280	117,22	46,338	0,649	678,01	45,894	5,133	0,058	76,015	
1,290	118,15	46,342	0,654	677,07	45,892	5,139	0,058	75,915	
1,300	119,09	46,346	0,659	676,14	45,891	5,144	0,057	75,815	
1,310	120,03	46,349	0,664	675,20	45,890	5,149	0,057	75,715	
1,320	120,96	46,353	0,669	674,26	45,888	5,155	0,056	75,614	
1,330	121,90	46,357	0,674	673,33	45,887	5,160	0,056	75,514	
1,340	122,84	46,361	0,679	672,39	45,886	5,165	0,055	75,414	
1,350	123,77	46,364	0,684	671,45	45,884	5,171	0,055	75,314	
1,360	124,71	46,368	0,689	670,52	45,883	5,176	0,054	75,213	
1,370	125,65	46,372	0,694	669,58	45,882	5,181	0,054	75,113	
1,380	126,59	46,376	0,699	668,64	45,880	5,187	0,053	75,013	
1,390	127,52	46,379	0,704	667,70	45,879	5,192	0,053	74,913	
1,400	128,46	46,383	0,709	666,77	45,877	5,197	0,052	74,812	
1,410	129,40	46,386	0,714	665,83	45,876	5,203	0,052	74,712	
1,420	130,34	46,390	0,719	664,89	45,875	5,208	0,051	74,612	
1,430	131,28	46,394	0,724	663,95	45,873	5,213	0,051	74,512	
1,440	132,21	46,397	0,729	663,01	45,872	5,219	0,050	74,411	
1,450	133,15	46,401	0,734	662,08	45,870	5,224	0,050	74,311	
1,460	134,09	46,404	0,739	661,14	45,869	5,229	0,050	74,211	
1,470	135,03	46,408	0,745	660,20	45,867	5,235	0,049	74,111	
1,480	135,97	46,411	0,750	659,26	45,866	5,240	0,049	74,011	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,490	136,90	46,415	0,755	658,32	45,864	5,245	0,048	73,910	
1,500	137,84	46,418	0,760	657,39	45,863	5,251	0,048	73,810	
1,510	138,78	46,422	0,765	656,45	45,861	5,256	0,048	73,710	
1,520	139,72	46,425	0,770	655,51	45,860	5,262	0,047	73,610	
1,530	140,66	46,428	0,775	654,57	45,858	5,267	0,047	73,510	
1,540	141,60	46,432	0,780	653,63	45,857	5,272	0,046	73,409	
1,550	142,54	46,435	0,785	652,69	45,855	5,278	0,046	73,309	
1,560	143,47	46,438	0,790	651,75	45,854	5,283	0,046	73,209	
1,570	144,41	46,442	0,795	650,81	45,852	5,288	0,045	73,109	
1,580	145,35	46,445	0,800	649,87	45,850	5,294	0,045	73,009	
1,590	146,29	46,448	0,805	648,94	45,849	5,299	0,045	72,908	
1,600	147,23	46,452	0,810	648,00	45,847	5,304	0,044	72,808	
1,610	148,17	46,455	0,815	647,06	45,846	5,310	0,044	72,708	
1,620	149,11	46,458	0,820	646,12	45,844	5,315	0,044	72,608	
1,630	150,05	46,461	0,825	645,18	45,842	5,321	0,043	72,508	
1,640	150,99	46,465	0,830	644,24	45,841	5,326	0,043	72,407	
1,650	151,93	46,468	0,835	643,30	45,839	5,331	0,043	72,307	
1,660	152,87	46,471	0,840	642,36	45,837	5,337	0,042	72,207	
1,670	153,81	46,474	0,845	641,42	45,836	5,342	0,042	72,107	
1,680	154,75	46,477	0,850	640,48	45,834	5,347	0,042	72,007	
1,690	155,69	46,480	0,855	639,54	45,832	5,353	0,041	71,906	
1,700	156,63	46,484	0,860	638,60	45,830	5,358	0,041	71,806	
1,710	157,57	46,487	0,865	637,66	45,829	5,364	0,041	71,706	
1,720	158,51	46,490	0,871	636,72	45,827	5,369	0,040	71,606	
1,730	159,45	46,493	0,876	635,78	45,825	5,374	0,040	71,506	
1,740	160,39	46,496	0,881	634,84	45,823	5,380	0,040	71,406	
1,750	161,33	46,499	0,886	633,90	45,822	5,385	0,039	71,305	
1,760	162,27	46,502	0,891	632,96	45,820	5,391	0,039	71,205	
1,770	163,21	46,505	0,896	632,02	45,818	5,396	0,039	71,105	
1,780	164,15	46,508	0,901	631,08	45,816	5,401	0,039	71,005	
1,790	165,09	46,511	0,906	630,14	45,814	5,407	0,038	70,905	
1,800	166,03	46,514	0,911	629,20	45,813	5,412	0,038	70,805	
1,810	166,97	46,517	0,916	628,25	45,811	5,418	0,038	70,704	
1,820	167,91	46,520	0,921	627,31	45,809	5,423	0,038	70,604	
1,830	168,85	46,523	0,926	626,37	45,807	5,428	0,037	70,504	
1,840	169,80	46,526	0,931	625,43	45,805	5,434	0,037	70,404	
1,850	170,74	46,529	0,936	624,49	45,803	5,439	0,037	70,304	
1,860	171,68	46,532	0,941	623,55	45,801	5,445	0,037	70,204	
1,870	172,62	46,534	0,946	622,61	45,800	5,450	0,036	70,104	
1,880	173,56	46,537	0,951	621,67	45,798	5,455	0,036	70,003	
1,890	174,50	46,540	0,956	620,73	45,796	5,461	0,036	69,903	
1,900	175,44	46,543	0,961	619,78	45,794	5,466	0,036	69,803	
1,910	176,38	46,546	0,966	618,84	45,792	5,472	0,035	69,703	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
1,920	177,33	46,549	0,971	617,90	45,790	5,477	0,035	69,603	
1,930	178,27	46,552	0,976	616,96	45,788	5,482	0,035	69,503	
1,940	179,21	46,554	0,981	616,02	45,786	5,488	0,035	69,402	
1,950	180,15	46,557	0,986	615,08	45,784	5,493	0,034	69,302	
1,960	181,09	46,560	0,991	614,13	45,782	5,499	0,034	69,202	
1,970	182,04	46,563	0,996	613,19	45,780	5,504	0,034	69,102	
1,980	182,98	46,565	1,002	612,25	45,778	5,510	0,034	69,002	
1,990	183,92	46,568	1,007	611,31	45,776	5,515	0,033	68,902	
2,000	184,86	46,571	1,012	610,37	45,774	5,520	0,033	68,802	
2,010	185,80	46,574	1,017	609,42	45,772	5,526	0,033	68,701	
2,020	186,75	46,576	1,022	608,48	45,770	5,531	0,033	68,601	
2,030	187,69	46,579	1,027	607,54	45,768	5,537	0,033	68,501	
2,040	188,63	46,582	1,032	606,60	45,765	5,542	0,032	68,401	
2,050	189,57	46,584	1,037	605,65	45,763	5,548	0,032	68,301	
2,060	190,52	46,587	1,042	604,71	45,761	5,553	0,032	68,201	
2,070	191,46	46,590	1,047	603,77	45,759	5,559	0,032	68,101	
2,080	192,40	46,592	1,052	602,83	45,757	5,564	0,031	68,000	
2,090	193,34	46,595	1,057	601,88	45,755	5,569	0,031	67,900	
2,100	194,29	46,598	1,062	600,94	45,753	5,575	0,031	67,800	
2,110	195,23	46,600	1,067	600,00	45,750	5,580	0,031	67,700	
2,120	196,17	46,603	1,072	599,06	45,748	5,586	0,031	67,600	
2,130	197,11	46,605	1,077	598,11	45,746	5,591	0,031	67,500	
2,140	198,06	46,608	1,082	597,17	45,744	5,597	0,030	67,400	
2,150	199,00	46,611	1,087	596,23	45,742	5,602	0,030	67,299	
2,160	199,94	46,613	1,092	595,28	45,739	5,608	0,030	67,199	
2,170	200,89	46,616	1,097	594,34	45,737	5,613	0,030	67,099	
2,180	201,83	46,618	1,102	593,40	45,735	5,619	0,030	66,999	
2,190	202,77	46,621	1,107	592,45	45,733	5,624	0,029	66,899	
2,200	203,72	46,623	1,112	591,51	45,730	5,629	0,029	66,799	
2,210	204,66	46,626	1,117	590,57	45,728	5,635	0,029	66,699	
2,220	205,60	46,628	1,122	589,62	45,726	5,640	0,029	66,598	
2,230	206,55	46,631	1,127	588,68	45,723	5,646	0,029	66,498	
2,240	207,49	46,633	1,132	587,74	45,721	5,651	0,028	66,398	
2,250	208,43	46,636	1,138	586,79	45,719	5,657	0,028	66,298	
2,260	209,38	46,638	1,143	585,85	45,716	5,662	0,028	66,198	
2,270	210,32	46,641	1,148	584,91	45,714	5,668	0,028	66,098	
2,280	211,27	46,643	1,153	583,96	45,712	5,673	0,028	65,998	
2,290	212,21	46,646	1,158	583,02	45,709	5,679	0,028	65,898	
2,300	213,15	46,648	1,163	582,07	45,707	5,684	0,027	65,797	
2,310	214,10	46,651	1,168	581,13	45,704	5,690	0,027	65,697	
2,320	215,04	46,653	1,173	580,19	45,702	5,695	0,027	65,597	
2,330	215,99	46,656	1,178	579,24	45,699	5,701	0,027	65,497	
2,340	216,93	46,658	1,183	578,30	45,697	5,706	0,027	65,397	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
2,350	217,87	46,660	1,188	577,35	45,694	5,712	0,027	65,297	
2,360	218,82	46,663	1,193	576,41	45,692	5,717	0,027	65,197	
2,370	219,76	46,665	1,198	575,46	45,689	5,723	0,026	65,096	
2,380	220,71	46,668	1,203	574,52	45,687	5,728	0,026	64,996	
2,390	221,65	46,670	1,208	573,58	45,684	5,734	0,026	64,896	
2,400	222,60	46,672	1,213	572,63	45,682	5,739	0,026	64,796	
2,410	223,54	46,675	1,218	571,69	45,679	5,745	0,026	64,696	
2,420	224,49	46,677	1,223	570,74	45,677	5,750	0,026	64,596	
2,430	225,43	46,679	1,228	569,80	45,674	5,756	0,025	64,496	
2,440	226,38	46,682	1,233	568,85	45,671	5,761	0,025	64,396	
2,450	227,32	46,684	1,238	567,91	45,669	5,767	0,025	64,295	
2,460	228,27	46,686	1,243	566,96	45,666	5,772	0,025	64,195	
2,470	229,21	46,689	1,248	566,02	45,664	5,778	0,025	64,095	
2,480	230,16	46,691	1,253	565,07	45,661	5,783	0,025	63,995	
2,490	231,10	46,693	1,258	564,13	45,658	5,789	0,025	63,895	
2,500	232,05	46,696	1,263	563,18	45,656	5,794	0,024	63,795	
2,510	232,99	46,698	1,268	562,24	45,653	5,800	0,024	63,695	
2,520	233,94	46,700	1,274	561,29	45,650	5,806	0,024	63,594	
2,530	234,88	46,702	1,279	560,35	45,647	5,811	0,024	63,494	
2,540	235,83	46,705	1,284	559,40	45,645	5,817	0,024	63,394	
2,550	236,77	46,707	1,289	558,46	45,642	5,822	0,024	63,294	
2,560	237,72	46,709	1,294	557,51	45,639	5,828	0,024	63,194	
2,570	238,66	46,711	1,299	556,56	45,636	5,833	0,023	63,094	
2,580	239,61	46,714	1,304	555,62	45,634	5,839	0,023	62,994	
2,590	240,55	46,716	1,309	554,67	45,631	5,844	0,023	62,894	
2,600	241,50	46,718	1,314	553,73	45,628	5,850	0,023	62,793	
2,610	242,45	46,720	1,319	552,78	45,625	5,855	0,023	62,693	
2,620	243,39	46,723	1,324	551,84	45,622	5,861	0,023	62,593	
2,630	244,34	46,725	1,329	550,89	45,619	5,867	0,023	62,493	
2,640	245,28	46,727	1,334	549,95	45,617	5,872	0,023	62,393	
2,650	246,23	46,729	1,339	549,00	45,614	5,878	0,022	62,293	
2,660	247,17	46,731	1,344	548,05	45,611	5,883	0,022	62,193	
2,670	248,12	46,733	1,349	547,11	45,608	5,889	0,022	62,093	
2,680	249,07	46,736	1,354	546,16	45,605	5,894	0,022	61,992	
2,690	250,01	46,738	1,359	545,22	45,602	5,900	0,022	61,892	
2,700	250,96	46,740	1,364	544,27	45,599	5,905	0,022	61,792	
2,710	251,90	46,742	1,369	543,32	45,596	5,911	0,022	61,692	
2,720	252,85	46,744	1,374	542,38	45,593	5,917	0,022	61,592	
2,730	253,80	46,746	1,379	541,43	45,590	5,922	0,022	61,492	
2,740	254,74	46,748	1,384	540,48	45,587	5,928	0,021	61,392	
2,750	255,69	46,751	1,389	539,54	45,584	5,933	0,021	61,292	
2,760	256,64	46,753	1,394	538,59	45,581	5,939	0,021	61,191	
2,770	257,58	46,755	1,399	537,64	45,578	5,945	0,021	61,091	
2,780	258,53	46,757	1,404	536,70	45,575	5,950	0,021	60,991	

Bilge type:		Round bilges							
Bilge keel area:		0,00 m ²							
Draft	Lateral area	LCE	VCE	Wind area	LCE	VCE	Wind lever	Wind moment	
m	m ²	m	m	m ²	m	m	m	t*m	
2,790	259,48	46,759	1,409	535,75	45,572	5,956	0,021	60,891	
2,800	260,42	46,761	1,415	534,81	45,569	5,961	0,021	60,791	

ES-TRIN Chapter 27 - Heeling Moments Container Vessels

Vessel: 001 Europa 2b barge - steel
2 layers of containers

ENI: ---

Main characteristics:

Length over all - L_{oA}	76,50 [m]	
Length in waterline, empty - $L_{WL,empty}$	70,66 [m]	
Length in waterline, laden - $L_{WL,max}$	73,80 [m]	
Depth - H	3,20 [m]	
Draught empty - T_{empty}	0,46 [m]	(laden with 2 layers of empty containers)
Maximum draught - T_{max}	1,32 [m]	(laden with 2 layers of full containers)
Displacement empty - D_{empty}	333,022 [t]	(laden with 2 layers of empty containers)
Maximum displacement - D_{max}	1031,422 [t]	(laden with 2 layers of full containers)

Total Heeling Moment for stability calculation - $M_{Heel,max}$ 120,38 [t*m]

Heeling moment resulting from centrifugal force in accordance with Article 27.02 Nr. 1 c)

Parameter C_{KZ}	0,04 [s ² /m]	
Maximum speed - v	15,00 [km/h] =	4,17 [m/s]
Height of vertical center of gravity- VCG_{empty}	2,01 [m a.B.]	(laden with 2 layers of empty containers)
Height of vertical center of gravity, laden - VCG_{laden}	2,95 [m a.B.]	(laden with 2 layers of full containers)

Heeling moment centrifugal force, empty - $M_{cf,empty}$	5,82 [t*m]
Heeling moment centrifugal force, laden - $M_{cf,laden}$	22,25 [t*m]
Heeling moment centrifugal force - $M_{cf,max}$	22,25 [t*m]

Heeling moment resulting from wind pressure in accordance with Article 27.02 Nr. 1 d)

Parameter C_{KW}	0,025 [t/m ²]	
Wind area above WL, empty - A_{empty}	385,83 [m ²]	(laden with 2 layers of empty containers)
Wind area above WL, laden - A_{bel}	324,17 [m ²]	(laden with 2 layers of full containers)
Center of gravity of wind area above base line, empty - $l_{W,empty}$	3,18 [m]	(laden with 2 layers of empty containers)
Center of gravity of wind area above base line, laden - $l_{W,laden}$	3,62 [m]	(laden with 2 layers of full containers)

Heeling moment wind pressure, empty - $M_{W,empty}$	28,49 [t*m]
Heeling moment wind pressure, laden - $M_{W,laden}$	24,00 [t*m]
Heeling moment wind pressure - $M_{W,max}$	28,49 [t*m]

Heeling moment resulting from free surfaces (rain water, residual water) in accordance with Article 27.02 Nr. 1 e)

Parameter C_{KfO}	0,015 [t/m ²]	
Length of cargo hold - l	67,00 [m]	
Breadth of cargo hold - b	9,20 [m]	

Heeling moment free surfaces - M_{fs} 69,64 [t*m]

ES-TRIN Chapter 27 - Heeling Moments Container Vessels

Vessel: 001 Europa 2b barge - aluminium
2 layers of containers

ENI: ---

Main characteristics:

Length over all - L_{oA}	76,50 [m]	
Length in waterline, empty - $L_{WL,empty}$	70,66 [m]	
Length in waterline, laden - $L_{WL,max}$	73,80 [m]	
Depth - H	3,20 [m]	
Draught empty - T_{empty}	0,38 [m]	(laden with 2 layers of empty containers)
Maximum draught - T_{max}	1,24 [m]	(laden with 2 layers of full containers)
Displacement empty - D_{empty}	270,834 [t]	(laden with 2 layers of empty containers)
Maximum displacement - D_{max}	969,234 [t]	(laden with 2 layers of full containers)

Total Heeling Moment for stability calculation - $M_{Heel,max}$ 120,82 [t*m]

Heeling moment resulting from centrifugal force in accordance with Article 27.02 Nr. 1 c)

Parameter C_{KZ}	0,04 [s ² /m]	
Maximum speed - v	15,00 [km/h] =	4,17 [m/s]
Height of vertical center of gravity- VCG_{empty}	2,19 [m a.B.]	(laden with 2 layers of empty containers)
Height of vertical center of gravity, laden - VCG_{laden}	3,06 [m a.B.]	(laden with 2 layers of full containers)

Heeling moment centrifugal force, empty - $M_{cf,empty}$ 5,33 [t*m]

Heeling moment centrifugal force, laden - $M_{cf,laden}$ 22,27 [t*m]

Heeling moment centrifugal force - $M_{cf,max}$ 22,27 [t*m]

Heeling moment resulting from wind pressure in accordance with Article 27.02 Nr. 1 d)

Parameter C_{KW}	0,025 [t/m ²]	
Wind area above WL, empty - A_{empty}	391,36 [m ²]	(laden with 2 layers of empty containers)
Wind area above WL, laden - A_{bel}	330,03 [m ²]	(laden with 2 layers of full containers)
Center of gravity of wind area above base line, empty - $l_{W,empty}$	3,15 [m]	(laden with 2 layers of empty containers)
Center of gravity of wind area above base line, laden - $l_{W,laden}$	3,58 [m]	(laden with 2 layers of full containers)

Heeling moment wind pressure, empty - $M_{W,empty}$ 28,91 [t*m]

Heeling moment wind pressure, laden - $M_{W,laden}$ 24,40 [t*m]

Heeling moment wind pressure - $M_{W,max}$ 28,91 [t*m]

Heeling moment resulting from free surfaces (rain water, residual water) in accordance with Article 27.02 Nr. 1 e)

Parameter C_{KfO}	0,015 [t/m ²]	
Length of cargo hold - l	67,00 [m]	
Breadth of cargo hold - b	9,20 [m]	

Heeling moment free surfaces - M_{fs} 69,64 [t*m]

ES-TRIN Chapter 27 - Heeling Moments Container Vessels

Vessel: 001 Europa 2b barge - steel
3 layers of containers

ENI: ---

Main characteristics:

Length over all - L_{oA}	76,50 [m]	
Length in waterline, empty - $L_{WL,empty}$	71,11 [m]	
Length in waterline, laden - $L_{WL,max}$	74,63 [m]	
Depth - H	3,20 [m]	
Draught empty - T_{empty}	0,53 [m]	(laden with 3 layers of empty containers)
Maximum draught - T_{max}	1,80 [m]	(laden with 3 layers of full containers)
Displacement empty - D_{empty}	386,822 [t]	(laden with 3 layers of empty containers)
Maximum displacement - D_{max}	1439,422 [t]	(laden with 3 layers of full containers)

Total Heeling Moment for stability calculation - $M_{Heel,max}$ 173,30 [t*m]

Heeling moment resulting from centrifugal force in accordance with Article 27.02 Nr. 1 c)

Parameter C_{KZ}	0,04 [s ² /m]	
Maximum speed - v	15,00 [km/h] =	4,17 [m/s]
Height of vertical center of gravity- VCG_{empty}	2,81 [m a.B.]	(laden with 3 layers of empty containers)
Height of vertical center of gravity, laden - VCG_{laden}	4,31 [m a.B.]	(laden with 3 layers of full containers)

Heeling moment centrifugal force, empty - $M_{cf,empty}$	9,60 [t*m]
Heeling moment centrifugal force, laden - $M_{cf,laden}$	45,65 [t*m]
Heeling moment centrifugal force - $M_{cf,max}$	45,65 [t*m]

Heeling moment resulting from wind pressure in accordance with Article 27.02 Nr. 1 d)

Parameter C_{KW}	0,025 [t/m ²]	
Wind area above WL, empty - A_{empty}	540,72 [m ²]	(laden with 3 layers of empty containers)
Wind area above WL, laden - A_{bel}	448,45 [m ²]	(laden with 3 layers of full containers)
Center of gravity of wind area above base line, empty - $l_{W,empty}$	4,56 [m]	(laden with 3 layers of empty containers)
Center of gravity of wind area above base line, laden - $l_{W,laden}$	5,25 [m]	(laden with 3 layers of full containers)

Heeling moment wind pressure, empty - $M_{W,empty}$	58,01 [t*m]
Heeling moment wind pressure, laden - $M_{W,laden}$	48,77 [t*m]
Heeling moment wind pressure - $M_{W,max}$	58,01 [t*m]

Heeling moment resulting from free surfaces (rain water, residual water) in accordance with Article 27.02 Nr. 1 e)

Parameter C_{KfO}	0,015 [t/m ²]
Length of cargo hold - l	67,00 [m]
Breadth of cargo hold - b	9,20 [m]

Heeling moment free surfaces - M_{fs} 69,64 [t*m]

ES-TRIN Chapter 27 - Heeling Moments Container Vessels

Vessel: 001 Europa 2b barge - aluminium
3 layers of containers

ENI: ---

Main characteristics:

Length over all - L_{oA}	76,50 [m]	
Length in waterline, empty - $L_{WL,empty}$	71,11 [m]	
Length in waterline, laden - $L_{WL,max}$	74,63 [m]	
Depth - H	3,20 [m]	
Draught empty - T_{empty}	0,45 [m]	(laden with 3 layers of empty containers)
Maximum draught - T_{max}	1,73 [m]	(laden with 3 layers of full containers)
Displacement empty - D_{empty}	324,634 [t]	(laden with 3 layers of empty containers)
Maximum displacement - D_{max}	1377,234 [t]	(laden with 3 layers of full containers)

Total Heeling Moment for stability calculation - $M_{Heel,max}$ 174,19 [t*m]

Heeling moment resulting from centrifugal force in accordance with Article 27.02 Nr. 1 c)

Parameter C_{KZ}	0,04 [s ² /m]	
Maximum speed - v	15,00 [km/h] =	4,17 [m/s]
Height of vertical center of gravity- VCG_{empty}	3,12 [m a.B.]	(laden with 3 layers of empty containers)
Height of vertical center of gravity, laden - VCG_{laden}	4,45 [m a.B.]	(laden with 3 layers of full containers)

Heeling moment centrifugal force, empty - $M_{cf,empty}$ 9,16 [t*m]

Heeling moment centrifugal force, laden - $M_{cf,laden}$ 45,96 [t*m]

Heeling moment centrifugal force - $M_{cf,max}$ 45,96 [t*m]

Heeling moment resulting from wind pressure in accordance with Article 27.02 Nr. 1 d)

Parameter C_{KW}	0,025 [t/m ²]	
Wind area above WL, empty - A_{empty}	546,28 [m ²]	(laden with 3 layers of empty containers)
Wind area above WL, laden - A_{bel}	453,65 [m ²]	(laden with 3 layers of full containers)
Center of gravity of wind area above base line, empty - $l_{W,empty}$	4,51 [m]	(laden with 3 layers of empty containers)
Center of gravity of wind area above base line, laden - $l_{W,laden}$	5,21 [m]	(laden with 3 layers of full containers)

Heeling moment wind pressure, empty - $M_{W,empty}$ 58,59 [t*m]

Heeling moment wind pressure, laden - $M_{W,laden}$ 49,31 [t*m]

Heeling moment wind pressure - $M_{W,max}$ 58,59 [t*m]

Heeling moment resulting from free surfaces (rain water, residual water) in accordance with Article 27.02 Nr. 1 e)

Parameter C_{KfO}	0,015 [t/m ²]	
Length of cargo hold - l	67,00 [m]	
Breadth of cargo hold - b	9,20 [m]	

Heeling moment free surfaces - M_{fs} 69,64 [t*m]

ES-TRIN Chapter 27 - Heeling Moments Container Vessels

Vessel: 002 Europa 3a barge - steel
2 layers of containers

ENI: ---

Main characteristics:

Length over all - L_{oA}	90,00 [m]	
Length in waterline, empty - $L_{WL,empty}$	84,16 [m]	
Length in waterline, laden - $L_{WL,max}$	87,37 [m]	
Depth - H	3,25 [m]	
Draught empty - T_{empty}	0,54 [m]	(laden with 2 layers of empty containers)
Maximum draught - T_{max}	1,44 [m]	(laden with 2 layers of full containers)
Displacement empty - D_{empty}	480,001 [t]	(laden with 2 layers of empty containers)
Maximum displacement - D_{max}	1353,001 [t]	(laden with 2 layers of full containers)

Total Heeling Moment for stability calculation - $M_{Heel,max}$ 140,93 [t*m]

Heeling moment resulting from centrifugal force in accordance with Article 27.02 Nr. 1 c)

Parameter c_{KZ}	0,04 [s ² /m]	
Maximum speed - v	15,00 [km/h] =	4,17 [m/s]
Height of vertical center of gravity- VCG_{empty}	1,85 [m a.B.]	(laden with 2 layers of empty containers)
Height of vertical center of gravity, laden - VCG_{laden}	2,85 [m a.B.]	(laden with 2 layers of full containers)

Heeling moment centrifugal force, empty - $M_{cf,empty}$ 6,26 [t*m]

Heeling moment centrifugal force, laden - $M_{cf,laden}$ 22,92 [t*m]

Heeling moment centrifugal force - $M_{cf,max}$ 22,92 [t*m]

Heeling moment resulting from wind pressure in accordance with Article 27.02 Nr. 1 d)

Parameter c_{KW}	0,025 [t/m ²]	
Wind area above WL, empty - A_{empty}	459,46 [m ²]	(laden with 2 layers of empty containers)
Wind area above WL, laden - A_{bel}	382,39 [m ²]	(laden with 2 layers of full containers)
Center of gravity of wind area above base line, empty - $l_{W,empty}$	3,26 [m]	(laden with 2 layers of empty containers)
Center of gravity of wind area above base line, laden - $l_{W,laden}$	3,72 [m]	(laden with 2 layers of full containers)

Heeling moment wind pressure, empty - $M_{W,empty}$ 34,34 [t*m]

Heeling moment wind pressure, laden - $M_{W,laden}$ 28,67 [t*m]

Heeling moment wind pressure - $M_{W,max}$ 34,34 [t*m]

Heeling moment resulting from free surfaces (rain water, residual water) in accordance with Article 27.02 Nr. 1 e)

Parameter c_{KfO}	0,015 [t/m ²]
Length of cargo hold - l	80,50 [m]
Breadth of cargo hold - b	9,20 [m]

Heeling moment free surfaces - M_{fs} 83,67 [t*m]

ES-TRIN Chapter 27 - Heeling Moments Container Vessels

Vessel: 002 Europa 3a barge - aluminium
2 layers of containers

ENI: ---

Main characteristics:

Length over all - L_{oA}	90,00 [m]	
Length in waterline, empty - $L_{WL,empty}$	84,16 [m]	
Length in waterline, laden - $L_{WL,max}$	87,37 [m]	
Depth - H	3,25 [m]	
Draught empty - T_{empty}	0,45 [m]	(laden with 2 layers of empty containers)
Maximum draught - T_{max}	1,35 [m]	(laden with 2 layers of full containers)
Displacement empty - D_{empty}	386,923 [t]	(laden with 2 layers of empty containers)
Maximum displacement - D_{max}	1259,923 [t]	(laden with 2 layers of full containers)

Total Heeling Moment for stability calculation - $M_{Heel,max}$ 141,77 [t*m]

Heeling moment resulting from centrifugal force in accordance with Article 27.02 Nr. 1 c)

Parameter C_{KZ}	0,04 [s ² /m]	
Maximum speed - v	15,00 [km/h] =	4,17 [m/s]
Height of vertical center of gravity- VCG_{empty}	2,04 [m a.B.]	(laden with 2 layers of empty containers)
Height of vertical center of gravity, laden - VCG_{laden}	2,98 [m a.B.]	(laden with 2 layers of full containers)

Heeling moment centrifugal force, empty - $M_{cf,empty}$ 5,81 [t*m]

Heeling moment centrifugal force, laden - $M_{cf,laden}$ 23,13 [t*m]

Heeling moment centrifugal force - $M_{cf,max}$ 23,13 [t*m]

Heeling moment resulting from wind pressure in accordance with Article 27.02 Nr. 1 d)

Parameter C_{KW}	0,025 [t/m ²]	
Wind area above WL, empty - A_{empty}	466,93 [m ²]	(laden with 2 layers of empty containers)
Wind area above WL, laden - A_{bel}	390,23 [m ²]	(laden with 2 layers of full containers)
Center of gravity of wind area above base line, empty - $l_{W,empty}$	3,22 [m]	(laden with 2 layers of empty containers)
Center of gravity of wind area above base line, laden - $l_{W,laden}$	3,67 [m]	(laden with 2 layers of full containers)

Heeling moment wind pressure, empty - $M_{W,empty}$ 34,97 [t*m]

Heeling moment wind pressure, laden - $M_{W,laden}$ 29,26 [t*m]

Heeling moment wind pressure - $M_{W,max}$ 34,97 [t*m]

Heeling moment resulting from free surfaces (rain water, residual water) in accordance with Article 27.02 Nr. 1 e)

Parameter C_{KfO}	0,015 [t/m ²]	
Length of cargo hold - l	80,50 [m]	
Breadth of cargo hold - b	9,20 [m]	

Heeling moment free surfaces - M_{fs} 83,67 [t*m]

ES-TRIN Chapter 27 - Heeling Moments Container Vessels

Vessel: 002 Europa 3a barge - steel
3 layers of containers

ENI: ---

Main characteristics:

Length over all - L_{oA}	90,00 [m]	
Length in waterline, empty - $L_{WL,empty}$	84,68 [m]	
Length in waterline, laden - $L_{WL,max}$	88,25 [m]	
Depth - H	3,25 [m]	
Draught empty - T_{empty}	0,62 [m]	(laden with 3 layers of empty containers)
Maximum draught - T_{max}	1,95 [m]	(laden with 3 layers of full containers)
Displacement empty - D_{empty}	553,501 [t]	(laden with 3 layers of empty containers)
Maximum displacement - D_{max}	1863,001 [t]	(laden with 3 layers of full containers)

Total Heeling Moment for stability calculation - $M_{Heel,max}$ 201,67 [t*m]

Heeling moment resulting from centrifugal force in accordance with Article 27.02 Nr. 1 c)

Parameter C_{KZ}	0,04 [s ² /m]	
Maximum speed - v	15,00 [km/h] =	4,17 [m/s]
Height of vertical center of gravity- VCG_{empty}	2,64 [m a.B.]	(laden with 3 layers of empty containers)
Height of vertical center of gravity, laden - VCG_{laden}	4,19 [m a.B.]	(laden with 3 layers of full containers)

Heeling moment centrifugal force, empty - $M_{cf,empty}$ 10,55 [t*m]

Heeling moment centrifugal force, laden - $M_{cf,laden}$ 47,13 [t*m]

Heeling moment centrifugal force - $M_{cf,max}$ 47,13 [t*m]

Heeling moment resulting from wind pressure in accordance with Article 27.02 Nr. 1 d)

Parameter C_{KW}	0,025 [t/m ²]	
Wind area above WL, empty - A_{empty}	651,93 [m ²]	(laden with 3 layers of empty containers)
Wind area above WL, laden - A_{bel}	536,88 [m ²]	(laden with 3 layers of full containers)
Center of gravity of wind area above base line, empty - $l_{W,empty}$	4,66 [m]	(laden with 3 layers of empty containers)
Center of gravity of wind area above base line, laden - $l_{W,laden}$	5,38 [m]	(laden with 3 layers of full containers)

Heeling moment wind pressure, empty - $M_{W,empty}$ 70,87 [t*m]

Heeling moment wind pressure, laden - $M_{W,laden}$ 59,12 [t*m]

Heeling moment wind pressure - $M_{W,max}$ 70,87 [t*m]

Heeling moment resulting from free surfaces (rain water, residual water) in accordance with Article 27.02 Nr. 1 e)

Parameter C_{KfO}	0,015 [t/m ²]	
Length of cargo hold - l	80,50 [m]	
Breadth of cargo hold - b	9,20 [m]	

Heeling moment free surfaces - M_{fs} 83,67 [t*m]

ES-TRIN Chapter 27 - Heeling Moments Container Vessels

Vessel: 002 Europa 3a barge - aluminium
3 layers of containers

ENI: ---

Main characteristics:

Length over all - L_{oA}	90,00 [m]	
Length in waterline, empty - $L_{WL,empty}$	84,68 [m]	
Length in waterline, laden - $L_{WL,max}$	88,25 [m]	
Depth - H	3,25 [m]	
Draught empty - T_{empty}	0,52 [m]	(laden with 3 layers of empty containers)
Maximum draught - T_{max}	1,86 [m]	(laden with 3 layers of full containers)
Displacement empty - D_{empty}	460,423 [t]	(laden with 3 layers of empty containers)
Maximum displacement - D_{max}	1769,923 [t]	(laden with 3 layers of full containers)

Total Heeling Moment for stability calculation - $M_{Heel,max}$ 203,13 [t*m]

Heeling moment resulting from centrifugal force in accordance with Article 27.02 Nr. 1 c)

Parameter C_{KZ}	0,04 [s ² /m]	
Maximum speed - v	15,00 [km/h] =	4,17 [m/s]
Height of vertical center of gravity- VCG_{empty}	2,95 [m a.B.]	(laden with 3 layers of empty containers)
Height of vertical center of gravity, laden - VCG_{laden}	4,36 [m a.B.]	(laden with 3 layers of full containers)

Heeling moment centrifugal force, empty - $M_{cf,empty}$	10,16 [t*m]
Heeling moment centrifugal force, laden - $M_{cf,laden}$	47,73 [t*m]
Heeling moment centrifugal force - $M_{cf,max}$	47,73 [t*m]

Heeling moment resulting from wind pressure in accordance with Article 27.02 Nr. 1 d)

Parameter C_{KW}	0,025 [t/m ²]	
Wind area above WL, empty - A_{empty}	660,29 [m ²]	(laden with 3 layers of empty containers)
Wind area above WL, laden - A_{bel}	544,79 [m ²]	(laden with 3 layers of full containers)
Center of gravity of wind area above base line, empty - $l_{W,empty}$	4,61 [m]	(laden with 3 layers of empty containers)
Center of gravity of wind area above base line, laden - $l_{W,laden}$	5,33 [m]	(laden with 3 layers of full containers)
	20,00	

Heeling moment wind pressure, empty - $M_{W,empty}$	71,73 [t*m]
Heeling moment wind pressure, laden - $M_{W,laden}$	59,94 [t*m]
Heeling moment wind pressure - $M_{W,max}$	71,73 [t*m]

Heeling moment resulting from free surfaces (rain water, residual water) in accordance with Article 27.02 Nr. 1 e)

Parameter C_{KfO}	0,015 [t/m ²]
Length of cargo hold - l	80,50 [m]
Breadth of cargo hold - b	9,20 [m]

Heeling moment free surfaces - M_{fs} 83,67 [t*m]

ES-TRIN Chapter 27 - Heeling Moments Container Vessels

Vessel: 003 IW-NET 3 units abreast - steel
2 layers of containers

ENI: ---

Main characteristics:

Length over all - L_{oA}	81,00 [m]	
Length in waterline, empty - $L_{WL,empty}$	79,03 [m]	
Length in waterline, laden - $L_{WL,max}$	80,33 [m]	
Depth - H	3,20 [m]	
Draught empty - T_{empty}	0,62 [m]	(laden with 2 layers of empty containers)
Maximum draught - T_{max}	1,78 [m]	(laden with 2 layers of full containers)
Displacement empty - D_{empty}	421,925 [t]	(laden with 2 layers of empty containers)
Maximum displacement - D_{max}	1294,925 [t]	(laden with 2 layers of full containers)

Total Heeling Moment for stability calculation - $M_{Heel,max}$ 109,36 [t*m]

Heeling moment resulting from centrifugal force in accordance with Article 27.02 Nr. 1 c)

Parameter c_{KZ}	0,04 [s ² /m]	
Maximum speed - v	15,00 [km/h] =	4,17 [m/s]
Height of vertical center of gravity- VCG_{empty}	2,04 [m a.B.]	(laden with 2 layers of empty containers)
Height of vertical center of gravity, laden - VCG_{laden}	2,96 [m a.B.]	(laden with 2 layers of full containers)

Heeling moment centrifugal force, empty - $M_{cf,empty}$ 6,42 [t*m]

Heeling moment centrifugal force, laden - $M_{cf,laden}$ 23,12 [t*m]

Heeling moment centrifugal force - $M_{cf,max}$ 23,12 [t*m]

Heeling moment resulting from wind pressure in accordance with Article 27.02 Nr. 1 d)

Parameter c_{KW}	0,025 [t/m ²]	
Wind area above WL, empty - A_{empty}	421,15 [m ²]	(laden with 2 layers of empty containers)
Wind area above WL, laden - A_{bel}	328,67 [m ²]	(laden with 2 layers of full containers)
Center of gravity of wind area above base line, empty - $l_{W,empty}$	3,35 [m]	(laden with 2 layers of empty containers)
Center of gravity of wind area above base line, laden - $l_{W,laden}$	3,96 [m]	(laden with 2 layers of full containers)

Heeling moment wind pressure, empty - $M_{W,empty}$ 31,98 [t*m]

Heeling moment wind pressure, laden - $M_{W,laden}$ 25,18 [t*m]

Heeling moment wind pressure - $M_{W,max}$ 31,98 [t*m]

Heeling moment resulting from free surfaces (rain water, residual water) in accordance with Article 27.02 Nr. 1 e)

Parameter c_{KfO}	0,015 [t/m ²]	
Length of cargo hold - l	71,88 [m]	
Breadth of cargo hold - b	7,91 [m]	

Heeling moment free surfaces - M_{fs} 54,27 [t*m]

ES-TRIN Chapter 27 - Heeling Moments Container Vessels

Vessel: 003 IW-NET 3 units abreast - aluminium
2 layers of containers ENI: ---

Main characteristics:

Length over all - L_{OA}	81,00 [m]	
Length in waterline, empty - $L_{WL,empty}$	79,03 [m]	
Length in waterline, laden - $L_{WL,max}$	80,33 [m]	
Depth - H	3,20 [m]	
Draught empty - T_{empty}	0,51 [m]	(laden with 2 layers of empty containers)
Maximum draught - T_{max}	1,67 [m]	(laden with 2 layers of full containers)
Displacement empty - D_{empty}	338,876 [t]	(laden with 2 layers of empty containers)
Maximum displacement - D_{max}	1211,876 [t]	(laden with 2 layers of full containers)

Total Heeling Moment for stability calculation - $M_{Heel,max}$ 110,38 [t*m]

Heeling moment resulting from centrifugal force in accordance with Article 27.02 Nr. 1 c)

Parameter C_{KZ}	0,04 [s ² /m]	
Maximum speed - v	15,00 [km/h] =	4,17 [m/s]
Height of vertical center of gravity- VCG_{empty}	2,23 [m a.B.]	(laden with 2 layers of empty containers)
Height of vertical center of gravity, laden - VCG_{laden}	3,07 [m a.B.]	(laden with 2 layers of full containers)

Heeling moment centrifugal force, empty - $M_{cf,empty}$ 5,89 [t*m]

Heeling moment centrifugal force, laden - $M_{cf,laden}$ 23,41 [t*m]

Heeling moment centrifugal force - $M_{cf,max}$ 23,41 [t*m]

Heeling moment resulting from wind pressure in accordance with Article 27.02 Nr. 1 d)

Parameter C_{KW}	0,025 [t/m ²]	
Wind area above WL, empty - A_{empty}	429,81 [m ²]	(laden with 2 layers of empty containers)
Wind area above WL, laden - A_{bel}	337,50 [m ²]	(laden with 2 layers of full containers)
Center of gravity of wind area above base line, empty - $l_{W,empty}$	3,30 [m]	(laden with 2 layers of empty containers)
Center of gravity of wind area above base line, laden - $l_{W,laden}$	3,90 [m]	(laden with 2 layers of full containers)

Heeling moment wind pressure, empty - $M_{W,empty}$ 32,69 [t*m]

Heeling moment wind pressure, laden - $M_{W,laden}$ 25,82 [t*m]

Heeling moment wind pressure - $M_{W,max}$ 32,69 [t*m]

Heeling moment resulting from free surfaces (rain water, residual water) in accordance with Article 27.02 Nr. 1 e)

Parameter C_{KfO}	0,015 [t/m ²]	
Length of cargo hold - l	71,88 [m]	
Breadth of cargo hold - b	7,91 [m]	

Heeling moment free surfaces - M_{fs} 54,27 [t*m]

ES-TRIN Chapter 27 - Heeling Moments Container Vessels

Vessel: 003 IW-NET 3 units abreast - steel
3 layers of containers

ENI: ---

Main characteristics:

Length over all - L_{OA}	81,00 [m]	
Length in waterline, empty - $L_{WL,empty}$	79,21 [m]	
Length in waterline, laden - $L_{WL,max}$	80,74 [m]	
Depth - H	3,20 [m]	
Draught empty - T_{empty}	0,72 [m]	(laden with 3 layers of empty containers)
Maximum draught - T_{max}	2,46 [m]	(laden with 3 layers of full containers)
Displacement empty - D_{empty}	495,425 [t]	(laden with 3 layers of empty containers)
Maximum displacement - D_{max}	1804,925 [t]	(laden with 3 layers of full containers)

Total Heeling Moment for stability calculation - $M_{Heel,max}$ 170,46 [t*m]

Heeling moment resulting from centrifugal force in accordance with Article 27.02 Nr. 1 c)

Parameter C_{KZ}	0,04 [s ² /m]	
Maximum speed - v	15,00 [km/h] =	4,17 [m/s]
Height of vertical center of gravity- VCG_{empty}	2,89 [m a.B.]	(laden with 3 layers of empty containers)
Height of vertical center of gravity, laden - VCG_{laden}	4,31 [m a.B.]	(laden with 3 layers of full containers)

Heeling moment centrifugal force, empty - $M_{cf,empty}$ 10,98 [t*m]

Heeling moment centrifugal force, laden - $M_{cf,laden}$ 47,87 [t*m]

Heeling moment centrifugal force - $M_{cf,max}$ 47,87 [t*m]

Heeling moment resulting from wind pressure in accordance with Article 27.02 Nr. 1 d)

Parameter C_{KW}	0,025 [t/m ²]	
Wind area above WL, empty - A_{empty}	612,86 [m ²]	(laden with 3 layers of empty containers)
Wind area above WL, laden - A_{bel}	473,53 [m ²]	(laden with 3 layers of full containers)
Center of gravity of wind area above base line, empty - $l_{W,empty}$	4,82 [m]	(laden with 3 layers of empty containers)
Center of gravity of wind area above base line, laden - $l_{W,laden}$	5,77 [m]	(laden with 3 layers of full containers)

Heeling moment wind pressure, empty - $M_{W,empty}$ 68,32 [t*m]

Heeling moment wind pressure, laden - $M_{W,laden}$ 53,74 [t*m]

Heeling moment wind pressure - $M_{W,max}$ 68,32 [t*m]

Heeling moment resulting from free surfaces (rain water, residual water) in accordance with Article 27.02 Nr. 1 e)

Parameter C_{KfO}	0,015 [t/m ²]	
Length of cargo hold - l	71,88 [m]	
Breadth of cargo hold - b	7,91 [m]	

Heeling moment free surfaces - M_{fs} 54,27 [t*m]

ES-TRIN Chapter 27 - Heeling Moments Container Vessels

Vessel: 003 IW-NET 3 units abreast - aluminium
3 layers of containers

ENI: ---

Main characteristics:

Length over all - L_{OA}	81,00 [m]	
Length in waterline, empty - $L_{WL,empty}$	79,21 [m]	
Length in waterline, laden - $L_{WL,max}$	80,74 [m]	
Depth - H	3,20 [m]	
Draught empty - T_{empty}	0,61 [m]	(laden with 3 layers of empty containers)
Maximum draught - T_{max}	2,35 [m]	(laden with 3 layers of full containers)
Displacement empty - D_{empty}	412,376 [t]	(laden with 3 layers of empty containers)
Maximum displacement - D_{max}	1721,876 [t]	(laden with 3 layers of full containers)

Total Heeling Moment for stability calculation - $M_{Heel,max}$ 172,25 [t*m]

Heeling moment resulting from centrifugal force in accordance with Article 27.02 Nr. 1 c)

Parameter C_{KZ}	0,04 [s ² /m]	
Maximum speed - v	15,00 [km/h] =	4,17 [m/s]
Height of vertical center of gravity- VCG_{empty}	3,21 [m a.B.]	(laden with 3 layers of empty containers)
Height of vertical center of gravity, laden - VCG_{laden}	4,46 [m a.B.]	(laden with 3 layers of full containers)

Heeling moment centrifugal force, empty - $M_{cf,empty}$ 10,52 [t*m]

Heeling moment centrifugal force, laden - $M_{cf,laden}$ 48,64 [t*m]

Heeling moment centrifugal force - $M_{cf,max}$ 48,64 [t*m]

Heeling moment resulting from wind pressure in accordance with Article 27.02 Nr. 1 d)

Parameter C_{KW}	0,025 [t/m ²]	
Wind area above WL, empty - A_{empty}	621,55 [m ²]	(laden with 3 layers of empty containers)
Wind area above WL, laden - A_{bel}	482,41 [m ²]	(laden with 3 layers of full containers)
Center of gravity of wind area above base line, empty - $l_{W,empty}$	4,77 [m]	(laden with 3 layers of empty containers)
Center of gravity of wind area above base line, laden - $l_{W,laden}$	5,71 [m]	(laden with 3 layers of full containers)

Heeling moment wind pressure, empty - $M_{W,empty}$ 69,34 [t*m]

Heeling moment wind pressure, laden - $M_{W,laden}$ 54,66 [t*m]

Heeling moment wind pressure - $M_{W,max}$ 69,34 [t*m]

Heeling moment resulting from free surfaces (rain water, residual water) in accordance with Article 27.02 Nr. 1 e)

Parameter C_{KfO}	0,015 [t/m ²]	
Length of cargo hold - l	71,88 [m]	
Breadth of cargo hold - b	7,91 [m]	

Heeling moment free surfaces - M_{fs} 54,27 [t*m]

ES-TRIN Chapter 27 - Heeling Moments Container Vessels

Vessel: 004 NEWS Evolution - steel
2 layers of containers

ENI: ---

Main characteristics:

Length over all - L_{oA}	85,92 [m]	
Length in waterline, empty - $L_{WL,empty}$	84,06 [m]	
Length in waterline, laden - $L_{WL,max}$	85,34 [m]	
Depth - H	4,10 [m]	
Draught empty - T_{empty}	0,67 [m]	(laden with 2 layers of empty containers)
Maximum draught - T_{max}	1,88 [m]	(laden with 2 layers of full containers)
Displacement empty - D_{empty}	597,565 [t]	(laden with 2 layers of empty containers)
Maximum displacement - D_{max}	1761,565 [t]	(laden with 2 layers of full containers)

Total Heeling Moment for stability calculation - $M_{Heel,max}$ 154,40 [t*m]

Heeling moment resulting from centrifugal force in accordance with Article 27.02 Nr. 1 c)

Parameter C_{KZ}	0,04 [s ² /m]	
Maximum speed - v	15,00 [km/h] =	4,17 [m/s]
Height of vertical center of gravity- VCG_{empty}	2,02 [m a.B.]	(laden with 2 layers of empty containers)
Height of vertical center of gravity, laden - VCG_{laden}	2,93 [m a.B.]	(laden with 2 layers of full containers)

Heeling moment centrifugal force, empty - $M_{cf,empty}$ 8,31 [t*m]

Heeling moment centrifugal force, laden - $M_{cf,laden}$ 28,53 [t*m]

Heeling moment centrifugal force - $M_{cf,max}$ 28,53 [t*m]

Heeling moment resulting from wind pressure in accordance with Article 27.02 Nr. 1 d)

Parameter C_{KW}	0,025 [t/m ²]	
Wind area above WL, empty - A_{empty}	439,44 [m ²]	(laden with 2 layers of empty containers)
Wind area above WL, laden - A_{bel}	336,97 [m ²]	(laden with 2 layers of full containers)
Center of gravity of wind area above base line, empty - $l_{W,empty}$	3,34 [m]	(laden with 2 layers of empty containers)
Center of gravity of wind area above base line, laden - $l_{W,laden}$	3,97 [m]	(laden with 2 layers of full containers)

Heeling moment wind pressure, empty - $M_{W,empty}$ 33,01 [t*m]

Heeling moment wind pressure, laden - $M_{W,laden}$ 25,50 [t*m]

Heeling moment wind pressure - $M_{W,max}$ 33,01 [t*m]

Heeling moment resulting from free surfaces (rain water, residual water) in accordance with Article 27.02 Nr. 1 e)

Parameter C_{KfO}	0,015 [t/m ²]	
Length of cargo hold - l	69,00 [m]	
Breadth of cargo hold - b	10,40 [m]	

Heeling moment free surfaces - M_{fs} 92,85 [t*m]

ES-TRIN Chapter 27 - Heeling Moments Container Vessels

Vessel: 004 NEWS Evolution - aluminium
2 layers of containers

ENI: ---

Main characteristics:

Length over all - L_{oA}	85,92 [m]	
Length in waterline, empty - $L_{WL,empty}$	84,06 [m]	
Length in waterline, laden - $L_{WL,max}$	85,34 [m]	
Depth - H	4,10 [m]	
Draught empty - T_{empty}	0,55 [m]	(laden with 2 layers of empty containers)
Maximum draught - T_{max}	1,76 [m]	(laden with 2 layers of full containers)
Displacement empty - D_{empty}	481,024 [t]	(laden with 2 layers of empty containers)
Maximum displacement - D_{max}	1645,024 [t]	(laden with 2 layers of full containers)

Total Heeling Moment for stability calculation - $M_{Heel,max}$ 155,63 [t*m]

Heeling moment resulting from centrifugal force in accordance with Article 27.02 Nr. 1 c)

Parameter C_{KZ}	0,04 [s ² /m]	
Maximum speed - v	15,00 [km/h] =	4,17 [m/s]
Height of vertical center of gravity- VCG_{empty}	2,20 [m a.B.]	(laden with 2 layers of empty containers)
Height of vertical center of gravity, laden - VCG_{laden}	3,05 [m a.B.]	(laden with 2 layers of full containers)

Heeling moment centrifugal force, empty - $M_{cf,empty}$ 7,64 [t*m]

Heeling moment centrifugal force, laden - $M_{cf,laden}$ 29,00 [t*m]

Heeling moment centrifugal force - $M_{cf,max}$ 29,00 [t*m]

Heeling moment resulting from wind pressure in accordance with Article 27.02 Nr. 1 d)

Parameter C_{KW}	0,025 [t/m ²]	
Wind area above WL, empty - A_{empty}	449,49 [m ²]	(laden with 2 layers of empty containers)
Wind area above WL, laden - A_{bel}	347,20 [m ²]	(laden with 2 layers of full containers)
Center of gravity of wind area above base line, empty - $l_{W,empty}$	3,28 [m]	(laden with 2 layers of empty containers)
Center of gravity of wind area above base line, laden - $l_{W,laden}$	3,91 [m]	(laden with 2 layers of full containers)

Heeling moment wind pressure, empty - $M_{W,empty}$ 33,77 [t*m]

Heeling moment wind pressure, laden - $M_{W,laden}$ 26,24 [t*m]

Heeling moment wind pressure - $M_{W,max}$ 33,77 [t*m]

Heeling moment resulting from free surfaces (rain water, residual water) in accordance with Article 27.02 Nr. 1 e)

Parameter C_{KfO}	0,015 [t/m ²]	
Length of cargo hold - l	69,00 [m]	
Breadth of cargo hold - b	10,40 [m]	

Heeling moment free surfaces - M_{fs} 92,85 [t*m]

ES-TRIN Chapter 27 - Heeling Moments Container Vessels

Vessel: 004 NEWS Evolution - steel
3 layers of containers

ENI: ---

Main characteristics:

Length over all - L_{oA}	85,92 [m]	
Length in waterline, empty - $L_{WL,empty}$	84,23 [m]	
Length in waterline, laden - $L_{WL,max}$	85,75 [m]	
Depth - H	4,10 [m]	
Draught empty - T_{empty}	0,78 [m]	(laden with 3 layers of empty containers)
Maximum draught - T_{max}	2,58 [m]	(laden with 3 layers of full containers)
Displacement empty - D_{empty}	695,565 [t]	(laden with 3 layers of empty containers)
Maximum displacement - D_{max}	2441,565 [t]	(laden with 3 layers of full containers)

Total Heeling Moment for stability calculation - $M_{Heel,max}$ 220,31 [t*m]

Heeling moment resulting from centrifugal force in accordance with Article 27.02 Nr. 1 c)

Parameter C_{KZ}	0,04 [s ² /m]	
Maximum speed - v	15,00 [km/h] =	4,17 [m/s]
Height of vertical center of gravity- VCG_{empty}	2,83 [m a.B.]	(laden with 3 layers of empty containers)
Height of vertical center of gravity, laden - VCG_{laden}	4,27 [m a.B.]	(laden with 3 layers of full containers)

Heeling moment centrifugal force, empty - $M_{cf,empty}$ 13,98 [t*m]

Heeling moment centrifugal force, laden - $M_{cf,laden}$ 58,97 [t*m]

Heeling moment centrifugal force - $M_{cf,max}$ 58,97 [t*m]

Heeling moment resulting from wind pressure in accordance with Article 27.02 Nr. 1 d)

Parameter C_{KW}	0,025 [t/m ²]	
Wind area above WL, empty - A_{empty}	626,80 [m ²]	(laden with 3 layers of empty containers)
Wind area above WL, laden - A_{bel}	473,72 [m ²]	(laden with 3 layers of full containers)
Center of gravity of wind area above base line, empty - $l_{W,empty}$	4,76 [m]	(laden with 3 layers of empty containers)
Center of gravity of wind area above base line, laden - $l_{W,laden}$	5,75 [m]	(laden with 3 layers of full containers)

Heeling moment wind pressure, empty - $M_{W,empty}$ 68,49 [t*m]

Heeling moment wind pressure, laden - $M_{W,laden}$ 52,83 [t*m]

Heeling moment wind pressure - $M_{W,max}$ 68,49 [t*m]

Heeling moment resulting from free surfaces (rain water, residual water) in accordance with Article 27.02 Nr. 1 e)

Parameter C_{KfO}	0,015 [t/m ²]
Length of cargo hold - l	69,00 [m]
Breadth of cargo hold - b	10,40 [m]

Heeling moment free surfaces - M_{fs} 92,85 [t*m]

ES-TRIN Chapter 27 - Heeling Moments Container Vessels

Vessel: 004 NEWS Evolution - aluminium
3 layers of containers

ENI: ---

Main characteristics:

Length over all - L_{oA}	85,92 [m]	
Length in waterline, empty - $L_{WL,empty}$	84,23 [m]	
Length in waterline, laden - $L_{WL,max}$	85,75 [m]	
Depth - H	4,10 [m]	
Draught empty - T_{empty}	0,65 [m]	(laden with 3 layers of empty containers)
Maximum draught - T_{max}	2,46 [m]	(laden with 3 layers of full containers)
Displacement empty - D_{empty}	579,024 [t]	(laden with 3 layers of empty containers)
Maximum displacement - D_{max}	2325,024 [t]	(laden with 3 layers of full containers)

Total Heeling Moment for stability calculation - $M_{Heel,max}$ 222,50 [t*m]

Heeling moment resulting from centrifugal force in accordance with Article 27.02 Nr. 1 c)

Parameter C_{KZ}	0,04 [s ² /m]	
Maximum speed - v	15,00 [km/h] =	4,17 [m/s]
Height of vertical center of gravity- VCG_{empty}	3,14 [m a.B.]	(laden with 3 layers of empty containers)
Height of vertical center of gravity, laden - VCG_{laden}	4,42 [m a.B.]	(laden with 3 layers of full containers)

Heeling moment centrifugal force, empty - $M_{cf,empty}$ 13,42 [t*m]

Heeling moment centrifugal force, laden - $M_{cf,laden}$ 60,10 [t*m]

Heeling moment centrifugal force - $M_{cf,max}$ 60,10 [t*m]

Heeling moment resulting from wind pressure in accordance with Article 27.02 Nr. 1 d)

Parameter C_{KW}	0,025 [t/m ²]	
Wind area above WL, empty - A_{empty}	637,71 [m ²]	(laden with 3 layers of empty containers)
Wind area above WL, laden - A_{bel}	484,00 [m ²]	(laden with 3 layers of full containers)
Center of gravity of wind area above base line, empty - $l_{W,empty}$	4,69 [m]	(laden with 3 layers of empty containers)
Center of gravity of wind area above base line, laden - $l_{W,laden}$	5,68 [m]	(laden with 3 layers of full containers)

Heeling moment wind pressure, empty - $M_{W,empty}$ 69,54 [t*m]

Heeling moment wind pressure, laden - $M_{W,laden}$ 53,87 [t*m]

Heeling moment wind pressure - $M_{W,max}$ 69,54 [t*m]

Heeling moment resulting from free surfaces (rain water, residual water) in accordance with Article 27.02 Nr. 1 e)

Parameter C_{KfO}	0,015 [t/m ²]
Length of cargo hold - l	69,00 [m]
Breadth of cargo hold - b	10,40 [m]

Heeling moment free surfaces - M_{fs} 92,85 [t*m]

ES-TRIN Chapter 27 - Heeling Moments Container Vessels

Vessel: 005 IW-NET Containers transverse - steel
2 layers of containers

ENI: ---

Main characteristics:

Length over all - L_{oA}	89,80 [m]	
Length in waterline, empty - $L_{WL,empty}$	87,45 [m]	
Length in waterline, laden - $L_{WL,max}$	88,75 [m]	
Depth - H	4,00 [m]	
Draught empty - T_{empty}	0,64 [m]	(laden with 2 layers of empty containers)
Maximum draught - T_{max}	1,86 [m]	(laden with 2 layers of full containers)
Displacement empty - D_{empty}	834,180 [t]	(laden with 2 layers of empty containers)
Maximum displacement - D_{max}	2580,180 [t]	(laden with 2 layers of full containers)

Total Heeling Moment for stability calculation - $M_{Heel,max}$ 269,40 [t*m]

Heeling moment resulting from centrifugal force in accordance with Article 27.02 Nr. 1 c)

Parameter c_{KZ}	0,04 [s ² /m]	
Maximum speed - v	15,00 [km/h] =	4,17 [m/s]
Height of vertical center of gravity- VCG_{empty}	2,06 [m a.B.]	(laden with 2 layers of empty containers)
Height of vertical center of gravity, laden - VCG_{laden}	3,03 [m a.B.]	(laden with 2 layers of full containers)

Heeling moment centrifugal force, empty - $M_{cf,empty}$ 11,53 [t*m]

Heeling moment centrifugal force, laden - $M_{cf,laden}$ 42,41 [t*m]

Heeling moment centrifugal force - $M_{cf,max}$ 42,41 [t*m]

Heeling moment resulting from wind pressure in accordance with Article 27.02 Nr. 1 d)

Parameter c_{KW}	0,025 [t/m ²]	
Wind area above WL, empty - A_{empty}	485,21 [m ²]	(laden with 2 layers of empty containers)
Wind area above WL, laden - A_{bel}	377,65 [m ²]	(laden with 2 layers of full containers)
Center of gravity of wind area above base line, empty - $l_{W,empty}$	3,43 [m]	(laden with 2 layers of empty containers)
Center of gravity of wind area above base line, laden - $l_{W,laden}$	4,05 [m]	(laden with 2 layers of full containers)

Heeling moment wind pressure, empty - $M_{W,empty}$ 37,74 [t*m]

Heeling moment wind pressure, laden - $M_{W,laden}$ 29,45 [t*m]

Heeling moment wind pressure - $M_{W,max}$ 37,74 [t*m]

Heeling moment resulting from free surfaces (rain water, residual water) in accordance with Article 27.02 Nr. 1 e)

Parameter c_{KfO}	0,015 [t/m ²]	
Length of cargo hold - l	78,00 [m]	
Breadth of cargo hold - b	13,78 [m]	

Heeling moment free surfaces - M_{fs} 189,25 [t*m]

ES-TRIN Chapter 27 - Heeling Moments Container Vessels

Vessel: 005 IW-NET Containers transverse - aluminium
2 layers of containers ENI: ---

Main characteristics:

Length over all - L_{oA}	89,80 [m]	
Length in waterline, empty - $L_{WL,empty}$	87,45 [m]	
Length in waterline, laden - $L_{WL,max}$	88,75 [m]	
Depth - H	4,00 [m]	
Draught empty - T_{empty}	0,53 [m]	(laden with 2 layers of empty containers)
Maximum draught - T_{max}	1,76 [m]	(laden with 2 layers of full containers)
Displacement empty - D_{empty}	682,760 [t]	(laden with 2 layers of empty containers)
Maximum displacement - D_{max}	2428,760 [t]	(laden with 2 layers of full containers)

Total Heeling Moment for stability calculation - $M_{Heel,max}$ 270,90 [t*m]

Heeling moment resulting from centrifugal force in accordance with Article 27.02 Nr. 1 c)

Parameter C_{KZ}	0,04 [s ² /m]	
Maximum speed - v	15,00 [km/h] =	4,17 [m/s]
Height of vertical center of gravity- VCG_{empty}	2,26 [m a.B.]	(laden with 2 layers of empty containers)
Height of vertical center of gravity, laden - VCG_{laden}	3,15 [m a.B.]	(laden with 2 layers of full containers)

Heeling moment centrifugal force, empty - $M_{cf,empty}$ 10,84 [t*m]

Heeling moment centrifugal force, laden - $M_{cf,laden}$ 43,16 [t*m]

Heeling moment centrifugal force - $M_{cf,max}$ 43,16 [t*m]

Heeling moment resulting from wind pressure in accordance with Article 27.02 Nr. 1 d)

Parameter C_{KW}	0,025 [t/m ²]	
Wind area above WL, empty - A_{empty}	494,81 [m ²]	(laden with 2 layers of empty containers)
Wind area above WL, laden - A_{bel}	386,52 [m ²]	(laden with 2 layers of full containers)
Center of gravity of wind area above base line, empty - $l_{W,empty}$	3,37 [m]	(laden with 2 layers of empty containers)
Center of gravity of wind area above base line, laden - $l_{W,laden}$	4,00 [m]	(laden with 2 layers of full containers)

Heeling moment wind pressure, empty - $M_{W,empty}$ 38,48 [t*m]

Heeling moment wind pressure, laden - $M_{W,laden}$ 30,15 [t*m]

Heeling moment wind pressure - $M_{W,max}$ 38,48 [t*m]

Heeling moment resulting from free surfaces (rain water, residual water) in accordance with Article 27.02 Nr. 1 e)

Parameter C_{KfO}	0,015 [t/m ²]	
Length of cargo hold - l	78,00 [m]	
Breadth of cargo hold - b	13,78 [m]	

Heeling moment free surfaces - M_{fs} 189,25 [t*m]

ES-TRIN Chapter 27 - Heeling Moments Container Vessels

Vessel: 005 IW-NET Containers transverse - steel
3 layers of containers

ENI: ---

Main characteristics:

Length over all - L_{oA}	89,80 [m]	
Length in waterline, empty - $L_{WL,empty}$	87,63 [m]	
Length in waterline, laden - $L_{WL,max}$	89,18 [m]	
Depth - H	4,00 [m]	
Draught empty - T_{empty}	0,74 [m]	(laden with 3 layers of empty containers)
Maximum draught - T_{max}	2,57 [m]	(laden with 3 layers of full containers)
Displacement empty - D_{empty}	981,180 [t]	(laden with 3 layers of empty containers)
Maximum displacement - D_{max}	3600,180 [t]	(laden with 3 layers of full containers)

Total Heeling Moment for stability calculation - $M_{Heel,max}$ 355,57 [t*m]

Heeling moment resulting from centrifugal force in accordance with Article 27.02 Nr. 1 c)

Parameter C_{KZ}	0,04 [s ² /m]	
Maximum speed - v	15,00 [km/h] =	4,17 [m/s]
Height of vertical center of gravity- VCG_{empty}	2,93 [m a.B.]	(laden with 3 layers of empty containers)
Height of vertical center of gravity, laden - VCG_{laden}	4,39 [m a.B.]	(laden with 3 layers of full containers)

Heeling moment centrifugal force, empty - $M_{cf,empty}$ 19,87 [t*m]

Heeling moment centrifugal force, laden - $M_{cf,laden}$ 87,17 [t*m]

Heeling moment centrifugal force - $M_{cf,max}$ 87,17 [t*m]

Heeling moment resulting from wind pressure in accordance with Article 27.02 Nr. 1 d)

Parameter C_{KW}	0,025 [t/m ²]	
Wind area above WL, empty - A_{empty}	701,89 [m ²]	(laden with 3 layers of empty containers)
Wind area above WL, laden - A_{bel}	539,93 [m ²]	(laden with 3 layers of full containers)
Center of gravity of wind area above base line, empty - $l_{W,empty}$	4,88 [m]	(laden with 3 layers of empty containers)
Center of gravity of wind area above base line, laden - $l_{W,laden}$	5,85 [m]	(laden with 3 layers of full containers)

Heeling moment wind pressure, empty - $M_{W,empty}$ 79,15 [t*m]

Heeling moment wind pressure, laden - $M_{W,laden}$ 61,59 [t*m]

Heeling moment wind pressure - $M_{W,max}$ 79,15 [t*m]

Heeling moment resulting from free surfaces (rain water, residual water) in accordance with Article 27.02 Nr. 1 e)

Parameter C_{KfO}	0,015 [t/m ²]	
Length of cargo hold - l	78,00 [m]	
Breadth of cargo hold - b	13,78 [m]	

Heeling moment free surfaces - M_{fs} 189,25 [t*m]

ES-TRIN Chapter 27 - Heeling Moments Container Vessels

Vessel: 005 IW-NET Containers transverse - aluminium
3 layers of containers ENI: ---

Main characteristics:

Length over all - L_{oA}	89,80 [m]	
Length in waterline, empty - $L_{WL,empty}$	87,63 [m]	
Length in waterline, laden - $L_{WL,max}$	89,18 [m]	
Depth - H	4,00 [m]	
Draught empty - T_{empty}	0,63 [m]	(laden with 3 layers of empty containers)
Maximum draught - T_{max}	2,46 [m]	(laden with 3 layers of full containers)
Displacement empty - D_{empty}	829,760 [t]	(laden with 3 layers of empty containers)
Maximum displacement - D_{max}	3448,760 [t]	(laden with 3 layers of full containers)

Total Heeling Moment for stability calculation - $M_{Heel,max}$ 358,16 [t*m]

Heeling moment resulting from centrifugal force in accordance with Article 27.02 Nr. 1 c)

Parameter C_{KZ}	0,04 [s ² /m]	
Maximum speed - v	15,00 [km/h] =	4,17 [m/s]
Height of vertical center of gravity- VCG_{empty}	3,25 [m a.B.]	(laden with 3 layers of empty containers)
Height of vertical center of gravity, laden - VCG_{laden}	4,54 [m a.B.]	(laden with 3 layers of full containers)

Heeling moment centrifugal force, empty - $M_{cf,empty}$ 19,30 [t*m]

Heeling moment centrifugal force, laden - $M_{cf,laden}$ 88,73 [t*m]

Heeling moment centrifugal force - $M_{cf,max}$ 88,73 [t*m]

Heeling moment resulting from wind pressure in accordance with Article 27.02 Nr. 1 d)

Parameter C_{KW}	0,025 [t/m ²]	
Wind area above WL, empty - A_{empty}	711,51 [m ²]	(laden with 3 layers of empty containers)
Wind area above WL, laden - A_{bel}	549,73 [m ²]	(laden with 3 layers of full containers)
Center of gravity of wind area above base line, empty - $l_{W,empty}$	4,82 [m]	(laden with 3 layers of empty containers)
Center of gravity of wind area above base line, laden - $l_{W,laden}$	5,79 [m]	(laden with 3 layers of full containers)

Heeling moment wind pressure, empty - $M_{W,empty}$ 80,18 [t*m]

Heeling moment wind pressure, laden - $M_{W,laden}$ 62,60 [t*m]

Heeling moment wind pressure - $M_{W,max}$ 80,18 [t*m]

Heeling moment resulting from free surfaces (rain water, residual water) in accordance with Article 27.02 Nr. 1 e)

Parameter C_{KfO}	0,015 [t/m ²]	
Length of cargo hold - l	78,00 [m]	
Breadth of cargo hold - b	13,78 [m]	

Heeling moment free surfaces - M_{fs} 189,25 [t*m]

ES-TRIN Chapter 27 - Heeling Moments Container Vessels

Vessel: 006 IW-NET 3 units abreast long - steel
2 layers of containers

ENI: ---

Main characteristics:

Length over all - L_{oA}	94,77 [m]	
Length in waterline, empty - $L_{WL,empty}$	92,80 [m]	
Length in waterline, laden - $L_{WL,max}$	94,11 [m]	
Depth - H	3,20 [m]	
Draught empty - T_{empty}	0,67 [m]	(laden with 2 layers of empty containers)
Maximum draught - T_{max}	1,86 [m]	(laden with 2 layers of full containers)
Displacement empty - D_{empty}	539,754 [t]	(laden with 2 layers of empty containers)
Maximum displacement - D_{max}	1587,354 [t]	(laden with 2 layers of full containers)

Total Heeling Moment for stability calculation - $M_{Heel,max}$ 122,04 [t*m]

Heeling moment resulting from centrifugal force in accordance with Article 27.02 Nr. 1 c)

Parameter C_{KZ}	0,04 [s ² /m]	
Maximum speed - v	15,00 [km/h] =	4,17 [m/s]
Height of vertical center of gravity- VCG_{empty}	1,82 [m a.B.]	(laden with 2 layers of empty containers)
Height of vertical center of gravity, laden - VCG_{laden}	2,86 [m a.B.]	(laden with 2 layers of full containers)

Heeling moment centrifugal force, empty - $M_{cf,empty}$ 6,02 [t*m]

Heeling moment centrifugal force, laden - $M_{cf,laden}$ 22,68 [t*m]

Heeling moment centrifugal force - $M_{cf,max}$ 22,68 [t*m]

Heeling moment resulting from wind pressure in accordance with Article 27.02 Nr. 1 d)

Parameter C_{KW}	0,025 [t/m ²]	
Wind area above WL, empty - A_{empty}	495,58 [m ²]	(laden with 2 layers of empty containers)
Wind area above WL, laden - A_{bel}	384,25 [m ²]	(laden with 2 layers of full containers)
Center of gravity of wind area above base line, empty - $l_{W,empty}$	3,40 [m]	(laden with 2 layers of empty containers)
Center of gravity of wind area above base line, laden - $l_{W,laden}$	4,02 [m]	(laden with 2 layers of full containers)

Heeling moment wind pressure, empty - $M_{W,empty}$ 37,96 [t*m]

Heeling moment wind pressure, laden - $M_{W,laden}$ 29,69 [t*m]

Heeling moment wind pressure - $M_{W,max}$ 37,96 [t*m]

Heeling moment resulting from free surfaces (rain water, residual water) in accordance with Article 27.02 Nr. 1 e)

Parameter C_{KfO}	0,015 [t/m ²]
Length of cargo hold - l	82,65 [m]
Breadth of cargo hold - b	7,85 [m]

Heeling moment free surfaces - M_{fs} 61,40 [t*m]

ES-TRIN Chapter 27 - Heeling Moments Container Vessels

Vessel: 006 IW-NET 3 units abreast long - aluminium
2 layers of containers ENI: ---

Main characteristics:

Length over all - L_{oA}	94,77 [m]	
Length in waterline, empty - $L_{WL,empty}$	92,80 [m]	
Length in waterline, laden - $L_{WL,max}$	94,11 [m]	
Depth - H	3,20 [m]	
Draught empty - T_{empty}	0,55 [m]	(laden with 2 layers of empty containers)
Maximum draught - T_{max}	1,74 [m]	(laden with 2 layers of full containers)
Displacement empty - D_{empty}	436,990 [t]	(laden with 2 layers of empty containers)
Maximum displacement - D_{max}	1484,590 [t]	(laden with 2 layers of full containers)

Total Heeling Moment for stability calculation - $M_{Heel,max}$ 123,58 [t*m]

Heeling moment resulting from centrifugal force in accordance with Article 27.02 Nr. 1 c)

Parameter C_{KZ}	0,04 [s ² /m]	
Maximum speed - v	15,00 [km/h] =	4,17 [m/s]
Height of vertical center of gravity- VCG_{empty}	2,06 [m a.B.]	(laden with 2 layers of empty containers)
Height of vertical center of gravity, laden - VCG_{laden}	3,01 [m a.B.]	(laden with 2 layers of full containers)

Heeling moment centrifugal force, empty - $M_{cf,empty}$ 5,84 [t*m]

Heeling moment centrifugal force, laden - $M_{cf,laden}$ 23,40 [t*m]

Heeling moment centrifugal force - $M_{cf,max}$ 23,40 [t*m]

Heeling moment resulting from wind pressure in accordance with Article 27.02 Nr. 1 d)

Parameter C_{KW}	0,025 [t/m ²]	
Wind area above WL, empty - A_{empty}	506,70 [m ²]	(laden with 2 layers of empty containers)
Wind area above WL, laden - A_{bel}	395,54 [m ²]	(laden with 2 layers of full containers)
Center of gravity of wind area above base line, empty - $l_{W,empty}$	3,33 [m]	(laden with 2 layers of empty containers)
Center of gravity of wind area above base line, laden - $l_{W,laden}$	3,96 [m]	(laden with 2 layers of full containers)

Heeling moment wind pressure, empty - $M_{W,empty}$ 38,78 [t*m]

Heeling moment wind pressure, laden - $M_{W,laden}$ 30,51 [t*m]

Heeling moment wind pressure - $M_{W,max}$ 38,78 [t*m]

Heeling moment resulting from free surfaces (rain water, residual water) in accordance with Article 27.02 Nr. 1 e)

Parameter C_{KfO}	0,015 [t/m ²]	
Length of cargo hold - l	82,65 [m]	
Breadth of cargo hold - b	7,85 [m]	

Heeling moment free surfaces - M_{fs} 61,40 [t*m]

ES-TRIN Chapter 27 - Heeling Moments Container Vessels

Vessel: 006 IW-NET 3 units abreast long - steel
3 layers of containers

ENI: ---

Main characteristics:

Length over all - L_{oA}	94,77 [m]	
Length in waterline, empty - $L_{WL,empty}$	92,98 [m]	
Length in waterline, laden - $L_{WL,max}$	94,53 [m]	
Depth - H	3,20 [m]	
Draught empty - T_{empty}	0,77 [m]	(laden with 3 layers of empty containers)
Maximum draught - T_{max}	2,54 [m]	(laden with 3 layers of full containers)
Displacement empty - D_{empty}	627,954 [t]	(laden with 3 layers of empty containers)
Maximum displacement - D_{max}	2199,354 [t]	(laden with 3 layers of full containers)

Total Heeling Moment for stability calculation - $M_{Heel,max}$ 190,36 [t*m]

Heeling moment resulting from centrifugal force in accordance with Article 27.02 Nr. 1 c)

Parameter C_{KZ}	0,04 [s ² /m]	
Maximum speed - v	15,00 [km/h] =	4,17 [m/s]
Height of vertical center of gravity- VCG_{empty}	2,66 [m a.B.]	(laden with 3 layers of empty containers)
Height of vertical center of gravity, laden - VCG_{laden}	4,22 [m a.B.]	(laden with 3 layers of full containers)

Heeling moment centrifugal force, empty - $M_{cf,empty}$	10,66 [t*m]
Heeling moment centrifugal force, laden - $M_{cf,laden}$	47,71 [t*m]
Heeling moment centrifugal force - $M_{cf,max}$	47,71 [t*m]

Heeling moment resulting from wind pressure in accordance with Article 27.02 Nr. 1 d)

Parameter C_{KW}	0,025 [t/m ²]	
Wind area above WL, empty - A_{empty}	725,35 [m ²]	(laden with 3 layers of empty containers)
Wind area above WL, laden - A_{bel}	559,16 [m ²]	(laden with 3 layers of full containers)
Center of gravity of wind area above base line, empty - $l_{W,empty}$	4,86 [m]	(laden with 3 layers of empty containers)
Center of gravity of wind area above base line, laden - $l_{W,laden}$	5,82 [m]	(laden with 3 layers of full containers)

Heeling moment wind pressure, empty - $M_{W,empty}$	81,26 [t*m]
Heeling moment wind pressure, laden - $M_{W,laden}$	63,56 [t*m]
Heeling moment wind pressure - $M_{W,max}$	81,26 [t*m]

Heeling moment resulting from free surfaces (rain water, residual water) in accordance with Article 27.02 Nr. 1 e)

Parameter C_{KfO}	0,015 [t/m ²]
Length of cargo hold - l	82,65 [m]
Breadth of cargo hold - b	7,85 [m]

Heeling moment free surfaces - M_{fs} 61,40 [t*m]

ES-TRIN Chapter 27 - Heeling Moments Container Vessels

Vessel: 006 IW-NET 3 units abreast long - aluminium
3 layers of containers ENI: ---

Main characteristics:

Length over all - L_{oA}	94,77 [m]	
Length in waterline, empty - $L_{WL,empty}$	92,98 [m]	
Length in waterline, laden - $L_{WL,max}$	94,53 [m]	
Depth - H	3,20 [m]	
Draught empty - T_{empty}	0,65 [m]	(laden with 3 layers of empty containers)
Maximum draught - T_{max}	2,43 [m]	(laden with 3 layers of full containers)
Displacement empty - D_{empty}	525,190 [t]	(laden with 3 layers of empty containers)
Maximum displacement - D_{max}	2096,590 [t]	(laden with 3 layers of full containers)

Total Heeling Moment for stability calculation - $M_{Heel,max}$ 192,77 [t*m]

Heeling moment resulting from centrifugal force in accordance with Article 27.02 Nr. 1 c)

Parameter C_{KZ}	0,04 [s ² /m]	
Maximum speed - v	15,00 [km/h] =	4,17 [m/s]
Height of vertical center of gravity- VCG_{empty}	3,02 [m a.B.]	(laden with 3 layers of empty containers)
Height of vertical center of gravity, laden - VCG_{laden}	4,39 [m a.B.]	(laden with 3 layers of full containers)

Heeling moment centrifugal force, empty - $M_{cf,empty}$ 10,56 [t*m]

Heeling moment centrifugal force, laden - $M_{cf,laden}$ 48,93 [t*m]

Heeling moment centrifugal force - $M_{cf,max}$ 48,93 [t*m]

Heeling moment resulting from wind pressure in accordance with Article 27.02 Nr. 1 d)

Parameter C_{KW}	0,025 [t/m ²]	
Wind area above WL, empty - A_{empty}	736,49 [m ²]	(laden with 3 layers of empty containers)
Wind area above WL, laden - A_{bel}	569,55 [m ²]	(laden with 3 layers of full containers)
Center of gravity of wind area above base line, empty - $l_{W,empty}$	4,80 [m]	(laden with 3 layers of empty containers)
Center of gravity of wind area above base line, laden - $l_{W,laden}$	5,76 [m]	(laden with 3 layers of full containers)

Heeling moment wind pressure, empty - $M_{W,empty}$ 82,43 [t*m]

Heeling moment wind pressure, laden - $M_{W,laden}$ 64,70 [t*m]

Heeling moment wind pressure - $M_{W,max}$ 82,43 [t*m]

Heeling moment resulting from free surfaces (rain water, residual water) in accordance with Article 27.02 Nr. 1 e)

Parameter C_{KfO}	0,015 [t/m ²]	
Length of cargo hold - l	82,65 [m]	
Breadth of cargo hold - b	7,85 [m]	

Heeling moment free surfaces - M_{fs} 61,40 [t*m]

ES-TRIN Chapter 27 - Heeling Moments Container Vessels

Vessel: 007 NEWS Evolution long - steel
2 layers of containers

ENI: ---

Main characteristics:

Length over all - L_{oA}	97,32 [m]	
Length in waterline, empty - $L_{WL,empty}$	95,43 [m]	
Length in waterline, laden - $L_{WL,max}$	96,78 [m]	
Depth - H	4,10 [m]	
Draught empty - T_{empty}	0,71 [m]	(laden with 2 layers of empty containers)
Maximum draught - T_{max}	1,99 [m]	(laden with 2 layers of full containers)
Displacement empty - D_{empty}	723,727 [t]	(laden with 2 layers of empty containers)
Maximum displacement - D_{max}	2120,527 [t]	(laden with 2 layers of full containers)

Total Heeling Moment for stability calculation - $M_{Heel,max}$ 178,55 [t*m]

Heeling moment resulting from centrifugal force in accordance with Article 27.02 Nr. 1 c)

Parameter C_{KZ}	0,04 [s ² /m]	
Maximum speed - v	15,00 [km/h] =	4,17 [m/s]
Height of vertical center of gravity- VCG_{empty}	1,86 [m a.B.]	(laden with 2 layers of empty containers)
Height of vertical center of gravity, laden - VCG_{laden}	2,88 [m a.B.]	(laden with 2 layers of full containers)

Heeling moment centrifugal force, empty - $M_{cf,empty}$ 7,94 [t*m]

Heeling moment centrifugal force, laden - $M_{cf,laden}$ 28,61 [t*m]

Heeling moment centrifugal force - $M_{cf,max}$ 28,61 [t*m]

Heeling moment resulting from wind pressure in accordance with Article 27.02 Nr. 1 d)

Parameter C_{KW}	0,025 [t/m ²]	
Wind area above WL, empty - A_{empty}	505,85 [m ²]	(laden with 2 layers of empty containers)
Wind area above WL, laden - A_{bel}	382,72 [m ²]	(laden with 2 layers of full containers)
Center of gravity of wind area above base line, empty - $l_{W,empty}$	3,40 [m]	(laden with 2 layers of empty containers)
Center of gravity of wind area above base line, laden - $l_{W,laden}$	4,06 [m]	(laden with 2 layers of full containers)

Heeling moment wind pressure, empty - $M_{W,empty}$ 38,51 [t*m]

Heeling moment wind pressure, laden - $M_{W,laden}$ 29,32 [t*m]

Heeling moment wind pressure - $M_{W,max}$ 38,51 [t*m]

Heeling moment resulting from free surfaces (rain water, residual water) in accordance with Article 27.02 Nr. 1 e)

Parameter C_{KfO}	0,015 [t/m ²]
Length of cargo hold - l	82,80 [m]
Breadth of cargo hold - b	10,40 [m]

Heeling moment free surfaces - M_{fs} 111,42 [t*m]

ES-TRIN Chapter 27 - Heeling Moments Container Vessels

Vessel: 007 NEWS Evolution long - aluminium
2 layers of containers

ENI: ---

Main characteristics:

Length over all - L_{oA}	97,32 [m]	
Length in waterline, empty - $L_{WL,empty}$	95,43 [m]	
Length in waterline, laden - $L_{WL,max}$	96,78 [m]	
Depth - H	4,10 [m]	
Draught empty - T_{empty}	0,58 [m]	(laden with 2 layers of empty containers)
Maximum draught - T_{max}	1,86 [m]	(laden with 2 layers of full containers)
Displacement empty - D_{empty}	580,674 [t]	(laden with 2 layers of empty containers)
Maximum displacement - D_{max}	1977,474 [t]	(laden with 2 layers of full containers)

Total Heeling Moment for stability calculation - $M_{Heel,max}$ 180,42 [t*m]

Heeling moment resulting from centrifugal force in accordance with Article 27.02 Nr. 1 c)

Parameter c_{KZ}	0,04 [s ² /m]	
Maximum speed - v	15,00 [km/h] =	4,17 [m/s]
Height of vertical center of gravity- VCG_{empty}	2,08 [m a.B.]	(laden with 2 layers of empty containers)
Height of vertical center of gravity, laden - VCG_{laden}	3,01 [m a.B.]	(laden with 2 layers of full containers)

Heeling moment centrifugal force, empty - $M_{cf,empty}$ 7,55 [t*m]

Heeling moment centrifugal force, laden - $M_{cf,laden}$ 29,54 [t*m]

Heeling moment centrifugal force - $M_{cf,max}$ 29,54 [t*m]

Heeling moment resulting from wind pressure in accordance with Article 27.02 Nr. 1 d)

Parameter c_{KW}	0,025 [t/m ²]	
Wind area above WL, empty - A_{empty}	518,23 [m ²]	(laden with 2 layers of empty containers)
Wind area above WL, laden - A_{bel}	395,29 [m ²]	(laden with 2 layers of full containers)
Center of gravity of wind area above base line, empty - $l_{W,empty}$	3,33 [m]	(laden with 2 layers of empty containers)
Center of gravity of wind area above base line, laden - $l_{W,laden}$	4,00 [m]	(laden with 2 layers of full containers)

Heeling moment wind pressure, empty - $M_{W,empty}$ 39,46 [t*m]

Heeling moment wind pressure, laden - $M_{W,laden}$ 30,30 [t*m]

Heeling moment wind pressure - $M_{W,max}$ 39,46 [t*m]

Heeling moment resulting from free surfaces (rain water, residual water) in accordance with Article 27.02 Nr. 1 e)

Parameter c_{KfO}	0,015 [t/m ²]
Length of cargo hold - l	82,80 [m]
Breadth of cargo hold - b	10,40 [m]

Heeling moment free surfaces - M_{fs} 111,42 [t*m]

ES-TRIN Chapter 27 - Heeling Moments Container Vessels

Vessel: 007 NEWS Evolution long - steel
3 layers of containers

ENI: ---

Main characteristics:

Length over all - L_{oA}	97,32 [m]	
Length in waterline, empty - $L_{WL,empty}$	95,61 [m]	
Length in waterline, laden - $L_{WL,max}$	97,20 [m]	
Depth - H	4,10 [m]	
Draught empty - T_{empty}	0,84 [m]	(laden with 3 layers of empty containers)
Maximum draught - T_{max}	2,73 [m]	(laden with 3 layers of full containers)
Displacement empty - D_{empty}	841,327 [t]	(laden with 3 layers of empty containers)
Maximum displacement - D_{max}	2936,527 [t]	(laden with 3 layers of full containers)

Total Heeling Moment for stability calculation - $M_{Heel,max}$ 252,87 [t*m]

Heeling moment resulting from centrifugal force in accordance with Article 27.02 Nr. 1 c)

Parameter C_{KZ}	0,04 [s ² /m]	
Maximum speed - v	15,00 [km/h] =	4,17 [m/s]
Height of vertical center of gravity- VCG_{empty}	2,69 [m a.B.]	(laden with 3 layers of empty containers)
Height of vertical center of gravity, laden - VCG_{laden}	4,23 [m a.B.]	(laden with 3 layers of full containers)

Heeling moment centrifugal force, empty - $M_{cf,empty}$ 13,85 [t*m]

Heeling moment centrifugal force, laden - $M_{cf,laden}$ 60,12 [t*m]

Heeling moment centrifugal force - $M_{cf,max}$ 60,12 [t*m]

Heeling moment resulting from wind pressure in accordance with Article 27.02 Nr. 1 d)

Parameter C_{KW}	0,025 [t/m ²]	
Wind area above WL, empty - A_{empty}	732,18 [m ²]	(laden with 3 layers of empty containers)
Wind area above WL, laden - A_{bel}	549,69 [m ²]	(laden with 3 layers of full containers)
Center of gravity of wind area above base line, empty - $l_{W,empty}$	4,86 [m]	(laden with 3 layers of empty containers)
Center of gravity of wind area above base line, laden - $l_{W,laden}$	5,88 [m]	(laden with 3 layers of full containers)

Heeling moment wind pressure, empty - $M_{W,empty}$ 81,33 [t*m]

Heeling moment wind pressure, laden - $M_{W,laden}$ 62,11 [t*m]

Heeling moment wind pressure - $M_{W,max}$ 81,33 [t*m]

Heeling moment resulting from free surfaces (rain water, residual water) in accordance with Article 27.02 Nr. 1 e)

Parameter C_{KfO}	0,015 [t/m ²]
Length of cargo hold - l	82,80 [m]
Breadth of cargo hold - b	10,40 [m]

Heeling moment free surfaces - M_{fs} 111,42 [t*m]

ES-TRIN Chapter 27 - Heeling Moments Container Vessels

Vessel: 007 NEWS Evolution long - aluminium
3 layers of containers

ENI: ---

Main characteristics:

Length over all - L_{oA}	97,32 [m]	
Length in waterline, empty - $L_{WL,empty}$	95,61 [m]	
Length in waterline, laden - $L_{WL,max}$	97,20 [m]	
Depth - H	4,10 [m]	
Draught empty - T_{empty}	0,69 [m]	(laden with 3 layers of empty containers)
Maximum draught - T_{max}	2,60 [m]	(laden with 3 layers of full containers)
Displacement empty - D_{empty}	698,274 [t]	(laden with 3 layers of empty containers)
Maximum displacement - D_{max}	2793,474 [t]	(laden with 3 layers of full containers)

Total Heeling Moment for stability calculation - $M_{Heel,max}$ 256,10 [t*m]

Heeling moment resulting from centrifugal force in accordance with Article 27.02 Nr. 1 c)

Parameter c_{KZ}	0,04 [s ² /m]	
Maximum speed - v	15,00 [km/h] =	4,17 [m/s]
Height of vertical center of gravity- VCG_{empty}	3,03 [m a.B.]	(laden with 3 layers of empty containers)
Height of vertical center of gravity, laden - VCG_{laden}	4,40 [m a.B.]	(laden with 3 layers of full containers)

Heeling moment centrifugal force, empty - $M_{cf,empty}$ 13,62 [t*m]

Heeling moment centrifugal force, laden - $M_{cf,laden}$ 61,80 [t*m]

Heeling moment centrifugal force - $M_{cf,max}$ 61,80 [t*m]

Heeling moment resulting from wind pressure in accordance with Article 27.02 Nr. 1 d)

Parameter c_{KW}	0,025 [t/m ²]	
Wind area above WL, empty - A_{empty}	746,50 [m ²]	(laden with 3 layers of empty containers)
Wind area above WL, laden - A_{bel}	562,32 [m ²]	(laden with 3 layers of full containers)
Center of gravity of wind area above base line, empty - $l_{W,empty}$	4,78 [m]	(laden with 3 layers of empty containers)
Center of gravity of wind area above base line, laden - $l_{W,laden}$	5,81 [m]	(laden with 3 layers of full containers)

Heeling moment wind pressure, empty - $M_{W,empty}$ 82,87 [t*m]

Heeling moment wind pressure, laden - $M_{W,laden}$ 63,44 [t*m]

Heeling moment wind pressure - $M_{W,max}$ 82,87 [t*m]

Heeling moment resulting from free surfaces (rain water, residual water) in accordance with Article 27.02 Nr. 1 e)

Parameter c_{KfO}	0,015 [t/m ²]	
Length of cargo hold - l	82,80 [m]	
Breadth of cargo hold - b	10,40 [m]	

Heeling moment free surfaces - M_{fs} 111,42 [t*m]

ES-TRIN Chapter 27 - Heeling Moments Container Vessels

Vessel: 008 IW-NET 3 units abreast long_shallow - steel
2 layers of containers

ENI: ---

Main characteristics:

Length over all - L_{oA}	94,77 [m]	
Length in waterline, empty - $L_{WL,empty}$	92,68 [m]	
Length in waterline, laden - $L_{WL,max}$	93,93 [m]	
Depth - H	3,20 [m]	
Draught empty - T_{empty}	0,67 [m]	(laden with 2 layers of empty containers)
Maximum draught - T_{max}	1,66 [m]	(laden with 2 layers of full containers)
Displacement empty - D_{empty}	656,319 [t]	(laden with 2 layers of empty containers)
Maximum displacement - D_{max}	1703,919 [t]	(laden with 2 layers of full containers)

Total Heeling Moment for stability calculation - $M_{Heel,max}$ 123,49 [t*m]

Heeling moment resulting from centrifugal force in accordance with Article 27.02 Nr. 1 c)

Parameter C_{KZ}	0,04 [s ² /m]	
Maximum speed - v	15,00 [km/h] =	4,17 [m/s]
Height of vertical center of gravity- VCG_{empty}	1,69 [m a.B.]	(laden with 2 layers of empty containers)
Height of vertical center of gravity, laden - VCG_{laden}	2,74 [m a.B.]	(laden with 2 layers of full containers)

Heeling moment centrifugal force, empty - $M_{cf,empty}$	6,68 [t*m]
Heeling moment centrifugal force, laden - $M_{cf,laden}$	24,12 [t*m]
Heeling moment centrifugal force - $M_{cf,max}$	24,12 [t*m]

Heeling moment resulting from wind pressure in accordance with Article 27.02 Nr. 1 d)

Parameter C_{KW}	0,025 [t/m ²]	
Wind area above WL, empty - A_{empty}	496,76 [m ²]	(laden with 2 layers of empty containers)
Wind area above WL, laden - A_{bel}	403,31 [m ²]	(laden with 2 layers of full containers)
Center of gravity of wind area above base line, empty - $l_{W,empty}$	3,39 [m]	(laden with 2 layers of empty containers)
Center of gravity of wind area above base line, laden - $l_{W,laden}$	3,91 [m]	(laden with 2 layers of full containers)

Heeling moment wind pressure, empty - $M_{W,empty}$	37,98 [t*m]
Heeling moment wind pressure, laden - $M_{W,laden}$	31,05 [t*m]
Heeling moment wind pressure - $M_{W,max}$	37,98 [t*m]

Heeling moment resulting from free surfaces (rain water, residual water) in accordance with Article 27.02 Nr. 1 e)

Parameter C_{KfO}	0,015 [t/m ²]
Length of cargo hold - l	82,65 [m]
Breadth of cargo hold - b	7,85 [m]

Heeling moment free surfaces - M_{fs} 61,40 [t*m]

ES-TRIN Chapter 27 - Heeling Moments Container Vessels

Vessel: 008 IW-NET 3 units abreast long_shallow - aluminium
2 layers of containers

ENI: ---

Main characteristics:

Length over all - L_{OA}	94,77 [m]	
Length in waterline, empty - $L_{WL,empty}$	92,68 [m]	
Length in waterline, laden - $L_{WL,max}$	93,93 [m]	
Depth - H	3,20 [m]	
Draught empty - T_{empty}	0,53 [m]	(laden with 2 layers of empty containers)
Maximum draught - T_{max}	1,52 [m]	(laden with 2 layers of full containers)
Displacement empty - D_{empty}	513,066 [t]	(laden with 2 layers of empty containers)
Maximum displacement - D_{max}	1560,666 [t]	(laden with 2 layers of full containers)

Total Heeling Moment for stability calculation - $M_{Heel,max}$ 125,03 [t*m]

Heeling moment resulting from centrifugal force in accordance with Article 27.02 Nr. 1 c)

Parameter C_{KZ}	0,04 [s ² /m]	
Maximum speed - v	15,00 [km/h] =	4,17 [m/s]
Height of vertical center of gravity- VCG_{empty}	1,88 [m a.B.]	(laden with 2 layers of empty containers)
Height of vertical center of gravity, laden - VCG_{laden}	2,90 [m a.B.]	(laden with 2 layers of full containers)

Heeling moment centrifugal force, empty - $M_{cf,empty}$ 6,21 [t*m]

Heeling moment centrifugal force, laden - $M_{cf,laden}$ 24,70 [t*m]

Heeling moment centrifugal force - $M_{cf,max}$ 24,70 [t*m]

Heeling moment resulting from wind pressure in accordance with Article 27.02 Nr. 1 d)

Parameter C_{KW}	0,025 [t/m ²]	
Wind area above WL, empty - A_{empty}	508,80 [m ²]	(laden with 2 layers of empty containers)
Wind area above WL, laden - A_{bel}	416,45 [m ²]	(laden with 2 layers of full containers)
Center of gravity of wind area above base line, empty - $l_{W,empty}$	3,33 [m]	(laden with 2 layers of empty containers)
Center of gravity of wind area above base line, laden - $l_{W,laden}$	3,83 [m]	(laden with 2 layers of full containers)

Heeling moment wind pressure, empty - $M_{W,empty}$ 38,93 [t*m]

Heeling moment wind pressure, laden - $M_{W,laden}$ 32,00 [t*m]

Heeling moment wind pressure - $M_{W,max}$ 38,93 [t*m]

Heeling moment resulting from free surfaces (rain water, residual water) in accordance with Article 27.02 Nr. 1 e)

Parameter C_{KfO}	0,015 [t/m ²]
Length of cargo hold - l	82,65 [m]
Breadth of cargo hold - b	7,85 [m]

Heeling moment free surfaces - M_{fs} 61,40 [t*m]

ES-TRIN Chapter 27 - Heeling Moments Container Vessels

Vessel: 008 IW-NET 3 units abreast long shallow - steel
3 layers of containers

ENI: ---

Main characteristics:

Length over all - L_{oA}	94,77 [m]	
Length in waterline, empty - $L_{WL,empty}$	92,84 [m]	
Length in waterline, laden - $L_{WL,max}$	94,31 [m]	
Depth - H	3,20 [m]	
Draught empty - T_{empty}	0,75 [m]	(laden with 3 layers of empty containers)
Maximum draught - T_{max}	2,23 [m]	(laden with 3 layers of full containers)
Displacement empty - D_{empty}	744,519 [t]	(laden with 3 layers of empty containers)
Maximum displacement - D_{max}	2315,919 [t]	(laden with 3 layers of full containers)

Total Heeling Moment for stability calculation - $M_{Heel,max}$ 193,19 [t*m]

Heeling moment resulting from centrifugal force in accordance with Article 27.02 Nr. 1 c)

Parameter C_{KZ}	0,04 [s ² /m]	
Maximum speed - v	15,00 [km/h] =	4,17 [m/s]
Height of vertical center of gravity- VCG_{empty}	2,41 [m a.B.]	(laden with 3 layers of empty containers)
Height of vertical center of gravity, laden - VCG_{laden}	4,07 [m a.B.]	(laden with 3 layers of full containers)

Heeling moment centrifugal force, empty - $M_{cf,empty}$ 11,33 [t*m]

Heeling moment centrifugal force, laden - $M_{cf,laden}$ 50,35 [t*m]

Heeling moment centrifugal force - $M_{cf,max}$ 50,35 [t*m]

Heeling moment resulting from wind pressure in accordance with Article 27.02 Nr. 1 d)

Parameter C_{KW}	0,025 [t/m ²]	
Wind area above WL, empty - A_{empty}	727,46 [m ²]	(laden with 3 layers of empty containers)
Wind area above WL, laden - A_{bel}	588,68 [m ²]	(laden with 3 layers of full containers)
Center of gravity of wind area above base line, empty - $l_{W,empty}$	4,85 [m]	(laden with 3 layers of empty containers)
Center of gravity of wind area above base line, laden - $l_{W,laden}$	5,65 [m]	(laden with 3 layers of full containers)

Heeling moment wind pressure, empty - $M_{W,empty}$ 81,44 [t*m]

Heeling moment wind pressure, laden - $M_{W,laden}$ 66,72 [t*m]

Heeling moment wind pressure - $M_{W,max}$ 81,44 [t*m]

Heeling moment resulting from free surfaces (rain water, residual water) in accordance with Article 27.02 Nr. 1 e)

Parameter C_{KfO}	0,015 [t/m ²]
Length of cargo hold - l	82,65 [m]
Breadth of cargo hold - b	7,85 [m]

Heeling moment free surfaces - M_{fs} 61,40 [t*m]

ES-TRIN Chapter 27 - Heeling Moments Container Vessels

Vessel: 008 IW-NET 3 units abreast long shallow - aluminium
3 layers of containers

ENI: ---

Main characteristics:

Length over all - L_{OA}	94,77 [m]	
Length in waterline, empty - $L_{WL,empty}$	92,84 [m]	
Length in waterline, laden - $L_{WL,max}$	94,31 [m]	
Depth - H	3,20 [m]	
Draught empty - T_{empty}	0,61 [m]	(laden with 3 layers of empty containers)
Maximum draught - T_{max}	2,09 [m]	(laden with 3 layers of full containers)
Displacement empty - D_{empty}	601,266 [t]	(laden with 3 layers of empty containers)
Maximum displacement - D_{max}	2172,666 [t]	(laden with 3 layers of full containers)

Total Heeling Moment for stability calculation - $M_{Heel,max}$ 195,72 [t*m]

Heeling moment resulting from centrifugal force in accordance with Article 27.02 Nr. 1 c)

Parameter C_{KZ}	0,04 [s ² /m]	
Maximum speed - v	15,00 [km/h] =	4,17 [m/s]
Height of vertical center of gravity- VCG_{empty}	2,74 [m a.B.]	(laden with 3 layers of empty containers)
Height of vertical center of gravity, laden - VCG_{laden}	4,27 [m a.B.]	(laden with 3 layers of full containers)

Heeling moment centrifugal force, empty - $M_{cf,empty}$ 10,95 [t*m]

Heeling moment centrifugal force, laden - $M_{cf,laden}$ 51,51 [t*m]

Heeling moment centrifugal force - $M_{cf,max}$ 51,51 [t*m]

Heeling moment resulting from wind pressure in accordance with Article 27.02 Nr. 1 d)

Parameter C_{KW}	0,025 [t/m ²]	
Wind area above WL, empty - A_{empty}	740,45 [m ²]	(laden with 3 layers of empty containers)
Wind area above WL, laden - A_{bel}	601,88 [m ²]	(laden with 3 layers of full containers)
Center of gravity of wind area above base line, empty - $l_{W,empty}$	4,78 [m]	(laden with 3 layers of empty containers)
Center of gravity of wind area above base line, laden - $l_{W,laden}$	5,57 [m]	(laden with 3 layers of full containers)

Heeling moment wind pressure, empty - $M_{W,empty}$ 82,81 [t*m]

Heeling moment wind pressure, laden - $M_{W,laden}$ 68,06 [t*m]

Heeling moment wind pressure - $M_{W,max}$ 82,81 [t*m]

Heeling moment resulting from free surfaces (rain water, residual water) in accordance with Article 27.02 Nr. 1 e)

Parameter C_{KfO}	0,015 [t/m ²]	
Length of cargo hold - l	82,65 [m]	
Breadth of cargo hold - b	7,85 [m]	

Heeling moment free surfaces - M_{fs} 61,40 [t*m]

Summary of intact stability

Description	Density	Draft	Draft BoK	Trim	List	Displ.	VCG'	Max VCG'	GM'	Complies
		m	m	m	degr	t	m	m	m	
Containers empty	1,0000	0,460	0,460	0,149	0,0 (CL)	333,022	2,008	20,212	23,656	Complies
Containers 70 % full	1,0000	1,065	1,065	0,105	0,0 (CL)	821,902	2,836	9,770	8,578	Complies
Containers full	1,0000	1,317	1,317	0,081	0,0 (CL)	1031,422	2,951	8,143	6,476	Complies
Containers empty 3 layers	1,0000	0,528	0,528	0,143	0,0 (CL)	386,822	2,806	16,588	19,523	Complies
Containers 70 % full 3 layers	1,0000	1,429	1,429	0,068	0,0 (CL)	1125,142	4,160	7,065	4,624	Complies
Containers full 3 layers	1,0000	1,803	1,803	0,008	0,0 (CL)	1439,422	4,310	5,963	2,974	Complies
Containers empty ALU	1,0000	0,380	0,380	0,121	0,0 (CL)	270,834	2,194	23,191	28,522	Complies
Containers 70 % full ALU	1,0000	0,988	0,988	0,080	0,0 (CL)	759,714	2,970	10,430	9,244	Complies
Containers full ALU	1,0000	1,242	1,242	0,060	0,0 (CL)	969,234	3,063	8,537	6,859	Complies
Containers empty 3 layers ALU	1,0000	0,448	0,448	0,115	0,0 (CL)	324,634	3,115	18,775	23,168	Complies
Containers 70 % full 3 layers ALU	1,0000	1,354	1,354	0,048	0,0 (CL)	1062,954	4,333	7,371	4,860	Complies
Containers full 3 layers ALU	1,0000	1,729	1,729	-0,007	0,0 (CL)	1377,234	4,451	6,117	3,067	Complies

Components of deadweight

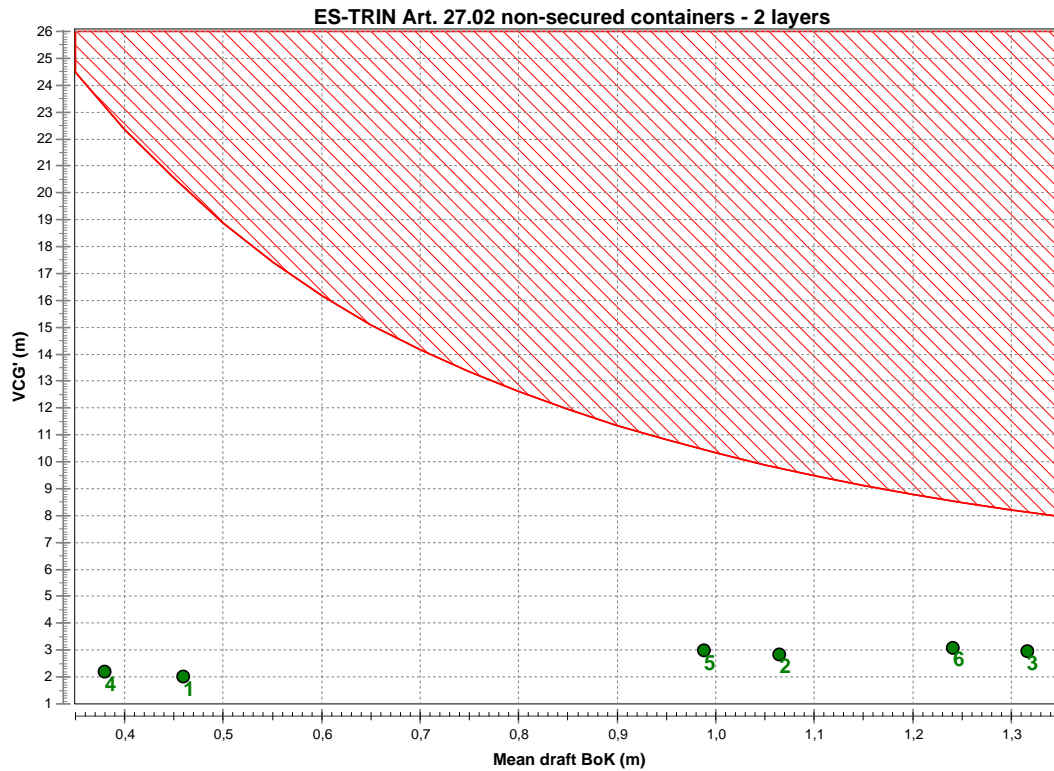
Loading condition	Deadweight	Containers t
Containers empty	117,600	117,600
Containers 70 % full	606,480	606,480
Containers full	816,000	816,000
Containers empty 3 layers	171,400	171,400
Containers 70 % full 3 layers	909,720	909,720
Containers full 3 layers	1224,000	1224,000
Containers empty ALU	117,600	117,600
Containers 70 % full ALU	606,480	606,480
Containers full ALU	816,000	816,000
Containers empty 3 layers ALU	171,400	171,400
Containers 70 % full 3 layers ALU	909,720	909,720
Containers full 3 layers ALU	1224,000	1224,000

Maximum VCG' envelope

Criteria : ES-TRIN Art. 27.02 non-secured containers - 2 layers

Calculated for average trim : 0,099 m

Wind silhouette : 2 layers



Loading conditions:

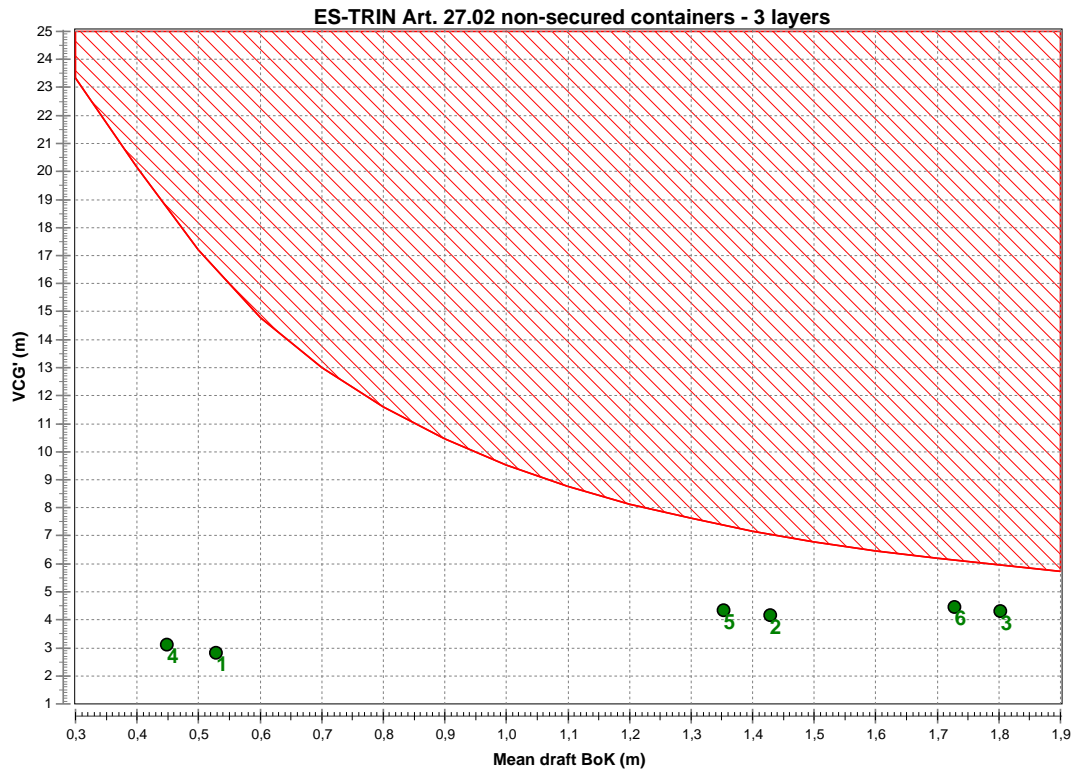
1. Containers empty
2. Containers 70 % full
3. Containers full
4. Containers empty ALU
5. Containers 70 % full ALU
6. Containers full ALU

Maximum VCG' envelope

Criteria : ES-TRIN Art. 27.02 non-secured containers - 3 layers

Calculated for average trim : 0,063 m

Wind silhouette : 2 layers



Loading conditions:

1. Containers empty 3 layers
2. Containers 70 % full 3 layers
3. Containers full 3 layers
4. Containers empty 3 layers ALU
5. Containers 70 % full 3 layers ALU
6. Containers full 3 layers ALU

Containers empty

2020.056_001 IW-NET Europa 2b Barge

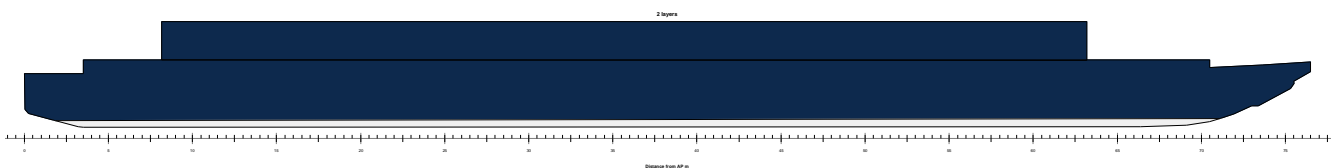
Designer

Created by Bernhard Bieringer

Comment

Filename 2020_056_001_Europa2b barge.fbm

Design length	76,500 m	Midship location	38,250 m
Length over all	76,500 m	Water density	1,0000
Design beam	11,858 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,500 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,008 m
Draft aft pp	0,386 m	GG'	0,000 m
Mean moulded draft	0,460 m	VCG'	2,008 m
Draft forward pp	0,535 m	Max VCG'	20,212 m
Trim	0,149 m	GM solid	23,656 m
LCF	36,172 m	G'M liquid	23,656 m
LCB	37,391 m	Immersion rate	7,846 tonne/cm
KM	25,664 m	MCT	40,108 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

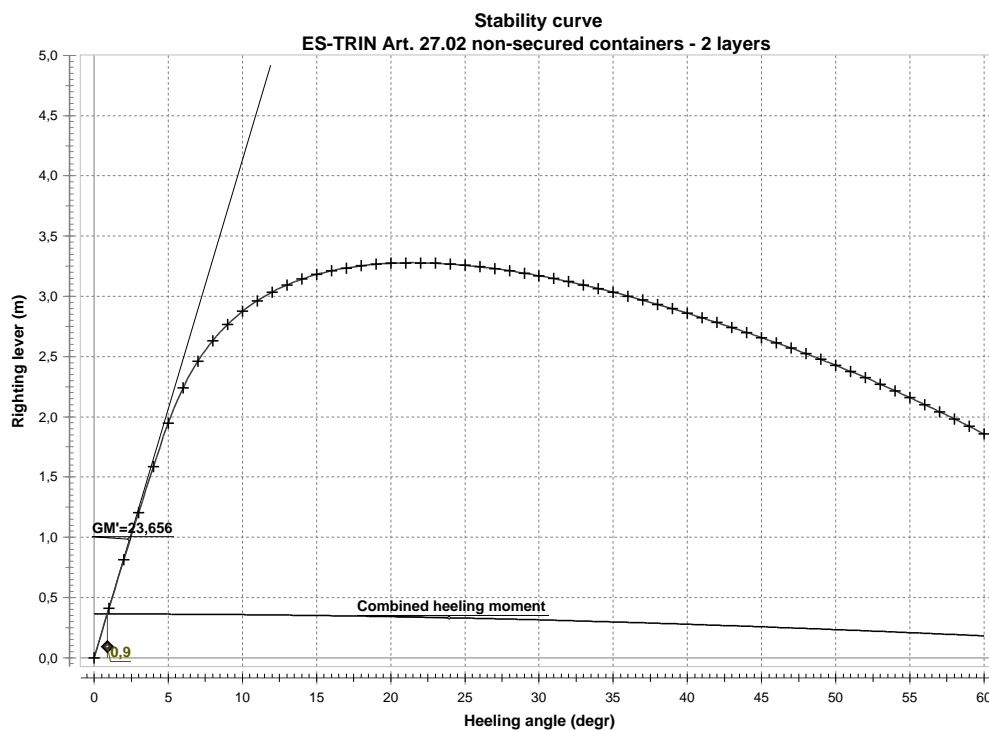
Containers empty			117,600	35,690	0,000 (CL)	3,400	0,000
Lightship			215,422	38,315	0,000 (CL)	1,248	
Deadweight			117,600	35,690	0,000 (CL)	3,400	0,000
Displacement			333,022	37,388	0,000 (CL)	2,008	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	0,460	0,149	333,021	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	0,460	0,149	333,022	0,446	0,035	0,000	0,000	0,411	0,0036
2,0 (PS)	0,458	0,150	333,021	0,883	0,070	0,000	0,000	0,813	0,0143
3,0 (PS)	0,456	0,152	333,022	1,310	0,105	0,000	0,000	1,205	0,0319
4,0 (PS)	0,452	0,153	333,020	1,727	0,140	0,000	0,000	1,587	0,0563
5,0 (PS)	0,447	0,157	333,020	2,124	0,175	0,000	0,000	1,949	0,0872
6,0 (PS)	0,435	0,169	333,021	2,451	0,210	0,000	0,000	2,241	0,1239
7,0 (PS)	0,416	0,180	333,020	2,706	0,245	0,000	0,000	2,461	0,1650
8,0 (PS)	0,391	0,191	333,020	2,911	0,279	0,000	0,000	2,632	0,2095
9,0 (PS)	0,361	0,201	333,021	3,081	0,314	0,000	0,000	2,767	0,2567
10,0 (PS)	0,326	0,211	333,019	3,224	0,349	0,000	0,000	2,875	0,3060
11,0 (PS)	0,288	0,220	333,020	3,347	0,383	0,000	0,000	2,964	0,3570
12,0 (PS)	0,247	0,228	333,019	3,453	0,417	0,000	0,000	3,036	0,4093
13,0 (PS)	0,202	0,237	333,020	3,546	0,452	0,000	0,000	3,094	0,4628
14,0 (PS)	0,155	0,245	333,020	3,628	0,486	0,000	0,000	3,142	0,5173
15,0 (PS)	0,105	0,252	333,019	3,701	0,520	0,000	0,000	3,181	0,5725
16,0 (PS)	0,053	0,259	333,019	3,765	0,553	0,000	0,000	3,212	0,6283
17,0 (PS)	-0,002	0,266	333,019	3,823	0,587	0,000	0,000	3,236	0,6845
18,0 (PS)	-0,059	0,273	333,020	3,874	0,620	0,000	0,000	3,254	0,7412
19,0 (PS)	-0,118	0,279	333,020	3,920	0,654	0,000	0,000	3,266	0,7981
20,0 (PS)	-0,180	0,286	333,021	3,961	0,687	0,000	0,000	3,274	0,8552
21,0 (PS)	-0,244	0,291	333,020	3,998	0,720	0,000	0,000	3,278	0,9124
22,0 (PS)	-0,309	0,297	333,020	4,030	0,752	0,000	0,000	3,278	0,9696
23,0 (PS)	-0,378	0,303	333,019	4,059	0,785	0,000	0,000	3,274	1,0268
24,0 (PS)	-0,448	0,308	333,020	4,084	0,817	0,000	0,000	3,267	1,0838
25,0 (PS)	-0,520	0,313	333,021	4,106	0,849	0,000	0,000	3,258	1,1408
26,0 (PS)	-0,595	0,318	333,019	4,125	0,880	0,000	0,000	3,245	1,1975
27,0 (PS)	-0,673	0,323	333,020	4,141	0,912	0,000	0,000	3,230	1,2540
28,0 (PS)	-0,752	0,328	333,021	4,155	0,943	0,000	0,000	3,212	1,3103
29,0 (PS)	-0,835	0,333	333,019	4,166	0,973	0,000	0,000	3,193	1,3662
30,0 (PS)	-0,920	0,337	333,020	4,175	1,004	0,000	0,000	3,171	1,4217
31,0 (PS)	-1,007	0,341	333,021	4,181	1,034	0,000	0,000	3,147	1,4768
32,0 (PS)	-1,098	0,346	333,021	4,185	1,064	0,000	0,000	3,121	1,5315
33,0 (PS)	-1,191	0,350	333,019	4,188	1,094	0,000	0,000	3,094	1,5858
34,0 (PS)	-1,287	0,354	333,020	4,188	1,123	0,000	0,000	3,065	1,6395
35,0 (PS)	-1,387	0,358	333,021	4,186	1,152	0,000	0,000	3,034	1,6928
36,0 (PS)	-1,490	0,362	333,021	4,182	1,180	0,000	0,000	3,002	1,7454
37,0 (PS)	-1,596	0,366	333,020	4,177	1,208	0,000	0,000	2,969	1,7975
38,0 (PS)	-1,707	0,370	333,021	4,170	1,236	0,000	0,000	2,934	1,8491
39,0 (PS)	-1,821	0,374	333,021	4,161	1,264	0,000	0,000	2,898	1,8999
40,0 (PS)	-1,939	0,378	333,019	4,151	1,291	0,000	0,000	2,860	1,9502
41,0 (PS)	-2,062	0,381	333,020	4,139	1,317	0,000	0,000	2,822	1,9998
42,0 (PS)	-2,190	0,385	333,021	4,126	1,344	0,000	0,000	2,782	2,0487
43,0 (PS)	-2,322	0,389	333,022	4,111	1,369	0,000	0,000	2,742	2,0969
44,0 (PS)	-2,460	0,392	333,020	4,095	1,395	0,000	0,000	2,700	2,1444
45,0 (PS)	-2,604	0,396	333,021	4,078	1,420	0,000	0,000	2,658	2,1911
46,0 (PS)	-2,753	0,400	333,022	4,059	1,444	0,000	0,000	2,614	2,2371
47,0 (PS)	-2,909	0,405	333,019	4,038	1,469	0,000	0,000	2,570	2,2824
48,0 (PS)	-3,071	0,412	333,020	4,016	1,492	0,000	0,000	2,524	2,3268
49,0 (PS)	-3,240	0,419	333,021	3,992	1,515	0,000	0,000	2,476	2,3705
50,0 (PS)	-3,416	0,427	333,021	3,965	1,538	0,000	0,000	2,427	2,4133

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
51,0 (PS)	-3,599	0,436	333,022	3,937	1,560	0,000	0,000	2,377	2,4552
52,0 (PS)	-3,791	0,444	333,022	3,907	1,582	0,000	0,000	2,324	2,4962
53,0 (PS)	-3,991	0,452	333,022	3,874	1,604	0,000	0,000	2,271	2,5363
54,0 (PS)	-4,202	0,461	333,022	3,840	1,624	0,000	0,000	2,216	2,5755
55,0 (PS)	-4,422	0,469	333,022	3,804	1,645	0,000	0,000	2,159	2,6136
56,0 (PS)	-4,654	0,478	333,019	3,766	1,665	0,000	0,000	2,101	2,6508
57,0 (PS)	-4,898	0,487	333,020	3,726	1,684	0,000	0,000	2,042	2,6870
58,0 (PS)	-5,156	0,496	333,020	3,684	1,703	0,000	0,000	1,982	2,7221
59,0 (PS)	-5,428	0,505	333,020	3,641	1,721	0,000	0,000	1,920	2,7561
60,0 (PS)	-5,717	0,515	333,020	3,596	1,739	0,000	0,000	1,857	2,7891



ES-TRIN Art. 27.02 non-secured containers - 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	23,656 m	\geq	1,000 m	Complies
Combined heeling moment	0,9 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	120,820 t*m			
Required freeboard	2,599 m	\geq	0,000 m	Complies
Weight	120,820 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers 70 % full

2020.056_001 IW-NET Europa 2b Barge

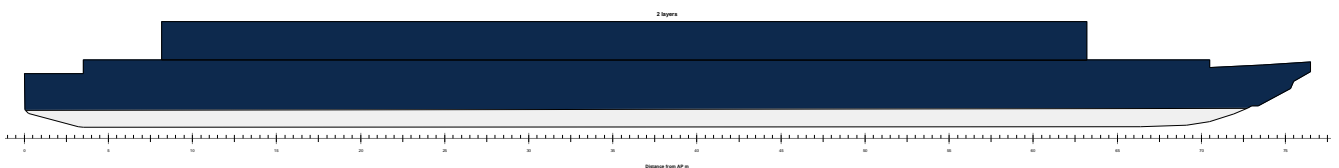
Designer

Created by Bernhard Bieringer

Comment

Filename 2020_056_001_Europa2b barge.fbm

Design length	76,500 m	Midship location	38,250 m
Length over all	76,500 m	Water density	1,0000
Design beam	11,858 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,500 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,836 m
Draft aft pp	1,012 m	GG'	0,000 m
Mean moulded draft	1,065 m	VCG'	2,836 m
Draft forward pp	1,117 m	Max VCG'	9,770 m
Trim	0,105 m	GM solid	8,578 m
LCF	36,112 m	G'M liquid	8,578 m
LCB	36,381 m	Immersion rate	8,246 tonne/cm
KM	11,414 m	MCT	46,370 t*m

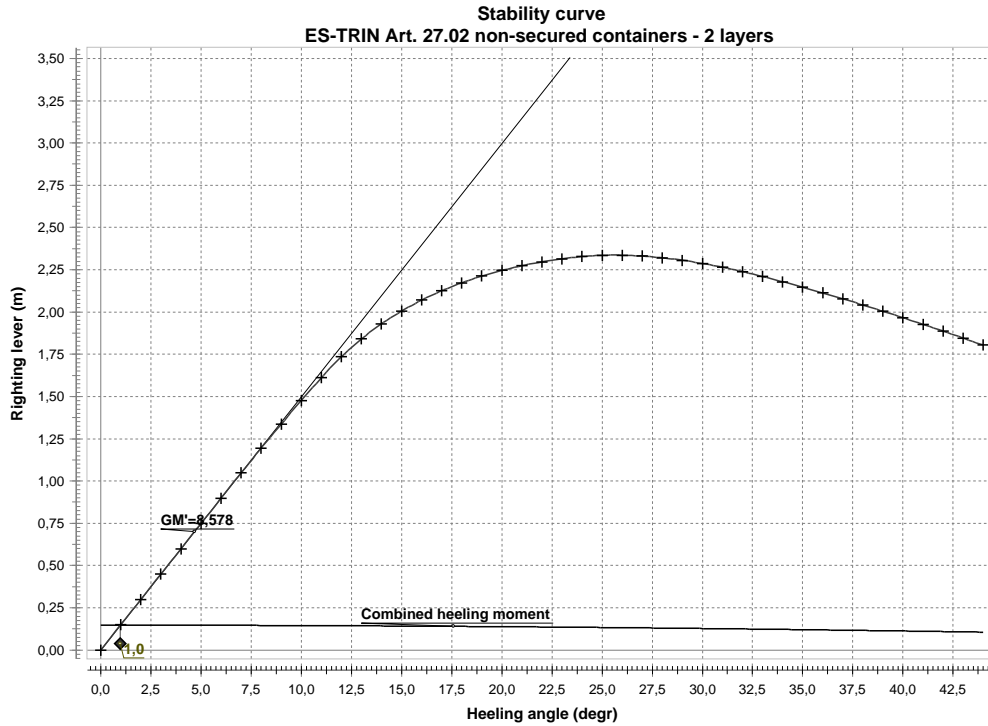
Description	Density	Filling	Weight	LCG	TCG	VCG	FSM
		%	t	m	m	m	t*m

Containers

Containers 70 % full			606,480	35,690	0,000 (CL)	3,400	0,000
Lightship			215,422	38,315	0,000 (CL)	1,248	
Deadweight			606,480	35,690	0,000 (CL)	3,400	0,000
Displacement			821,902	36,378	0,000 (CL)	2,836	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,065	0,105	821,900	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,065	0,105	821,896	0,199	0,049	0,000	0,000	0,150	0,0013
2,0 (PS)	1,064	0,104	821,902	0,398	0,099	0,000	0,000	0,299	0,0052
3,0 (PS)	1,064	0,103	821,899	0,598	0,148	0,000	0,000	0,449	0,0118
4,0 (PS)	1,063	0,101	821,908	0,797	0,198	0,000	0,000	0,599	0,0209
5,0 (PS)	1,062	0,100	821,904	0,996	0,247	0,000	0,000	0,749	0,0327
6,0 (PS)	1,061	0,097	821,906	1,195	0,296	0,000	0,000	0,899	0,0470
7,0 (PS)	1,060	0,095	821,902	1,394	0,346	0,000	0,000	1,048	0,0640
8,0 (PS)	1,057	0,093	821,900	1,589	0,395	0,000	0,000	1,195	0,0836
9,0 (PS)	1,054	0,091	821,902	1,781	0,444	0,000	0,000	1,337	0,1057
10,0 (PS)	1,050	0,088	821,902	1,968	0,492	0,000	0,000	1,476	0,1303
11,0 (PS)	1,045	0,086	821,900	2,152	0,541	0,000	0,000	1,611	0,1572
12,0 (PS)	1,037	0,084	821,901	2,325	0,590	0,000	0,000	1,735	0,1864
13,0 (PS)	1,025	0,083	821,896	2,478	0,638	0,000	0,000	1,840	0,2177
14,0 (PS)	1,009	0,082	821,900	2,616	0,686	0,000	0,000	1,930	0,2506
15,0 (PS)	0,990	0,080	821,898	2,740	0,734	0,000	0,000	2,006	0,2849
16,0 (PS)	0,967	0,078	821,896	2,852	0,782	0,000	0,000	2,070	0,3205
17,0 (PS)	0,942	0,076	821,895	2,955	0,829	0,000	0,000	2,126	0,3572
18,0 (PS)	0,913	0,074	821,895	3,049	0,876	0,000	0,000	2,173	0,3947
19,0 (PS)	0,882	0,072	821,896	3,136	0,923	0,000	0,000	2,212	0,4330
20,0 (PS)	0,848	0,069	821,898	3,216	0,970	0,000	0,000	2,246	0,4719
21,0 (PS)	0,811	0,067	821,900	3,290	1,016	0,000	0,000	2,274	0,5113
22,0 (PS)	0,772	0,064	821,901	3,359	1,062	0,000	0,000	2,296	0,5512
23,0 (PS)	0,730	0,061	821,899	3,423	1,108	0,000	0,000	2,315	0,5915
24,0 (PS)	0,687	0,058	821,901	3,482	1,153	0,000	0,000	2,328	0,6320
25,0 (PS)	0,641	0,055	821,901	3,534	1,199	0,000	0,000	2,335	0,6727
26,0 (PS)	0,595	0,050	821,901	3,579	1,243	0,000	0,000	2,336	0,7135
27,0 (PS)	0,548	0,045	821,901	3,618	1,287	0,000	0,000	2,331	0,7542
28,0 (PS)	0,500	0,038	821,901	3,652	1,331	0,000	0,000	2,321	0,7948
29,0 (PS)	0,451	0,031	821,894	3,681	1,375	0,000	0,000	2,306	0,8352
30,0 (PS)	0,400	0,023	821,894	3,705	1,418	0,000	0,000	2,287	0,8753
31,0 (PS)	0,349	0,014	821,901	3,725	1,461	0,000	0,000	2,265	0,9150
32,0 (PS)	0,296	0,004	821,901	3,741	1,503	0,000	0,000	2,239	0,9543
33,0 (PS)	0,243	-0,006	821,901	3,754	1,545	0,000	0,000	2,210	0,9931
34,0 (PS)	0,187	-0,016	821,894	3,765	1,586	0,000	0,000	2,179	1,0314
35,0 (PS)	0,129	-0,026	821,896	3,773	1,627	0,000	0,000	2,147	1,0692
36,0 (PS)	0,068	-0,036	821,898	3,780	1,667	0,000	0,000	2,113	1,1063
37,0 (PS)	0,005	-0,046	821,900	3,785	1,707	0,000	0,000	2,078	1,1429
38,0 (PS)	-0,061	-0,056	821,901	3,788	1,746	0,000	0,000	2,042	1,1789
39,0 (PS)	-0,129	-0,066	821,902	3,789	1,785	0,000	0,000	2,004	1,2142
40,0 (PS)	-0,201	-0,075	821,898	3,789	1,823	0,000	0,000	1,966	1,2488
41,0 (PS)	-0,275	-0,085	821,900	3,787	1,861	0,000	0,000	1,927	1,2828
42,0 (PS)	-0,353	-0,095	821,902	3,784	1,898	0,000	0,000	1,887	1,3161
43,0 (PS)	-0,435	-0,105	821,897	3,780	1,934	0,000	0,000	1,846	1,3487
44,0 (PS)	-0,520	-0,116	821,902	3,774	1,970	0,000	0,000	1,804	1,3805



ES-TRIN Art. 27.02 non-secured containers - 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	8,578 m	>=	1,000 m	Complies
Combined heeling moment	1,0 degr	<=	5,0 degr	Complies
Calculated heeling moment (upright)	120,820 t*m			
Required freeboard	2,000 m	>=	0,000 m	Complies
Weight	120,820 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers full

2020.056_001 IW-NET Europa 2b Barge

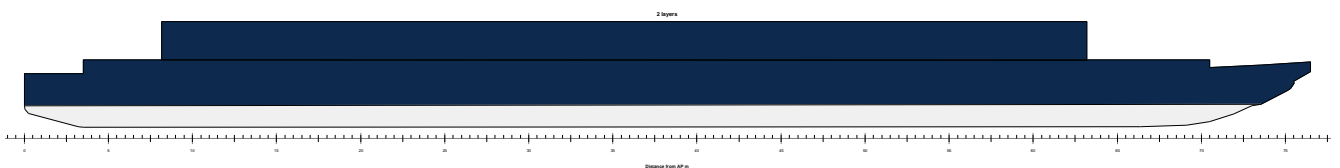
Designer

Created by Bernhard Bieringer

Comment

Filename 2020_056_001_Europa2b barge.fbm

Design length	76,500 m	Midship location	38,250 m
Length over all	76,500 m	Water density	1,0000
Design beam	11,858 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,500 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,951 m
Draft aft pp	1,276 m	GG'	0,000 m
Mean moulded draft	1,317 m	VCG'	2,951 m
Draft forward pp	1,358 m	Max VCG'	8,143 m
Trim	0,081 m	GM solid	6,476 m
LCF	36,334 m	G'M liquid	6,476 m
LCB	36,240 m	Immersion rate	8,318 tonne/cm
KM	9,427 m	MCT	47,534 t*m

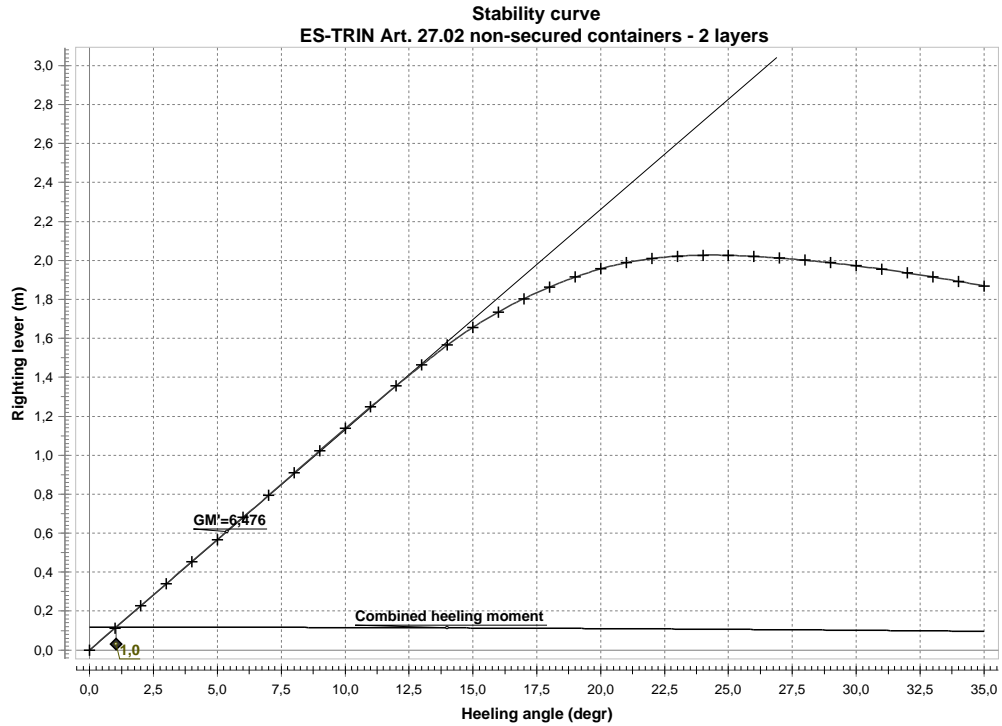
Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers full			816,000	35,690	0,000 (CL)	3,400	0,000
Lightship			215,422	38,315	0,000 (CL)	1,248	
Deadweight			816,000	35,690	0,000 (CL)	3,400	0,000
Displacement			1031,422	36,238	0,000 (CL)	2,951	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,317	0,081	1031,421	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,317	0,081	1031,418	0,165	0,051	0,000	0,000	0,113	0,0010
2,0 (PS)	1,317	0,080	1031,413	0,329	0,103	0,000	0,000	0,226	0,0039
3,0 (PS)	1,316	0,079	1031,422	0,494	0,154	0,000	0,000	0,339	0,0089
4,0 (PS)	1,316	0,076	1031,422	0,659	0,206	0,000	0,000	0,453	0,0158
5,0 (PS)	1,315	0,074	1031,422	0,824	0,257	0,000	0,000	0,566	0,0247
6,0 (PS)	1,314	0,071	1031,422	0,989	0,308	0,000	0,000	0,680	0,0356
7,0 (PS)	1,313	0,067	1031,424	1,154	0,360	0,000	0,000	0,794	0,0484
8,0 (PS)	1,312	0,063	1031,422	1,320	0,411	0,000	0,000	0,909	0,0633
9,0 (PS)	1,311	0,059	1031,422	1,485	0,462	0,000	0,000	1,024	0,0802
10,0 (PS)	1,309	0,055	1031,422	1,650	0,512	0,000	0,000	1,138	0,0990
11,0 (PS)	1,306	0,050	1031,422	1,812	0,563	0,000	0,000	1,249	0,1199
12,0 (PS)	1,302	0,046	1031,422	1,970	0,613	0,000	0,000	1,357	0,1426
13,0 (PS)	1,297	0,041	1031,422	2,126	0,664	0,000	0,000	1,463	0,1672
14,0 (PS)	1,291	0,036	1031,419	2,279	0,714	0,000	0,000	1,565	0,1936
15,0 (PS)	1,282	0,031	1031,420	2,420	0,764	0,000	0,000	1,656	0,2218
16,0 (PS)	1,269	0,026	1031,415	2,549	0,813	0,000	0,000	1,735	0,2514
17,0 (PS)	1,253	0,021	1031,421	2,666	0,863	0,000	0,000	1,804	0,2823
18,0 (PS)	1,234	0,016	1031,421	2,775	0,912	0,000	0,000	1,863	0,3143
19,0 (PS)	1,212	0,010	1031,421	2,875	0,961	0,000	0,000	1,914	0,3473
20,0 (PS)	1,187	0,005	1031,421	2,966	1,009	0,000	0,000	1,957	0,3811
21,0 (PS)	1,162	-0,003	1031,420	3,045	1,057	0,000	0,000	1,988	0,4155
22,0 (PS)	1,137	-0,012	1031,420	3,114	1,105	0,000	0,000	2,009	0,4504
23,0 (PS)	1,111	-0,023	1031,421	3,174	1,153	0,000	0,000	2,021	0,4856
24,0 (PS)	1,084	-0,035	1031,421	3,227	1,200	0,000	0,000	2,027	0,5209
25,0 (PS)	1,057	-0,048	1031,420	3,273	1,247	0,000	0,000	2,026	0,5563
26,0 (PS)	1,028	-0,061	1031,421	3,314	1,293	0,000	0,000	2,020	0,5916
27,0 (PS)	0,998	-0,073	1031,415	3,351	1,340	0,000	0,000	2,012	0,6268
28,0 (PS)	0,966	-0,086	1031,418	3,386	1,385	0,000	0,000	2,001	0,6618
29,0 (PS)	0,932	-0,098	1031,420	3,418	1,430	0,000	0,000	1,988	0,6966
30,0 (PS)	0,896	-0,110	1031,421	3,447	1,475	0,000	0,000	1,972	0,7312
31,0 (PS)	0,858	-0,122	1031,414	3,474	1,520	0,000	0,000	1,955	0,7655
32,0 (PS)	0,818	-0,134	1031,419	3,499	1,564	0,000	0,000	1,936	0,7994
33,0 (PS)	0,775	-0,147	1031,421	3,522	1,607	0,000	0,000	1,915	0,8330
34,0 (PS)	0,731	-0,158	1031,416	3,542	1,650	0,000	0,000	1,892	0,8663
35,0 (PS)	0,684	-0,170	1031,422	3,561	1,692	0,000	0,000	1,869	0,8991



ES-TRIN Art. 27.02 non-secured containers - 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	6,476 m	>=	1,000 m	Complies
Combined heeling moment	1,0 degr	<=	5,0 degr	Complies
Calculated heeling moment (upright)	120,820 t*m			
Required freeboard	1,751 m	>=	0,000 m	Complies
Weight	120,820 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers empty 3 layers

2020.056_001 IW-NET Europa 2b Barge

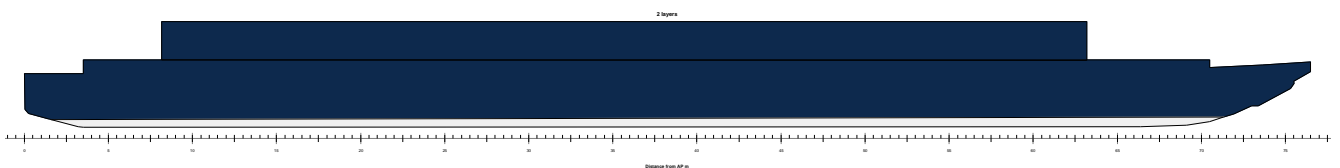
Designer

Created by Bernhard Bieringer

Comment

Filename 2020_056_001_Europa2b barge.fbm

Design length	76,500 m	Midship location	38,250 m
Length over all	76,500 m	Water density	1,0000
Design beam	11,858 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,500 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,806 m
Draft aft pp	0,457 m	GG'	0,000 m
Mean moulded draft	0,528 m	VCG'	2,806 m
Draft forward pp	0,600 m	Max VCG'	16,588 m
Trim	0,143 m	GM solid	19,523 m
LCF	36,153 m	G'M liquid	19,523 m
LCB	37,157 m	Immersion rate	7,901 tonne/cm
KM	22,329 m	MCT	40,895 t*m

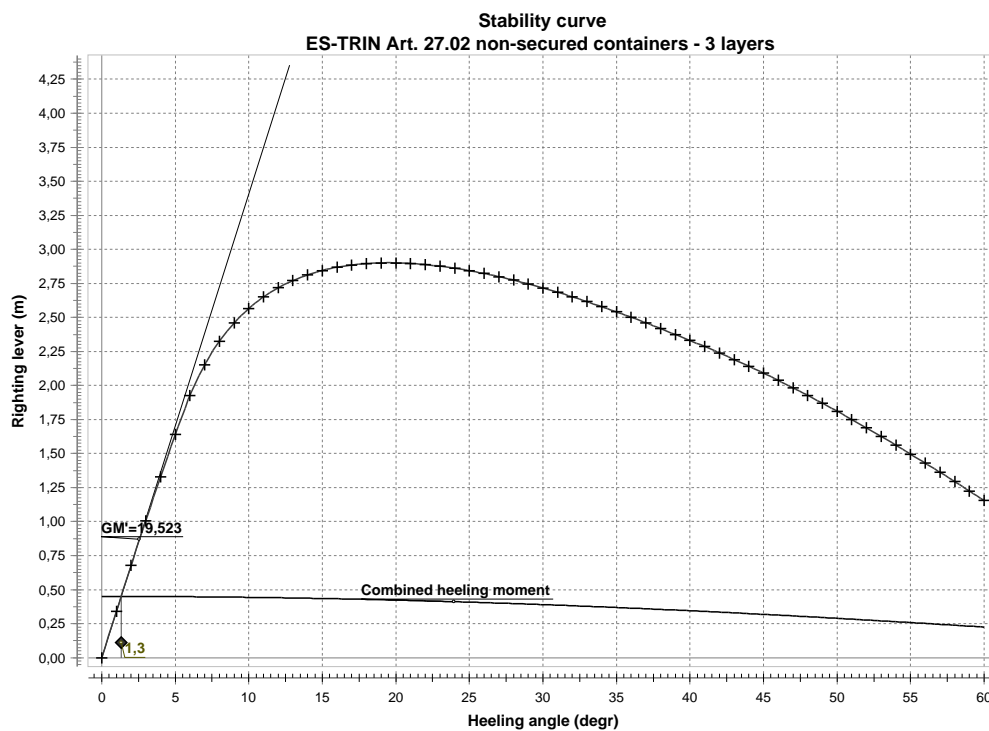
Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
Containers							
Containers empty			117,600	35,690	0,000 (CL)	3,400	0,000
3rd layer empty			53,800	35,690	0,000 (CL)	7,748	0,000
Totals for Containers			171,400	35,690	0,000 (CL)	4,765	0,000
Lightship			215,422	38,315	0,000 (CL)	1,248	
Deadweight			171,400	35,690	0,000 (CL)	4,765	0,000
Displacement			386,822	37,152	0,000 (CL)	2,806	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	0,528	0,143	386,822	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	0,528	0,143	386,820	0,390	0,049	0,000	0,000	0,341	0,0030
2,0 (PS)	0,527	0,144	386,822	0,776	0,098	0,000	0,000	0,678	0,0119
3,0 (PS)	0,525	0,145	386,820	1,154	0,147	0,000	0,000	1,007	0,0266
4,0 (PS)	0,522	0,146	386,821	1,523	0,196	0,000	0,000	1,327	0,0470
5,0 (PS)	0,518	0,147	386,820	1,883	0,245	0,000	0,000	1,639	0,0729
6,0 (PS)	0,512	0,154	386,819	2,220	0,293	0,000	0,000	1,926	0,1040
7,0 (PS)	0,498	0,164	386,821	2,494	0,342	0,000	0,000	2,152	0,1397
8,0 (PS)	0,479	0,173	386,821	2,715	0,391	0,000	0,000	2,324	0,1789
9,0 (PS)	0,454	0,182	386,818	2,898	0,439	0,000	0,000	2,459	0,2206
10,0 (PS)	0,425	0,190	386,820	3,052	0,487	0,000	0,000	2,565	0,2645
11,0 (PS)	0,391	0,198	386,820	3,185	0,535	0,000	0,000	2,650	0,3101
12,0 (PS)	0,354	0,205	386,819	3,301	0,583	0,000	0,000	2,717	0,3569
13,0 (PS)	0,314	0,212	386,821	3,402	0,631	0,000	0,000	2,771	0,4048
14,0 (PS)	0,272	0,218	386,820	3,491	0,679	0,000	0,000	2,812	0,4536
15,0 (PS)	0,226	0,225	386,820	3,571	0,726	0,000	0,000	2,845	0,5029
16,0 (PS)	0,178	0,231	386,820	3,642	0,774	0,000	0,000	2,868	0,5528
17,0 (PS)	0,127	0,237	386,820	3,706	0,820	0,000	0,000	2,885	0,6030
18,0 (PS)	0,074	0,242	386,820	3,763	0,867	0,000	0,000	2,896	0,6535
19,0 (PS)	0,018	0,247	386,820	3,814	0,914	0,000	0,000	2,901	0,7041
20,0 (PS)	-0,040	0,252	386,819	3,860	0,960	0,000	0,000	2,901	0,7547
21,0 (PS)	-0,100	0,257	386,820	3,902	1,006	0,000	0,000	2,896	0,8053
22,0 (PS)	-0,162	0,262	386,820	3,939	1,051	0,000	0,000	2,888	0,8558
23,0 (PS)	-0,226	0,266	386,819	3,973	1,096	0,000	0,000	2,876	0,9061
24,0 (PS)	-0,293	0,270	386,820	4,003	1,141	0,000	0,000	2,861	0,9562
25,0 (PS)	-0,362	0,274	386,821	4,029	1,186	0,000	0,000	2,843	1,0060
26,0 (PS)	-0,434	0,278	386,819	4,053	1,230	0,000	0,000	2,823	1,0554
27,0 (PS)	-0,507	0,282	386,820	4,074	1,274	0,000	0,000	2,800	1,1045
28,0 (PS)	-0,584	0,285	386,821	4,091	1,317	0,000	0,000	2,774	1,1531
29,0 (PS)	-0,662	0,289	386,818	4,107	1,361	0,000	0,000	2,746	1,2013
30,0 (PS)	-0,744	0,292	386,820	4,119	1,403	0,000	0,000	2,716	1,2490
31,0 (PS)	-0,828	0,295	386,821	4,130	1,445	0,000	0,000	2,684	1,2961
32,0 (PS)	-0,915	0,299	386,821	4,138	1,487	0,000	0,000	2,651	1,3426
33,0 (PS)	-1,005	0,302	386,819	4,144	1,528	0,000	0,000	2,616	1,3886
34,0 (PS)	-1,098	0,305	386,820	4,148	1,569	0,000	0,000	2,579	1,4339
35,0 (PS)	-1,194	0,307	386,821	4,150	1,610	0,000	0,000	2,541	1,4786
36,0 (PS)	-1,293	0,310	386,818	4,151	1,649	0,000	0,000	2,501	1,5226
37,0 (PS)	-1,396	0,313	386,820	4,149	1,689	0,000	0,000	2,460	1,5659
38,0 (PS)	-1,503	0,315	386,821	4,146	1,728	0,000	0,000	2,418	1,6085
39,0 (PS)	-1,614	0,318	386,822	4,141	1,766	0,000	0,000	2,375	1,6503
40,0 (PS)	-1,728	0,320	386,820	4,134	1,804	0,000	0,000	2,330	1,6914
41,0 (PS)	-1,848	0,323	386,821	4,126	1,841	0,000	0,000	2,285	1,7317
42,0 (PS)	-1,971	0,326	386,822	4,116	1,878	0,000	0,000	2,239	1,7711
43,0 (PS)	-2,100	0,329	386,818	4,105	1,914	0,000	0,000	2,191	1,8098
44,0 (PS)	-2,233	0,334	386,820	4,091	1,949	0,000	0,000	2,142	1,8476
45,0 (PS)	-2,370	0,340	386,821	4,075	1,984	0,000	0,000	2,091	1,8845
46,0 (PS)	-2,513	0,345	386,821	4,057	2,019	0,000	0,000	2,038	1,9206
47,0 (PS)	-2,662	0,350	386,821	4,036	2,052	0,000	0,000	1,983	1,9557
48,0 (PS)	-2,816	0,355	386,821	4,013	2,085	0,000	0,000	1,927	1,9898
49,0 (PS)	-2,976	0,360	386,822	3,988	2,118	0,000	0,000	1,870	2,0229
50,0 (PS)	-3,142	0,365	386,822	3,960	2,150	0,000	0,000	1,811	2,0551

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
51,0 (PS)	-3,316	0,370	386,822	3,931	2,181	0,000	0,000	1,750	2,0861
52,0 (PS)	-3,498	0,374	386,822	3,900	2,211	0,000	0,000	1,688	2,1161
53,0 (PS)	-3,688	0,379	386,822	3,866	2,241	0,000	0,000	1,625	2,1451
54,0 (PS)	-3,887	0,383	386,822	3,831	2,270	0,000	0,000	1,561	2,1729
55,0 (PS)	-4,096	0,388	386,822	3,794	2,299	0,000	0,000	1,496	2,1995
56,0 (PS)	-4,315	0,393	386,818	3,756	2,327	0,000	0,000	1,429	2,2251
57,0 (PS)	-4,546	0,397	386,818	3,715	2,354	0,000	0,000	1,362	2,2494
58,0 (PS)	-4,790	0,402	386,819	3,673	2,380	0,000	0,000	1,294	2,2726
59,0 (PS)	-5,048	0,407	386,819	3,630	2,405	0,000	0,000	1,224	2,2946
60,0 (PS)	-5,322	0,412	386,819	3,585	2,430	0,000	0,000	1,154	2,3153



ES-TRIN Art. 27.02 non-secured containers - 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	19,523 m	\geq	1,000 m	Complies
Combined heeling moment	1,3 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	174,190 t*m			
Required freeboard	2,489 m	\geq	0,000 m	Complies
Deck immersion angle	40,2 degr			
Max allowed ratio static angle/deck immersion angle	0,033	\leq	1,000	Complies
Weight	174,190 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers 70 % full 3 layers

2020.056_001 IW-NET Europa 2b Barge

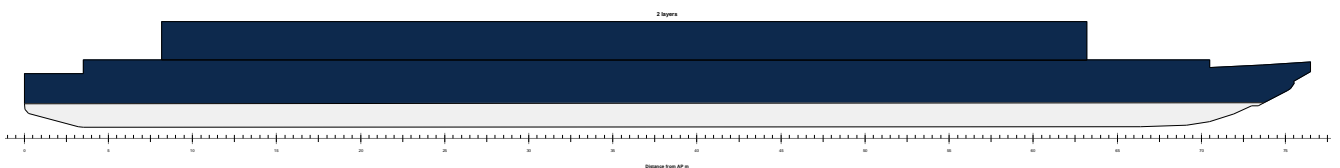
Designer

Created by Bernhard Bieringer

Comment

Filename 2020_056_001_Europa2b barge.fbm

Design length	76,500 m	Midship location	38,250 m
Length over all	76,500 m	Water density	1,0000
Design beam	11,858 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,500 m		



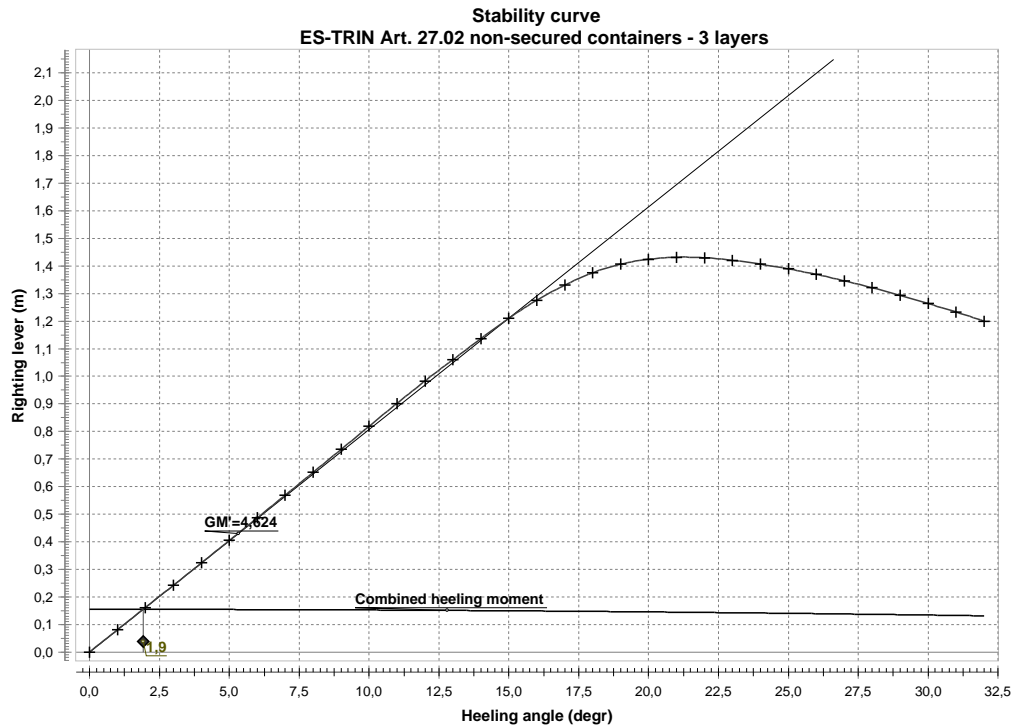
Hydrostatic particulars

List	0,0 (CL) degr	VCG	4,160 m
Draft aft pp	1,395 m	GG'	0,000 m
Mean moulded draft	1,429 m	VCG'	4,160 m
Draft forward pp	1,463 m	Max VCG'	7,065 m
Trim	0,068 m	GM solid	4,624 m
LCF	36,442 m	G'M liquid	4,624 m
LCB	36,195 m	Immersion rate	8,343 tonne/cm
KM	8,783 m	MCT	47,762 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
Containers							
Containers 70 % full			606,480	35,690	0,000 (CL)	3,400	0,000
3rd layer 70 % full			303,240	35,690	0,000 (CL)	7,748	0,000
Totals for Containers			909,720	35,690	0,000 (CL)	4,849	0,000
Lightship			215,422	38,315	0,000 (CL)	1,248	
Deadweight			909,720	35,690	0,000 (CL)	4,849	0,000
Displacement			1125,142	36,193	0,000 (CL)	4,160	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,429	0,068	1125,142	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,429	0,068	1125,138	0,153	0,073	0,000	0,000	0,081	0,0007
2,0 (PS)	1,429	0,067	1125,133	0,307	0,145	0,000	0,000	0,162	0,0028
3,0 (PS)	1,429	0,065	1125,142	0,460	0,218	0,000	0,000	0,242	0,0063
4,0 (PS)	1,428	0,063	1125,142	0,614	0,290	0,000	0,000	0,324	0,0113
5,0 (PS)	1,428	0,060	1125,142	0,768	0,363	0,000	0,000	0,405	0,0176
6,0 (PS)	1,427	0,057	1125,142	0,922	0,435	0,000	0,000	0,487	0,0254
7,0 (PS)	1,426	0,053	1125,142	1,076	0,507	0,000	0,000	0,569	0,0346
8,0 (PS)	1,425	0,049	1125,142	1,231	0,579	0,000	0,000	0,652	0,0453
9,0 (PS)	1,424	0,044	1125,142	1,386	0,651	0,000	0,000	0,735	0,0574
10,0 (PS)	1,422	0,039	1125,142	1,541	0,722	0,000	0,000	0,819	0,0710
11,0 (PS)	1,420	0,034	1125,142	1,695	0,794	0,000	0,000	0,902	0,0860
12,0 (PS)	1,417	0,028	1125,142	1,847	0,865	0,000	0,000	0,982	0,1024
13,0 (PS)	1,413	0,023	1125,141	1,997	0,936	0,000	0,000	1,061	0,1202
14,0 (PS)	1,408	0,017	1125,141	2,144	1,006	0,000	0,000	1,137	0,1394
15,0 (PS)	1,402	0,011	1125,139	2,288	1,077	0,000	0,000	1,211	0,1599
16,0 (PS)	1,394	0,005	1125,141	2,423	1,147	0,000	0,000	1,276	0,1817
17,0 (PS)	1,382	-0,002	1125,142	2,547	1,216	0,000	0,000	1,331	0,2044
18,0 (PS)	1,367	-0,008	1125,141	2,661	1,285	0,000	0,000	1,375	0,2280
19,0 (PS)	1,350	-0,017	1125,136	2,761	1,354	0,000	0,000	1,406	0,2523
20,0 (PS)	1,333	-0,027	1125,141	2,847	1,423	0,000	0,000	1,425	0,2771
21,0 (PS)	1,316	-0,039	1125,141	2,923	1,491	0,000	0,000	1,432	0,3020
22,0 (PS)	1,298	-0,053	1125,140	2,988	1,558	0,000	0,000	1,430	0,3270
23,0 (PS)	1,279	-0,067	1125,140	3,046	1,625	0,000	0,000	1,421	0,3519
24,0 (PS)	1,259	-0,081	1125,132	3,099	1,692	0,000	0,000	1,407	0,3766
25,0 (PS)	1,237	-0,095	1125,136	3,148	1,758	0,000	0,000	1,390	0,4010
26,0 (PS)	1,214	-0,109	1125,139	3,193	1,824	0,000	0,000	1,369	0,4250
27,0 (PS)	1,188	-0,122	1125,141	3,235	1,889	0,000	0,000	1,346	0,4487
28,0 (PS)	1,160	-0,135	1125,132	3,274	1,953	0,000	0,000	1,321	0,4720
29,0 (PS)	1,131	-0,149	1125,139	3,310	2,017	0,000	0,000	1,294	0,4948
30,0 (PS)	1,099	-0,162	1125,141	3,344	2,080	0,000	0,000	1,264	0,5172
31,0 (PS)	1,066	-0,175	1125,136	3,375	2,142	0,000	0,000	1,233	0,5390
32,0 (PS)	1,030	-0,188	1125,142	3,405	2,204	0,000	0,000	1,200	0,5602



ES-TRIN Art. 27.02 non-secured containers - 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	4,624 m	\geq	1,000 m	Complies
Combined heeling moment	1,9 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	174,190 t*m			
Required freeboard	1,555 m	\geq	0,000 m	Complies
Deck immersion angle	17,7 degr			
Max allowed ratio static angle/deck immersion angle	0,108	\leq	1,000	Complies
Weight	174,190 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers full 3 layers

2020.056_001 IW-NET Europa 2b Barge

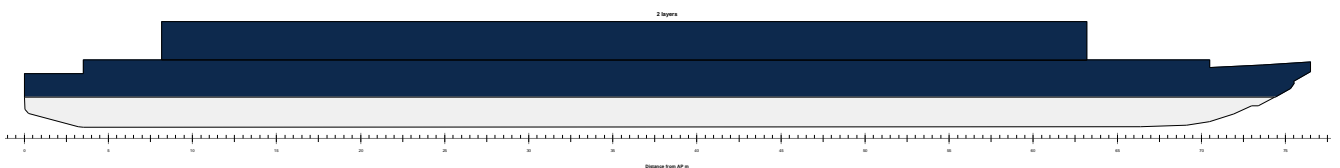
Designer

Created by Bernhard Bieringer

Comment

Filename 2020_056_001_Europa2b barge.fbm

Design length	76,500 m	Midship location	38,250 m
Length over all	76,500 m	Water density	1,0000
Design beam	11,858 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,500 m		



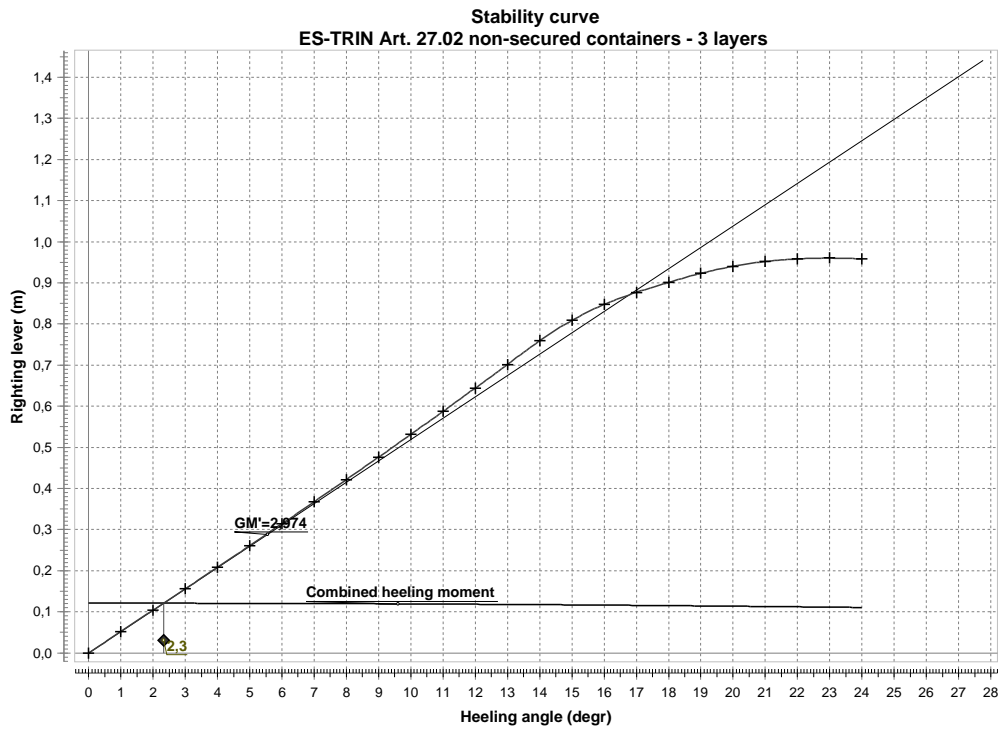
Hydrostatic particulars

List	0,0 (CL) degr	VCG	4,310 m
Draft aft pp	1,799 m	GG'	0,000 m
Mean moulded draft	1,803 m	VCG'	4,310 m
Draft forward pp	1,807 m	Max VCG'	5,963 m
Trim	0,008 m	GM solid	2,974 m
LCF	36,784 m	G'M liquid	2,974 m
LCB	36,083 m	Immersion rate	8,421 tonne/cm
KM	7,284 m	MCT	49,000 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
Containers							
Containers full			816,000	35,690	0,000 (CL)	3,400	0,000
3rd layer full			408,000	35,690	0,000 (CL)	7,748	0,000
Totals for Containers			1224,000	35,690	0,000 (CL)	4,849	0,000
Lightship			215,422	38,315	0,000 (CL)	1,248	
Deadweight			1224,000	35,690	0,000 (CL)	4,849	0,000
Displacement			1439,422	36,083	0,000 (CL)	4,310	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,803	0,008	1439,422	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,803	0,008	1439,421	0,127	0,075	0,000	0,000	0,052	0,0005
2,0 (PS)	1,803	0,007	1439,416	0,254	0,150	0,000	0,000	0,104	0,0018
3,0 (PS)	1,802	0,005	1439,411	0,382	0,226	0,000	0,000	0,156	0,0041
4,0 (PS)	1,802	0,003	1439,422	0,509	0,301	0,000	0,000	0,208	0,0073
5,0 (PS)	1,801	0,001	1439,422	0,637	0,376	0,000	0,000	0,261	0,0114
6,0 (PS)	1,801	-0,003	1439,422	0,765	0,451	0,000	0,000	0,314	0,0164
7,0 (PS)	1,800	-0,007	1439,422	0,893	0,525	0,000	0,000	0,368	0,0223
8,0 (PS)	1,799	-0,011	1439,422	1,022	0,600	0,000	0,000	0,422	0,0292
9,0 (PS)	1,798	-0,016	1439,422	1,151	0,674	0,000	0,000	0,476	0,0371
10,0 (PS)	1,797	-0,022	1439,422	1,280	0,748	0,000	0,000	0,532	0,0458
11,0 (PS)	1,796	-0,028	1439,422	1,410	0,822	0,000	0,000	0,587	0,0556
12,0 (PS)	1,794	-0,035	1439,422	1,540	0,896	0,000	0,000	0,644	0,0664
13,0 (PS)	1,793	-0,042	1439,422	1,671	0,970	0,000	0,000	0,702	0,0781
14,0 (PS)	1,791	-0,050	1439,422	1,802	1,043	0,000	0,000	0,759	0,0909
15,0 (PS)	1,791	-0,061	1439,423	1,925	1,116	0,000	0,000	0,809	0,1046
16,0 (PS)	1,793	-0,075	1439,425	2,036	1,188	0,000	0,000	0,848	0,1190
17,0 (PS)	1,797	-0,092	1439,429	2,137	1,260	0,000	0,000	0,877	0,1341
18,0 (PS)	1,801	-0,108	1439,419	2,233	1,332	0,000	0,000	0,901	0,1496
19,0 (PS)	1,805	-0,124	1439,415	2,327	1,403	0,000	0,000	0,923	0,1655
20,0 (PS)	1,808	-0,142	1439,421	2,415	1,474	0,000	0,000	0,940	0,1818
21,0 (PS)	1,808	-0,160	1439,408	2,497	1,545	0,000	0,000	0,952	0,1983
22,0 (PS)	1,806	-0,177	1439,417	2,573	1,615	0,000	0,000	0,958	0,2150
23,0 (PS)	1,802	-0,195	1439,421	2,645	1,684	0,000	0,000	0,960	0,2318
24,0 (PS)	1,795	-0,212	1439,419	2,712	1,753	0,000	0,000	0,959	0,2485



ES-TRIN Art. 27.02 non-secured containers - 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	2,974 m	\geq	1,000 m	Complies
Combined heeling moment	2,3 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	174,190 t*m			
Required freeboard	1,162 m	\geq	0,000 m	Complies
Deck immersion angle	13,6 degr			
Max allowed ratio static angle/deck immersion angle	0,171	\leq	1,000	Complies
Weight	174,190 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers empty ALU

2020.056_001 IW-NET Europa 2b Barge

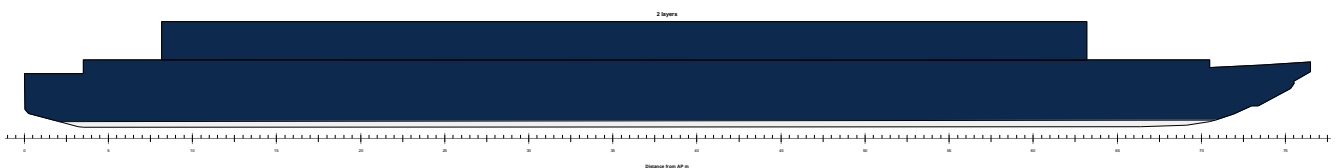
Designer

Created by Bernhard Bieringer

Comment

Filename 2020_056_001_Europa2b barge.fbm

Design length	76,500 m	Midship location	38,250 m
Length over all	76,500 m	Water density	1,0000
Design beam	11,858 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,500 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,194 m
Draft aft pp	0,319 m	GG'	0,000 m
Mean moulded draft	0,380 m	VCG'	2,194 m
Draft forward pp	0,440 m	Max VCG'	23,191 m
Trim	0,121 m	GM solid	28,522 m
LCF	36,205 m	G'M liquid	28,522 m
LCB	37,268 m	Immersion rate	7,742 tonne/cm
KM	30,716 m	MCT	38,914 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

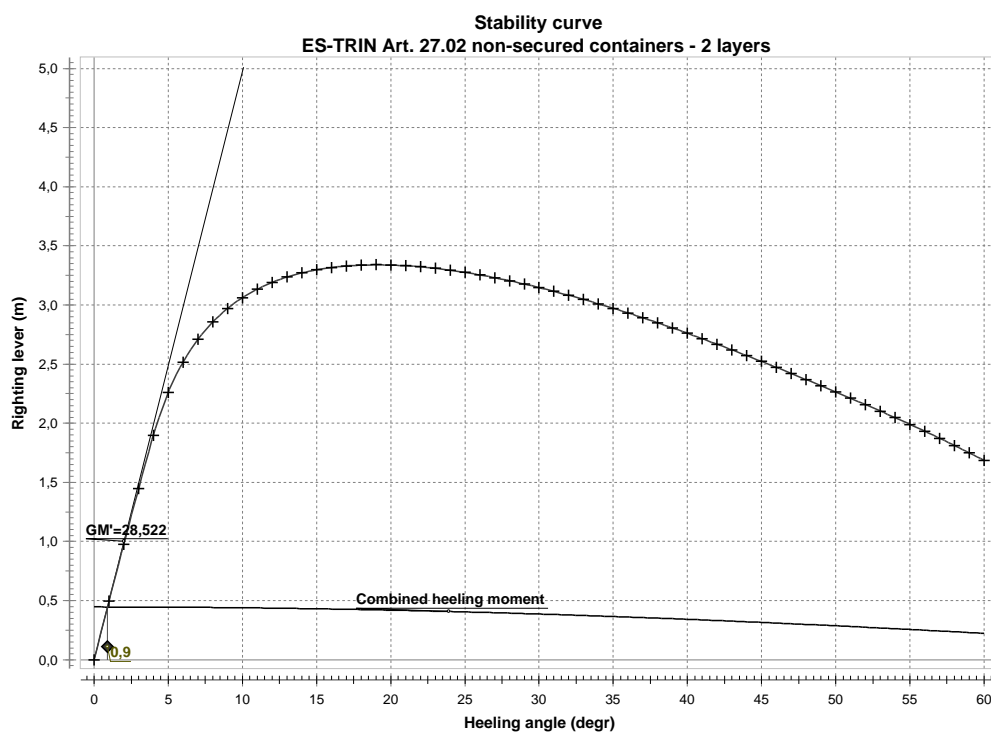
Containers empty			117,600	35,690	0,000 (CL)	3,400	0,000
Lightship			153,234	38,473	0,000 (CL)	1,269	
Deadweight			117,600	35,690	0,000 (CL)	3,400	0,000
Displacement			270,834	37,265	0,000 (CL)	2,194	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	0,380	0,121	270,834	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	0,379	0,122	270,833	0,533	0,038	0,000	0,000	0,494	0,0043
2,0 (PS)	0,377	0,123	270,834	1,053	0,077	0,000	0,000	0,977	0,0172
3,0 (PS)	0,374	0,124	270,833	1,561	0,115	0,000	0,000	1,447	0,0383
4,0 (PS)	0,369	0,126	270,832	2,051	0,153	0,000	0,000	1,898	0,0676
5,0 (PS)	0,358	0,137	270,833	2,451	0,191	0,000	0,000	2,260	0,1040
6,0 (PS)	0,338	0,148	270,833	2,747	0,229	0,000	0,000	2,518	0,1459
7,0 (PS)	0,311	0,158	270,833	2,977	0,267	0,000	0,000	2,710	0,1916
8,0 (PS)	0,278	0,167	270,833	3,162	0,305	0,000	0,000	2,857	0,2402
9,0 (PS)	0,242	0,176	270,833	3,315	0,343	0,000	0,000	2,971	0,2911
10,0 (PS)	0,201	0,185	270,832	3,443	0,381	0,000	0,000	3,062	0,3438
11,0 (PS)	0,157	0,193	270,832	3,553	0,419	0,000	0,000	3,134	0,3979
12,0 (PS)	0,109	0,201	270,832	3,647	0,456	0,000	0,000	3,191	0,4531
13,0 (PS)	0,059	0,209	270,833	3,730	0,494	0,000	0,000	3,236	0,5092
14,0 (PS)	0,006	0,216	270,832	3,802	0,531	0,000	0,000	3,271	0,5660
15,0 (PS)	-0,049	0,223	270,832	3,866	0,568	0,000	0,000	3,298	0,6233
16,0 (PS)	-0,106	0,230	270,832	3,922	0,605	0,000	0,000	3,317	0,6811
17,0 (PS)	-0,166	0,236	270,832	3,972	0,642	0,000	0,000	3,330	0,7391
18,0 (PS)	-0,228	0,242	270,832	4,016	0,678	0,000	0,000	3,338	0,7973
19,0 (PS)	-0,292	0,248	270,833	4,054	0,714	0,000	0,000	3,340	0,8556
20,0 (PS)	-0,358	0,254	270,832	4,089	0,750	0,000	0,000	3,338	0,9138
21,0 (PS)	-0,427	0,260	270,832	4,119	0,786	0,000	0,000	3,332	0,9721
22,0 (PS)	-0,497	0,265	270,833	4,145	0,822	0,000	0,000	3,323	1,0301
23,0 (PS)	-0,570	0,270	270,832	4,168	0,857	0,000	0,000	3,310	1,0880
24,0 (PS)	-0,645	0,275	270,833	4,187	0,893	0,000	0,000	3,294	1,1457
25,0 (PS)	-0,722	0,280	270,832	4,203	0,927	0,000	0,000	3,276	1,2030
26,0 (PS)	-0,801	0,285	270,832	4,217	0,962	0,000	0,000	3,255	1,2600
27,0 (PS)	-0,883	0,290	270,833	4,227	0,996	0,000	0,000	3,231	1,3166
28,0 (PS)	-0,967	0,294	270,832	4,236	1,030	0,000	0,000	3,205	1,3728
29,0 (PS)	-1,054	0,299	270,832	4,241	1,064	0,000	0,000	3,178	1,4285
30,0 (PS)	-1,143	0,303	270,833	4,245	1,097	0,000	0,000	3,148	1,4837
31,0 (PS)	-1,235	0,307	270,832	4,246	1,130	0,000	0,000	3,116	1,5383
32,0 (PS)	-1,330	0,311	270,832	4,245	1,163	0,000	0,000	3,082	1,5924
33,0 (PS)	-1,428	0,315	270,833	4,242	1,195	0,000	0,000	3,047	1,6459
34,0 (PS)	-1,528	0,319	270,833	4,237	1,227	0,000	0,000	3,010	1,6988
35,0 (PS)	-1,632	0,323	270,832	4,231	1,259	0,000	0,000	2,972	1,7510
36,0 (PS)	-1,740	0,327	270,833	4,222	1,290	0,000	0,000	2,932	1,8025
37,0 (PS)	-1,851	0,331	270,833	4,212	1,321	0,000	0,000	2,891	1,8534
38,0 (PS)	-1,966	0,335	270,831	4,200	1,351	0,000	0,000	2,849	1,9034
39,0 (PS)	-2,085	0,339	270,832	4,186	1,381	0,000	0,000	2,805	1,9528
40,0 (PS)	-2,208	0,342	270,833	4,171	1,410	0,000	0,000	2,761	2,0014
41,0 (PS)	-2,335	0,346	270,833	4,155	1,440	0,000	0,000	2,715	2,0492
42,0 (PS)	-2,467	0,350	270,832	4,137	1,468	0,000	0,000	2,668	2,0961
43,0 (PS)	-2,605	0,353	270,832	4,117	1,497	0,000	0,000	2,621	2,1423
44,0 (PS)	-2,748	0,357	270,833	4,096	1,524	0,000	0,000	2,572	2,1876
45,0 (PS)	-2,896	0,360	270,833	4,074	1,552	0,000	0,000	2,523	2,2321
46,0 (PS)	-3,051	0,364	270,832	4,051	1,578	0,000	0,000	2,472	2,2757
47,0 (PS)	-3,212	0,367	270,833	4,026	1,605	0,000	0,000	2,421	2,3184
48,0 (PS)	-3,380	0,371	270,833	4,000	1,631	0,000	0,000	2,370	2,3602
49,0 (PS)	-3,556	0,374	270,834	3,974	1,656	0,000	0,000	2,318	2,4011
50,0 (PS)	-3,740	0,378	270,833	3,946	1,681	0,000	0,000	2,265	2,4411

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
51,0 (PS)	-3,933	0,381	270,833	3,917	1,705	0,000	0,000	2,212	2,4801
52,0 (PS)	-4,135	0,386	270,834	3,887	1,729	0,000	0,000	2,158	2,5183
53,0 (PS)	-4,347	0,391	270,832	3,855	1,752	0,000	0,000	2,103	2,5554
54,0 (PS)	-4,570	0,399	270,833	3,822	1,775	0,000	0,000	2,047	2,5917
55,0 (PS)	-4,803	0,406	270,833	3,788	1,797	0,000	0,000	1,990	2,6269
56,0 (PS)	-5,049	0,415	270,834	3,751	1,819	0,000	0,000	1,932	2,6611
57,0 (PS)	-5,308	0,423	270,834	3,713	1,840	0,000	0,000	1,872	2,6943
58,0 (PS)	-5,582	0,431	270,834	3,673	1,861	0,000	0,000	1,812	2,7265
59,0 (PS)	-5,871	0,440	270,834	3,631	1,881	0,000	0,000	1,750	2,7576
60,0 (PS)	-6,178	0,449	270,834	3,587	1,900	0,000	0,000	1,687	2,7875



ES-TRIN Art. 27.02 non-secured containers - 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	28,522 m	\geq	1,000 m	Complies
Combined heeling moment	0,9 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	120,820 t*m			
Required freeboard	2,688 m	\geq	0,000 m	Complies
Weight	120,820 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers 70 % full ALU

2020.056_001 IW-NET Europa 2b Barge

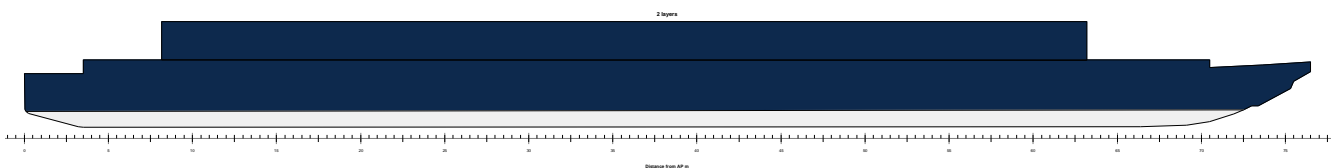
Designer

Created by Bernhard Bieringer

Comment

Filename 2020_056_001_Europa2b barge.fbm

Design length	76,500 m	Midship location	38,250 m
Length over all	76,500 m	Water density	1,0000
Design beam	11,858 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,500 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,970 m
Draft aft pp	0,948 m	GG'	0,000 m
Mean moulded draft	0,988 m	VCG'	2,970 m
Draft forward pp	1,028 m	Max VCG'	10,430 m
Trim	0,080 m	GM solid	9,244 m
LCF	36,034 m	G'M liquid	9,244 m
LCB	36,254 m	Immersion rate	8,215 tonne/cm
KM	12,214 m	MCT	45,854 t*m

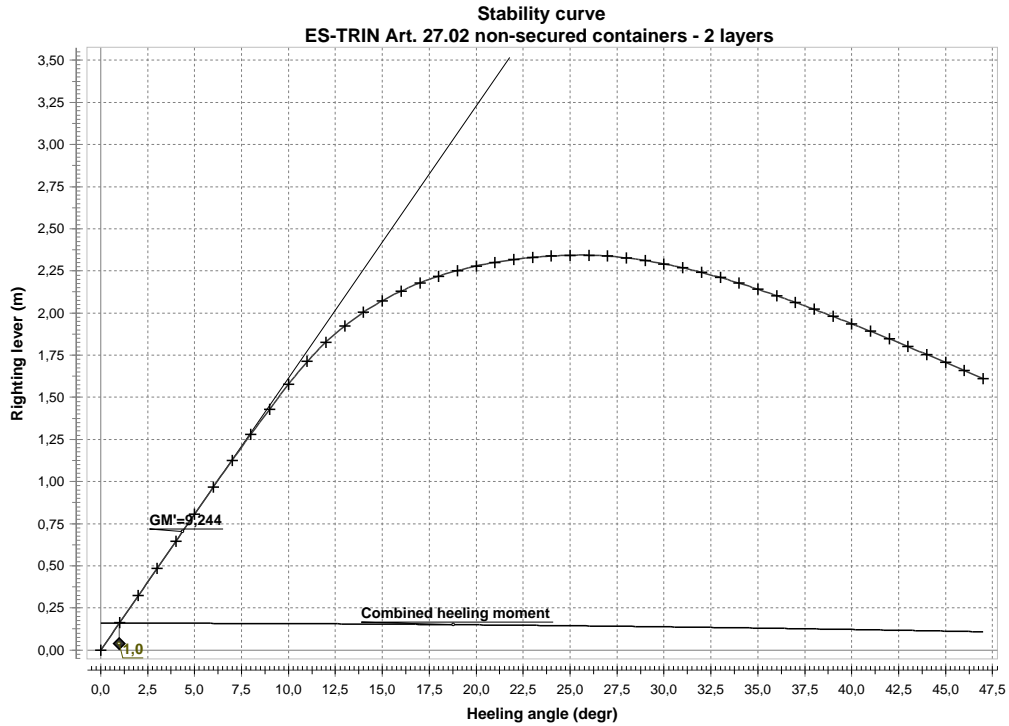
Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers 70 % full			606,480	35,690	0,000 (CL)	3,400	0,000
Lightship			153,234	38,473	0,000 (CL)	1,269	
Deadweight			606,480	35,690	0,000 (CL)	3,400	0,000
Displacement			759,714	36,251	0,000 (CL)	2,970	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	0,988	0,080	759,713	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	0,988	0,079	759,708	0,213	0,052	0,000	0,000	0,161	0,0014
2,0 (PS)	0,988	0,079	759,708	0,426	0,104	0,000	0,000	0,323	0,0056
3,0 (PS)	0,987	0,078	759,717	0,639	0,155	0,000	0,000	0,484	0,0127
4,0 (PS)	0,987	0,077	759,713	0,852	0,207	0,000	0,000	0,645	0,0225
5,0 (PS)	0,986	0,076	759,714	1,065	0,259	0,000	0,000	0,806	0,0352
6,0 (PS)	0,984	0,074	759,714	1,278	0,310	0,000	0,000	0,968	0,0507
7,0 (PS)	0,982	0,072	759,710	1,488	0,362	0,000	0,000	1,126	0,0690
8,0 (PS)	0,979	0,070	759,714	1,693	0,413	0,000	0,000	1,280	0,0900
9,0 (PS)	0,975	0,068	759,713	1,894	0,465	0,000	0,000	1,430	0,1136
10,0 (PS)	0,971	0,066	759,711	2,092	0,516	0,000	0,000	1,576	0,1398
11,0 (PS)	0,964	0,064	759,713	2,279	0,567	0,000	0,000	1,712	0,1686
12,0 (PS)	0,952	0,063	759,713	2,445	0,618	0,000	0,000	1,827	0,1995
13,0 (PS)	0,937	0,062	759,711	2,592	0,668	0,000	0,000	1,924	0,2322
14,0 (PS)	0,918	0,060	759,707	2,723	0,719	0,000	0,000	2,005	0,2665
15,0 (PS)	0,895	0,058	759,712	2,842	0,769	0,000	0,000	2,073	0,3021
16,0 (PS)	0,870	0,056	759,711	2,949	0,819	0,000	0,000	2,130	0,3388
17,0 (PS)	0,841	0,054	759,711	3,047	0,868	0,000	0,000	2,179	0,3765
18,0 (PS)	0,809	0,051	759,711	3,137	0,918	0,000	0,000	2,219	0,4148
19,0 (PS)	0,775	0,049	759,711	3,219	0,967	0,000	0,000	2,252	0,4539
20,0 (PS)	0,738	0,046	759,712	3,295	1,016	0,000	0,000	2,279	0,4934
21,0 (PS)	0,699	0,044	759,707	3,365	1,064	0,000	0,000	2,301	0,5334
22,0 (PS)	0,657	0,041	759,710	3,430	1,113	0,000	0,000	2,317	0,5737
23,0 (PS)	0,612	0,038	759,712	3,490	1,161	0,000	0,000	2,330	0,6143
24,0 (PS)	0,565	0,034	759,708	3,546	1,208	0,000	0,000	2,338	0,6550
25,0 (PS)	0,516	0,031	759,712	3,598	1,255	0,000	0,000	2,343	0,6959
26,0 (PS)	0,464	0,028	759,713	3,645	1,302	0,000	0,000	2,343	0,7368
27,0 (PS)	0,412	0,023	759,713	3,686	1,348	0,000	0,000	2,338	0,7776
28,0 (PS)	0,358	0,018	759,713	3,721	1,394	0,000	0,000	2,327	0,8183
29,0 (PS)	0,303	0,011	759,713	3,751	1,440	0,000	0,000	2,311	0,8588
30,0 (PS)	0,247	0,003	759,713	3,777	1,485	0,000	0,000	2,292	0,8990
31,0 (PS)	0,190	-0,005	759,707	3,798	1,530	0,000	0,000	2,268	0,9388
32,0 (PS)	0,131	-0,014	759,707	3,815	1,574	0,000	0,000	2,241	0,9781
33,0 (PS)	0,071	-0,024	759,713	3,828	1,618	0,000	0,000	2,211	1,0170
34,0 (PS)	0,009	-0,034	759,713	3,838	1,661	0,000	0,000	2,177	1,0553
35,0 (PS)	-0,054	-0,046	759,713	3,845	1,704	0,000	0,000	2,141	1,0930
36,0 (PS)	-0,119	-0,057	759,713	3,849	1,746	0,000	0,000	2,103	1,1300
37,0 (PS)	-0,186	-0,068	759,708	3,851	1,787	0,000	0,000	2,063	1,1664
38,0 (PS)	-0,255	-0,080	759,710	3,851	1,829	0,000	0,000	2,022	1,2020
39,0 (PS)	-0,328	-0,091	759,711	3,849	1,869	0,000	0,000	1,980	1,2369
40,0 (PS)	-0,403	-0,102	759,712	3,845	1,909	0,000	0,000	1,936	1,2711
41,0 (PS)	-0,482	-0,113	759,713	3,841	1,949	0,000	0,000	1,892	1,3045
42,0 (PS)	-0,564	-0,124	759,714	3,834	1,987	0,000	0,000	1,847	1,3371
43,0 (PS)	-0,650	-0,135	759,711	3,826	2,026	0,000	0,000	1,801	1,3690
44,0 (PS)	-0,739	-0,146	759,713	3,817	2,063	0,000	0,000	1,754	1,4000
45,0 (PS)	-0,833	-0,158	759,714	3,807	2,100	0,000	0,000	1,707	1,4302
46,0 (PS)	-0,931	-0,169	759,710	3,795	2,137	0,000	0,000	1,659	1,4596
47,0 (PS)	-1,033	-0,181	759,714	3,782	2,172	0,000	0,000	1,610	1,4881



ES-TRIN Art. 27.02 non-secured containers - 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	9,244 m	>=	1,000 m	Complies
Combined heeling moment	1,0 degr	<=	5,0 degr	Complies
Calculated heeling moment (upright)	120,820 t*m			
Required freeboard	2,085 m	>=	0,000 m	Complies
Weight	120,820 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers full ALU

2020.056_001 IW-NET Europa 2b Barge

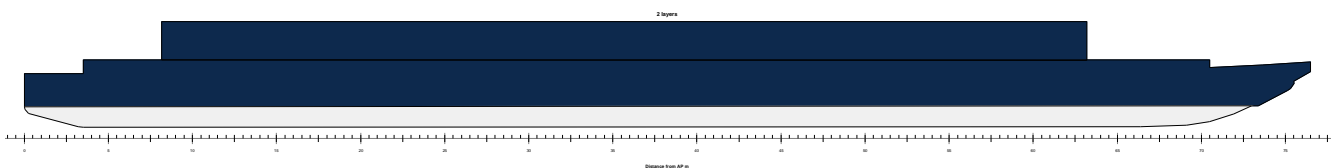
Designer

Created by Bernhard Bieringer

Comment

Filename 2020_056_001_Europa2b barge.fbm

Design length	76,500 m	Midship location	38,250 m
Length over all	76,500 m	Water density	1,0000
Design beam	11,858 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,500 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	3,063 m
Draft aft pp	1,212 m	GG'	0,000 m
Mean moulded draft	1,242 m	VCG'	3,063 m
Draft forward pp	1,271 m	Max VCG'	8,537 m
Trim	0,060 m	GM solid	6,859 m
LCF	36,243 m	G'M liquid	6,859 m
LCB	36,131 m	Immersion rate	8,296 tonne/cm
KM	9,922 m	MCT	47,158 t*m

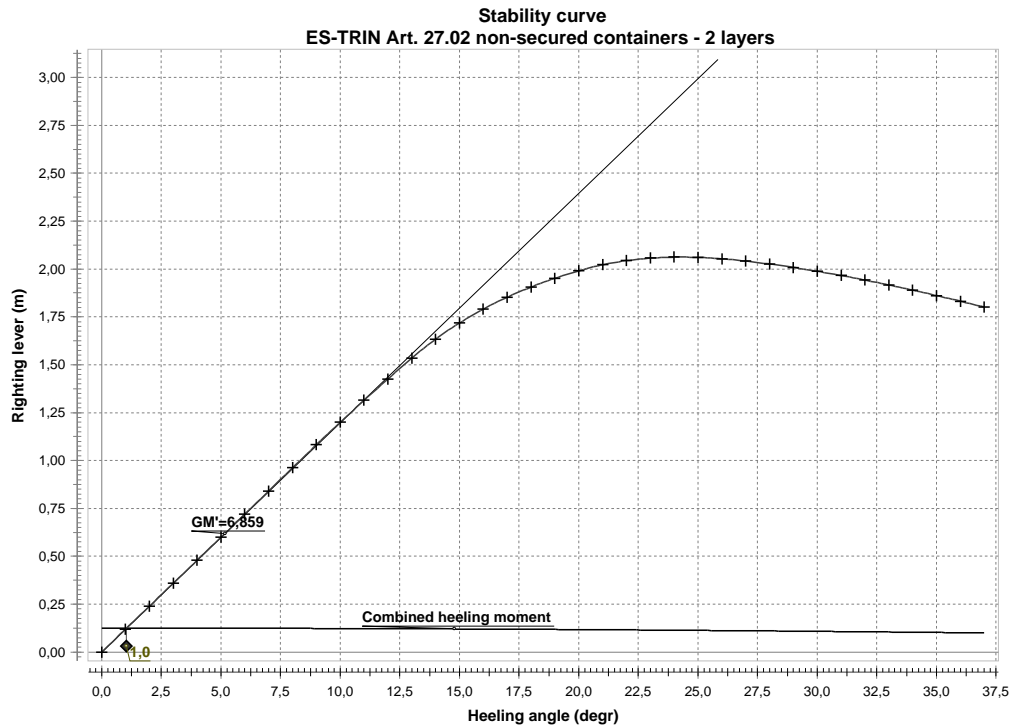
Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers full			816,000	35,690	0,000 (CL)	3,400	0,000
Lightship			153,234	38,473	0,000 (CL)	1,269	
Deadweight			816,000	35,690	0,000 (CL)	3,400	0,000
Displacement			969,234	36,130	0,000 (CL)	3,063	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,242	0,060	969,233	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,241	0,060	969,230	0,173	0,053	0,000	0,000	0,120	0,0010
2,0 (PS)	1,241	0,059	969,225	0,346	0,107	0,000	0,000	0,239	0,0042
3,0 (PS)	1,241	0,057	969,234	0,520	0,160	0,000	0,000	0,359	0,0094
4,0 (PS)	1,240	0,055	969,234	0,693	0,214	0,000	0,000	0,479	0,0167
5,0 (PS)	1,240	0,053	969,230	0,867	0,267	0,000	0,000	0,600	0,0261
6,0 (PS)	1,239	0,050	969,242	1,040	0,320	0,000	0,000	0,720	0,0377
7,0 (PS)	1,238	0,046	969,234	1,214	0,373	0,000	0,000	0,841	0,0513
8,0 (PS)	1,236	0,043	969,234	1,388	0,426	0,000	0,000	0,962	0,0670
9,0 (PS)	1,235	0,039	969,234	1,561	0,479	0,000	0,000	1,082	0,0848
10,0 (PS)	1,232	0,035	969,234	1,732	0,532	0,000	0,000	1,200	0,1048
11,0 (PS)	1,228	0,030	969,234	1,899	0,584	0,000	0,000	1,314	0,1267
12,0 (PS)	1,224	0,026	969,234	2,063	0,637	0,000	0,000	1,426	0,1506
13,0 (PS)	1,218	0,021	969,226	2,224	0,689	0,000	0,000	1,535	0,1765
14,0 (PS)	1,210	0,016	969,230	2,375	0,741	0,000	0,000	1,634	0,2041
15,0 (PS)	1,198	0,011	969,233	2,511	0,793	0,000	0,000	1,718	0,2334
16,0 (PS)	1,182	0,006	969,232	2,635	0,844	0,000	0,000	1,790	0,2640
17,0 (PS)	1,163	0,001	969,230	2,748	0,896	0,000	0,000	1,853	0,2958
18,0 (PS)	1,142	-0,004	969,230	2,852	0,947	0,000	0,000	1,906	0,3287
19,0 (PS)	1,117	-0,010	969,230	2,949	0,997	0,000	0,000	1,952	0,3623
20,0 (PS)	1,089	-0,015	969,232	3,038	1,048	0,000	0,000	1,991	0,3967
21,0 (PS)	1,060	-0,022	969,232	3,120	1,098	0,000	0,000	2,022	0,4318
22,0 (PS)	1,029	-0,030	969,232	3,191	1,147	0,000	0,000	2,044	0,4673
23,0 (PS)	0,998	-0,039	969,233	3,253	1,197	0,000	0,000	2,057	0,5031
24,0 (PS)	0,966	-0,050	969,233	3,308	1,246	0,000	0,000	2,062	0,5390
25,0 (PS)	0,933	-0,062	969,233	3,355	1,295	0,000	0,000	2,061	0,5750
26,0 (PS)	0,900	-0,076	969,233	3,396	1,343	0,000	0,000	2,053	0,6109
27,0 (PS)	0,866	-0,090	969,233	3,432	1,391	0,000	0,000	2,041	0,6466
28,0 (PS)	0,830	-0,103	969,225	3,464	1,438	0,000	0,000	2,026	0,6821
29,0 (PS)	0,793	-0,116	969,228	3,493	1,485	0,000	0,000	2,008	0,7173
30,0 (PS)	0,754	-0,129	969,231	3,519	1,532	0,000	0,000	1,988	0,7522
31,0 (PS)	0,713	-0,142	969,232	3,544	1,578	0,000	0,000	1,966	0,7867
32,0 (PS)	0,669	-0,155	969,233	3,565	1,623	0,000	0,000	1,942	0,8208
33,0 (PS)	0,624	-0,168	969,228	3,585	1,668	0,000	0,000	1,917	0,8545
34,0 (PS)	0,576	-0,181	969,232	3,603	1,713	0,000	0,000	1,890	0,8877
35,0 (PS)	0,526	-0,194	969,233	3,618	1,757	0,000	0,000	1,861	0,9205
36,0 (PS)	0,474	-0,206	969,229	3,632	1,800	0,000	0,000	1,832	0,9527
37,0 (PS)	0,419	-0,219	969,234	3,644	1,843	0,000	0,000	1,801	0,9844



ES-TRIN Art. 27.02 non-secured containers - 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	6,859 m	\geq	1,000 m	Complies
Combined heeling moment	1,0 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	120,820 t*m			
Required freeboard	1,833 m	\geq	0,000 m	Complies
Weight	120,820 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers empty 3 layers ALU

2020.056_001 IW-NET Europa 2b Barge

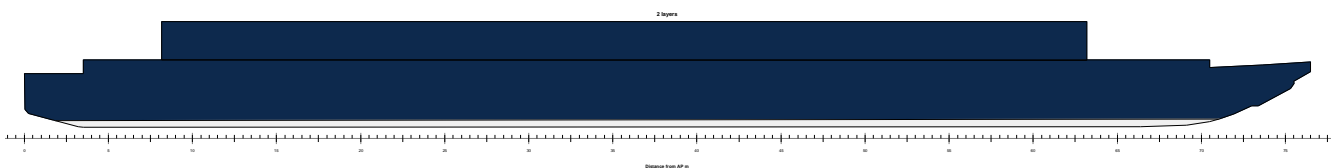
Designer

Created by Bernhard Bieringer

Comment

Filename 2020_056_001_Europa2b barge.fbm

Design length	76,500 m	Midship location	38,250 m
Length over all	76,500 m	Water density	1,0000
Design beam	11,858 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,500 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	3,115 m
Draft aft pp	0,391 m	GG'	0,000 m
Mean moulded draft	0,448 m	VCG'	3,115 m
Draft forward pp	0,506 m	Max VCG'	18,775 m
Trim	0,115 m	GM solid	23,168 m
LCF	36,119 m	G'M liquid	23,168 m
LCB	37,008 m	Immersion rate	7,838 tonne/cm
KM	26,283 m	MCT	39,938 t*m

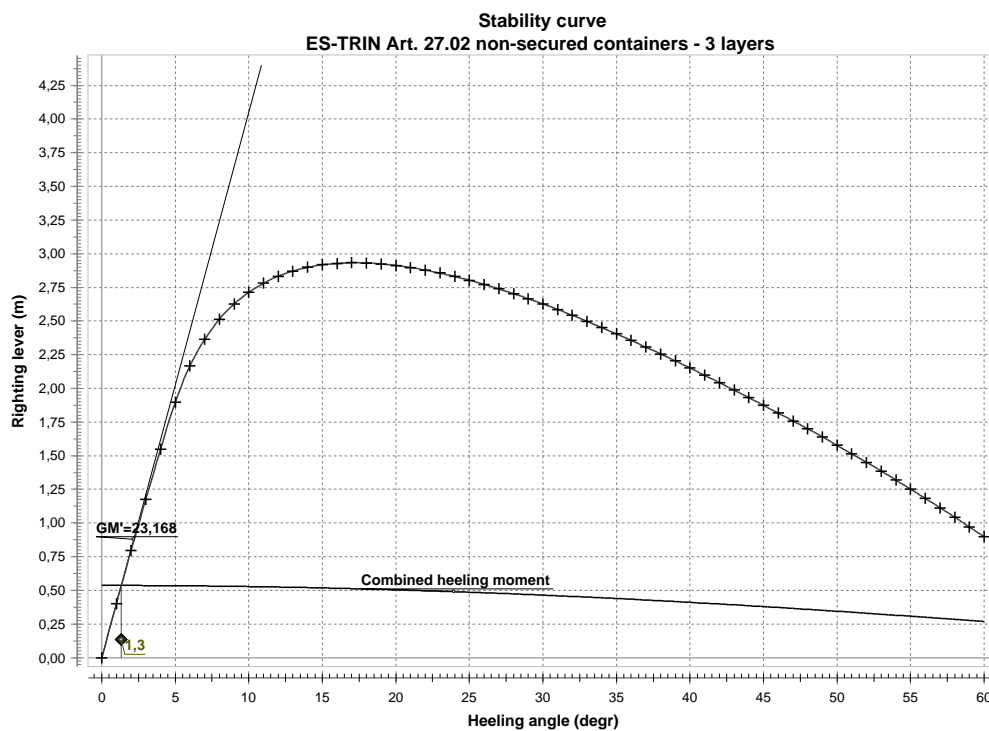
Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
Containers							
Containers empty			117,600	35,690	0,000 (CL)	3,400	0,000
3rd layer empty			53,800	35,690	0,000 (CL)	7,748	0,000
Totals for Containers			171,400	35,690	0,000 (CL)	4,765	0,000
Lightship			153,234	38,473	0,000 (CL)	1,269	
Deadweight			171,400	35,690	0,000 (CL)	4,765	0,000
Displacement			324,634	37,004	0,000 (CL)	3,115	0,000

Righting levers

Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	0,448	0,115	324,633	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	0,448	0,116	324,634	0,456	0,054	0,000	0,000	0,402	0,0035
2,0 (PS)	0,447	0,116	324,633	0,903	0,109	0,000	0,000	0,795	0,0140
3,0 (PS)	0,444	0,117	324,634	1,339	0,163	0,000	0,000	1,176	0,0312
4,0 (PS)	0,440	0,118	324,632	1,765	0,217	0,000	0,000	1,548	0,0550
5,0 (PS)	0,435	0,122	324,631	2,169	0,271	0,000	0,000	1,897	0,0851
6,0 (PS)	0,422	0,132	324,633	2,492	0,326	0,000	0,000	2,167	0,1207
7,0 (PS)	0,402	0,140	324,632	2,744	0,380	0,000	0,000	2,364	0,1603
8,0 (PS)	0,375	0,149	324,632	2,946	0,433	0,000	0,000	2,512	0,2029
9,0 (PS)	0,344	0,156	324,632	3,113	0,487	0,000	0,000	2,626	0,2478
10,0 (PS)	0,309	0,164	324,633	3,254	0,541	0,000	0,000	2,714	0,2945
11,0 (PS)	0,270	0,171	324,632	3,375	0,594	0,000	0,000	2,781	0,3424
12,0 (PS)	0,228	0,178	324,633	3,480	0,648	0,000	0,000	2,832	0,3914
13,0 (PS)	0,183	0,184	324,632	3,572	0,701	0,000	0,000	2,871	0,4412
14,0 (PS)	0,135	0,190	324,631	3,652	0,754	0,000	0,000	2,899	0,4916
15,0 (PS)	0,084	0,196	324,631	3,723	0,806	0,000	0,000	2,917	0,5424
16,0 (PS)	0,031	0,202	324,631	3,787	0,859	0,000	0,000	2,928	0,5934
17,0 (PS)	-0,024	0,207	324,631	3,843	0,911	0,000	0,000	2,933	0,6445
18,0 (PS)	-0,082	0,212	324,631	3,893	0,962	0,000	0,000	2,931	0,6957
19,0 (PS)	-0,142	0,217	324,632	3,938	1,014	0,000	0,000	2,924	0,7468
20,0 (PS)	-0,204	0,221	324,632	3,978	1,065	0,000	0,000	2,913	0,7978
21,0 (PS)	-0,268	0,226	324,631	4,014	1,116	0,000	0,000	2,898	0,8485
22,0 (PS)	-0,335	0,230	324,632	4,046	1,167	0,000	0,000	2,879	0,8989
23,0 (PS)	-0,403	0,234	324,633	4,073	1,217	0,000	0,000	2,856	0,9489
24,0 (PS)	-0,474	0,238	324,631	4,098	1,267	0,000	0,000	2,831	0,9986
25,0 (PS)	-0,548	0,241	324,632	4,119	1,316	0,000	0,000	2,803	1,0477
26,0 (PS)	-0,623	0,245	324,633	4,137	1,365	0,000	0,000	2,772	1,0964
27,0 (PS)	-0,701	0,249	324,631	4,153	1,414	0,000	0,000	2,739	1,1445
28,0 (PS)	-0,781	0,252	324,632	4,166	1,462	0,000	0,000	2,704	1,1920
29,0 (PS)	-0,864	0,255	324,633	4,176	1,510	0,000	0,000	2,666	1,2389
30,0 (PS)	-0,950	0,258	324,631	4,184	1,557	0,000	0,000	2,627	1,2850
31,0 (PS)	-1,038	0,261	324,632	4,190	1,604	0,000	0,000	2,586	1,3305
32,0 (PS)	-1,129	0,264	324,633	4,193	1,651	0,000	0,000	2,543	1,3753
33,0 (PS)	-1,223	0,267	324,633	4,195	1,696	0,000	0,000	2,498	1,4193
34,0 (PS)	-1,320	0,270	324,632	4,194	1,742	0,000	0,000	2,452	1,4625
35,0 (PS)	-1,420	0,273	324,632	4,192	1,787	0,000	0,000	2,405	1,5049
36,0 (PS)	-1,523	0,275	324,633	4,187	1,831	0,000	0,000	2,357	1,5464
37,0 (PS)	-1,631	0,278	324,631	4,181	1,874	0,000	0,000	2,307	1,5871
38,0 (PS)	-1,741	0,280	324,632	4,174	1,918	0,000	0,000	2,256	1,6269
39,0 (PS)	-1,856	0,283	324,633	4,164	1,960	0,000	0,000	2,204	1,6659
40,0 (PS)	-1,975	0,285	324,633	4,153	2,002	0,000	0,000	2,151	1,7039
41,0 (PS)	-2,099	0,287	324,631	4,141	2,043	0,000	0,000	2,097	1,7410
42,0 (PS)	-2,227	0,289	324,632	4,127	2,084	0,000	0,000	2,043	1,7771
43,0 (PS)	-2,360	0,291	324,633	4,111	2,124	0,000	0,000	1,987	1,8122
44,0 (PS)	-2,499	0,294	324,634	4,095	2,164	0,000	0,000	1,931	1,8464
45,0 (PS)	-2,643	0,296	324,632	4,077	2,202	0,000	0,000	1,874	1,8796
46,0 (PS)	-2,793	0,298	324,633	4,057	2,241	0,000	0,000	1,817	1,9119
47,0 (PS)	-2,950	0,300	324,634	4,036	2,278	0,000	0,000	1,759	1,9431
48,0 (PS)	-3,113	0,304	324,631	4,014	2,315	0,000	0,000	1,700	1,9732
49,0 (PS)	-3,283	0,308	324,633	3,990	2,351	0,000	0,000	1,639	2,0024
50,0 (PS)	-3,461	0,313	324,633	3,964	2,386	0,000	0,000	1,578	2,0305

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
51,0 (PS)	-3,646	0,318	324,633	3,936	2,421	0,000	0,000	1,515	2,0574
52,0 (PS)	-3,839	0,322	324,633	3,906	2,454	0,000	0,000	1,451	2,0833
53,0 (PS)	-4,041	0,327	324,634	3,873	2,488	0,000	0,000	1,386	2,1081
54,0 (PS)	-4,253	0,331	324,634	3,839	2,520	0,000	0,000	1,319	2,1317
55,0 (PS)	-4,475	0,335	324,634	3,803	2,551	0,000	0,000	1,252	2,1541
56,0 (PS)	-4,709	0,339	324,634	3,765	2,582	0,000	0,000	1,183	2,1754
57,0 (PS)	-4,955	0,343	324,634	3,725	2,612	0,000	0,000	1,113	2,1954
58,0 (PS)	-5,215	0,347	324,634	3,684	2,641	0,000	0,000	1,042	2,2142
59,0 (PS)	-5,490	0,351	324,631	3,641	2,670	0,000	0,000	0,971	2,2318
60,0 (PS)	-5,781	0,355	324,631	3,596	2,697	0,000	0,000	0,898	2,2481



ES-TRIN Art. 27.02 non-secured containers - 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	23,168 m	\geq	1,000 m	Complies
Combined heeling moment	1,3 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	174,190 t*m			
Required freeboard	2,577 m	\geq	0,000 m	Complies
Deck immersion angle	45,3 degr			
Max allowed ratio static angle/deck immersion angle	0,030	\leq	1,000	Complies
Weight	174,190 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers 70 % full 3 layers ALU

2020.056_001 IW-NET Europa 2b Barge

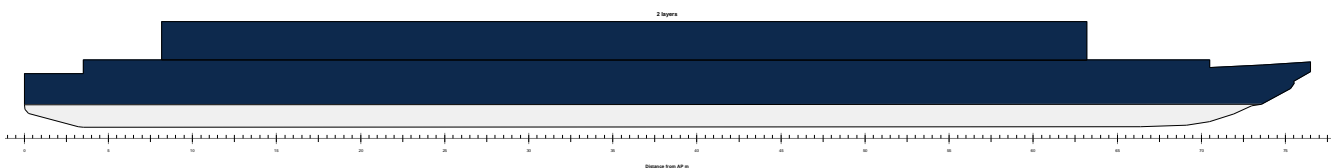
Designer

Created by Bernhard Bieringer

Comment

Filename 2020_056_001_Europa2b barge.fbm

Design length	76,500 m	Midship location	38,250 m
Length over all	76,500 m	Water density	1,0000
Design beam	11,858 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,500 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	4,333 m
Draft aft pp	1,330 m	GG'	0,000 m
Mean moulded draft	1,354 m	VCG'	4,333 m
Draft forward pp	1,378 m	Max VCG'	7,371 m
Trim	0,048 m	GM solid	4,860 m
LCF	36,357 m	G'M liquid	4,860 m
LCB	36,093 m	Immersion rate	8,323 tonne/cm
KM	9,193 m	MCT	47,426 t*m

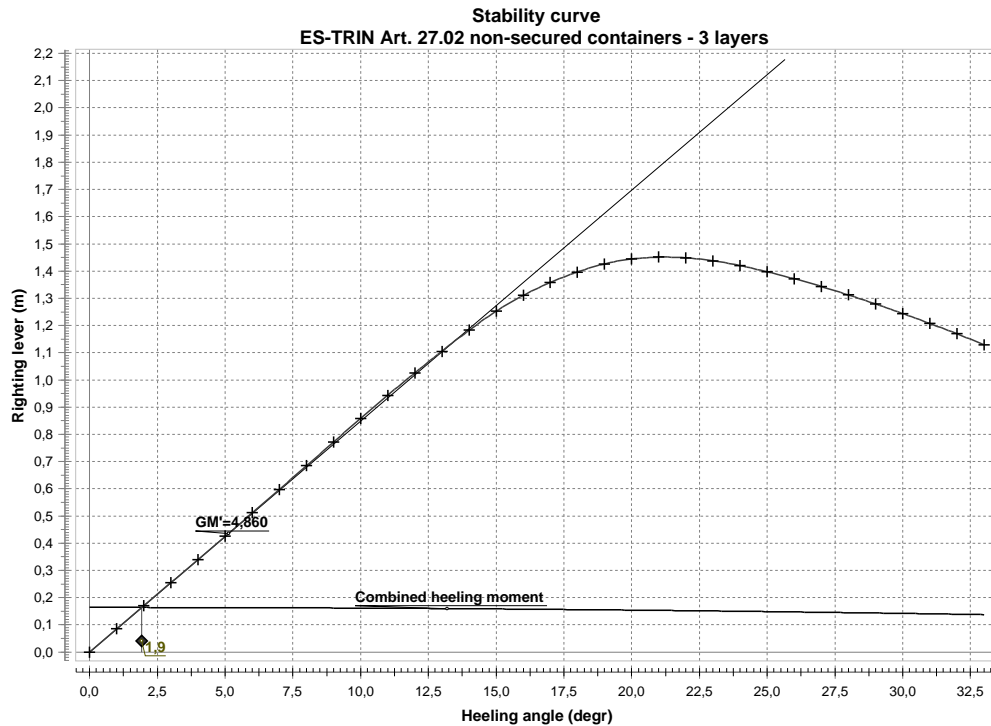
Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers 70 % full			606,480	35,690	0,000 (CL)	3,400	0,000
3rd layer 70 % full			303,240	35,690	0,000 (CL)	7,748	0,000
Totals for Containers			909,720	35,690	0,000 (CL)	4,849	0,000
Lightship			153,234	38,473	0,000 (CL)	1,269	
Deadweight			909,720	35,690	0,000 (CL)	4,849	0,000
Displacement			1062,954	36,091	0,000 (CL)	4,333	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,354	0,048	1062,954	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,354	0,048	1062,950	0,160	0,076	0,000	0,000	0,085	0,0007
2,0 (PS)	1,354	0,047	1062,945	0,321	0,151	0,000	0,000	0,170	0,0030
3,0 (PS)	1,353	0,045	1062,954	0,482	0,227	0,000	0,000	0,255	0,0067
4,0 (PS)	1,353	0,043	1062,954	0,642	0,302	0,000	0,000	0,340	0,0119
5,0 (PS)	1,352	0,040	1062,954	0,803	0,378	0,000	0,000	0,426	0,0185
6,0 (PS)	1,352	0,037	1062,954	0,964	0,453	0,000	0,000	0,511	0,0267
7,0 (PS)	1,351	0,033	1062,954	1,126	0,528	0,000	0,000	0,598	0,0364
8,0 (PS)	1,349	0,029	1062,957	1,287	0,603	0,000	0,000	0,684	0,0476
9,0 (PS)	1,348	0,025	1062,954	1,449	0,678	0,000	0,000	0,772	0,0603
10,0 (PS)	1,346	0,020	1062,954	1,611	0,752	0,000	0,000	0,859	0,0745
11,0 (PS)	1,344	0,015	1062,954	1,770	0,827	0,000	0,000	0,943	0,0902
12,0 (PS)	1,340	0,010	1062,953	1,926	0,901	0,000	0,000	1,025	0,1074
13,0 (PS)	1,336	0,004	1062,953	2,080	0,975	0,000	0,000	1,105	0,1260
14,0 (PS)	1,330	-0,002	1062,953	2,231	1,048	0,000	0,000	1,183	0,1460
15,0 (PS)	1,322	-0,008	1062,954	2,374	1,122	0,000	0,000	1,253	0,1673
16,0 (PS)	1,311	-0,014	1062,952	2,505	1,194	0,000	0,000	1,311	0,1897
17,0 (PS)	1,296	-0,021	1062,949	2,625	1,267	0,000	0,000	1,358	0,2130
18,0 (PS)	1,278	-0,027	1062,947	2,735	1,339	0,000	0,000	1,396	0,2370
19,0 (PS)	1,258	-0,035	1062,946	2,837	1,411	0,000	0,000	1,426	0,2617
20,0 (PS)	1,236	-0,044	1062,953	2,926	1,482	0,000	0,000	1,444	0,2867
21,0 (PS)	1,213	-0,055	1062,953	3,004	1,553	0,000	0,000	1,451	0,3120
22,0 (PS)	1,190	-0,067	1062,953	3,072	1,623	0,000	0,000	1,448	0,3373
23,0 (PS)	1,167	-0,081	1062,953	3,131	1,693	0,000	0,000	1,438	0,3625
24,0 (PS)	1,143	-0,096	1062,953	3,183	1,762	0,000	0,000	1,420	0,3875
25,0 (PS)	1,118	-0,111	1062,953	3,229	1,831	0,000	0,000	1,397	0,4121
26,0 (PS)	1,091	-0,125	1062,947	3,271	1,900	0,000	0,000	1,372	0,4362
27,0 (PS)	1,062	-0,140	1062,950	3,310	1,967	0,000	0,000	1,343	0,4599
28,0 (PS)	1,032	-0,154	1062,952	3,346	2,034	0,000	0,000	1,312	0,4831
29,0 (PS)	0,999	-0,168	1062,953	3,380	2,101	0,000	0,000	1,279	0,5057
30,0 (PS)	0,965	-0,182	1062,948	3,411	2,167	0,000	0,000	1,244	0,5277
31,0 (PS)	0,928	-0,196	1062,952	3,439	2,232	0,000	0,000	1,208	0,5491
32,0 (PS)	0,889	-0,209	1062,954	3,466	2,296	0,000	0,000	1,169	0,5699
33,0 (PS)	0,849	-0,223	1062,952	3,490	2,360	0,000	0,000	1,130	0,5899



ES-TRIN Art. 27.02 non-secured containers - 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	4,860 m	\geq	1,000 m	Complies
Combined heeling moment	1,9 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	174,190 t*m			
Required freeboard	1,636 m	\geq	0,000 m	Complies
Deck immersion angle	18,5 degr			
Max allowed ratio static angle/deck immersion angle	0,104	\leq	1,000	Complies
Weight	174,190 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers full 3 layers ALU

2020.056_001 IW-NET Europa 2b Barge

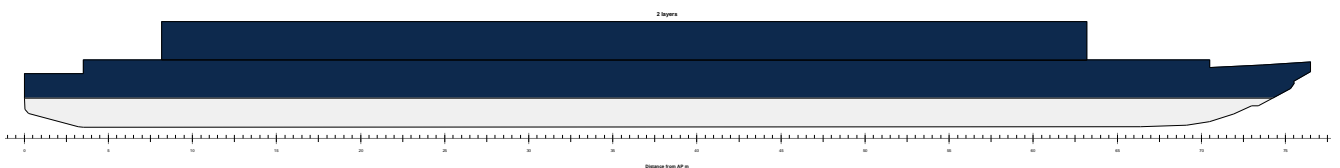
Designer

Created by Bernhard Bieringer

Comment

Filename 2020_056_001_Europa2b barge.fbm

Design length	76,500 m	Midship location	38,250 m
Length over all	76,500 m	Water density	1,0000
Design beam	11,858 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,500 m		



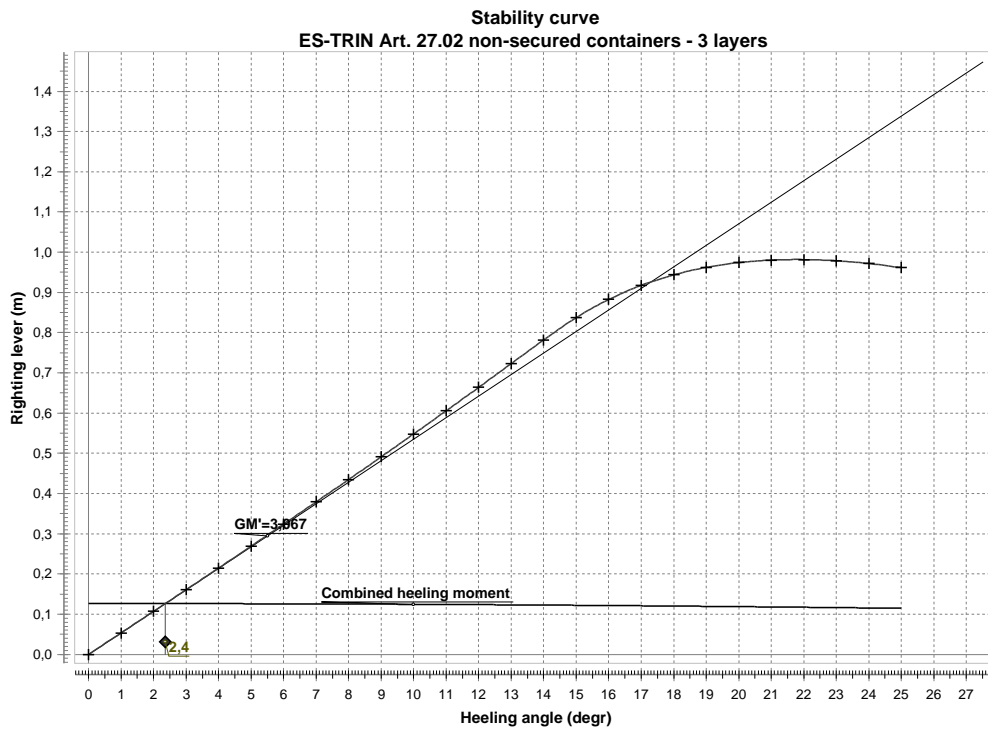
Hydrostatic particulars

List	0,0 (CL) degr	VCG	4,451 m
Draft aft pp	1,732 m	GG'	0,000 m
Mean moulded draft	1,729 m	VCG'	4,451 m
Draft forward pp	1,725 m	Max VCG'	6,117 m
Trim	-0,007 m	GM solid	3,067 m
LCF	36,705 m	G'M liquid	3,067 m
LCB	35,999 m	Immersion rate	8,403 tonne/cm
KM	7,518 m	MCT	48,676 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
Containers							
Containers full			816,000	35,690	0,000 (CL)	3,400	0,000
3rd layer full			408,000	35,690	0,000 (CL)	7,748	0,000
Totals for Containers			1224,000	35,690	0,000 (CL)	4,849	0,000
Lightship			153,234	38,473	0,000 (CL)	1,269	
Deadweight			1224,000	35,690	0,000 (CL)	4,849	0,000
Displacement			1377,234	36,000	0,000 (CL)	4,451	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,729	-0,007	1377,234	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,728	-0,007	1377,232	0,131	0,078	0,000	0,000	0,054	0,0005
2,0 (PS)	1,728	-0,008	1377,228	0,262	0,155	0,000	0,000	0,107	0,0019
3,0 (PS)	1,728	-0,010	1377,223	0,394	0,233	0,000	0,000	0,161	0,0042
4,0 (PS)	1,728	-0,012	1377,234	0,525	0,310	0,000	0,000	0,215	0,0075
5,0 (PS)	1,727	-0,015	1377,234	0,657	0,388	0,000	0,000	0,269	0,0117
6,0 (PS)	1,727	-0,018	1377,234	0,789	0,465	0,000	0,000	0,324	0,0169
7,0 (PS)	1,726	-0,022	1377,234	0,922	0,542	0,000	0,000	0,379	0,0230
8,0 (PS)	1,725	-0,026	1377,234	1,054	0,619	0,000	0,000	0,435	0,0301
9,0 (PS)	1,724	-0,032	1377,234	1,187	0,696	0,000	0,000	0,491	0,0382
10,0 (PS)	1,723	-0,037	1377,234	1,321	0,773	0,000	0,000	0,548	0,0473
11,0 (PS)	1,721	-0,043	1377,234	1,455	0,849	0,000	0,000	0,606	0,0573
12,0 (PS)	1,720	-0,050	1377,234	1,589	0,925	0,000	0,000	0,664	0,0684
13,0 (PS)	1,718	-0,057	1377,234	1,724	1,001	0,000	0,000	0,723	0,0805
14,0 (PS)	1,716	-0,065	1377,234	1,859	1,077	0,000	0,000	0,782	0,0937
15,0 (PS)	1,713	-0,074	1377,234	1,989	1,152	0,000	0,000	0,837	0,1078
16,0 (PS)	1,712	-0,087	1377,234	2,109	1,227	0,000	0,000	0,883	0,1228
17,0 (PS)	1,713	-0,102	1377,232	2,219	1,301	0,000	0,000	0,918	0,1386
18,0 (PS)	1,715	-0,120	1377,229	2,319	1,375	0,000	0,000	0,944	0,1548
19,0 (PS)	1,717	-0,138	1377,233	2,411	1,449	0,000	0,000	0,962	0,1715
20,0 (PS)	1,717	-0,156	1377,232	2,496	1,522	0,000	0,000	0,974	0,1884
21,0 (PS)	1,715	-0,175	1377,232	2,575	1,595	0,000	0,000	0,980	0,2054
22,0 (PS)	1,710	-0,193	1377,233	2,649	1,667	0,000	0,000	0,982	0,2226
23,0 (PS)	1,703	-0,210	1377,230	2,718	1,739	0,000	0,000	0,979	0,2397
24,0 (PS)	1,694	-0,228	1377,233	2,782	1,810	0,000	0,000	0,972	0,2567
25,0 (PS)	1,684	-0,245	1377,231	2,843	1,881	0,000	0,000	0,962	0,2736



ES-TRIN Art. 27.02 non-secured containers - 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	3,067 m	\geq	1,000 m	Complies
Combined heeling moment	2,4 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	174,190 t*m			
Required freeboard	1,231 m	\geq	0,000 m	Complies
Deck immersion angle	14,2 degr			
Max. allowed ratio static angle/deck immersion angle	0,166	\leq	1,000	Complies
Weight	174,190 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Summary of intact stability

Description	Density	Draft	Draft BoK	Trim	List	Displ.	VCG'	Max VCG'	GM'	Complies
		m	m	m	degr	t	m	m	m	
Containers empty	1,0000	0,544	0,544	0,151	0,0 (CL)	480,001	1,852	17,656	19,754	Complies
Containers 70 % full	1,0000	1,175	1,175	0,124	0,0 (CL)	1091,101	2,719	8,932	7,662	Complies
Containers full	1,0000	1,440	1,440	0,104	0,0 (CL)	1353,001	2,851	7,539	5,835	Complies
Containers empty 3 layers	1,0000	0,621	0,621	0,147	0,0 (CL)	553,501	2,635	14,513	16,302	Complies
Containers 70 % full 3 layers	1,0000	1,558	1,558	0,092	0,0 (CL)	1470,151	4,016	6,595	4,118	Complies
Containers full 3 layers	1,0000	1,952	1,952	0,039	0,0 (CL)	1863,001	4,191	5,646	2,650	Complies
Containers empty ALU	1,0000	0,445	0,445	0,121	0,0 (CL)	386,923	2,041	20,837	24,398	Complies
Containers 70 % full ALU	1,0000	1,080	1,080	0,098	0,0 (CL)	998,023	2,873	9,613	8,329	Complies
Containers full ALU	1,0000	1,346	1,346	0,082	0,0 (CL)	1259,923	2,983	7,966	6,218	Complies
Containers empty 3 layers ALU	1,0000	0,523	0,523	0,118	0,0 (CL)	460,423	2,952	16,785	19,509	Complies
Containers 70 % full 3 layers ALU	1,0000	1,464	1,464	0,072	0,0 (CL)	1377,073	4,215	6,917	4,346	Complies
Containers full 3 layers ALU	1,0000	1,858	1,858	0,024	0,0 (CL)	1769,923	4,356	5,829	2,731	Complies

Components of deadweight

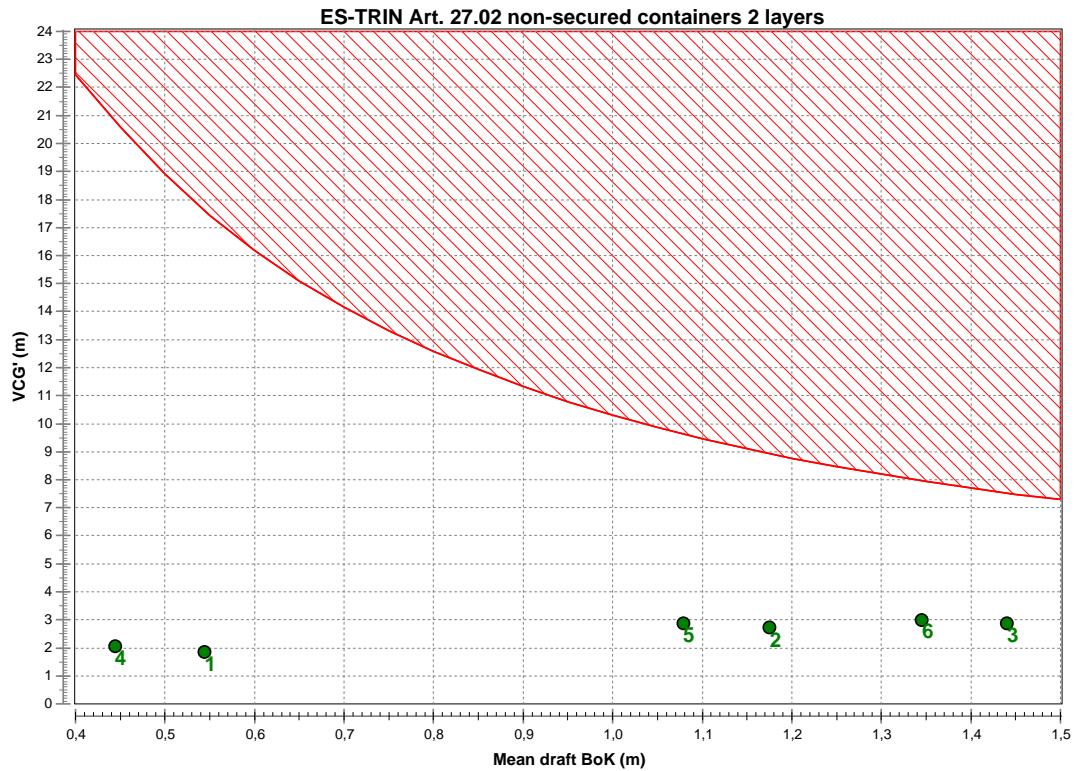
Loading condition	Deadweight	Containers t
Containers empty	147,000	147,000
Containers 70 % full	758,100	758,100
Containers full	1020,000	1020,000
Containers empty 3 layers	220,500	220,500
Containers 70 % full 3 layers	1137,150	1137,150
Containers full 3 layers	1530,000	1530,000
Containers empty ALU	147,000	147,000
Containers 70 % full ALU	758,100	758,100
Containers full ALU	1020,000	1020,000
Containers empty 3 layers ALU	220,500	220,500
Containers 70 % full 3 layers ALU	1137,150	1137,150
Containers full 3 layers ALU	1530,000	1530,000

Maximum VCG' envelope

Criteria : ES-TRIN Art. 27.02 non-secured containers 2 layers

Calculated for average trim : 0,113 m

Wind silhouette : 2 layers



Loading conditions:

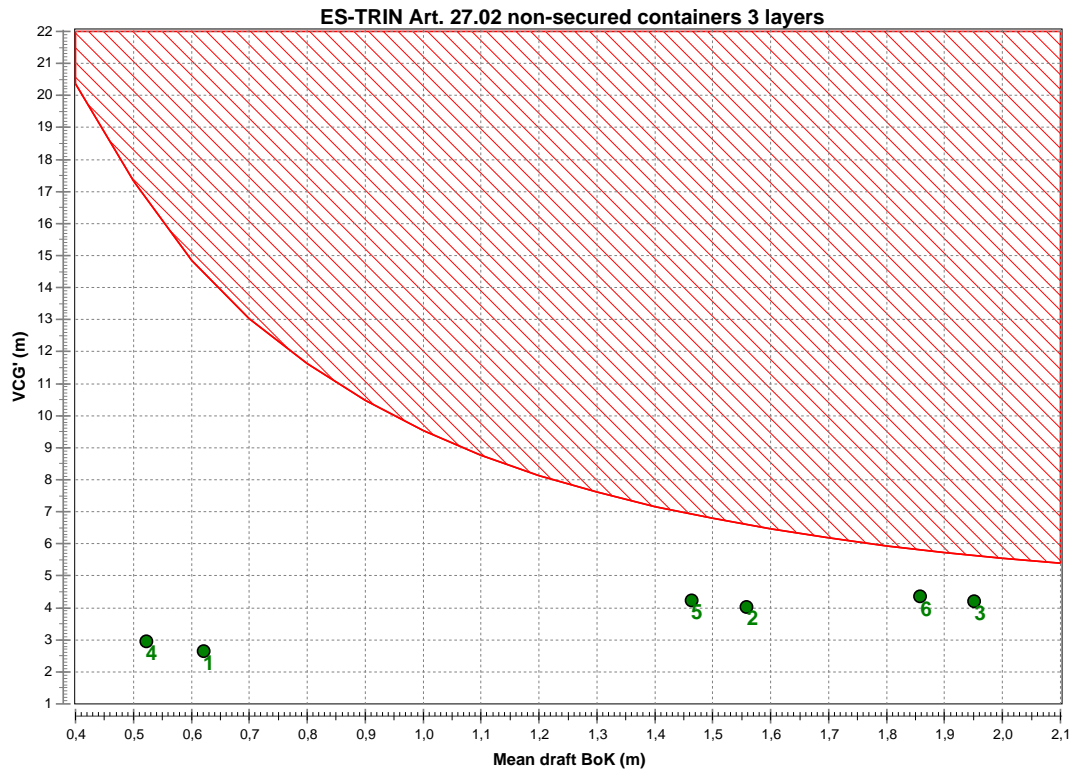
1. Containers empty
2. Containers 70 % full
3. Containers full
4. Containers empty ALU
5. Containers 70 % full ALU
6. Containers full ALU

Maximum VCG' envelope

Criteria : ES-TRIN Art. 27.02 non-secured containers 3 layers

Calculated for average trim : 0,082 m

Wind silhouette : 2 layers



Loading conditions:

1. Containers empty 3 layers
2. Containers 70 % full 3 layers
3. Containers full 3 layers
4. Containers empty 3 layers ALU
5. Containers 70 % full 3 layers ALU
6. Containers full 3 layers ALU

Containers empty

2020.056_002 IW-NET Europa 3b Barge

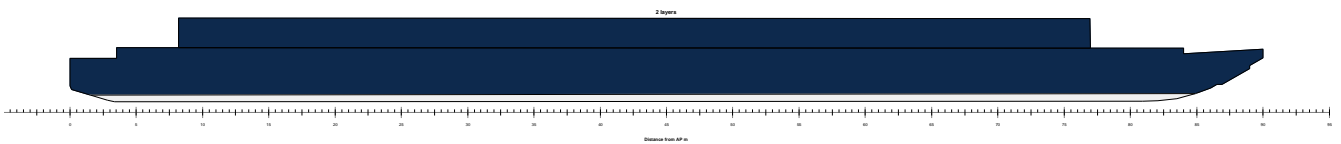
Designer

Created by Bernhard Bieringer

Comment

Filename 2020_056_002_Europa 3a barge.fbm

Design length	90,000 m	Midship location	45,000 m
Length over all	90,000 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,550 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	1,852 m
Draft aft pp	0,469 m	GG'	0,000 m
Mean moulded draft	0,544 m	VCG'	1,852 m
Draft forward pp	0,620 m	Max VCG'	17,656 m
Trim	0,151 m	GM solid	19,754 m
LCF	42,917 m	G'M liquid	19,754 m
LCB	44,263 m	Immersion rate	9,459 tonne/cm
KM	21,606 m	MCT	59,736 t*m

Description	Density	Filling	Weight	LCG	TCG	VCG	FSM
		%	t	m	m	m	t*m

Containers

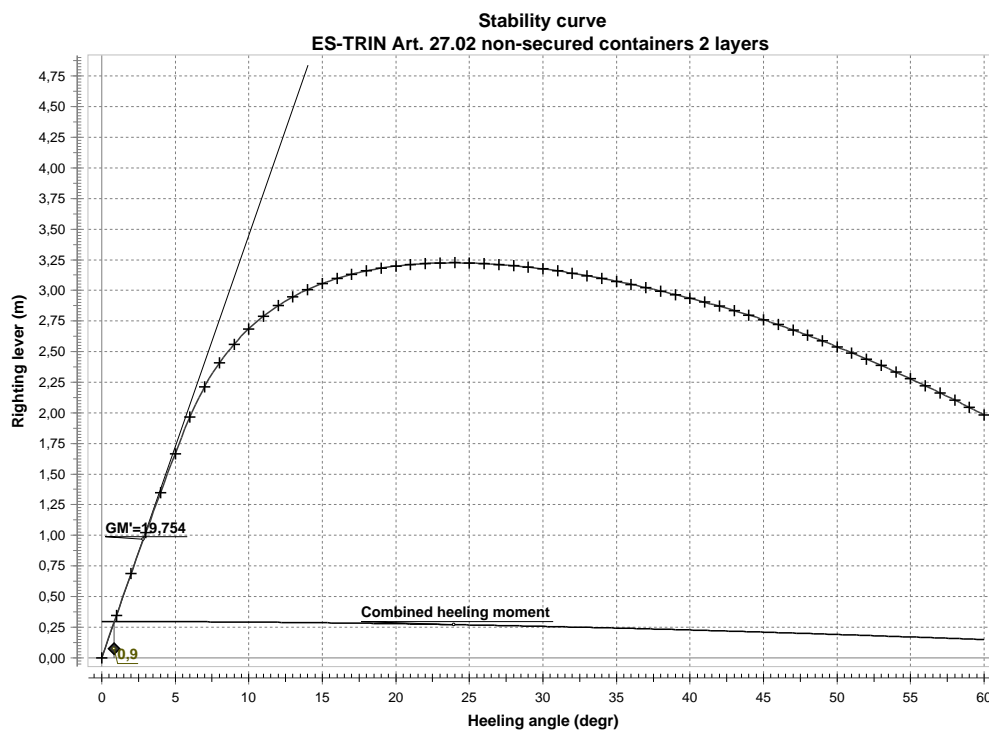
Containers empty			147,000	42,573	0,000 (CL)	3,400	0,000
Lightship			333,001	45,005	0,000 (CL)	1,169	
Deadweight			147,000	42,573	0,000 (CL)	3,400	0,000
Displacement			480,001	44,260	0,000 (CL)	1,852	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	0,544	0,151	480,000	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	0,544	0,151	480,000	0,377	0,032	0,000	0,000	0,345	0,0030
2,0 (PS)	0,543	0,152	479,999	0,752	0,065	0,000	0,000	0,687	0,0120
3,0 (PS)	0,542	0,153	480,001	1,119	0,097	0,000	0,000	1,022	0,0270
4,0 (PS)	0,539	0,154	480,000	1,478	0,129	0,000	0,000	1,348	0,0477
5,0 (PS)	0,535	0,156	479,998	1,828	0,161	0,000	0,000	1,667	0,0740
6,0 (PS)	0,530	0,161	479,999	2,161	0,194	0,000	0,000	1,967	0,1057
7,0 (PS)	0,518	0,172	479,997	2,440	0,226	0,000	0,000	2,214	0,1423
8,0 (PS)	0,500	0,182	479,997	2,664	0,258	0,000	0,000	2,407	0,1827
9,0 (PS)	0,477	0,191	479,998	2,851	0,290	0,000	0,000	2,561	0,2261
10,0 (PS)	0,449	0,200	479,999	3,008	0,322	0,000	0,000	2,686	0,2719
11,0 (PS)	0,417	0,208	479,997	3,143	0,353	0,000	0,000	2,789	0,3197
12,0 (PS)	0,381	0,216	479,999	3,260	0,385	0,000	0,000	2,875	0,3692
13,0 (PS)	0,343	0,223	479,999	3,363	0,417	0,000	0,000	2,947	0,4200
14,0 (PS)	0,301	0,230	479,998	3,454	0,448	0,000	0,000	3,006	0,4720
15,0 (PS)	0,257	0,237	479,998	3,536	0,479	0,000	0,000	3,056	0,5249
16,0 (PS)	0,209	0,244	479,998	3,608	0,511	0,000	0,000	3,097	0,5786
17,0 (PS)	0,160	0,250	479,999	3,673	0,542	0,000	0,000	3,132	0,6330
18,0 (PS)	0,108	0,256	479,999	3,732	0,572	0,000	0,000	3,159	0,6879
19,0 (PS)	0,053	0,261	479,998	3,784	0,603	0,000	0,000	3,181	0,7432
20,0 (PS)	-0,003	0,267	479,999	3,832	0,634	0,000	0,000	3,198	0,7989
21,0 (PS)	-0,062	0,272	480,000	3,874	0,664	0,000	0,000	3,211	0,8548
22,0 (PS)	-0,123	0,277	479,998	3,913	0,694	0,000	0,000	3,219	0,9110
23,0 (PS)	-0,187	0,282	479,999	3,948	0,724	0,000	0,000	3,224	0,9672
24,0 (PS)	-0,252	0,287	480,000	3,979	0,753	0,000	0,000	3,225	1,0235
25,0 (PS)	-0,320	0,292	479,997	4,006	0,783	0,000	0,000	3,223	1,0797
26,0 (PS)	-0,391	0,296	479,998	4,031	0,812	0,000	0,000	3,219	1,1360
27,0 (PS)	-0,463	0,300	479,999	4,052	0,841	0,000	0,000	3,211	1,1921
28,0 (PS)	-0,539	0,305	480,000	4,071	0,870	0,000	0,000	3,202	1,2481
29,0 (PS)	-0,616	0,309	479,997	4,087	0,898	0,000	0,000	3,189	1,3038
30,0 (PS)	-0,697	0,313	479,999	4,101	0,926	0,000	0,000	3,175	1,3594
31,0 (PS)	-0,780	0,317	480,000	4,113	0,954	0,000	0,000	3,159	1,4147
32,0 (PS)	-0,866	0,320	480,000	4,122	0,982	0,000	0,000	3,140	1,4696
33,0 (PS)	-0,954	0,324	479,997	4,129	1,009	0,000	0,000	3,120	1,5243
34,0 (PS)	-1,046	0,328	479,999	4,134	1,036	0,000	0,000	3,098	1,5785
35,0 (PS)	-1,141	0,331	480,000	4,137	1,062	0,000	0,000	3,075	1,6324
36,0 (PS)	-1,239	0,335	480,000	4,138	1,089	0,000	0,000	3,050	1,6858
37,0 (PS)	-1,341	0,338	479,998	4,138	1,115	0,000	0,000	3,023	1,7388
38,0 (PS)	-1,447	0,341	480,000	4,135	1,140	0,000	0,000	2,995	1,7914
39,0 (PS)	-1,556	0,345	480,000	4,131	1,166	0,000	0,000	2,966	1,8434
40,0 (PS)	-1,670	0,348	479,997	4,126	1,191	0,000	0,000	2,935	1,8949
41,0 (PS)	-1,788	0,352	480,000	4,119	1,215	0,000	0,000	2,903	1,9458
42,0 (PS)	-1,910	0,356	480,001	4,110	1,239	0,000	0,000	2,870	1,9962
43,0 (PS)	-2,037	0,361	480,001	4,099	1,263	0,000	0,000	2,835	2,0460
44,0 (PS)	-2,169	0,368	479,999	4,086	1,287	0,000	0,000	2,799	2,0952
45,0 (PS)	-2,305	0,375	480,000	4,070	1,310	0,000	0,000	2,760	2,1437
46,0 (PS)	-2,446	0,382	480,000	4,052	1,332	0,000	0,000	2,720	2,1915
47,0 (PS)	-2,593	0,389	480,001	4,032	1,355	0,000	0,000	2,677	2,2386
48,0 (PS)	-2,745	0,397	480,001	4,010	1,376	0,000	0,000	2,633	2,2850
49,0 (PS)	-2,903	0,404	480,001	3,985	1,398	0,000	0,000	2,587	2,3305
50,0 (PS)	-3,068	0,411	480,001	3,958	1,419	0,000	0,000	2,539	2,3753

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
51,0 (PS)	-3,240	0,419	480,001	3,929	1,439	0,000	0,000	2,490	2,4192
52,0 (PS)	-3,419	0,426	480,001	3,898	1,460	0,000	0,000	2,439	2,4622
53,0 (PS)	-3,607	0,434	480,001	3,866	1,479	0,000	0,000	2,386	2,5043
54,0 (PS)	-3,804	0,441	480,001	3,831	1,498	0,000	0,000	2,333	2,5455
55,0 (PS)	-4,010	0,449	480,001	3,795	1,517	0,000	0,000	2,277	2,5857
56,0 (PS)	-4,227	0,458	480,001	3,756	1,536	0,000	0,000	2,221	2,6250
57,0 (PS)	-4,455	0,466	480,001	3,717	1,553	0,000	0,000	2,163	2,6632
58,0 (PS)	-4,696	0,475	480,001	3,675	1,571	0,000	0,000	2,104	2,7005
59,0 (PS)	-4,951	0,484	480,001	3,632	1,588	0,000	0,000	2,044	2,7367
60,0 (PS)	-5,221	0,494	480,001	3,587	1,604	0,000	0,000	1,983	2,7718



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	19,754 m	\geq	1,000 m	Complies
Combined heeling moment	0,9 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	141,770 t*m			
Required freeboard	2,564 m	\geq	0,000 m	Complies
Weight	141,770 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers 70 % full

2020.056_002 IW-NET Europa 3b Barge

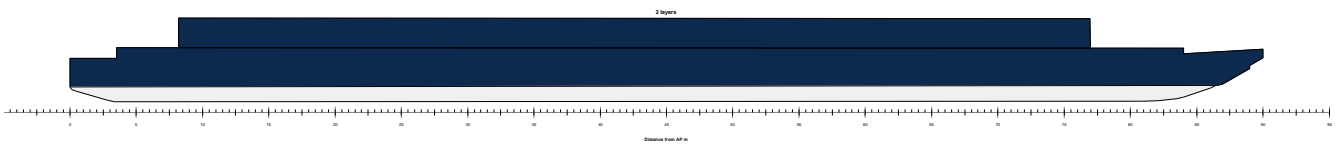
Designer

Created by Bernhard Bieringer

Comment

Filename 2020_056_002_Europa 3a barge.fbm

Design length	90,000 m	Midship location	45,000 m
Length over all	90,000 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,550 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,719 m
Draft aft pp	1,113 m	GG'	0,000 m
Mean moulded draft	1,175 m	VCG'	2,719 m
Draft forward pp	1,237 m	Max VCG'	8,932 m
Trim	0,124 m	GM solid	7,662 m
LCF	42,966 m	G'M liquid	7,662 m
LCB	43,318 m	Immersion rate	9,829 tonne/cm
KM	10,381 m	MCT	66,839 t*m

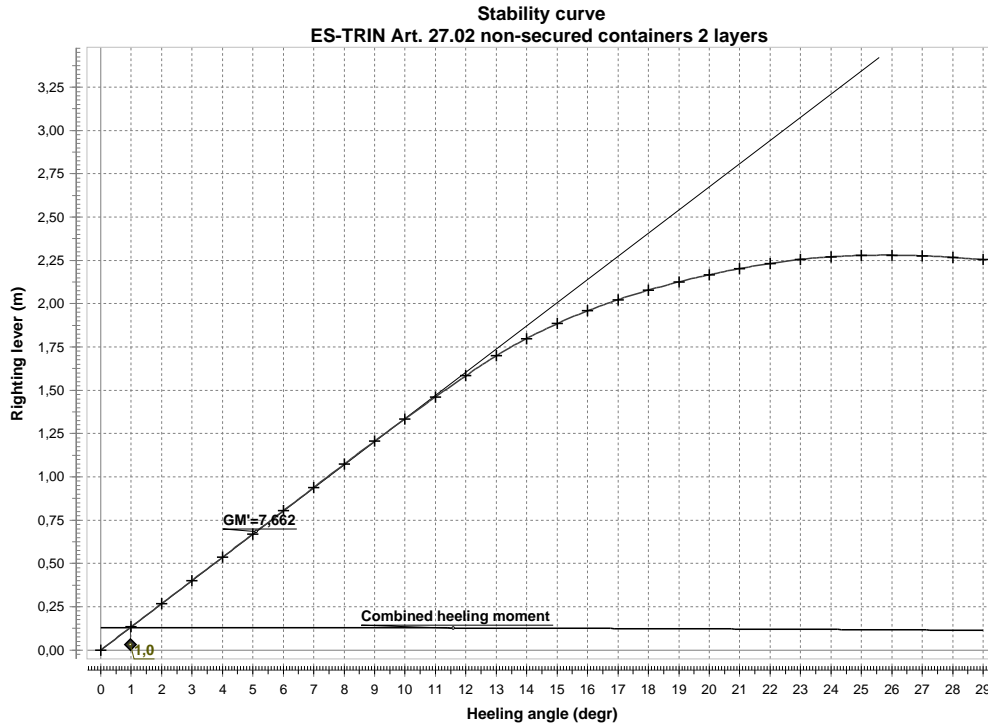
Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers 70 % full			758,100	42,573	0,000 (CL)	3,400	0,000
Lightship			333,001	45,005	0,000 (CL)	1,169	
Deadweight			758,100	42,573	0,000 (CL)	3,400	0,000
Displacement			1091,101	43,315	0,000 (CL)	2,719	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,175	0,124	1091,100	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,175	0,124	1091,100	0,181	0,047	0,000	0,000	0,134	0,0012
2,0 (PS)	1,175	0,123	1091,099	0,362	0,095	0,000	0,000	0,268	0,0047
3,0 (PS)	1,174	0,122	1091,099	0,544	0,142	0,000	0,000	0,401	0,0105
4,0 (PS)	1,174	0,120	1091,099	0,725	0,190	0,000	0,000	0,535	0,0187
5,0 (PS)	1,173	0,119	1091,099	0,907	0,237	0,000	0,000	0,670	0,0292
6,0 (PS)	1,173	0,117	1091,099	1,088	0,284	0,000	0,000	0,804	0,0421
7,0 (PS)	1,172	0,114	1091,098	1,270	0,331	0,000	0,000	0,939	0,0573
8,0 (PS)	1,170	0,112	1091,096	1,452	0,378	0,000	0,000	1,073	0,0748
9,0 (PS)	1,168	0,110	1091,101	1,631	0,425	0,000	0,000	1,206	0,0947
10,0 (PS)	1,165	0,107	1091,100	1,807	0,472	0,000	0,000	1,335	0,1169
11,0 (PS)	1,161	0,105	1091,099	1,979	0,519	0,000	0,000	1,461	0,1413
12,0 (PS)	1,157	0,102	1091,098	2,149	0,565	0,000	0,000	1,584	0,1679
13,0 (PS)	1,150	0,101	1091,100	2,311	0,612	0,000	0,000	1,699	0,1965
14,0 (PS)	1,139	0,101	1091,098	2,456	0,658	0,000	0,000	1,799	0,2271
15,0 (PS)	1,125	0,100	1091,095	2,588	0,704	0,000	0,000	1,884	0,2592
16,0 (PS)	1,107	0,099	1091,095	2,708	0,749	0,000	0,000	1,958	0,2928
17,0 (PS)	1,086	0,097	1091,096	2,818	0,795	0,000	0,000	2,023	0,3275
18,0 (PS)	1,062	0,096	1091,098	2,918	0,840	0,000	0,000	2,078	0,3633
19,0 (PS)	1,036	0,094	1091,100	3,011	0,885	0,000	0,000	2,126	0,4000
20,0 (PS)	1,006	0,092	1091,097	3,097	0,930	0,000	0,000	2,167	0,4375
21,0 (PS)	0,974	0,090	1091,100	3,177	0,974	0,000	0,000	2,202	0,4756
22,0 (PS)	0,939	0,088	1091,100	3,251	1,019	0,000	0,000	2,232	0,5144
23,0 (PS)	0,903	0,087	1091,101	3,318	1,062	0,000	0,000	2,256	0,5535
24,0 (PS)	0,865	0,085	1091,092	3,377	1,106	0,000	0,000	2,271	0,5930
25,0 (PS)	0,827	0,081	1091,099	3,428	1,149	0,000	0,000	2,279	0,6328
26,0 (PS)	0,789	0,077	1091,100	3,472	1,192	0,000	0,000	2,280	0,6725
27,0 (PS)	0,749	0,072	1091,101	3,511	1,234	0,000	0,000	2,276	0,7123
28,0 (PS)	0,708	0,066	1091,101	3,544	1,277	0,000	0,000	2,267	0,7520
29,0 (PS)	0,667	0,060	1091,101	3,572	1,318	0,000	0,000	2,254	0,7914



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	7,662 m	>=	1,000 m	Complies
Combined heeling moment	1,0 degr	<=	5,0 degr	Complies
Calculated heeling moment (upright)	141,770 t*m			
Required freeboard	1,932 m	>=	0,000 m	Complies
Weight	141,770 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers full

2020.056_002 IW-NET Europa 3b Barge

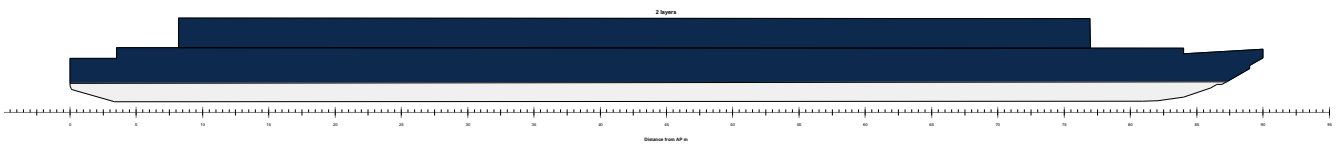
Designer

Created by Bernhard Bieringer

Comment

Filename 2020_056_002_Europa 3a barge.fbm

Design length	90,000 m	Midship location	45,000 m
Length over all	90,000 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,550 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,851 m
Draft aft pp	1,388 m	GG'	0,000 m
Mean moulded draft	1,440 m	VCG'	2,851 m
Draft forward pp	1,492 m	Max VCG'	7,539 m
Trim	0,104 m	GM solid	5,835 m
LCF	43,219 m	G'M liquid	5,835 m
LCB	43,174 m	Immersion rate	9,895 tonne/cm
KM	8,686 m	MCT	68,123 t*m

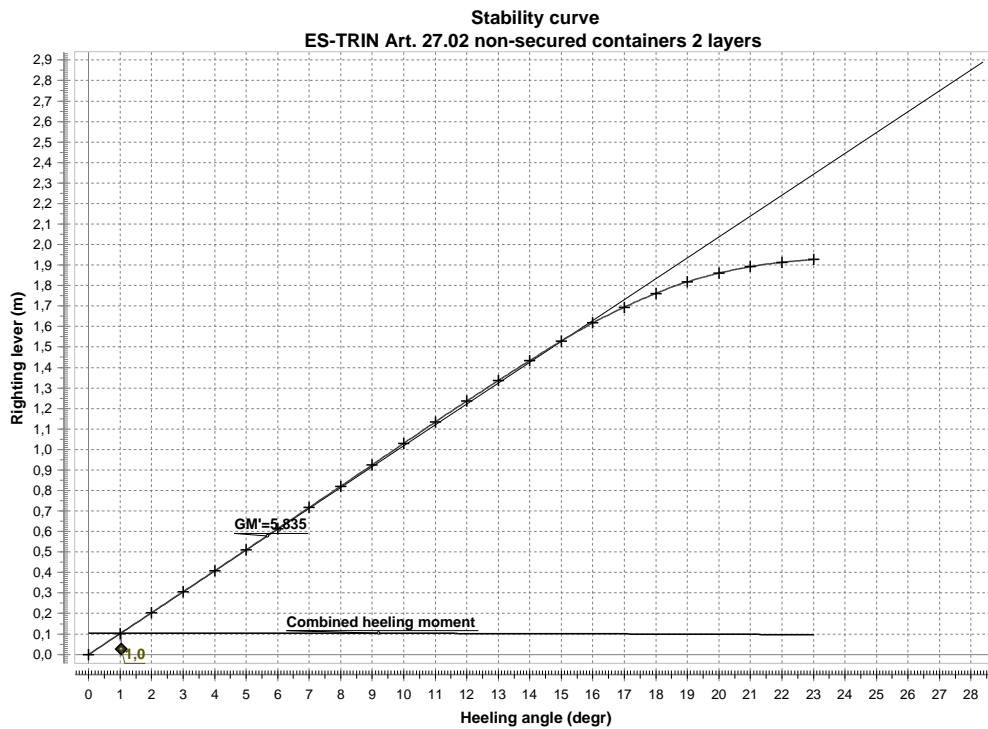
Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers full			1020,000	42,573	0,000 (CL)	3,400	0,000
Lightship			333,001	45,005	0,000 (CL)	1,169	
Deadweight			1020,000	42,573	0,000 (CL)	3,400	0,000
Displacement			1353,001	43,172	0,000 (CL)	2,851	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,440	0,104	1353,001	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,440	0,104	1353,000	0,152	0,050	0,000	0,000	0,102	0,0009
2,0 (PS)	1,440	0,103	1353,000	0,303	0,099	0,000	0,000	0,204	0,0036
3,0 (PS)	1,440	0,102	1353,000	0,455	0,149	0,000	0,000	0,306	0,0080
4,0 (PS)	1,439	0,100	1353,000	0,607	0,199	0,000	0,000	0,408	0,0142
5,0 (PS)	1,439	0,097	1353,001	0,759	0,248	0,000	0,000	0,511	0,0223
6,0 (PS)	1,438	0,095	1353,001	0,912	0,298	0,000	0,000	0,614	0,0321
7,0 (PS)	1,438	0,091	1353,001	1,064	0,347	0,000	0,000	0,717	0,0437
8,0 (PS)	1,437	0,088	1353,001	1,217	0,397	0,000	0,000	0,821	0,0571
9,0 (PS)	1,436	0,084	1353,001	1,371	0,446	0,000	0,000	0,925	0,0723
10,0 (PS)	1,434	0,080	1353,001	1,525	0,495	0,000	0,000	1,030	0,0894
11,0 (PS)	1,433	0,076	1353,001	1,678	0,544	0,000	0,000	1,134	0,1083
12,0 (PS)	1,430	0,072	1353,000	1,829	0,593	0,000	0,000	1,236	0,1290
13,0 (PS)	1,427	0,068	1352,999	1,978	0,641	0,000	0,000	1,336	0,1514
14,0 (PS)	1,422	0,063	1352,999	2,124	0,690	0,000	0,000	1,434	0,1756
15,0 (PS)	1,417	0,059	1352,999	2,267	0,738	0,000	0,000	1,530	0,2015
16,0 (PS)	1,409	0,055	1352,993	2,403	0,786	0,000	0,000	1,617	0,2289
17,0 (PS)	1,398	0,051	1352,994	2,528	0,834	0,000	0,000	1,694	0,2579
18,0 (PS)	1,383	0,047	1353,000	2,643	0,881	0,000	0,000	1,762	0,2880
19,0 (PS)	1,367	0,043	1353,001	2,746	0,928	0,000	0,000	1,818	0,3193
20,0 (PS)	1,350	0,038	1352,999	2,836	0,975	0,000	0,000	1,861	0,3514
21,0 (PS)	1,332	0,031	1353,001	2,913	1,022	0,000	0,000	1,892	0,3842
22,0 (PS)	1,314	0,023	1353,001	2,981	1,068	0,000	0,000	1,913	0,4174
23,0 (PS)	1,296	0,013	1352,998	3,041	1,114	0,000	0,000	1,927	0,4509



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	5,835 m	\geq	1,000 m	Complies
Combined heeling moment	1,0 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	141,770 t*m			
Required freeboard	1,668 m	\geq	0,000 m	Complies
Weight	141,770 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers empty 3 layers

2020.056_002 IW-NET Europa 3b Barge

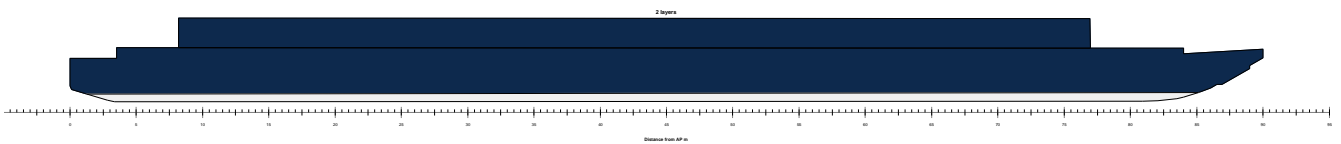
Designer

Created by Bernhard Bieringer

Comment

Filename 2020_056_002_Europa 3a barge.fbm

Design length	90,000 m	Midship location	45,000 m
Length over all	90,000 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,550 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,635 m
Draft aft pp	0,548 m	GG'	0,000 m
Mean moulded draft	0,621 m	VCG'	2,635 m
Draft forward pp	0,695 m	Max VCG'	14,513 m
Trim	0,147 m	GM solid	16,302 m
LCF	42,894 m	G'M liquid	16,302 m
LCB	44,040 m	Immersion rate	9,519 tonne/cm
KM	18,938 m	MCT	60,812 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers empty			147,000	42,573	0,000 (CL)	3,400	0,000
3rd layer empty			73,500	42,573	0,000 (CL)	7,748	0,000
Totals for Containers			220,500	42,573	0,000 (CL)	4,849	0,000

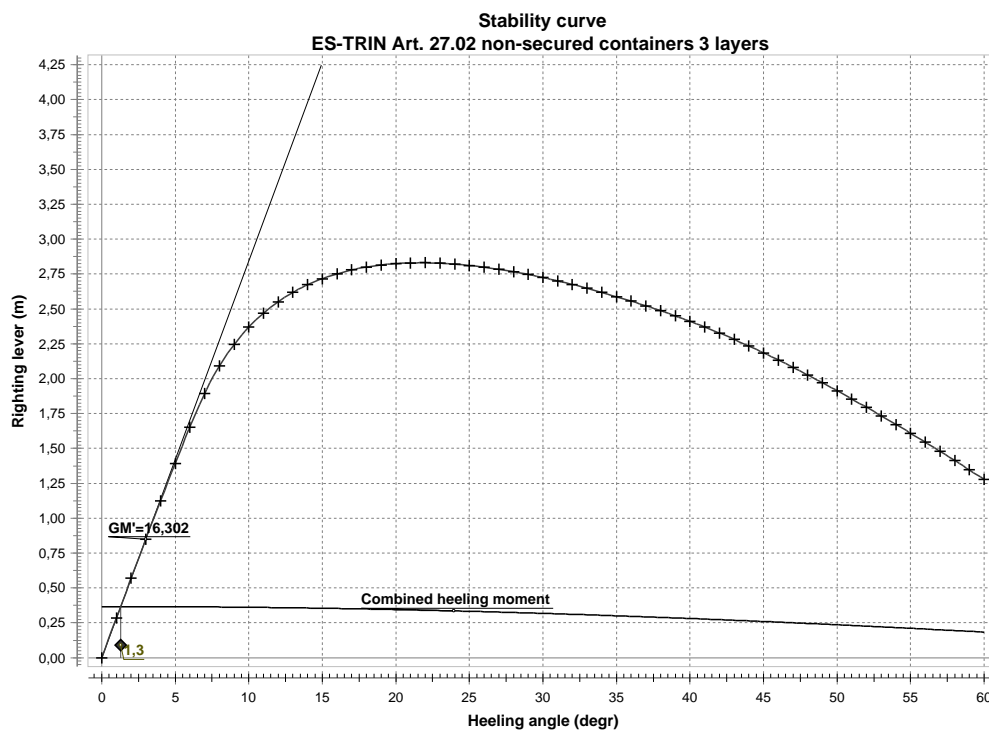
Lightship			333,001	45,005	0,000 (CL)	1,169	
Deadweight			220,500	42,573	0,000 (CL)	4,849	0,000
Displacement			553,501	44,036	0,000 (CL)	2,635	0,000

Righting levers

Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	0,621	0,147	553,501	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	0,621	0,147	553,500	0,331	0,046	0,000	0,000	0,285	0,0025
2,0 (PS)	0,621	0,147	553,500	0,661	0,092	0,000	0,000	0,569	0,0099
3,0 (PS)	0,620	0,148	553,499	0,989	0,138	0,000	0,000	0,851	0,0223
4,0 (PS)	0,618	0,150	553,501	1,309	0,184	0,000	0,000	1,125	0,0396
5,0 (PS)	0,615	0,151	553,500	1,622	0,230	0,000	0,000	1,393	0,0616
6,0 (PS)	0,611	0,152	553,498	1,928	0,275	0,000	0,000	1,653	0,0882
7,0 (PS)	0,604	0,158	553,499	2,216	0,321	0,000	0,000	1,895	0,1192
8,0 (PS)	0,592	0,167	553,498	2,457	0,367	0,000	0,000	2,090	0,1540
9,0 (PS)	0,575	0,175	553,499	2,657	0,412	0,000	0,000	2,245	0,1919
10,0 (PS)	0,552	0,183	553,500	2,827	0,458	0,000	0,000	2,369	0,2322
11,0 (PS)	0,525	0,190	553,498	2,973	0,503	0,000	0,000	2,470	0,2745
12,0 (PS)	0,494	0,196	553,500	3,099	0,548	0,000	0,000	2,552	0,3183
13,0 (PS)	0,460	0,203	553,499	3,211	0,593	0,000	0,000	2,618	0,3634
14,0 (PS)	0,423	0,209	553,498	3,310	0,637	0,000	0,000	2,673	0,4096
15,0 (PS)	0,383	0,214	553,498	3,399	0,682	0,000	0,000	2,717	0,4567
16,0 (PS)	0,340	0,220	553,498	3,478	0,726	0,000	0,000	2,752	0,5044
17,0 (PS)	0,295	0,225	553,499	3,549	0,770	0,000	0,000	2,779	0,5527
18,0 (PS)	0,247	0,230	553,499	3,614	0,814	0,000	0,000	2,800	0,6014
19,0 (PS)	0,197	0,234	553,497	3,673	0,858	0,000	0,000	2,815	0,6504
20,0 (PS)	0,144	0,239	553,499	3,726	0,901	0,000	0,000	2,824	0,6996
21,0 (PS)	0,089	0,243	553,500	3,774	0,944	0,000	0,000	2,829	0,7489
22,0 (PS)	0,032	0,247	553,497	3,817	0,987	0,000	0,000	2,830	0,7983
23,0 (PS)	-0,028	0,251	553,499	3,857	1,030	0,000	0,000	2,827	0,8477
24,0 (PS)	-0,090	0,255	553,500	3,893	1,072	0,000	0,000	2,821	0,8970
25,0 (PS)	-0,154	0,258	553,496	3,925	1,114	0,000	0,000	2,812	0,9462
26,0 (PS)	-0,221	0,262	553,498	3,954	1,155	0,000	0,000	2,799	0,9951
27,0 (PS)	-0,290	0,265	553,499	3,981	1,196	0,000	0,000	2,784	1,0439
28,0 (PS)	-0,361	0,268	553,500	4,004	1,237	0,000	0,000	2,767	1,0923
29,0 (PS)	-0,435	0,271	553,497	4,024	1,278	0,000	0,000	2,747	1,1404
30,0 (PS)	-0,512	0,274	553,499	4,043	1,318	0,000	0,000	2,725	1,1882
31,0 (PS)	-0,592	0,277	553,500	4,058	1,357	0,000	0,000	2,701	1,2355
32,0 (PS)	-0,674	0,280	553,500	4,072	1,396	0,000	0,000	2,675	1,2824
33,0 (PS)	-0,759	0,282	553,498	4,083	1,435	0,000	0,000	2,648	1,3289
34,0 (PS)	-0,847	0,285	553,499	4,092	1,474	0,000	0,000	2,619	1,3749
35,0 (PS)	-0,938	0,287	553,500	4,099	1,511	0,000	0,000	2,588	1,4203
36,0 (PS)	-1,033	0,289	553,497	4,105	1,549	0,000	0,000	2,556	1,4652
37,0 (PS)	-1,131	0,292	553,500	4,108	1,586	0,000	0,000	2,522	1,5095
38,0 (PS)	-1,233	0,295	553,501	4,109	1,622	0,000	0,000	2,487	1,5532
39,0 (PS)	-1,338	0,299	553,497	4,108	1,658	0,000	0,000	2,450	1,5963
40,0 (PS)	-1,446	0,304	553,500	4,105	1,694	0,000	0,000	2,411	1,6387
41,0 (PS)	-1,558	0,309	553,500	4,099	1,729	0,000	0,000	2,370	1,6804
42,0 (PS)	-1,674	0,314	553,501	4,090	1,763	0,000	0,000	2,327	1,7214
43,0 (PS)	-1,793	0,319	553,501	4,079	1,797	0,000	0,000	2,281	1,7617
44,0 (PS)	-1,917	0,324	553,501	4,065	1,831	0,000	0,000	2,234	1,8011
45,0 (PS)	-2,044	0,329	553,501	4,048	1,863	0,000	0,000	2,185	1,8396
46,0 (PS)	-2,177	0,333	553,501	4,029	1,896	0,000	0,000	2,134	1,8773
47,0 (PS)	-2,314	0,338	553,496	4,008	1,927	0,000	0,000	2,081	1,9141
48,0 (PS)	-2,456	0,342	553,496	3,985	1,958	0,000	0,000	2,027	1,9499
49,0 (PS)	-2,604	0,346	553,497	3,960	1,989	0,000	0,000	1,971	1,9848
50,0 (PS)	-2,759	0,351	553,497	3,932	2,019	0,000	0,000	1,913	2,0187

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
51,0 (PS)	-2,919	0,355	553,498	3,903	2,048	0,000	0,000	1,855	2,0516
52,0 (PS)	-3,087	0,359	553,498	3,872	2,077	0,000	0,000	1,795	2,0835
53,0 (PS)	-3,263	0,364	553,498	3,839	2,105	0,000	0,000	1,734	2,1143
54,0 (PS)	-3,447	0,368	553,498	3,804	2,132	0,000	0,000	1,672	2,1440
55,0 (PS)	-3,640	0,373	553,498	3,767	2,159	0,000	0,000	1,609	2,1726
56,0 (PS)	-3,842	0,378	553,498	3,729	2,185	0,000	0,000	1,544	2,2001
57,0 (PS)	-4,056	0,383	553,498	3,689	2,210	0,000	0,000	1,479	2,2265
58,0 (PS)	-4,282	0,388	553,497	3,648	2,235	0,000	0,000	1,413	2,2518
59,0 (PS)	-4,520	0,393	553,497	3,605	2,259	0,000	0,000	1,346	2,2758
60,0 (PS)	-4,773	0,399	553,496	3,560	2,282	0,000	0,000	1,278	2,2987



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	16,302 m	\geq	1,000 m	Complies
Combined heeling moment	1,3 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	203,130 t*m			
Required freeboard	2,444 m	\geq	0,000 m	Complies
Weight	203,130 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers 70 % full 3 layers

2020.056_002 IW-NET Europa 3b Barge

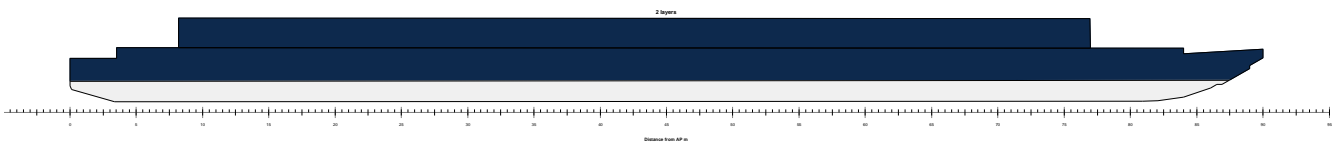
Designer

Created by Bernhard Bieringer

Comment

Filename 2020_056_002_Europa 3a barge.fbm

Design length	90,000 m	Midship location	45,000 m
Length over all	90,000 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,550 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	4,016 m
Draft aft pp	1,512 m	GG'	0,000 m
Mean moulded draft	1,558 m	VCG'	4,016 m
Draft forward pp	1,604 m	Max VCG'	6,595 m
Trim	0,092 m	GM solid	4,118 m
LCF	43,331 m	G'M liquid	4,118 m
LCB	43,126 m	Immersion rate	9,921 tonne/cm
KM	8,134 m	MCT	68,448 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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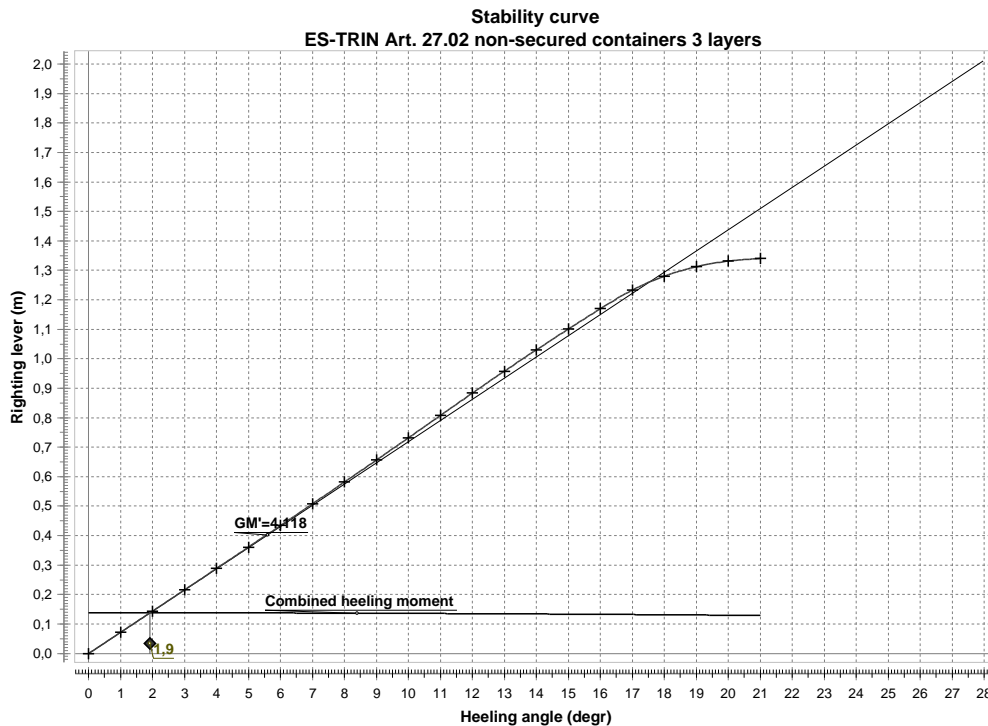
Containers

Containers 70 % full			758,100	42,573	0,000 (CL)	3,400	0,000
3rd layer 70 % full			379,050	42,573	0,000 (CL)	7,748	0,000
Totals for Containers			1137,150	42,573	0,000 (CL)	4,849	0,000

Lightship			333,001	45,005	0,000 (CL)	1,169	
Deadweight			1137,150	42,573	0,000 (CL)	4,849	0,000
Displacement			1470,151	43,124	0,000 (CL)	4,016	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,558	0,092	1470,151	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,558	0,092	1470,151	0,142	0,070	0,000	0,000	0,072	0,0006
2,0 (PS)	1,558	0,091	1470,151	0,284	0,140	0,000	0,000	0,144	0,0025
3,0 (PS)	1,558	0,090	1470,151	0,426	0,210	0,000	0,000	0,216	0,0057
4,0 (PS)	1,557	0,088	1470,151	0,569	0,280	0,000	0,000	0,288	0,0101
5,0 (PS)	1,557	0,086	1470,151	0,711	0,350	0,000	0,000	0,361	0,0157
6,0 (PS)	1,556	0,083	1470,151	0,854	0,420	0,000	0,000	0,434	0,0227
7,0 (PS)	1,556	0,080	1470,136	0,997	0,489	0,000	0,000	0,508	0,0309
8,0 (PS)	1,555	0,076	1470,142	1,141	0,559	0,000	0,000	0,582	0,0404
9,0 (PS)	1,554	0,072	1470,147	1,285	0,628	0,000	0,000	0,656	0,0512
10,0 (PS)	1,553	0,067	1470,153	1,429	0,697	0,000	0,000	0,732	0,0633
11,0 (PS)	1,552	0,063	1470,165	1,574	0,766	0,000	0,000	0,808	0,0767
12,0 (PS)	1,550	0,058	1470,161	1,719	0,835	0,000	0,000	0,884	0,0915
13,0 (PS)	1,548	0,053	1470,154	1,861	0,903	0,000	0,000	0,958	0,1076
14,0 (PS)	1,544	0,048	1470,163	2,002	0,971	0,000	0,000	1,030	0,1249
15,0 (PS)	1,540	0,043	1470,151	2,140	1,039	0,000	0,000	1,101	0,1435
16,0 (PS)	1,534	0,037	1470,151	2,277	1,107	0,000	0,000	1,170	0,1634
17,0 (PS)	1,527	0,032	1470,151	2,407	1,174	0,000	0,000	1,233	0,1843
18,0 (PS)	1,519	0,027	1470,148	2,521	1,241	0,000	0,000	1,280	0,2063
19,0 (PS)	1,510	0,019	1470,150	2,620	1,307	0,000	0,000	1,312	0,2289
20,0 (PS)	1,501	0,010	1470,151	2,705	1,373	0,000	0,000	1,331	0,2520
21,0 (PS)	1,491	0,000	1470,151	2,779	1,439	0,000	0,000	1,340	0,2754



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	4,118 m	\geq	1,000 m	Complies
Combined heeling moment	1,9 degr	\leq	5,0 degr	Complies

Calculated heeling moment (upright)	203,130 t*m			
Required freeboard	1,465 m	>=	0,000 m	Complies
Weight	203,130 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers full 3 layers

2020.056_002 IW-NET Europa 3b Barge

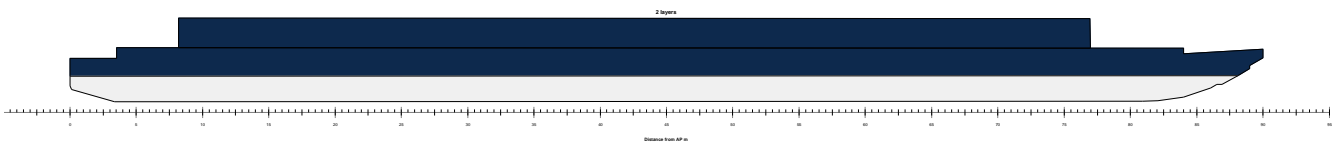
Designer

Created by Bernhard Bieringer

Comment

Filename 2020_056_002_Europa 3a barge.fbm

Design length	90,000 m	Midship location	45,000 m
Length over all	90,000 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,550 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	4,191 m
Draft aft pp	1,932 m	GG'	0,000 m
Mean moulded draft	1,952 m	VCG'	4,191 m
Draft forward pp	1,971 m	Max VCG'	5,646 m
Trim	0,039 m	GM solid	2,650 m
LCF	43,691 m	G'M liquid	2,650 m
LCB	43,009 m	Immersion rate	10,003 tonne/cm
KM	6,841 m	MCT	70,043 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers full			1020,000	42,573	0,000 (CL)	3,400	0,000
3rd layer full			510,000	42,573	0,000 (CL)	7,748	0,000
Totals for Containers			1530,000	42,573	0,000 (CL)	4,849	0,000

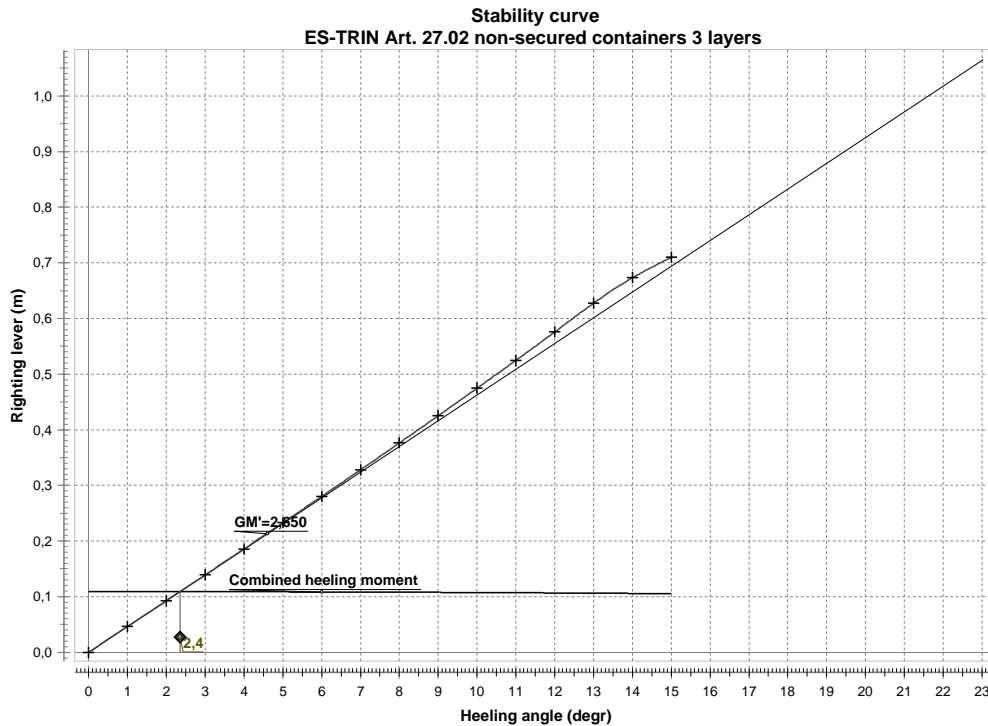
Lightship			333,001	45,005	0,000 (CL)	1,169	
Deadweight			1530,000	42,573	0,000 (CL)	4,849	0,000
Displacement			1863,001	43,008	0,000 (CL)	4,191	0,000

Righting levers

Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	1,952	0,039	1862,994	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,952	0,039	1862,990	0,119	0,073	0,000	0,000	0,046	0,0004
2,0 (PS)	1,951	0,038	1862,991	0,239	0,146	0,000	0,000	0,093	0,0016
3,0 (PS)	1,951	0,037	1862,992	0,358	0,219	0,000	0,000	0,139	0,0036
4,0 (PS)	1,951	0,035	1862,995	0,478	0,292	0,000	0,000	0,186	0,0065
5,0 (PS)	1,951	0,033	1862,998	0,598	0,365	0,000	0,000	0,233	0,0101
6,0 (PS)	1,950	0,030	1863,001	0,718	0,438	0,000	0,000	0,280	0,0146
7,0 (PS)	1,950	0,027	1863,001	0,839	0,511	0,000	0,000	0,328	0,0199
8,0 (PS)	1,949	0,023	1863,000	0,960	0,583	0,000	0,000	0,376	0,0260

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
9,0 (PS)	1,948	0,019	1862,998	1,081	0,656	0,000	0,000	0,425	0,0330
10,0 (PS)	1,947	0,015	1862,997	1,202	0,728	0,000	0,000	0,475	0,0409
11,0 (PS)	1,946	0,010	1862,995	1,325	0,800	0,000	0,000	0,525	0,0496
12,0 (PS)	1,945	0,004	1862,994	1,447	0,871	0,000	0,000	0,576	0,0592
13,0 (PS)	1,944	-0,002	1863,015	1,570	0,943	0,000	0,000	0,628	0,0697
14,0 (PS)	1,945	-0,010	1863,001	1,687	1,014	0,000	0,000	0,673	0,0811
15,0 (PS)	1,949	-0,021	1863,003	1,795	1,085	0,000	0,000	0,710	0,0932



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	2,650 m	\geq	1,000 m	Complies
Combined heeling moment	2,4 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	203,130 t*m			
Required freeboard	1,049 m	\geq	0,000 m	Complies
Weight	203,130 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers empty ALU

2020.056_002 IW-NET Europa 3b Barge

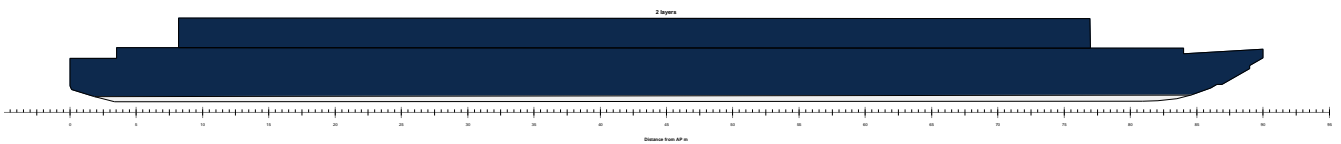
Designer

Created by Bernhard Bieringer

Comment

Filename 2020_056_002_Europa 3a barge.fbm

Design length	90,000 m	Midship location	45,000 m
Length over all	90,000 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,550 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,041 m
Draft aft pp	0,384 m	GG'	0,000 m
Mean moulded draft	0,445 m	VCG'	2,041 m
Draft forward pp	0,505 m	Max VCG'	20,837 m
Trim	0,121 m	GM solid	24,398 m
LCF	42,886 m	G'M liquid	24,398 m
LCB	44,136 m	Immersion rate	9,380 tonne/cm
KM	26,439 m	MCT	58,268 t*m

Description	Density	Filling	Weight	LCG	TCG	VCG	FSM
		%	t	m	m	m	t*m

Containers

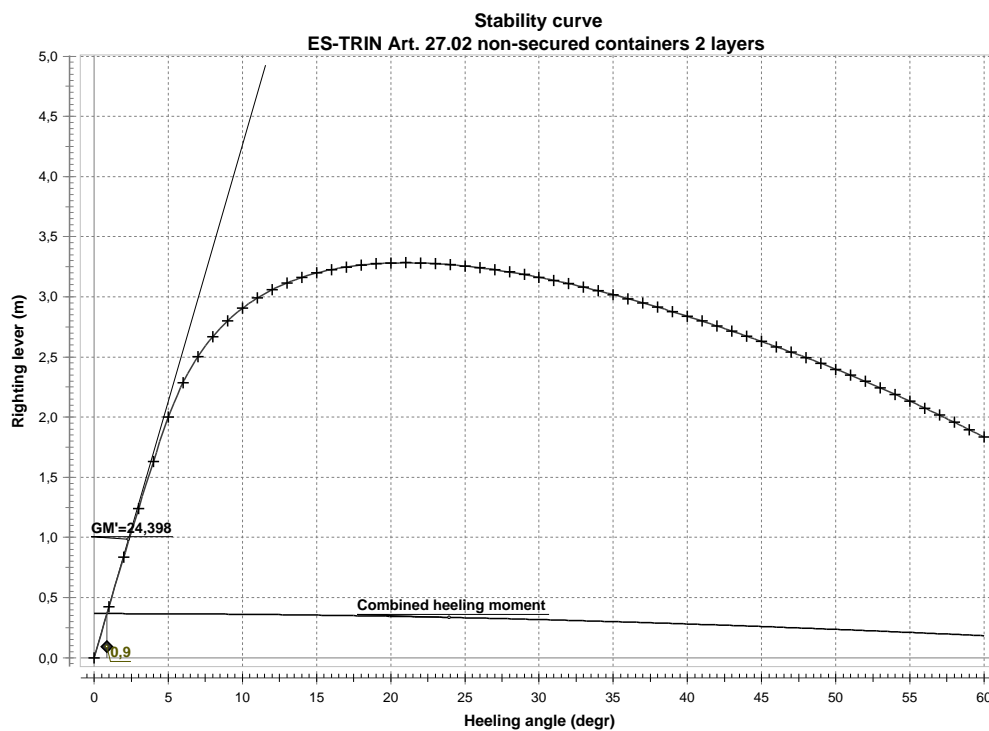
Containers empty			147,000	42,573	0,000 (CL)	3,400	0,000
Lightship			239,923	45,090	0,000 (CL)	1,208	
Deadweight			147,000	42,573	0,000 (CL)	3,400	0,000
Displacement			386,923	44,134	0,000 (CL)	2,041	0,000

Righting levers

Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	0,445	0,121	386,922	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	0,444	0,122	386,921	0,459	0,036	0,000	0,000	0,423	0,0037
2,0 (PS)	0,443	0,123	386,923	0,908	0,071	0,000	0,000	0,837	0,0147
3,0 (PS)	0,440	0,124	386,922	1,347	0,107	0,000	0,000	1,240	0,0329
4,0 (PS)	0,437	0,125	386,923	1,774	0,142	0,000	0,000	1,632	0,0579
5,0 (PS)	0,431	0,130	386,922	2,178	0,178	0,000	0,000	2,001	0,0897
6,0 (PS)	0,418	0,140	386,921	2,501	0,213	0,000	0,000	2,288	0,1273
7,0 (PS)	0,398	0,149	386,920	2,752	0,249	0,000	0,000	2,503	0,1692
8,0 (PS)	0,372	0,158	386,920	2,953	0,284	0,000	0,000	2,669	0,2143
9,0 (PS)	0,341	0,167	386,921	3,120	0,319	0,000	0,000	2,800	0,2621
10,0 (PS)	0,306	0,175	386,922	3,260	0,354	0,000	0,000	2,906	0,3119
11,0 (PS)	0,267	0,182	386,921	3,380	0,389	0,000	0,000	2,991	0,3634
12,0 (PS)	0,224	0,190	386,920	3,484	0,424	0,000	0,000	3,060	0,4162
13,0 (PS)	0,179	0,197	386,921	3,575	0,459	0,000	0,000	3,116	0,4702
14,0 (PS)	0,131	0,203	386,921	3,655	0,494	0,000	0,000	3,161	0,5250
15,0 (PS)	0,080	0,209	386,921	3,726	0,528	0,000	0,000	3,198	0,5805
16,0 (PS)	0,027	0,215	386,921	3,789	0,563	0,000	0,000	3,226	0,6365
17,0 (PS)	-0,028	0,221	386,920	3,845	0,597	0,000	0,000	3,248	0,6930
18,0 (PS)	-0,086	0,227	386,921	3,895	0,631	0,000	0,000	3,264	0,7499
19,0 (PS)	-0,146	0,232	386,921	3,939	0,664	0,000	0,000	3,275	0,8070
20,0 (PS)	-0,208	0,237	386,920	3,979	0,698	0,000	0,000	3,281	0,8642
21,0 (PS)	-0,272	0,242	386,921	4,014	0,731	0,000	0,000	3,283	0,9215
22,0 (PS)	-0,339	0,247	386,921	4,046	0,764	0,000	0,000	3,281	0,9787
23,0 (PS)	-0,407	0,252	386,920	4,073	0,797	0,000	0,000	3,276	1,0360
24,0 (PS)	-0,478	0,256	386,921	4,097	0,830	0,000	0,000	3,267	1,0931
25,0 (PS)	-0,551	0,260	386,921	4,118	0,862	0,000	0,000	3,256	1,1500
26,0 (PS)	-0,627	0,265	386,922	4,137	0,895	0,000	0,000	3,242	1,2067
27,0 (PS)	-0,705	0,269	386,920	4,152	0,926	0,000	0,000	3,225	1,2632
28,0 (PS)	-0,785	0,273	386,921	4,164	0,958	0,000	0,000	3,206	1,3193
29,0 (PS)	-0,868	0,277	386,922	4,175	0,989	0,000	0,000	3,185	1,3751
30,0 (PS)	-0,953	0,281	386,922	4,182	1,020	0,000	0,000	3,162	1,4305
31,0 (PS)	-1,041	0,284	386,920	4,188	1,051	0,000	0,000	3,137	1,4854
32,0 (PS)	-1,132	0,288	386,921	4,191	1,081	0,000	0,000	3,110	1,5399
33,0 (PS)	-1,226	0,292	386,922	4,192	1,111	0,000	0,000	3,081	1,5940
34,0 (PS)	-1,323	0,295	386,922	4,192	1,141	0,000	0,000	3,050	1,6475
35,0 (PS)	-1,423	0,299	386,920	4,189	1,171	0,000	0,000	3,019	1,7004
36,0 (PS)	-1,526	0,302	386,921	4,185	1,200	0,000	0,000	2,985	1,7528
37,0 (PS)	-1,633	0,305	386,922	4,178	1,228	0,000	0,000	2,950	1,8046
38,0 (PS)	-1,744	0,309	386,922	4,171	1,256	0,000	0,000	2,914	1,8558
39,0 (PS)	-1,859	0,312	386,920	4,161	1,284	0,000	0,000	2,877	1,9063
40,0 (PS)	-1,978	0,315	386,921	4,150	1,312	0,000	0,000	2,838	1,9562
41,0 (PS)	-2,101	0,318	386,922	4,137	1,339	0,000	0,000	2,798	2,0054
42,0 (PS)	-2,229	0,321	386,922	4,123	1,366	0,000	0,000	2,758	2,0539
43,0 (PS)	-2,363	0,325	386,920	4,108	1,392	0,000	0,000	2,716	2,1017
44,0 (PS)	-2,501	0,328	386,922	4,091	1,418	0,000	0,000	2,673	2,1487
45,0 (PS)	-2,645	0,331	386,922	4,073	1,443	0,000	0,000	2,630	2,1950
46,0 (PS)	-2,795	0,334	386,919	4,053	1,468	0,000	0,000	2,585	2,2405
47,0 (PS)	-2,952	0,337	386,922	4,033	1,493	0,000	0,000	2,540	2,2852
48,0 (PS)	-3,115	0,341	386,923	4,011	1,517	0,000	0,000	2,494	2,3291
49,0 (PS)	-3,286	0,346	386,923	3,987	1,540	0,000	0,000	2,447	2,3722
50,0 (PS)	-3,463	0,352	386,921	3,961	1,563	0,000	0,000	2,398	2,4145

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
51,0 (PS)	-3,649	0,359	386,922	3,934	1,586	0,000	0,000	2,348	2,4560
52,0 (PS)	-3,843	0,367	386,922	3,905	1,608	0,000	0,000	2,297	2,4965
53,0 (PS)	-4,046	0,374	386,923	3,873	1,630	0,000	0,000	2,243	2,5361
54,0 (PS)	-4,259	0,381	386,923	3,840	1,651	0,000	0,000	2,189	2,5748
55,0 (PS)	-4,482	0,388	386,923	3,804	1,672	0,000	0,000	2,133	2,6125
56,0 (PS)	-4,716	0,396	386,923	3,767	1,692	0,000	0,000	2,075	2,6492
57,0 (PS)	-4,964	0,403	386,923	3,728	1,712	0,000	0,000	2,017	2,6849
58,0 (PS)	-5,224	0,411	386,923	3,687	1,731	0,000	0,000	1,957	2,7196
59,0 (PS)	-5,500	0,419	386,923	3,645	1,749	0,000	0,000	1,896	2,7532
60,0 (PS)	-5,792	0,427	386,923	3,601	1,767	0,000	0,000	1,833	2,7858



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	24,398 m	\geq	1,000 m	Complies
Combined heeling moment	0,9 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	141,770 t*m			
Required freeboard	2,674 m	\geq	0,000 m	Complies
Weight	141,770 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers 70 % full ALU

2020.056_002 IW-NET Europa 3b Barge

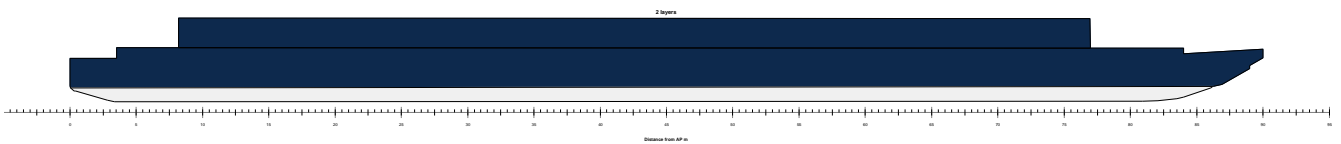
Designer

Created by Bernhard Bieringer

Comment

Filename 2020_056_002_Europa 3a barge.fbm

Design length	90,000 m	Midship location	45,000 m
Length over all	90,000 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,550 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,873 m
Draft aft pp	1,031 m	GG'	0,000 m
Mean moulded draft	1,080 m	VCG'	2,873 m
Draft forward pp	1,129 m	Max VCG'	9,613 m
Trim	0,098 m	GM solid	8,329 m
LCF	42,869 m	G'M liquid	8,329 m
LCB	43,181 m	Immersion rate	9,797 tonne/cm
KM	11,202 m	MCT	66,174 t*m

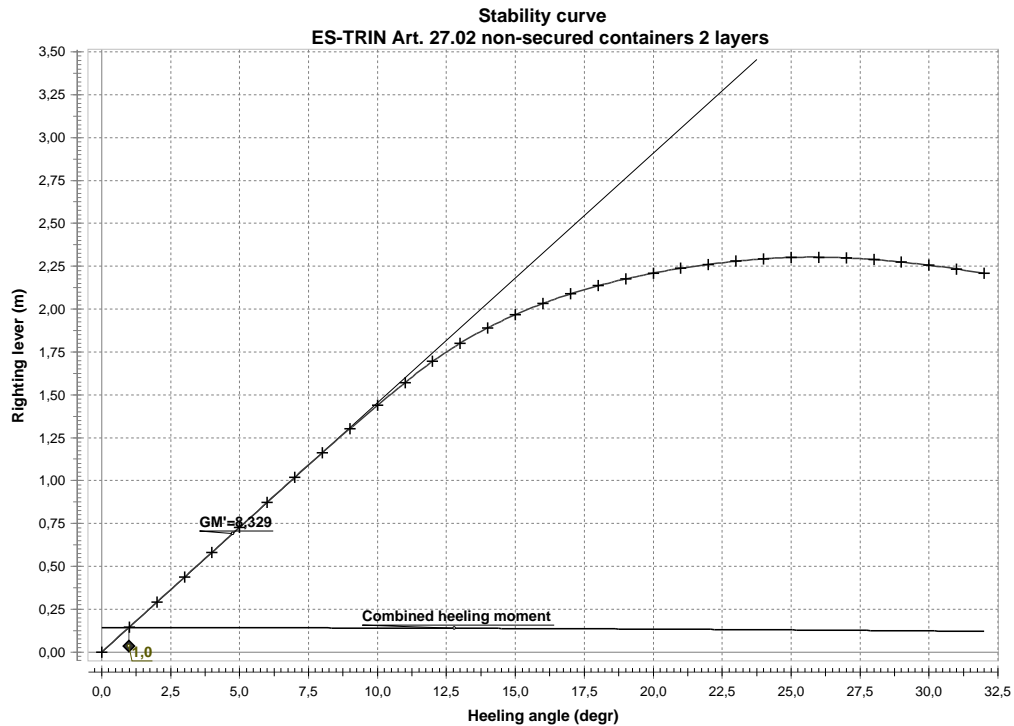
Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers 70 % full			758,100	42,573	0,000 (CL)	3,400	0,000
Lightship			239,923	45,090	0,000 (CL)	1,208	
Deadweight			758,100	42,573	0,000 (CL)	3,400	0,000
Displacement			998,023	43,178	0,000 (CL)	2,873	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,080	0,098	998,022	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,080	0,098	998,021	0,196	0,050	0,000	0,000	0,145	0,0013
2,0 (PS)	1,079	0,097	998,021	0,391	0,100	0,000	0,000	0,291	0,0051
3,0 (PS)	1,079	0,096	998,020	0,587	0,150	0,000	0,000	0,436	0,0114
4,0 (PS)	1,078	0,095	998,020	0,782	0,200	0,000	0,000	0,582	0,0203
5,0 (PS)	1,078	0,093	998,019	0,978	0,250	0,000	0,000	0,728	0,0317
6,0 (PS)	1,077	0,091	998,018	1,174	0,300	0,000	0,000	0,873	0,0457
7,0 (PS)	1,076	0,089	998,015	1,370	0,350	0,000	0,000	1,019	0,0622
8,0 (PS)	1,074	0,088	998,022	1,562	0,400	0,000	0,000	1,163	0,0813
9,0 (PS)	1,071	0,086	998,022	1,752	0,449	0,000	0,000	1,302	0,1028
10,0 (PS)	1,067	0,084	998,020	1,937	0,499	0,000	0,000	1,438	0,1267
11,0 (PS)	1,062	0,082	998,017	2,119	0,548	0,000	0,000	1,571	0,1530
12,0 (PS)	1,056	0,080	998,021	2,293	0,597	0,000	0,000	1,695	0,1815
13,0 (PS)	1,045	0,080	998,016	2,447	0,646	0,000	0,000	1,801	0,2120
14,0 (PS)	1,030	0,079	998,021	2,586	0,695	0,000	0,000	1,891	0,2443
15,0 (PS)	1,012	0,078	998,020	2,711	0,744	0,000	0,000	1,968	0,2780
16,0 (PS)	0,990	0,077	998,020	2,825	0,792	0,000	0,000	2,033	0,3129
17,0 (PS)	0,966	0,075	998,021	2,929	0,840	0,000	0,000	2,089	0,3489
18,0 (PS)	0,938	0,073	998,022	3,024	0,888	0,000	0,000	2,136	0,3857
19,0 (PS)	0,908	0,072	998,018	3,111	0,935	0,000	0,000	2,176	0,4234
20,0 (PS)	0,875	0,070	998,021	3,192	0,983	0,000	0,000	2,210	0,4617
21,0 (PS)	0,839	0,068	998,015	3,267	1,030	0,000	0,000	2,238	0,5005
22,0 (PS)	0,801	0,065	998,021	3,337	1,076	0,000	0,000	2,261	0,5397
23,0 (PS)	0,760	0,063	998,023	3,402	1,123	0,000	0,000	2,279	0,5794
24,0 (PS)	0,717	0,061	998,022	3,462	1,169	0,000	0,000	2,293	0,6193
25,0 (PS)	0,673	0,058	998,023	3,516	1,214	0,000	0,000	2,301	0,6594
26,0 (PS)	0,627	0,055	998,014	3,562	1,259	0,000	0,000	2,303	0,6996
27,0 (PS)	0,581	0,051	998,020	3,603	1,304	0,000	0,000	2,298	0,7397
28,0 (PS)	0,533	0,046	998,022	3,637	1,349	0,000	0,000	2,289	0,7797
29,0 (PS)	0,485	0,040	998,023	3,667	1,393	0,000	0,000	2,274	0,8196
30,0 (PS)	0,435	0,034	998,023	3,692	1,437	0,000	0,000	2,256	0,8591
31,0 (PS)	0,384	0,027	998,023	3,713	1,480	0,000	0,000	2,234	0,8983
32,0 (PS)	0,333	0,019	998,014	3,731	1,522	0,000	0,000	2,208	0,9371



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	8,329 m	>=	1,000 m	Complies
Combined heeling moment	1,0 degr	<=	5,0 degr	Complies
Calculated heeling moment (upright)	141,770 t*m			
Required freeboard	2,036 m	>=	0,000 m	Complies
Weight	141,770 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers full ALU

2020.056_002 IW-NET Europa 3b Barge

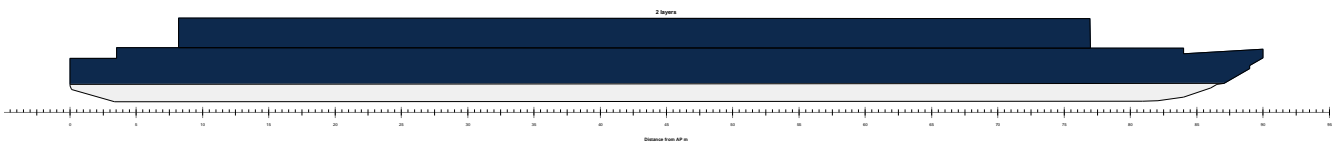
Designer

Created by Bernhard Bieringer

Comment

Filename 2020_056_002_Europa 3a barge.fbm

Design length	90,000 m	Midship location	45,000 m
Length over all	90,000 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,550 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,983 m
Draft aft pp	1,305 m	GG'	0,000 m
Mean moulded draft	1,346 m	VCG'	2,983 m
Draft forward pp	1,386 m	Max VCG'	7,966 m
Trim	0,082 m	GM solid	6,218 m
LCF	43,114 m	G'M liquid	6,218 m
LCB	43,054 m	Immersion rate	9,871 tonne/cm
KM	9,201 m	MCT	67,623 t*m

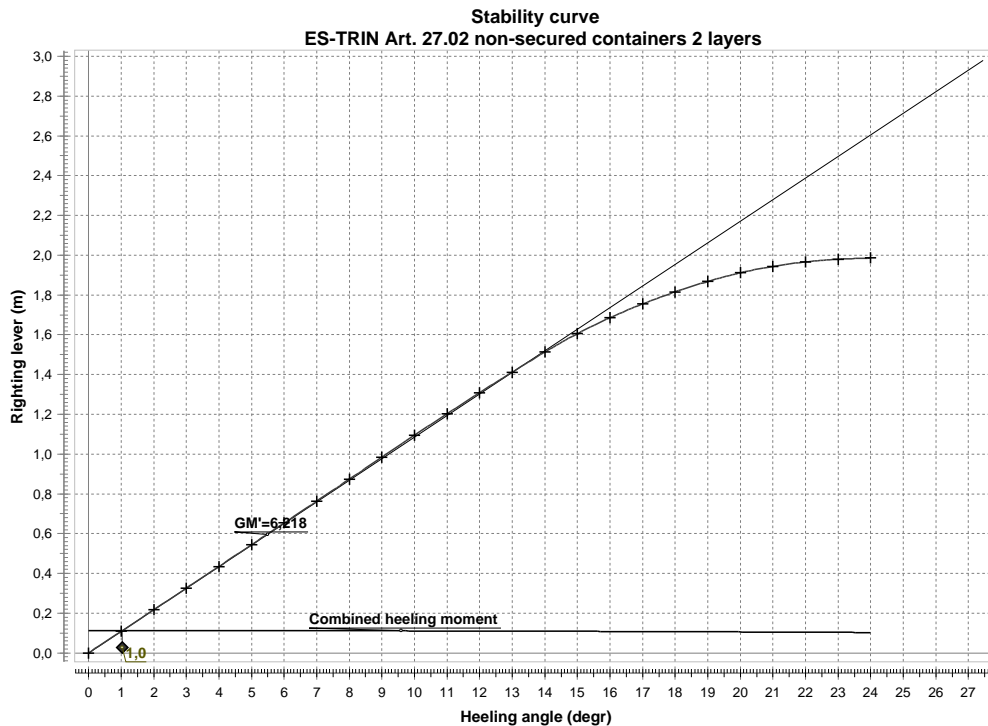
Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers full			1020,000	42,573	0,000 (CL)	3,400	0,000
Lightship			239,923	45,090	0,000 (CL)	1,208	
Deadweight			1020,000	42,573	0,000 (CL)	3,400	0,000
Displacement			1259,923	43,052	0,000 (CL)	2,983	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,346	0,082	1259,923	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,345	0,081	1259,922	0,161	0,052	0,000	0,000	0,109	0,0009
2,0 (PS)	1,345	0,080	1259,922	0,321	0,104	0,000	0,000	0,217	0,0038
3,0 (PS)	1,345	0,079	1259,922	0,482	0,156	0,000	0,000	0,326	0,0085
4,0 (PS)	1,345	0,077	1259,922	0,643	0,208	0,000	0,000	0,435	0,0152
5,0 (PS)	1,344	0,075	1259,922	0,804	0,260	0,000	0,000	0,544	0,0237
6,0 (PS)	1,343	0,073	1259,922	0,965	0,312	0,000	0,000	0,654	0,0342
7,0 (PS)	1,343	0,070	1259,922	1,127	0,363	0,000	0,000	0,764	0,0465
8,0 (PS)	1,342	0,066	1259,922	1,289	0,415	0,000	0,000	0,874	0,0608
9,0 (PS)	1,341	0,063	1259,922	1,451	0,467	0,000	0,000	0,985	0,0770
10,0 (PS)	1,339	0,059	1259,921	1,613	0,518	0,000	0,000	1,095	0,0952
11,0 (PS)	1,337	0,055	1259,918	1,772	0,569	0,000	0,000	1,203	0,1152
12,0 (PS)	1,333	0,051	1259,914	1,929	0,620	0,000	0,000	1,309	0,1372
13,0 (PS)	1,329	0,047	1259,911	2,083	0,671	0,000	0,000	1,412	0,1609
14,0 (PS)	1,324	0,043	1259,923	2,234	0,722	0,000	0,000	1,513	0,1864
15,0 (PS)	1,316	0,039	1259,921	2,377	0,772	0,000	0,000	1,605	0,2137
16,0 (PS)	1,305	0,036	1259,919	2,508	0,822	0,000	0,000	1,685	0,2424
17,0 (PS)	1,290	0,032	1259,920	2,627	0,872	0,000	0,000	1,755	0,2724
18,0 (PS)	1,273	0,027	1259,922	2,737	0,922	0,000	0,000	1,815	0,3036
19,0 (PS)	1,252	0,023	1259,920	2,839	0,971	0,000	0,000	1,868	0,3358
20,0 (PS)	1,229	0,019	1259,923	2,932	1,020	0,000	0,000	1,912	0,3688
21,0 (PS)	1,205	0,013	1259,919	3,013	1,069	0,000	0,000	1,944	0,4024
22,0 (PS)	1,181	0,006	1259,922	3,083	1,117	0,000	0,000	1,966	0,4366
23,0 (PS)	1,156	-0,003	1259,923	3,145	1,165	0,000	0,000	1,979	0,4710
24,0 (PS)	1,131	-0,012	1259,923	3,199	1,213	0,000	0,000	1,986	0,5056



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	6,218 m	\geq	1,000 m	Complies
Combined heeling moment	1,0 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	141,770 t*m			
Required freeboard	1,770 m	\geq	0,000 m	Complies
Weight	141,770 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers empty 3 layers ALU

2020.056_002 IW-NET Europa 3b Barge

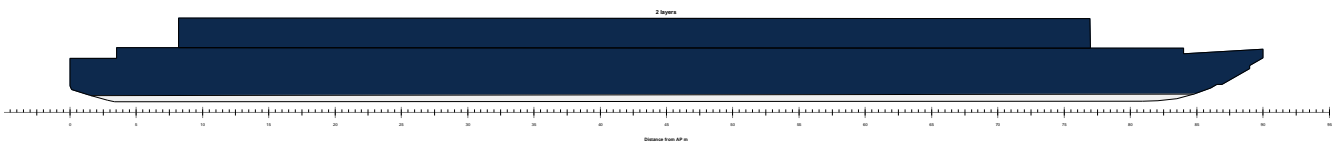
Designer

Created by Bernhard Bieringer

Comment

Filename 2020_056_002_Europa 3a barge.fbm

Design length	90,000 m	Midship location	45,000 m
Length over all	90,000 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,550 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,952 m
Draft aft pp	0,464 m	GG'	0,000 m
Mean moulded draft	0,523 m	VCG'	2,952 m
Draft forward pp	0,581 m	Max VCG'	16,785 m
Trim	0,118 m	GM solid	19,509 m
LCF	42,868 m	G'M liquid	19,509 m
LCB	43,888 m	Immersion rate	9,443 tonne/cm
KM	22,461 m	MCT	59,389 t*m

Description	Density	Filling	Weight	LCG	TCG	VCG	FSM
		%	t	m	m	m	t*m

Containers

Containers empty			147,000	42,573	0,000 (CL)	3,400	0,000
3rd layer empty			73,500	42,573	0,000 (CL)	7,748	0,000
Totals for Containers			220,500	42,573	0,000 (CL)	4,849	0,000

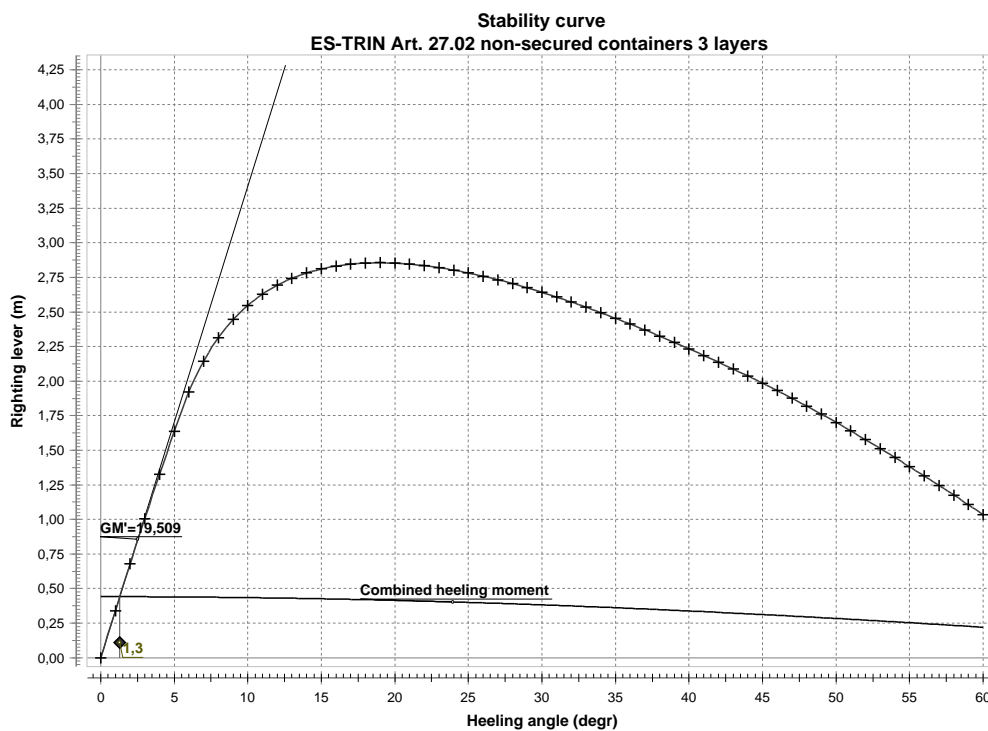
Lightship			239,923	45,090	0,000 (CL)	1,208	
Deadweight			220,500	42,573	0,000 (CL)	4,849	0,000
Displacement			460,423	43,885	0,000 (CL)	2,952	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	0,523	0,118	460,422	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	0,522	0,118	460,422	0,392	0,052	0,000	0,000	0,340	0,0030
2,0 (PS)	0,522	0,118	460,420	0,780	0,103	0,000	0,000	0,677	0,0119
3,0 (PS)	0,520	0,119	460,423	1,160	0,154	0,000	0,000	1,006	0,0266
4,0 (PS)	0,517	0,120	460,422	1,531	0,206	0,000	0,000	1,325	0,0469
5,0 (PS)	0,513	0,122	460,419	1,894	0,257	0,000	0,000	1,636	0,0728
6,0 (PS)	0,507	0,127	460,422	2,231	0,309	0,000	0,000	1,923	0,1039
7,0 (PS)	0,493	0,136	460,422	2,504	0,360	0,000	0,000	2,145	0,1395
8,0 (PS)	0,474	0,143	460,422	2,724	0,411	0,000	0,000	2,314	0,1785
9,0 (PS)	0,449	0,151	460,419	2,906	0,462	0,000	0,000	2,445	0,2200
10,0 (PS)	0,419	0,158	460,420	3,060	0,513	0,000	0,000	2,548	0,2636
11,0 (PS)	0,386	0,164	460,421	3,192	0,563	0,000	0,000	2,629	0,3088
12,0 (PS)	0,349	0,170	460,421	3,307	0,614	0,000	0,000	2,693	0,3553
13,0 (PS)	0,309	0,176	460,420	3,407	0,664	0,000	0,000	2,743	0,4028
14,0 (PS)	0,266	0,181	460,419	3,496	0,714	0,000	0,000	2,782	0,4510
15,0 (PS)	0,220	0,187	460,419	3,575	0,764	0,000	0,000	2,811	0,4998
16,0 (PS)	0,172	0,192	460,420	3,646	0,814	0,000	0,000	2,832	0,5491
17,0 (PS)	0,121	0,197	460,420	3,709	0,863	0,000	0,000	2,846	0,5986
18,0 (PS)	0,068	0,201	460,421	3,765	0,912	0,000	0,000	2,853	0,6484
19,0 (PS)	0,013	0,205	460,419	3,816	0,961	0,000	0,000	2,855	0,6982
20,0 (PS)	-0,045	0,209	460,420	3,862	1,010	0,000	0,000	2,853	0,7480
21,0 (PS)	-0,105	0,213	460,421	3,903	1,058	0,000	0,000	2,845	0,7977
22,0 (PS)	-0,167	0,217	460,419	3,940	1,106	0,000	0,000	2,835	0,8473
23,0 (PS)	-0,232	0,221	460,420	3,973	1,153	0,000	0,000	2,820	0,8967
24,0 (PS)	-0,299	0,224	460,421	4,003	1,201	0,000	0,000	2,802	0,9457
25,0 (PS)	-0,368	0,227	460,422	4,029	1,248	0,000	0,000	2,782	0,9945
26,0 (PS)	-0,439	0,231	460,419	4,052	1,294	0,000	0,000	2,758	1,0428
27,0 (PS)	-0,513	0,234	460,421	4,073	1,340	0,000	0,000	2,733	1,0907
28,0 (PS)	-0,589	0,237	460,421	4,090	1,386	0,000	0,000	2,704	1,1382
29,0 (PS)	-0,668	0,240	460,422	4,105	1,431	0,000	0,000	2,674	1,1851
30,0 (PS)	-0,749	0,242	460,420	4,118	1,476	0,000	0,000	2,642	1,2315
31,0 (PS)	-0,833	0,245	460,421	4,128	1,520	0,000	0,000	2,608	1,2773
32,0 (PS)	-0,920	0,248	460,422	4,136	1,564	0,000	0,000	2,572	1,3225
33,0 (PS)	-1,010	0,250	460,422	4,142	1,608	0,000	0,000	2,534	1,3671
34,0 (PS)	-1,103	0,253	460,420	4,146	1,651	0,000	0,000	2,495	1,4110
35,0 (PS)	-1,199	0,255	460,421	4,147	1,693	0,000	0,000	2,454	1,4542
36,0 (PS)	-1,298	0,257	460,422	4,147	1,735	0,000	0,000	2,412	1,4966
37,0 (PS)	-1,401	0,259	460,422	4,146	1,776	0,000	0,000	2,369	1,5384
38,0 (PS)	-1,508	0,261	460,420	4,142	1,817	0,000	0,000	2,325	1,5793
39,0 (PS)	-1,618	0,263	460,422	4,137	1,858	0,000	0,000	2,279	1,6195
40,0 (PS)	-1,733	0,266	460,422	4,130	1,897	0,000	0,000	2,233	1,6589
41,0 (PS)	-1,852	0,267	460,419	4,122	1,937	0,000	0,000	2,186	1,6975
42,0 (PS)	-1,976	0,269	460,422	4,112	1,975	0,000	0,000	2,137	1,7352
43,0 (PS)	-2,104	0,272	460,423	4,101	2,013	0,000	0,000	2,088	1,7721
44,0 (PS)	-2,238	0,275	460,419	4,088	2,051	0,000	0,000	2,037	1,8081
45,0 (PS)	-2,376	0,279	460,422	4,073	2,087	0,000	0,000	1,985	1,8432
46,0 (PS)	-2,520	0,284	460,422	4,055	2,123	0,000	0,000	1,932	1,8773
47,0 (PS)	-2,669	0,289	460,423	4,035	2,159	0,000	0,000	1,876	1,9106
48,0 (PS)	-2,824	0,293	460,423	4,013	2,194	0,000	0,000	1,819	1,9428
49,0 (PS)	-2,985	0,297	460,423	3,988	2,228	0,000	0,000	1,761	1,9741
50,0 (PS)	-3,152	0,301	460,423	3,962	2,261	0,000	0,000	1,701	2,0043

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
51,0 (PS)	-3,327	0,305	460,423	3,933	2,294	0,000	0,000	1,639	2,0334
52,0 (PS)	-3,510	0,309	460,423	3,902	2,326	0,000	0,000	1,576	2,0615
53,0 (PS)	-3,700	0,313	460,419	3,870	2,357	0,000	0,000	1,512	2,0884
54,0 (PS)	-3,900	0,316	460,420	3,835	2,388	0,000	0,000	1,447	2,1143
55,0 (PS)	-4,110	0,320	460,420	3,799	2,418	0,000	0,000	1,381	2,1390
56,0 (PS)	-4,331	0,323	460,420	3,761	2,447	0,000	0,000	1,314	2,1625
57,0 (PS)	-4,563	0,327	460,421	3,721	2,476	0,000	0,000	1,245	2,1848
58,0 (PS)	-4,809	0,331	460,421	3,679	2,503	0,000	0,000	1,176	2,2059
59,0 (PS)	-5,068	0,335	460,421	3,636	2,530	0,000	0,000	1,106	2,2259
60,0 (PS)	-5,343	0,339	460,421	3,592	2,556	0,000	0,000	1,035	2,2445



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	19,509 m	\geq	1,000 m	Complies
Combined heeling moment	1,3 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	203,130 t*m			
Required freeboard	2,554 m	\geq	0,000 m	Complies
Weight	203,130 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers 70 % full 3 layers ALU

2020.056_002 IW-NET Europa 3b Barge

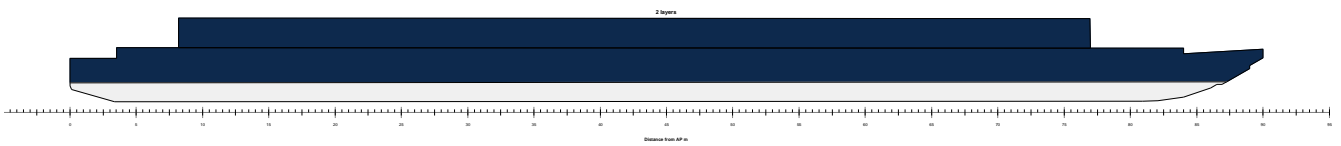
Designer

Created by Bernhard Bieringer

Comment

Filename 2020_056_002_Europa 3a barge.fbm

Design length	90,000 m	Midship location	45,000 m
Length over all	90,000 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,550 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	4,215 m
Draft aft pp	1,428 m	GG'	0,000 m
Mean moulded draft	1,464 m	VCG'	4,215 m
Draft forward pp	1,500 m	Max VCG'	6,917 m
Trim	0,072 m	GM solid	4,346 m
LCF	43,228 m	G'M liquid	4,346 m
LCB	43,014 m	Immersion rate	9,897 tonne/cm
KM	8,561 m	MCT	67,952 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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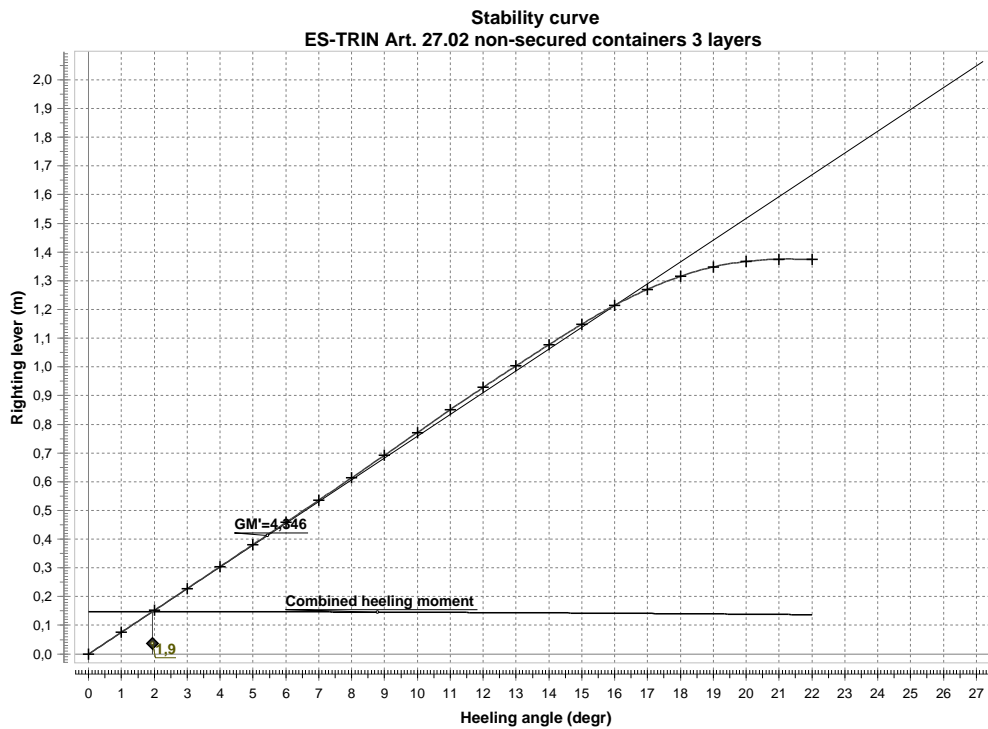
Containers

Containers 70 % full			758,100	42,573	0,000 (CL)	3,400	0,000
3rd layer 70 % full			379,050	42,573	0,000 (CL)	7,748	0,000
Totals for Containers			1137,150	42,573	0,000 (CL)	4,849	0,000

Lightship			239,923	45,090	0,000 (CL)	1,208	
Deadweight			1137,150	42,573	0,000 (CL)	4,849	0,000
Displacement			1377,073	43,012	0,000 (CL)	4,215	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,464	0,072	1377,073	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,464	0,071	1377,072	0,149	0,074	0,000	0,000	0,076	0,0007
2,0 (PS)	1,464	0,070	1377,072	0,299	0,147	0,000	0,000	0,152	0,0026
3,0 (PS)	1,463	0,069	1377,072	0,449	0,221	0,000	0,000	0,228	0,0060
4,0 (PS)	1,463	0,067	1377,072	0,598	0,294	0,000	0,000	0,304	0,0106
5,0 (PS)	1,463	0,065	1377,073	0,748	0,367	0,000	0,000	0,381	0,0166
6,0 (PS)	1,462	0,062	1377,073	0,899	0,441	0,000	0,000	0,458	0,0239
7,0 (PS)	1,461	0,059	1377,073	1,049	0,514	0,000	0,000	0,536	0,0326
8,0 (PS)	1,460	0,055	1377,073	1,200	0,587	0,000	0,000	0,614	0,0426
9,0 (PS)	1,459	0,052	1377,073	1,352	0,659	0,000	0,000	0,692	0,0540
10,0 (PS)	1,458	0,047	1377,073	1,503	0,732	0,000	0,000	0,771	0,0668
11,0 (PS)	1,457	0,043	1377,073	1,655	0,804	0,000	0,000	0,851	0,0809
12,0 (PS)	1,454	0,038	1377,072	1,805	0,876	0,000	0,000	0,928	0,0965
13,0 (PS)	1,451	0,034	1377,072	1,952	0,948	0,000	0,000	1,004	0,1133
14,0 (PS)	1,447	0,029	1377,072	2,097	1,020	0,000	0,000	1,077	0,1315
15,0 (PS)	1,442	0,024	1377,073	2,239	1,091	0,000	0,000	1,148	0,1509
16,0 (PS)	1,435	0,019	1377,070	2,376	1,162	0,000	0,000	1,215	0,1715
17,0 (PS)	1,424	0,014	1377,070	2,502	1,232	0,000	0,000	1,270	0,1932
18,0 (PS)	1,411	0,008	1377,073	2,618	1,302	0,000	0,000	1,316	0,2158
19,0 (PS)	1,396	0,002	1377,067	2,720	1,372	0,000	0,000	1,348	0,2391
20,0 (PS)	1,380	-0,006	1377,072	2,809	1,442	0,000	0,000	1,367	0,2628
21,0 (PS)	1,365	-0,016	1377,073	2,886	1,510	0,000	0,000	1,375	0,2868
22,0 (PS)	1,348	-0,027	1377,065	2,953	1,579	0,000	0,000	1,374	0,3108



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	4,346 m	>=	1,000 m	Complies
Combined heeling moment	1,9 degr	<=	5,0 degr	Complies
Calculated heeling moment (upright)	203,130 t*m			
Required freeboard	1,565 m	>=	0,000 m	Complies
Weight	203,130 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers full 3 layers ALU

2020.056_002 IW-NET Europa 3b Barge

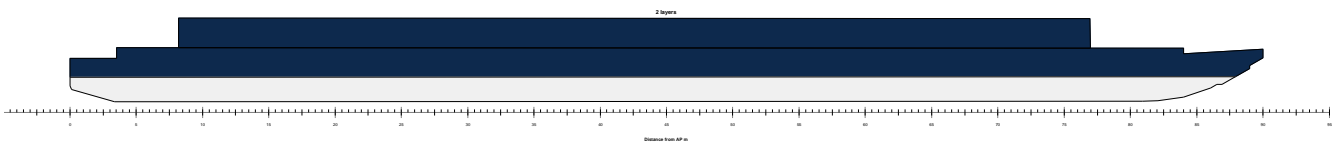
Designer

Created by Bernhard Bieringer

Comment

Filename 2020_056_002_Europa 3a barge.fbm

Design length	90,000 m	Midship location	45,000 m
Length over all	90,000 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,550 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	4,356 m
Draft aft pp	1,846 m	GG'	0,000 m
Mean moulded draft	1,858 m	VCG'	4,356 m
Draft forward pp	1,870 m	Max VCG'	5,829 m
Trim	0,024 m	GM solid	2,731 m
LCF	43,595 m	G'M liquid	2,731 m
LCB	42,915 m	Immersion rate	9,981 tonne/cm
KM	7,086 m	MCT	69,568 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers full			1020,000	42,573	0,000 (CL)	3,400	0,000
3rd layer full			510,000	42,573	0,000 (CL)	7,748	0,000
Totals for Containers			1530,000	42,573	0,000 (CL)	4,849	0,000

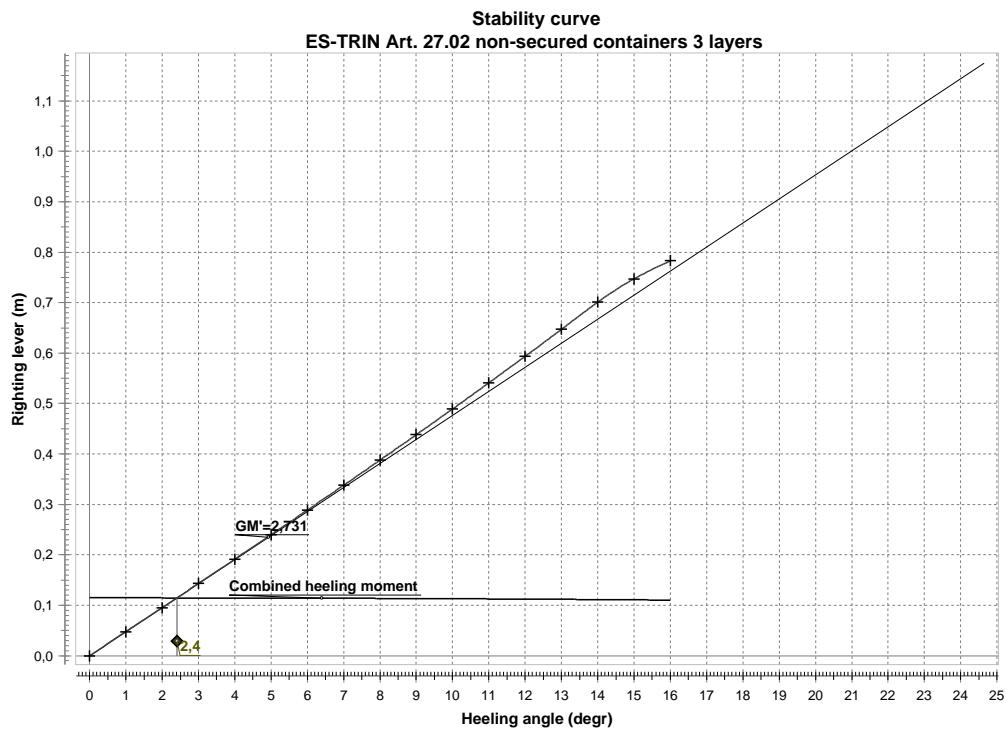
Lightship			239,923	45,090	0,000 (CL)	1,208	
Deadweight			1530,000	42,573	0,000 (CL)	4,849	0,000
Displacement			1769,923	42,914	0,000 (CL)	4,356	0,000

Righting levers

Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	1,858	0,024	1769,914	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,858	0,024	1769,909	0,124	0,076	0,000	0,000	0,048	0,0004
2,0 (PS)	1,858	0,023	1769,908	0,247	0,152	0,000	0,000	0,095	0,0017
3,0 (PS)	1,858	0,022	1769,909	0,371	0,228	0,000	0,000	0,143	0,0037
4,0 (PS)	1,858	0,020	1769,912	0,495	0,304	0,000	0,000	0,191	0,0067
5,0 (PS)	1,857	0,018	1769,916	0,619	0,380	0,000	0,000	0,240	0,0104
6,0 (PS)	1,857	0,015	1769,920	0,744	0,455	0,000	0,000	0,289	0,0150
7,0 (PS)	1,856	0,012	1769,922	0,869	0,531	0,000	0,000	0,338	0,0205
8,0 (PS)	1,855	0,008	1769,923	0,994	0,606	0,000	0,000	0,388	0,0268

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
9,0 (PS)	1,855	0,004	1769,922	1,120	0,681	0,000	0,000	0,438	0,0341
10,0 (PS)	1,854	-0,001	1769,920	1,246	0,756	0,000	0,000	0,489	0,0421
11,0 (PS)	1,853	-0,006	1769,917	1,372	0,831	0,000	0,000	0,541	0,0511
12,0 (PS)	1,852	-0,012	1769,915	1,499	0,906	0,000	0,000	0,594	0,0610
13,0 (PS)	1,850	-0,018	1769,911	1,627	0,980	0,000	0,000	0,647	0,0719
14,0 (PS)	1,849	-0,024	1769,932	1,755	1,054	0,000	0,000	0,701	0,0836
15,0 (PS)	1,850	-0,034	1769,923	1,875	1,127	0,000	0,000	0,747	0,0963
16,0 (PS)	1,853	-0,045	1769,924	1,984	1,201	0,000	0,000	0,783	0,1096



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	2,731 m	\geq	1,000 m	Complies
Combined heeling moment	2,4 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	203,130 t*m			
Required freeboard	1,142 m	\geq	0,000 m	Complies
Weight	203,130 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Summary of intact stability

Description	Density	Draft	Draft BoK	Trim	List	Displ.	VCG'	Max VCG'	GM'	Complies
		m	m	m	degr	t	m	m	m	
Containers empty	1,0000	0,618	0,618	0,065	0,0 (CL)	421,925	2,040	9,995	11,223	Complies
Containers 70 % full	1,0000	1,437	1,437	-0,043	0,0 (CL)	1033,025	2,845	4,969	3,314	Complies
Containers full	1,0000	1,784	1,784	-0,112	0,0 (CL)	1294,925	2,957	4,268	2,311	Complies
Containers empty 3 layers	1,0000	0,718	0,718	0,057	0,0 (CL)	495,425	2,887	7,473	8,567	Complies
Containers 70 % full 3 layers	1,0000	1,939	1,939	-0,147	0,0 (CL)	1412,075	4,161	3,630	0,835	FAILS
Containers full 3 layers	1,0000	2,455	2,455	-0,274	0,0 (CL)	1804,925	4,311	3,367	0,101	FAILS
Containers empty ALU	1,0000	0,505	0,505	0,050	0,0 (CL)	338,876	2,229	11,742	13,987	Complies
Containers 70 % full ALU	1,0000	1,327	1,327	-0,044	0,0 (CL)	949,976	2,982	5,267	3,579	Complies
Containers full ALU	1,0000	1,674	1,674	-0,109	0,0 (CL)	1211,876	3,072	4,501	2,428	Complies
Containers empty 3 layers ALU	1,0000	0,605	0,605	0,044	0,0 (CL)	412,376	3,212	8,506	10,332	Complies
Containers 70 % full 3 layers ALU	1,0000	1,829	1,829	-0,143	0,0 (CL)	1329,026	4,341	3,731	0,841	FAILS
Containers full 3 layers ALU	1,0000	2,346	2,346	-0,266	0,0 (CL)	1721,876	4,457	3,409	0,046	FAILS

Components of deadweight

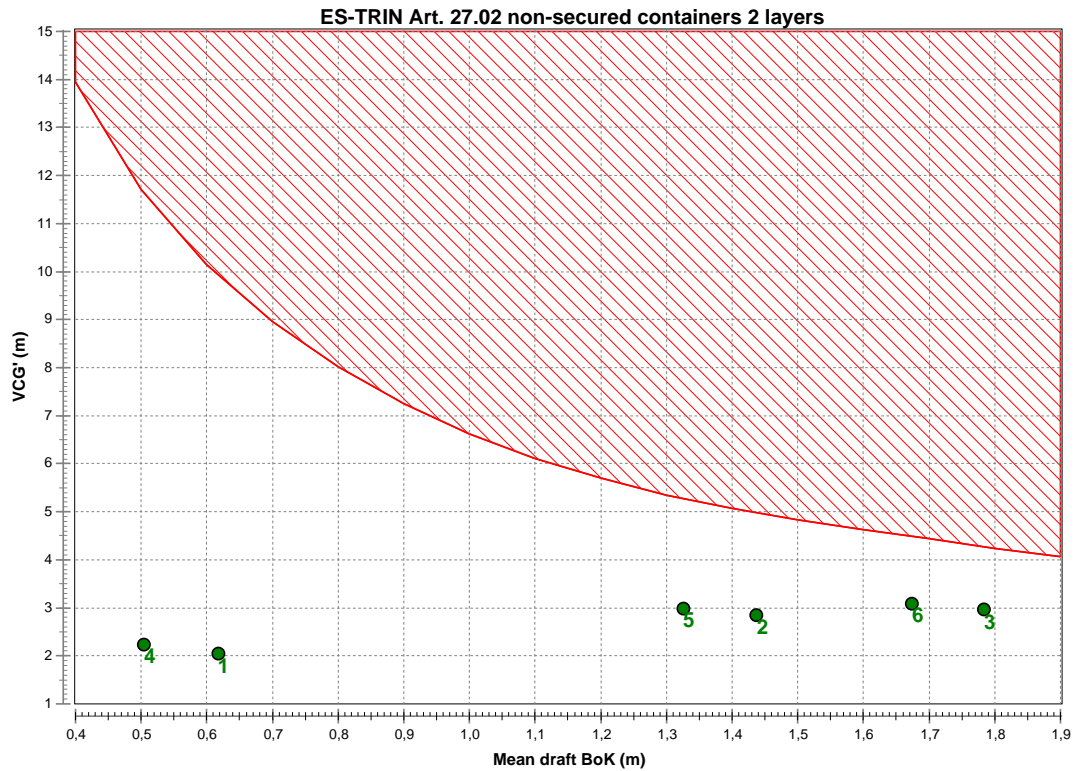
Loading condition	Deadweight	Containers t
Containers empty	147,000	147,000
Containers 70 % full	758,100	758,100
Containers full	1020,000	1020,000
Containers empty 3 layers	220,500	220,500
Containers 70 % full 3 layers	1137,150	1137,150
Containers full 3 layers	1530,000	1530,000
Containers empty ALU	147,000	147,000
Containers 70 % full ALU	758,100	758,100
Containers full ALU	1020,000	1020,000
Containers empty 3 layers ALU	220,500	220,500
Containers 70 % full 3 layers ALU	1137,150	1137,150
Containers full 3 layers ALU	1530,000	1530,000

Maximum VCG' envelope

Criteria : ES-TRIN Art. 27.02 non-secured containers 2 layers

Calculated for average trim : -0,032 m

Wind silhouette : 2 layers



Loading conditions:

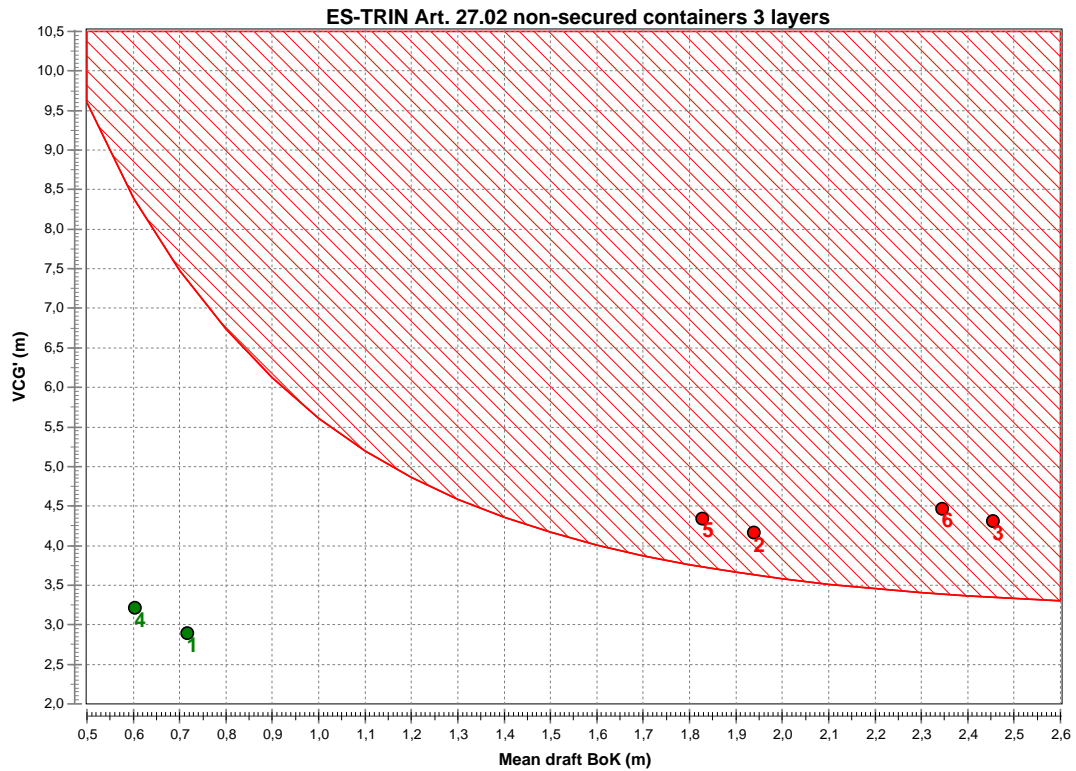
1. Containers empty
2. Containers 70 % full
3. Containers full
4. Containers empty ALU
5. Containers 70 % full ALU
6. Containers full ALU

Maximum VCG' envelope

Criteria : ES-TRIN Art. 27.02 non-secured containers 3 layers

Calculated for average trim : -0,121 m

Wind silhouette : 2 layers



Loading conditions:

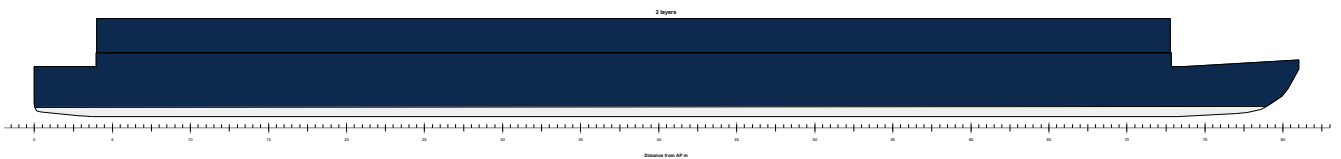
1. Containers empty 3 layers
2. Containers 70 % full 3 layers
3. Containers full 3 layers
4. Containers empty 3 layers ALU
5. Containers 70 % full 3 layers ALU
6. Containers full 3 layers ALU

Containers empty

2020.056_003 IW-NET barge 3 units abreast

Designer Bernhard Bieringer
 Created by Bernhard Bieringer
 Comment
 Filename 2020_056_003_IW-NET 3 Units abreast.fbm

Design length	81,000 m	Midship location	40,500 m
Length over all	81,000 m	Water density	1,0000
Design beam	9,500 m	Mean shell thickness	0,0000 m
Maximum beam	9,500 m	Appendage coefficient	1,0000
Design draft	1,830 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,040 m
Draft aft pp	0,586 m	GG'	0,000 m
Mean moulded draft	0,618 m	VCG'	2,040 m
Draft forward pp	0,651 m	Max VCG'	9,995 m
Trim	0,065 m	GM solid	11,223 m
LCF	38,859 m	G'M liquid	11,223 m
LCB	39,370 m	Immersion rate	7,365 tonne/cm
KM	13,264 m	MCT	45,501 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

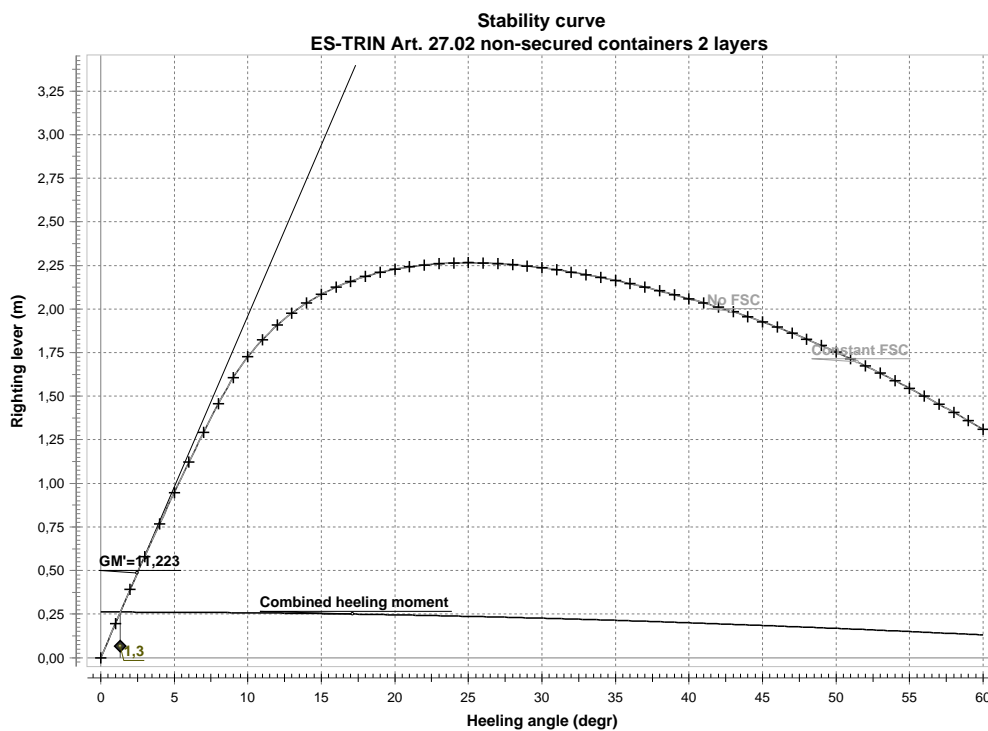
Containers empty			147,000	38,390	0,000 (CL)	3,400	0,000
Lightship			274,925	39,892	0,000 (CL)	1,313	
Deadweight			147,000	38,390	0,000 (CL)	3,400	0,000
Displacement			421,925	39,369	0,000 (CL)	2,040	0,000

Righting levers

Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	0,618	0,065	421,924	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	0,618	0,065	421,925	0,231	0,036	0,000	0,000	0,196	0,0017
2,0 (PS)	0,618	0,064	421,925	0,462	0,071	0,000	0,000	0,391	0,0068
3,0 (PS)	0,617	0,064	421,925	0,688	0,107	0,000	0,000	0,581	0,0153
4,0 (PS)	0,615	0,064	421,925	0,908	0,142	0,000	0,000	0,766	0,0271
5,0 (PS)	0,613	0,063	421,922	1,124	0,178	0,000	0,000	0,946	0,0420
6,0 (PS)	0,609	0,063	421,924	1,335	0,213	0,000	0,000	1,122	0,0601
7,0 (PS)	0,605	0,063	421,922	1,541	0,249	0,000	0,000	1,292	0,0812
8,0 (PS)	0,600	0,063	421,924	1,742	0,284	0,000	0,000	1,458	0,1052
9,0 (PS)	0,592	0,066	421,924	1,924	0,319	0,000	0,000	1,605	0,1319
10,0 (PS)	0,580	0,068	421,924	2,080	0,354	0,000	0,000	1,725	0,1610
11,0 (PS)	0,564	0,071	421,924	2,214	0,389	0,000	0,000	1,825	0,1920
12,0 (PS)	0,545	0,073	421,923	2,332	0,424	0,000	0,000	1,907	0,2246
13,0 (PS)	0,523	0,076	421,924	2,436	0,459	0,000	0,000	1,977	0,2585
14,0 (PS)	0,498	0,078	421,923	2,528	0,494	0,000	0,000	2,035	0,2936
15,0 (PS)	0,471	0,080	421,921	2,612	0,528	0,000	0,000	2,084	0,3295
16,0 (PS)	0,441	0,082	421,923	2,687	0,562	0,000	0,000	2,124	0,3662
17,0 (PS)	0,409	0,084	421,923	2,755	0,596	0,000	0,000	2,159	0,4036
18,0 (PS)	0,375	0,086	421,922	2,817	0,630	0,000	0,000	2,187	0,4416
19,0 (PS)	0,339	0,088	421,922	2,874	0,664	0,000	0,000	2,210	0,4799
20,0 (PS)	0,301	0,090	421,922	2,926	0,698	0,000	0,000	2,228	0,5187
21,0 (PS)	0,260	0,092	421,922	2,973	0,731	0,000	0,000	2,242	0,5577
22,0 (PS)	0,218	0,094	421,922	3,017	0,764	0,000	0,000	2,253	0,5969
23,0 (PS)	0,174	0,095	421,923	3,057	0,797	0,000	0,000	2,260	0,6363
24,0 (PS)	0,128	0,097	421,923	3,093	0,830	0,000	0,000	2,264	0,6758
25,0 (PS)	0,080	0,098	421,924	3,127	0,862	0,000	0,000	2,265	0,7153
26,0 (PS)	0,030	0,100	421,921	3,158	0,894	0,000	0,000	2,264	0,7548
27,0 (PS)	-0,023	0,101	421,923	3,186	0,926	0,000	0,000	2,260	0,7943
28,0 (PS)	-0,077	0,102	421,924	3,212	0,958	0,000	0,000	2,254	0,8337
29,0 (PS)	-0,133	0,104	421,921	3,235	0,989	0,000	0,000	2,246	0,8730
30,0 (PS)	-0,192	0,105	421,922	3,257	1,020	0,000	0,000	2,236	0,9121
31,0 (PS)	-0,252	0,106	421,923	3,276	1,051	0,000	0,000	2,225	0,9510
32,0 (PS)	-0,315	0,107	421,924	3,293	1,081	0,000	0,000	2,212	0,9897
33,0 (PS)	-0,381	0,108	421,922	3,308	1,111	0,000	0,000	2,197	1,0282
34,0 (PS)	-0,449	0,109	421,923	3,322	1,141	0,000	0,000	2,181	1,0664
35,0 (PS)	-0,519	0,109	421,924	3,334	1,170	0,000	0,000	2,163	1,1043
36,0 (PS)	-0,593	0,110	421,924	3,344	1,199	0,000	0,000	2,145	1,1419
37,0 (PS)	-0,669	0,111	421,922	3,353	1,228	0,000	0,000	2,125	1,1792
38,0 (PS)	-0,748	0,112	421,924	3,360	1,256	0,000	0,000	2,104	1,2161
39,0 (PS)	-0,830	0,112	421,924	3,366	1,284	0,000	0,000	2,082	1,2526
40,0 (PS)	-0,916	0,113	421,922	3,370	1,311	0,000	0,000	2,059	1,2888
41,0 (PS)	-1,005	0,113	421,923	3,373	1,338	0,000	0,000	2,035	1,3245
42,0 (PS)	-1,098	0,114	421,924	3,375	1,365	0,000	0,000	2,010	1,3598
43,0 (PS)	-1,194	0,115	421,925	3,375	1,391	0,000	0,000	1,984	1,3946
44,0 (PS)	-1,295	0,117	421,922	3,374	1,417	0,000	0,000	1,956	1,4290
45,0 (PS)	-1,398	0,118	421,922	3,369	1,443	0,000	0,000	1,927	1,4629
46,0 (PS)	-1,505	0,120	421,923	3,363	1,468	0,000	0,000	1,895	1,4963
47,0 (PS)	-1,617	0,121	421,923	3,354	1,492	0,000	0,000	1,862	1,5291
48,0 (PS)	-1,732	0,121	421,923	3,343	1,516	0,000	0,000	1,827	1,5613
49,0 (PS)	-1,853	0,122	421,924	3,331	1,540	0,000	0,000	1,791	1,5928
50,0 (PS)	-1,978	0,122	421,924	3,316	1,563	0,000	0,000	1,753	1,6238

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
51,0 (PS)	-2,108	0,122	421,924	3,299	1,585	0,000	0,000	1,714	1,6540
52,0 (PS)	-2,245	0,122	421,924	3,281	1,608	0,000	0,000	1,673	1,6836
53,0 (PS)	-2,387	0,122	421,924	3,261	1,629	0,000	0,000	1,632	1,7124
54,0 (PS)	-2,537	0,122	421,924	3,239	1,650	0,000	0,000	1,589	1,7405
55,0 (PS)	-2,694	0,121	421,924	3,216	1,671	0,000	0,000	1,545	1,7679
56,0 (PS)	-2,858	0,120	421,924	3,191	1,691	0,000	0,000	1,500	1,7945
57,0 (PS)	-3,032	0,119	421,924	3,165	1,711	0,000	0,000	1,454	1,8202
58,0 (PS)	-3,215	0,118	421,924	3,137	1,730	0,000	0,000	1,407	1,8452
59,0 (PS)	-3,409	0,117	421,924	3,108	1,749	0,000	0,000	1,359	1,8693
60,0 (PS)	-3,614	0,115	421,923	3,077	1,767	0,000	0,000	1,310	1,8926



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	11,223 m	>=	1,000 m	Complies
Combined heeling moment	1,3 degr	<=	5,0 degr	Complies
Calculated heeling moment (upright)	110,380 t*m			
Required freeboard	2,444 m	>=	0,000 m	Complies
Weight	110,380 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers 70 % full

2020.056_003 IW-NET barge 3 units abreast

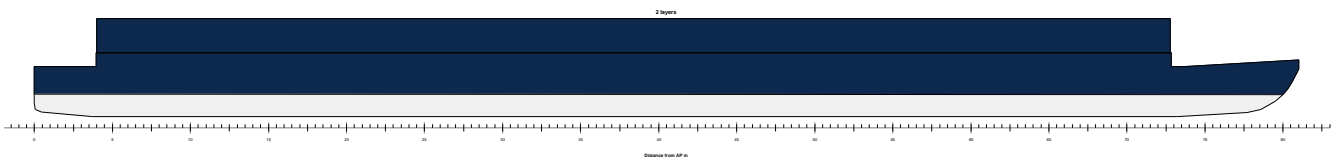
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_003_IW-NET 3 Units abreast.fbm

Design length	81,000 m	Midship location	40,500 m
Length over all	81,000 m	Water density	1,0000
Design beam	9,500 m	Mean shell thickness	0,0000 m
Maximum beam	9,500 m	Appendage coefficient	1,0000
Design draft	1,830 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,845 m
Draft aft pp	1,459 m	GG'	0,000 m
Mean moulded draft	1,437 m	VCG'	2,845 m
Draft forward pp	1,416 m	Max VCG'	4,969 m
Trim	-0,043 m	GM solid	3,314 m
LCF	39,550 m	G'M liquid	3,314 m
LCB	38,788 m	Immersion rate	7,513 tonne/cm
KM	6,159 m	MCT	48,102 t*m

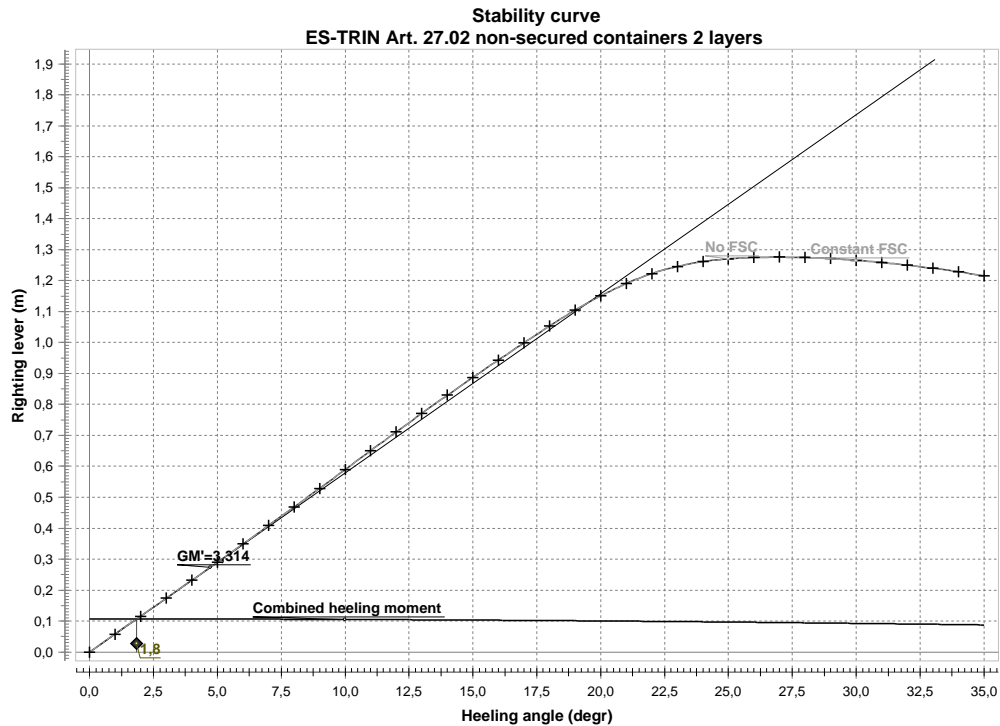
Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers 70 % full			758,100	38,390	0,000 (CL)	3,400	0,000
Lightship			274,925	39,892	0,000 (CL)	1,313	
Deadweight			758,100	38,390	0,000 (CL)	3,400	0,000
Displacement			1033,025	38,790	0,000 (CL)	2,845	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,437	-0,043	1033,025	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,437	-0,043	1033,024	0,108	0,050	0,000	0,000	0,058	0,0005
2,0 (PS)	1,437	-0,044	1033,022	0,215	0,099	0,000	0,000	0,116	0,0020
3,0 (PS)	1,437	-0,044	1033,017	0,323	0,149	0,000	0,000	0,174	0,0045
4,0 (PS)	1,437	-0,046	1033,025	0,430	0,198	0,000	0,000	0,232	0,0081
5,0 (PS)	1,437	-0,047	1033,025	0,538	0,248	0,000	0,000	0,291	0,0126
6,0 (PS)	1,436	-0,049	1033,025	0,647	0,297	0,000	0,000	0,349	0,0182
7,0 (PS)	1,436	-0,051	1033,025	0,755	0,347	0,000	0,000	0,409	0,0248
8,0 (PS)	1,435	-0,053	1033,025	0,864	0,396	0,000	0,000	0,468	0,0325
9,0 (PS)	1,435	-0,056	1033,025	0,973	0,445	0,000	0,000	0,528	0,0412
10,0 (PS)	1,434	-0,059	1033,025	1,083	0,494	0,000	0,000	0,589	0,0509
11,0 (PS)	1,434	-0,062	1033,025	1,193	0,543	0,000	0,000	0,650	0,0618
12,0 (PS)	1,433	-0,066	1033,025	1,303	0,591	0,000	0,000	0,711	0,0736
13,0 (PS)	1,431	-0,070	1033,017	1,411	0,640	0,000	0,000	0,771	0,0866
14,0 (PS)	1,429	-0,075	1033,025	1,518	0,688	0,000	0,000	0,830	0,1006
15,0 (PS)	1,426	-0,079	1033,025	1,623	0,736	0,000	0,000	0,887	0,1155
16,0 (PS)	1,422	-0,084	1033,025	1,727	0,784	0,000	0,000	0,943	0,1315
17,0 (PS)	1,417	-0,089	1033,024	1,830	0,832	0,000	0,000	0,999	0,1485
18,0 (PS)	1,412	-0,094	1033,023	1,932	0,879	0,000	0,000	1,053	0,1664
19,0 (PS)	1,405	-0,100	1033,024	2,030	0,926	0,000	0,000	1,104	0,1852
20,0 (PS)	1,397	-0,107	1033,025	2,123	0,973	0,000	0,000	1,150	0,2049
21,0 (PS)	1,386	-0,114	1033,019	2,210	1,019	0,000	0,000	1,191	0,2253
22,0 (PS)	1,373	-0,123	1033,024	2,288	1,066	0,000	0,000	1,223	0,2464
23,0 (PS)	1,361	-0,134	1033,020	2,357	1,111	0,000	0,000	1,246	0,2679
24,0 (PS)	1,348	-0,145	1033,016	2,418	1,157	0,000	0,000	1,261	0,2898
25,0 (PS)	1,335	-0,156	1033,024	2,473	1,202	0,000	0,000	1,270	0,3119
26,0 (PS)	1,321	-0,167	1033,024	2,522	1,247	0,000	0,000	1,275	0,3341
27,0 (PS)	1,306	-0,178	1033,017	2,567	1,291	0,000	0,000	1,276	0,3564
28,0 (PS)	1,289	-0,188	1033,020	2,610	1,335	0,000	0,000	1,274	0,3787
29,0 (PS)	1,270	-0,197	1033,023	2,650	1,379	0,000	0,000	1,271	0,4009
30,0 (PS)	1,250	-0,207	1033,024	2,688	1,422	0,000	0,000	1,266	0,4230
31,0 (PS)	1,228	-0,216	1033,016	2,724	1,465	0,000	0,000	1,259	0,4451
32,0 (PS)	1,205	-0,225	1033,022	2,757	1,507	0,000	0,000	1,250	0,4669
33,0 (PS)	1,180	-0,233	1033,024	2,789	1,549	0,000	0,000	1,240	0,4887
34,0 (PS)	1,153	-0,242	1033,016	2,819	1,591	0,000	0,000	1,228	0,5102
35,0 (PS)	1,124	-0,250	1033,025	2,847	1,632	0,000	0,000	1,215	0,5315



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	3,314 m	\geq	1,000 m	Complies
Combined heeling moment	1,8 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	110,380 t*m			
Required freeboard	1,587 m	\geq	0,000 m	Complies
Weight	110,380 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers full

2020.056_003 IW-NET barge 3 units abreast

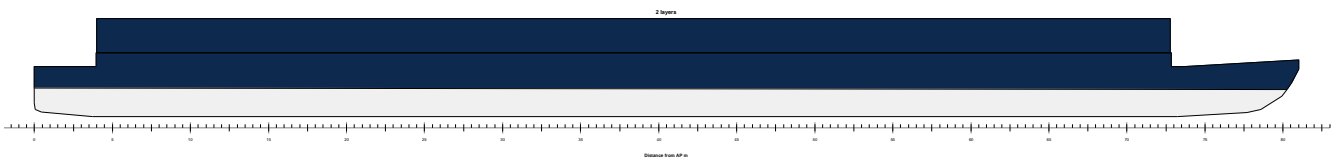
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_003_IW-NET 3 Units abreast.fbm

Design length	81,000 m	Midship location	40,500 m
Length over all	81,000 m	Water density	1,0000
Design beam	9,500 m	Mean shell thickness	0,0000 m
Maximum beam	9,500 m	Appendage coefficient	1,0000
Design draft	1,830 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,957 m
Draft aft pp	1,840 m	GG'	0,000 m
Mean moulded draft	1,784 m	VCG'	2,957 m
Draft forward pp	1,728 m	Max VCG'	4,268 m
Trim	-0,112 m	GM solid	2,311 m
LCF	39,767 m	G'M liquid	2,311 m
LCB	38,706 m	Immersion rate	7,554 tonne/cm
KM	5,268 m	MCT	48,840 t*m

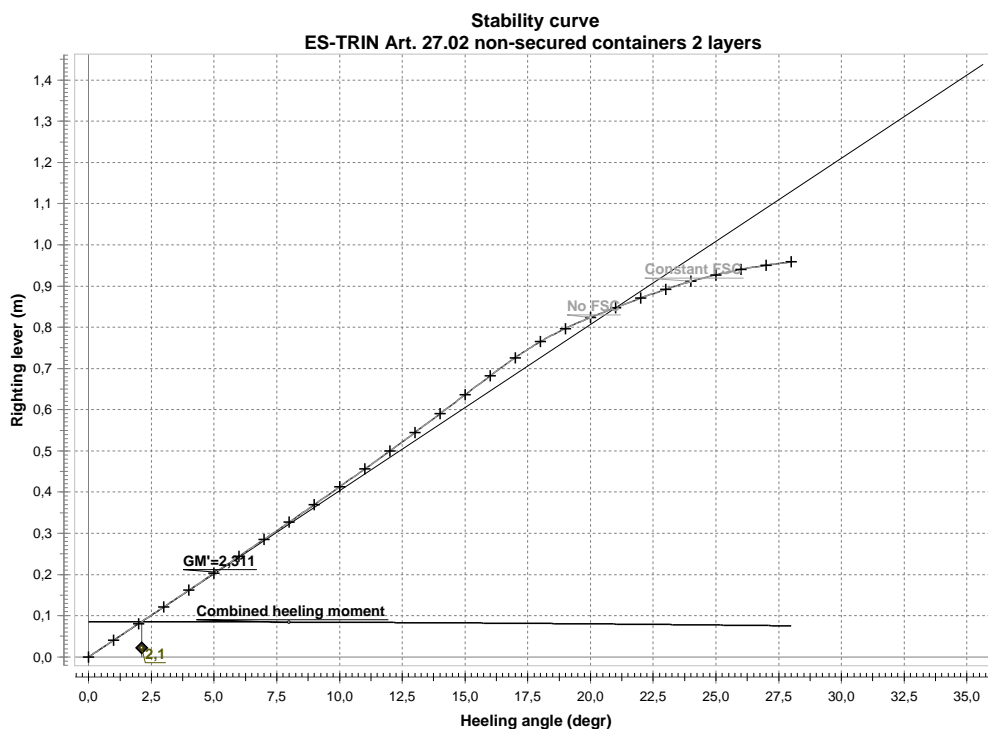
Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers full			1020,000	38,390	0,000 (CL)	3,400	0,000
Lightship			274,925	39,892	0,000 (CL)	1,313	
Deadweight			1020,000	38,390	0,000 (CL)	3,400	0,000
Displacement			1294,925	38,709	0,000 (CL)	2,957	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,784	-0,112	1294,925	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,784	-0,112	1294,925	0,092	0,052	0,000	0,000	0,040	0,0004
2,0 (PS)	1,784	-0,112	1294,923	0,184	0,103	0,000	0,000	0,081	0,0014
3,0 (PS)	1,784	-0,113	1294,919	0,276	0,155	0,000	0,000	0,121	0,0032
4,0 (PS)	1,784	-0,114	1294,916	0,368	0,206	0,000	0,000	0,162	0,0056
5,0 (PS)	1,784	-0,115	1294,925	0,461	0,258	0,000	0,000	0,203	0,0088
6,0 (PS)	1,783	-0,117	1294,925	0,553	0,309	0,000	0,000	0,244	0,0127
7,0 (PS)	1,783	-0,119	1294,925	0,646	0,360	0,000	0,000	0,285	0,0173
8,0 (PS)	1,783	-0,121	1294,925	0,739	0,412	0,000	0,000	0,327	0,0227
9,0 (PS)	1,782	-0,123	1294,925	0,832	0,463	0,000	0,000	0,370	0,0288
10,0 (PS)	1,782	-0,126	1294,925	0,926	0,513	0,000	0,000	0,412	0,0356
11,0 (PS)	1,781	-0,129	1294,925	1,020	0,564	0,000	0,000	0,456	0,0432
12,0 (PS)	1,781	-0,132	1294,925	1,115	0,615	0,000	0,000	0,500	0,0515
13,0 (PS)	1,780	-0,136	1294,925	1,210	0,665	0,000	0,000	0,544	0,0606
14,0 (PS)	1,779	-0,140	1294,925	1,305	0,715	0,000	0,000	0,590	0,0705
15,0 (PS)	1,778	-0,144	1294,925	1,401	0,765	0,000	0,000	0,636	0,0812
16,0 (PS)	1,777	-0,149	1294,925	1,497	0,815	0,000	0,000	0,682	0,0927
17,0 (PS)	1,776	-0,156	1294,925	1,591	0,865	0,000	0,000	0,726	0,1050
18,0 (PS)	1,776	-0,167	1294,926	1,679	0,914	0,000	0,000	0,765	0,1180
19,0 (PS)	1,777	-0,179	1294,928	1,760	0,963	0,000	0,000	0,797	0,1317
20,0 (PS)	1,780	-0,191	1294,926	1,835	1,011	0,000	0,000	0,824	0,1458
21,0 (PS)	1,783	-0,202	1294,924	1,908	1,060	0,000	0,000	0,848	0,1604
22,0 (PS)	1,786	-0,213	1294,923	1,978	1,108	0,000	0,000	0,871	0,1754
23,0 (PS)	1,788	-0,224	1294,922	2,048	1,155	0,000	0,000	0,892	0,1908
24,0 (PS)	1,789	-0,236	1294,920	2,114	1,203	0,000	0,000	0,911	0,2065
25,0 (PS)	1,789	-0,248	1294,920	2,177	1,250	0,000	0,000	0,927	0,2226
26,0 (PS)	1,786	-0,260	1294,923	2,236	1,296	0,000	0,000	0,940	0,2389
27,0 (PS)	1,783	-0,272	1294,925	2,293	1,342	0,000	0,000	0,951	0,2554
28,0 (PS)	1,777	-0,282	1294,924	2,347	1,388	0,000	0,000	0,958	0,2721



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	2,311 m	\geq	1,000 m	Complies
Combined heeling moment	2,1 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	110,380 t*m			
Required freeboard	1,185 m	\geq	0,000 m	Complies
Weight	110,380 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers empty 3 layers

2020.056_003 IW-NET barge 3 units abreast

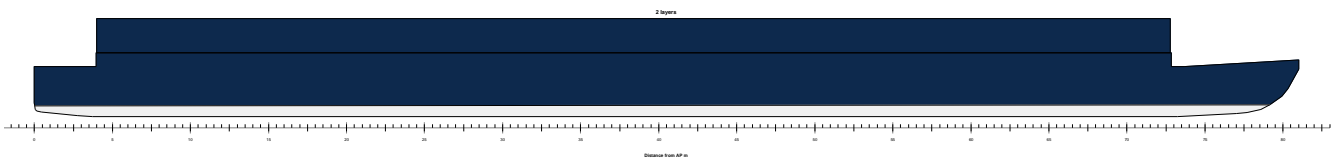
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_003_IW-NET 3 Units abreast.fbm

Design length	81,000 m	Midship location	40,500 m
Length over all	81,000 m	Water density	1,0000
Design beam	9,500 m	Mean shell thickness	0,0000 m
Maximum beam	9,500 m	Appendage coefficient	1,0000
Design draft	1,830 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,887 m
Draft aft pp	0,690 m	GG'	0,000 m
Mean moulded draft	0,718 m	VCG'	2,887 m
Draft forward pp	0,746 m	Max VCG'	7,473 m
Trim	0,057 m	GM solid	8,567 m
LCF	38,944 m	G'M liquid	8,567 m
LCB	39,225 m	Immersion rate	7,391 tonne/cm
KM	11,454 m	MCT	45,929 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

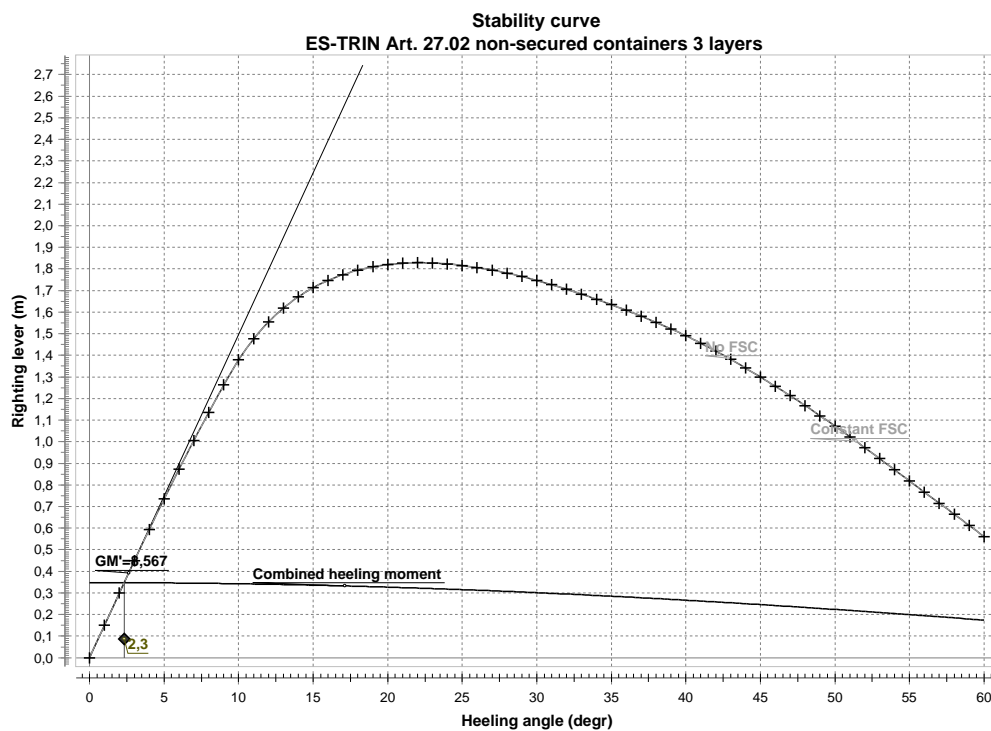
Containers empty			147,000	38,390	0,000 (CL)	3,400	0,000
3rd layer empty			73,500	38,390	0,000 (CL)	7,748	0,000
Totals for Containers			220,500	38,390	0,000 (CL)	4,849	0,000
Lightship			274,925	39,892	0,000 (CL)	1,313	
Deadweight			220,500	38,390	0,000 (CL)	4,849	0,000
Displacement			495,425	39,224	0,000 (CL)	2,887	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	0,718	0,057	495,424	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	0,718	0,056	495,420	0,200	0,050	0,000	0,000	0,150	0,0013
2,0 (PS)	0,718	0,056	495,425	0,400	0,101	0,000	0,000	0,299	0,0052
3,0 (PS)	0,717	0,055	495,425	0,599	0,151	0,000	0,000	0,448	0,0117
4,0 (PS)	0,716	0,055	495,425	0,795	0,201	0,000	0,000	0,594	0,0208
5,0 (PS)	0,715	0,054	495,425	0,987	0,252	0,000	0,000	0,735	0,0324
6,0 (PS)	0,712	0,053	495,423	1,175	0,302	0,000	0,000	0,873	0,0465
7,0 (PS)	0,709	0,052	495,425	1,358	0,352	0,000	0,000	1,007	0,0629
8,0 (PS)	0,705	0,051	495,424	1,538	0,402	0,000	0,000	1,136	0,0816
9,0 (PS)	0,700	0,050	495,425	1,714	0,452	0,000	0,000	1,262	0,1025
10,0 (PS)	0,694	0,050	495,422	1,881	0,501	0,000	0,000	1,380	0,1256
11,0 (PS)	0,683	0,051	495,423	2,026	0,551	0,000	0,000	1,476	0,1506
12,0 (PS)	0,670	0,052	495,424	2,154	0,600	0,000	0,000	1,554	0,1770
13,0 (PS)	0,653	0,053	495,421	2,267	0,649	0,000	0,000	1,618	0,2047
14,0 (PS)	0,633	0,054	495,423	2,369	0,698	0,000	0,000	1,670	0,2334
15,0 (PS)	0,610	0,055	495,422	2,460	0,747	0,000	0,000	1,713	0,2630
16,0 (PS)	0,585	0,056	495,420	2,542	0,796	0,000	0,000	1,747	0,2932
17,0 (PS)	0,558	0,057	495,423	2,618	0,844	0,000	0,000	1,774	0,3239
18,0 (PS)	0,528	0,058	495,423	2,686	0,892	0,000	0,000	1,794	0,3551
19,0 (PS)	0,497	0,059	495,422	2,749	0,940	0,000	0,000	1,809	0,3865
20,0 (PS)	0,463	0,059	495,422	2,807	0,987	0,000	0,000	1,820	0,4182
21,0 (PS)	0,427	0,060	495,422	2,861	1,035	0,000	0,000	1,826	0,4500
22,0 (PS)	0,389	0,061	495,422	2,910	1,081	0,000	0,000	1,828	0,4819
23,0 (PS)	0,349	0,061	495,423	2,955	1,128	0,000	0,000	1,827	0,5138
24,0 (PS)	0,307	0,062	495,423	2,997	1,174	0,000	0,000	1,823	0,5457
25,0 (PS)	0,263	0,062	495,424	3,036	1,220	0,000	0,000	1,816	0,5774
26,0 (PS)	0,217	0,063	495,421	3,072	1,266	0,000	0,000	1,807	0,6091
27,0 (PS)	0,169	0,063	495,423	3,105	1,311	0,000	0,000	1,795	0,6405
28,0 (PS)	0,119	0,063	495,424	3,136	1,355	0,000	0,000	1,781	0,6717
29,0 (PS)	0,067	0,063	495,421	3,164	1,400	0,000	0,000	1,765	0,7026
30,0 (PS)	0,012	0,064	495,422	3,190	1,443	0,000	0,000	1,747	0,7333
31,0 (PS)	-0,045	0,064	495,424	3,214	1,487	0,000	0,000	1,727	0,7636
32,0 (PS)	-0,103	0,064	495,424	3,236	1,530	0,000	0,000	1,706	0,7936
33,0 (PS)	-0,165	0,064	495,422	3,256	1,572	0,000	0,000	1,684	0,8232
34,0 (PS)	-0,229	0,063	495,423	3,274	1,614	0,000	0,000	1,660	0,8523
35,0 (PS)	-0,295	0,063	495,424	3,290	1,656	0,000	0,000	1,635	0,8811
36,0 (PS)	-0,364	0,063	495,421	3,305	1,697	0,000	0,000	1,608	0,9094
37,0 (PS)	-0,436	0,063	495,423	3,318	1,737	0,000	0,000	1,581	0,9372
38,0 (PS)	-0,511	0,063	495,424	3,330	1,777	0,000	0,000	1,553	0,9646
39,0 (PS)	-0,589	0,063	495,425	3,340	1,817	0,000	0,000	1,523	0,9914
40,0 (PS)	-0,669	0,063	495,425	3,346	1,856	0,000	0,000	1,490	1,0177
41,0 (PS)	-0,751	0,062	495,421	3,350	1,894	0,000	0,000	1,456	1,0434
42,0 (PS)	-0,836	0,061	495,421	3,351	1,932	0,000	0,000	1,420	1,0685
43,0 (PS)	-0,924	0,060	495,422	3,350	1,969	0,000	0,000	1,382	1,0930
44,0 (PS)	-1,014	0,059	495,422	3,347	2,005	0,000	0,000	1,342	1,1167
45,0 (PS)	-1,108	0,057	495,423	3,342	2,041	0,000	0,000	1,300	1,1398
46,0 (PS)	-1,205	0,055	495,423	3,334	2,077	0,000	0,000	1,257	1,1621
47,0 (PS)	-1,306	0,053	495,423	3,324	2,111	0,000	0,000	1,213	1,1837
48,0 (PS)	-1,411	0,050	495,422	3,312	2,145	0,000	0,000	1,167	1,2044
49,0 (PS)	-1,520	0,047	495,422	3,299	2,179	0,000	0,000	1,120	1,2244
50,0 (PS)	-1,633	0,044	495,422	3,284	2,212	0,000	0,000	1,072	1,2435

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
51,0 (PS)	-1,751	0,041	495,422	3,267	2,244	0,000	0,000	1,023	1,2618
52,0 (PS)	-1,875	0,037	495,422	3,248	2,275	0,000	0,000	0,973	1,2792
53,0 (PS)	-2,004	0,033	495,421	3,228	2,306	0,000	0,000	0,922	1,2958
54,0 (PS)	-2,140	0,029	495,422	3,206	2,336	0,000	0,000	0,871	1,3114
55,0 (PS)	-2,283	0,024	495,423	3,184	2,365	0,000	0,000	0,819	1,3262
56,0 (PS)	-2,435	0,020	495,424	3,160	2,393	0,000	0,000	0,767	1,3400
57,0 (PS)	-2,595	0,016	495,424	3,137	2,421	0,000	0,000	0,715	1,3529
58,0 (PS)	-2,766	0,012	495,425	3,112	2,448	0,000	0,000	0,664	1,3650
59,0 (PS)	-2,948	0,009	495,423	3,087	2,475	0,000	0,000	0,612	1,3761
60,0 (PS)	-3,142	0,005	495,424	3,061	2,500	0,000	0,000	0,561	1,3863



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	8,567 m	\geq	1,000 m	Complies
Combined heeling moment	2,3 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	172,250 t*m			
Required freeboard	2,266 m	\geq	0,000 m	Complies
Weight	172,250 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers 70 % full 3 layers

2020.056_003 IW-NET barge 3 units abreast

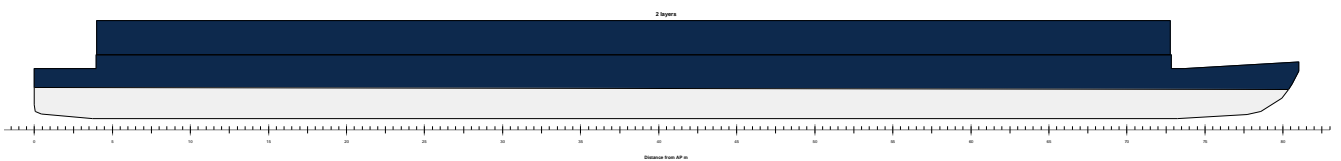
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_003_IW-NET 3 Units abreast.fbm

Design length	81,000 m	Midship location	40,500 m
Length over all	81,000 m	Water density	1,0000
Design beam	9,500 m	Mean shell thickness	0,0000 m
Maximum beam	9,500 m	Appendage coefficient	1,0000
Design draft	1,830 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	4,161 m
Draft aft pp	2,012 m	GG'	0,000 m
Mean moulded draft	1,939 m	VCG'	4,161 m
Draft forward pp	1,865 m	Max VCG'	3,630 m
Trim	-0,147 m	GM solid	0,835 m
LCF	39,852 m	G'M liquid	0,835 m
LCB	38,676 m	Immersion rate	7,571 tonne/cm
KM	4,996 m	MCT	48,932 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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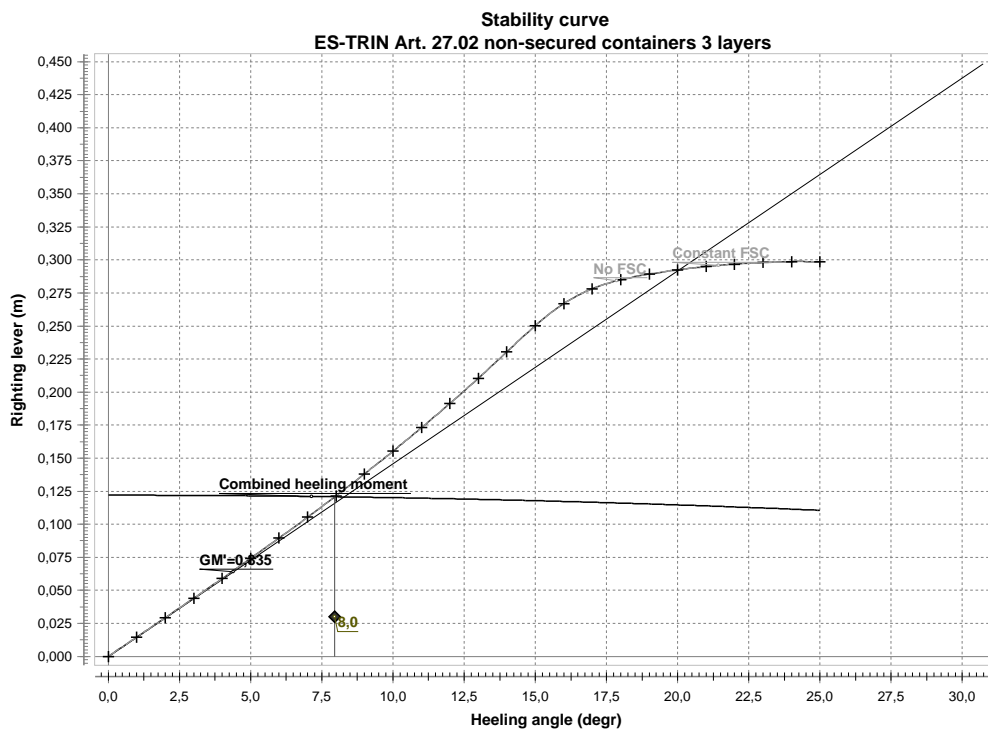
Containers

Containers 70 % full			758,100	38,390	0,000 (CL)	3,400	0,000
3rd layer 70 % full			379,050	38,390	0,000 (CL)	7,748	0,000
Totals for Containers			1137,150	38,390	0,000 (CL)	4,849	0,000

Lightship			274,925	39,892	0,000 (CL)	1,313	
Deadweight			1137,150	38,390	0,000 (CL)	4,849	0,000
Displacement			1412,075	38,682	0,000 (CL)	4,161	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,939	-0,147	1412,075	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,939	-0,147	1412,075	0,087	0,073	0,000	0,000	0,015	0,0001
2,0 (PS)	1,939	-0,147	1412,073	0,174	0,145	0,000	0,000	0,029	0,0005
3,0 (PS)	1,939	-0,148	1412,070	0,262	0,218	0,000	0,000	0,044	0,0011
4,0 (PS)	1,938	-0,149	1412,067	0,349	0,290	0,000	0,000	0,059	0,0020
5,0 (PS)	1,938	-0,150	1412,064	0,437	0,363	0,000	0,000	0,074	0,0032
6,0 (PS)	1,938	-0,151	1412,075	0,524	0,435	0,000	0,000	0,090	0,0046
7,0 (PS)	1,938	-0,153	1412,075	0,612	0,507	0,000	0,000	0,105	0,0063
8,0 (PS)	1,937	-0,155	1412,075	0,701	0,579	0,000	0,000	0,121	0,0083
9,0 (PS)	1,937	-0,157	1412,075	0,789	0,651	0,000	0,000	0,138	0,0106
10,0 (PS)	1,937	-0,160	1412,075	0,878	0,723	0,000	0,000	0,155	0,0131
11,0 (PS)	1,936	-0,162	1412,075	0,967	0,794	0,000	0,000	0,173	0,0160
12,0 (PS)	1,935	-0,165	1412,075	1,057	0,865	0,000	0,000	0,191	0,0192
13,0 (PS)	1,935	-0,169	1412,075	1,147	0,936	0,000	0,000	0,211	0,0227
14,0 (PS)	1,934	-0,172	1412,075	1,237	1,007	0,000	0,000	0,230	0,0265
15,0 (PS)	1,934	-0,178	1412,075	1,327	1,077	0,000	0,000	0,250	0,0307
16,0 (PS)	1,935	-0,188	1412,080	1,414	1,147	0,000	0,000	0,267	0,0353
17,0 (PS)	1,939	-0,200	1412,085	1,495	1,217	0,000	0,000	0,278	0,0400
18,0 (PS)	1,944	-0,212	1412,080	1,571	1,286	0,000	0,000	0,285	0,0449
19,0 (PS)	1,949	-0,223	1412,075	1,644	1,355	0,000	0,000	0,289	0,0499
20,0 (PS)	1,955	-0,234	1412,066	1,716	1,423	0,000	0,000	0,292	0,0550
21,0 (PS)	1,960	-0,244	1412,075	1,786	1,491	0,000	0,000	0,295	0,0602
22,0 (PS)	1,965	-0,254	1412,075	1,855	1,559	0,000	0,000	0,297	0,0653
23,0 (PS)	1,969	-0,264	1412,063	1,924	1,626	0,000	0,000	0,298	0,0705
24,0 (PS)	1,973	-0,274	1412,069	1,991	1,692	0,000	0,000	0,299	0,0757
25,0 (PS)	1,977	-0,284	1412,071	2,057	1,758	0,000	0,000	0,299	0,0809



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	0,835 m	\geq	1,000 m	FAILS
Combined heeling moment	8,0 degr	\leq	5,0 degr	FAILS
Calculated heeling moment (upright)	172,250 t*m			
Required freeboard	0,517 m	\geq	0,000 m	Complies
Weight	172,250 t			
Trv. location of weight	1,000 m			

The condition does NOT comply with the stability criteria

Containers full 3 layers

2020.056_003 IW-NET barge 3 units abreast

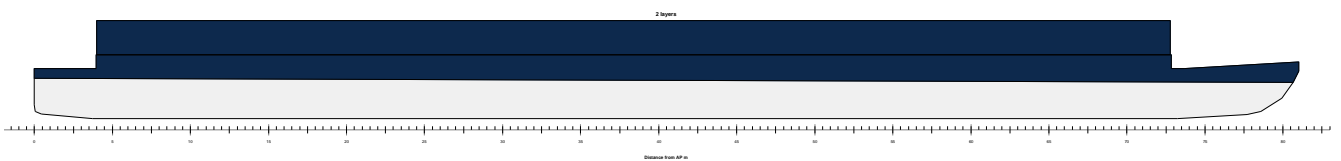
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_003_IW-NET 3 Units abreast.fbm

Design length	81,000 m	Midship location	40,500 m
Length over all	81,000 m	Water density	1,0000
Design beam	9,500 m	Mean shell thickness	0,0000 m
Maximum beam	9,500 m	Appendage coefficient	1,0000
Design draft	1,830 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	4,311 m
Draft aft pp	2,592 m	GG'	0,000 m
Mean moulded draft	2,455 m	VCG'	4,311 m
Draft forward pp	2,318 m	Max VCG'	3,367 m
Trim	-0,274 m	GM solid	0,101 m
LCF	40,102 m	G'M liquid	0,101 m
LCB	38,608 m	Immersion rate	7,618 tonne/cm
KM	4,412 m	MCT	49,740 t*m

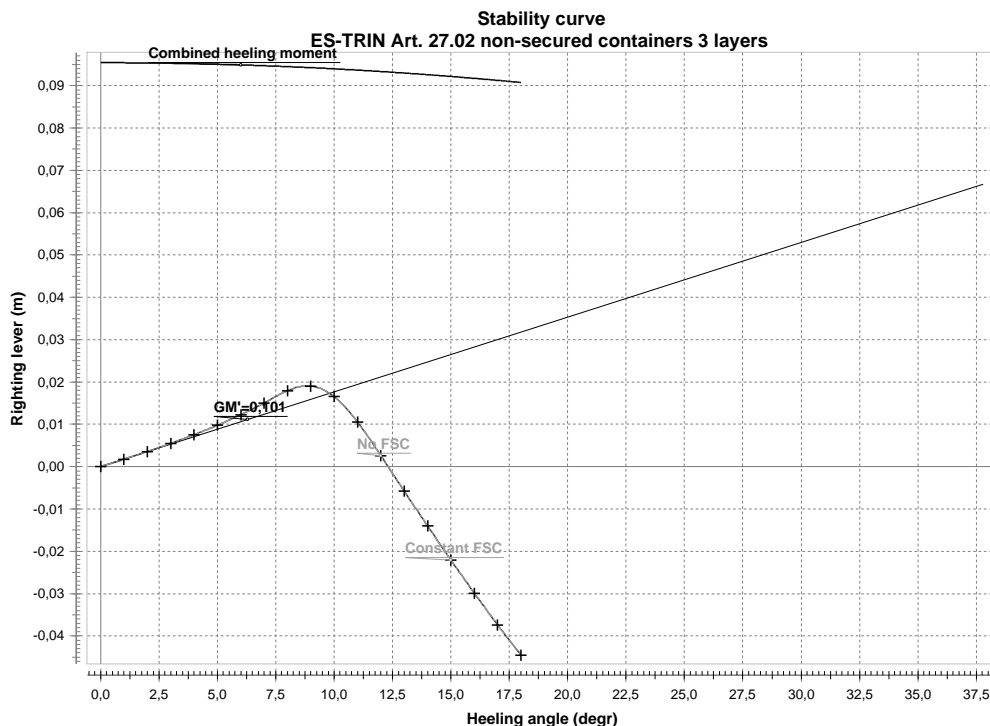
Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers full			1020,000	38,390	0,000 (CL)	3,400	0,000
3rd layer full			510,000	38,390	0,000 (CL)	7,748	0,000
Totals for Containers			1530,000	38,390	0,000 (CL)	4,849	0,000
Lightship			274,925	39,892	0,000 (CL)	1,313	
Deadweight			1530,000	38,390	0,000 (CL)	4,849	0,000
Displacement			1804,925	38,619	0,000 (CL)	4,311	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	2,455	-0,274	1804,924	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	2,455	-0,274	1804,925	0,077	0,075	0,000	0,000	0,002	0,0000
2,0 (PS)	2,455	-0,274	1804,925	0,154	0,150	0,000	0,000	0,004	0,0001
3,0 (PS)	2,455	-0,275	1804,924	0,231	0,226	0,000	0,000	0,006	0,0001
4,0 (PS)	2,455	-0,275	1804,922	0,308	0,301	0,000	0,000	0,008	0,0003
5,0 (PS)	2,455	-0,276	1804,920	0,386	0,376	0,000	0,000	0,010	0,0004
6,0 (PS)	2,455	-0,277	1804,919	0,463	0,451	0,000	0,000	0,012	0,0006
7,0 (PS)	2,454	-0,279	1804,917	0,540	0,525	0,000	0,000	0,015	0,0008
8,0 (PS)	2,454	-0,281	1804,925	0,618	0,600	0,000	0,000	0,018	0,0011
9,0 (PS)	2,455	-0,288	1804,928	0,693	0,674	0,000	0,000	0,019	0,0015
10,0 (PS)	2,458	-0,301	1804,930	0,765	0,749	0,000	0,000	0,017	0,0018
11,0 (PS)	2,463	-0,313	1804,928	0,833	0,823	0,000	0,000	0,011	0,0020
12,0 (PS)	2,470	-0,323	1804,926	0,899	0,896	0,000	0,000	0,003	0,0021
13,0 (PS)	2,477	-0,332	1804,934	0,964	0,970	0,000	0,000	-0,006	0,0021
14,0 (PS)	2,484	-0,340	1804,929	1,029	1,043	0,000	0,000	-0,014	0,0021
15,0 (PS)	2,492	-0,348	1804,927	1,094	1,116	0,000	0,000	-0,022	0,0021
16,0 (PS)	2,500	-0,356	1804,926	1,158	1,188	0,000	0,000	-0,030	0,0021
17,0 (PS)	2,508	-0,363	1804,926	1,223	1,260	0,000	0,000	-0,037	0,0021
18,0 (PS)	2,517	-0,369	1804,925	1,288	1,332	0,000	0,000	-0,045	0,0021



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	0,101 m	\geq	1,000 m	FAILS
Combined heeling moment	180,0 degr	\leq	5,0 degr	FAILS
Calculated heeling moment (upright)	172,250 t*m			
Required freeboard	-100,000 m	\geq	0,000 m	FAILS
Weight	172,250 t			

Trv. location of weight

1,000 m

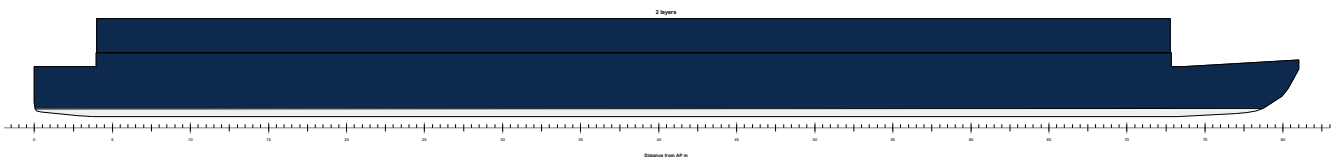
The condition does NOT comply with the stability criteria

Containers empty ALU

2020.056_003 IW-NET barge 3 units abreast

Designer Bernhard Bieringer
 Created by Bernhard Bieringer
 Comment
 Filename 2020_056_003_IW-NET 3 Units abreast.fbm

Design length	81,000 m	Midship location	40,500 m
Length over all	81,000 m	Water density	1,0000
Design beam	9,500 m	Mean shell thickness	0,0000 m
Maximum beam	9,500 m	Appendage coefficient	1,0000
Design draft	1,830 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,229 m
Draft aft pp	0,480 m	GG'	0,000 m
Mean moulded draft	0,505 m	VCG'	2,229 m
Draft forward pp	0,530 m	Max VCG'	11,742 m
Trim	0,050 m	GM solid	13,987 m
LCF	38,769 m	G'M liquid	13,987 m
LCB	39,318 m	Immersion rate	7,320 tonne/cm
KM	16,215 m	MCT	44,746 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

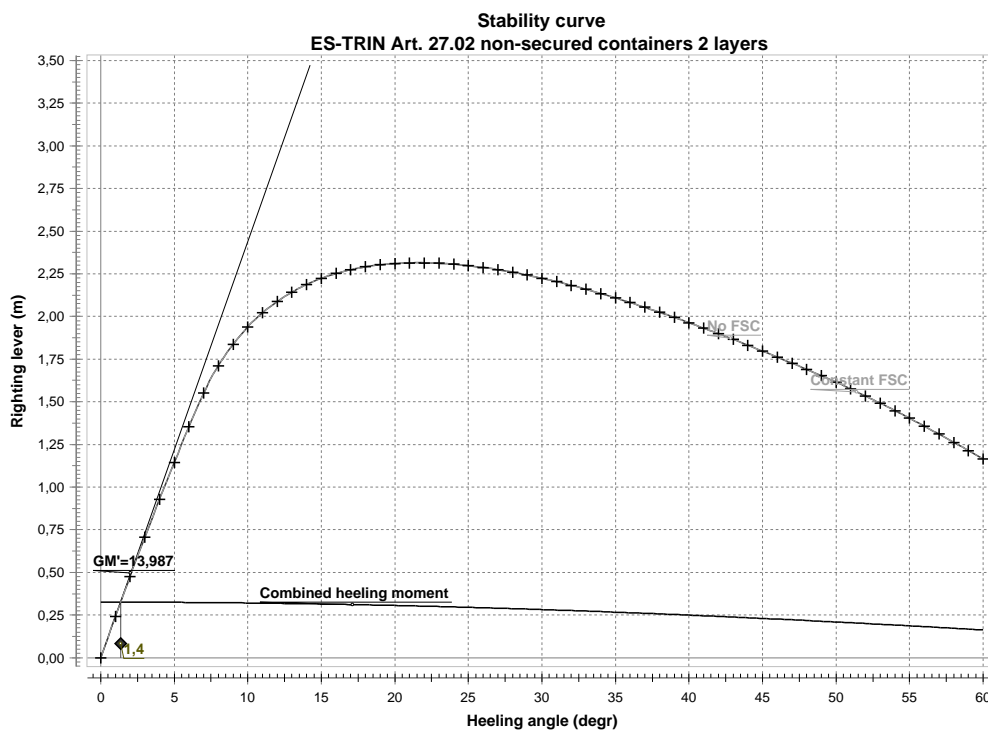
Containers empty			147,000	38,390	0,000 (CL)	3,400	0,000
Lightship			191,876	40,026	0,000 (CL)	1,331	
Deadweight			147,000	38,390	0,000 (CL)	3,400	0,000
Displacement			338,876	39,316	0,000 (CL)	2,229	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	0,505	0,050	338,876	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	0,505	0,051	338,876	0,281	0,039	0,000	0,000	0,242	0,0021
2,0 (PS)	0,503	0,051	338,876	0,555	0,078	0,000	0,000	0,477	0,0084
3,0 (PS)	0,501	0,051	338,876	0,822	0,117	0,000	0,000	0,706	0,0187
4,0 (PS)	0,499	0,051	338,876	1,084	0,155	0,000	0,000	0,928	0,0330
5,0 (PS)	0,495	0,051	338,875	1,339	0,194	0,000	0,000	1,144	0,0511
6,0 (PS)	0,490	0,052	338,876	1,587	0,233	0,000	0,000	1,354	0,0729
7,0 (PS)	0,484	0,054	338,875	1,824	0,272	0,000	0,000	1,552	0,0983
8,0 (PS)	0,474	0,057	338,875	2,022	0,310	0,000	0,000	1,712	0,1268
9,0 (PS)	0,458	0,060	338,875	2,186	0,349	0,000	0,000	1,838	0,1579
10,0 (PS)	0,439	0,064	338,875	2,326	0,387	0,000	0,000	1,939	0,1908
11,0 (PS)	0,417	0,067	338,873	2,446	0,425	0,000	0,000	2,021	0,2254
12,0 (PS)	0,391	0,070	338,874	2,551	0,463	0,000	0,000	2,088	0,2613
13,0 (PS)	0,362	0,072	338,873	2,644	0,501	0,000	0,000	2,143	0,2982
14,0 (PS)	0,331	0,075	338,874	2,726	0,539	0,000	0,000	2,187	0,3360
15,0 (PS)	0,298	0,078	338,874	2,800	0,577	0,000	0,000	2,223	0,3745
16,0 (PS)	0,262	0,080	338,875	2,866	0,614	0,000	0,000	2,251	0,4136
17,0 (PS)	0,225	0,083	338,875	2,925	0,652	0,000	0,000	2,274	0,4531
18,0 (PS)	0,185	0,085	338,874	2,979	0,689	0,000	0,000	2,290	0,4929
19,0 (PS)	0,143	0,087	338,874	3,028	0,726	0,000	0,000	2,302	0,5330
20,0 (PS)	0,099	0,089	338,874	3,072	0,762	0,000	0,000	2,310	0,5733
21,0 (PS)	0,054	0,091	338,874	3,112	0,799	0,000	0,000	2,314	0,6136
22,0 (PS)	0,006	0,093	338,874	3,149	0,835	0,000	0,000	2,314	0,6540
23,0 (PS)	-0,043	0,095	338,875	3,182	0,871	0,000	0,000	2,311	0,6944
24,0 (PS)	-0,095	0,097	338,873	3,212	0,906	0,000	0,000	2,306	0,7347
25,0 (PS)	-0,148	0,099	338,874	3,239	0,942	0,000	0,000	2,298	0,7749
26,0 (PS)	-0,203	0,100	338,874	3,264	0,977	0,000	0,000	2,287	0,8149
27,0 (PS)	-0,261	0,102	338,875	3,286	1,012	0,000	0,000	2,274	0,8547
28,0 (PS)	-0,320	0,103	338,873	3,306	1,046	0,000	0,000	2,259	0,8943
29,0 (PS)	-0,381	0,105	338,874	3,323	1,080	0,000	0,000	2,243	0,9335
30,0 (PS)	-0,445	0,106	338,875	3,338	1,114	0,000	0,000	2,224	0,9725
31,0 (PS)	-0,511	0,107	338,873	3,352	1,148	0,000	0,000	2,204	1,0112
32,0 (PS)	-0,579	0,108	338,874	3,363	1,181	0,000	0,000	2,182	1,0494
33,0 (PS)	-0,649	0,110	338,875	3,373	1,214	0,000	0,000	2,159	1,0873
34,0 (PS)	-0,722	0,111	338,875	3,381	1,246	0,000	0,000	2,134	1,1248
35,0 (PS)	-0,798	0,112	338,873	3,387	1,278	0,000	0,000	2,109	1,1618
36,0 (PS)	-0,876	0,113	338,874	3,392	1,310	0,000	0,000	2,082	1,1984
37,0 (PS)	-0,958	0,114	338,875	3,395	1,341	0,000	0,000	2,054	1,2345
38,0 (PS)	-1,042	0,115	338,875	3,396	1,372	0,000	0,000	2,024	1,2701
39,0 (PS)	-1,130	0,116	338,874	3,397	1,402	0,000	0,000	1,994	1,3052
40,0 (PS)	-1,221	0,117	338,875	3,396	1,432	0,000	0,000	1,963	1,3397
41,0 (PS)	-1,315	0,118	338,875	3,394	1,462	0,000	0,000	1,932	1,3737
42,0 (PS)	-1,414	0,119	338,873	3,390	1,491	0,000	0,000	1,899	1,4071
43,0 (PS)	-1,516	0,119	338,874	3,385	1,520	0,000	0,000	1,865	1,4400
44,0 (PS)	-1,623	0,120	338,875	3,379	1,548	0,000	0,000	1,831	1,4722
45,0 (PS)	-1,734	0,121	338,876	3,373	1,576	0,000	0,000	1,797	1,5039
46,0 (PS)	-1,850	0,122	338,874	3,365	1,603	0,000	0,000	1,762	1,5349
47,0 (PS)	-1,972	0,122	338,875	3,356	1,630	0,000	0,000	1,726	1,5654
48,0 (PS)	-2,099	0,123	338,876	3,346	1,656	0,000	0,000	1,690	1,5952
49,0 (PS)	-2,231	0,124	338,873	3,335	1,682	0,000	0,000	1,653	1,6243
50,0 (PS)	-2,370	0,126	338,874	3,322	1,707	0,000	0,000	1,615	1,6529

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
51,0 (PS)	-2,514	0,128	338,874	3,307	1,732	0,000	0,000	1,575	1,6807
52,0 (PS)	-2,665	0,130	338,875	3,290	1,756	0,000	0,000	1,534	1,7078
53,0 (PS)	-2,823	0,131	338,875	3,271	1,780	0,000	0,000	1,492	1,7342
54,0 (PS)	-2,988	0,133	338,875	3,251	1,803	0,000	0,000	1,448	1,7599
55,0 (PS)	-3,162	0,134	338,875	3,229	1,825	0,000	0,000	1,403	1,7848
56,0 (PS)	-3,344	0,135	338,875	3,205	1,848	0,000	0,000	1,357	1,8089
57,0 (PS)	-3,537	0,135	338,876	3,179	1,869	0,000	0,000	1,310	1,8322
58,0 (PS)	-3,739	0,136	338,876	3,152	1,890	0,000	0,000	1,262	1,8546
59,0 (PS)	-3,954	0,136	338,876	3,123	1,910	0,000	0,000	1,213	1,8762
60,0 (PS)	-4,181	0,136	338,876	3,093	1,930	0,000	0,000	1,163	1,8970



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	13,987 m	\geq	1,000 m	Complies
Combined heeling moment	1,4 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	110,380 t*m			
Required freeboard	2,562 m	\geq	0,000 m	Complies
Weight	110,380 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers 70 % full ALU

2020.056_003 IW-NET barge 3 units abreast

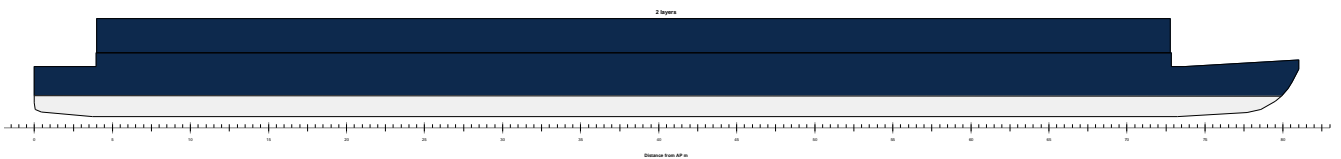
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_003_IW-NET 3 Units abreast.fbm

Design length	81,000 m	Midship location	40,500 m
Length over all	81,000 m	Water density	1,0000
Design beam	9,500 m	Mean shell thickness	0,0000 m
Maximum beam	9,500 m	Appendage coefficient	1,0000
Design draft	1,830 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,982 m
Draft aft pp	1,349 m	GG'	0,000 m
Mean moulded draft	1,327 m	VCG'	2,982 m
Draft forward pp	1,304 m	Max VCG'	5,267 m
Trim	-0,044 m	GM solid	3,579 m
LCF	39,464 m	G'M liquid	3,579 m
LCB	38,719 m	Immersion rate	7,496 tonne/cm
KM	6,561 m	MCT	47,786 t*m

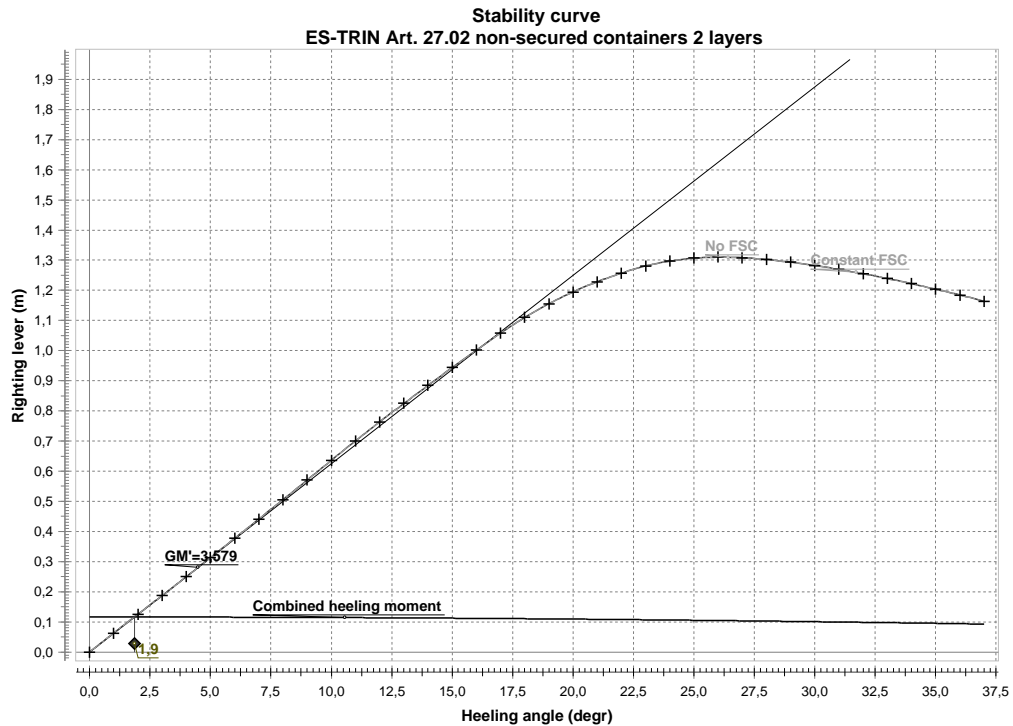
Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers 70 % full			758,100	38,390	0,000 (CL)	3,400	0,000
Lightship			191,876	40,026	0,000 (CL)	1,331	
Deadweight			758,100	38,390	0,000 (CL)	3,400	0,000
Displacement			949,976	38,720	0,000 (CL)	2,982	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,327	-0,044	949,976	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,327	-0,044	949,975	0,115	0,052	0,000	0,000	0,062	0,0005
2,0 (PS)	1,326	-0,045	949,972	0,229	0,104	0,000	0,000	0,125	0,0022
3,0 (PS)	1,326	-0,046	949,967	0,344	0,156	0,000	0,000	0,188	0,0049
4,0 (PS)	1,326	-0,047	949,976	0,459	0,208	0,000	0,000	0,251	0,0087
5,0 (PS)	1,326	-0,048	949,976	0,574	0,260	0,000	0,000	0,314	0,0137
6,0 (PS)	1,326	-0,050	949,976	0,689	0,312	0,000	0,000	0,377	0,0197
7,0 (PS)	1,325	-0,053	949,976	0,805	0,363	0,000	0,000	0,441	0,0268
8,0 (PS)	1,325	-0,055	949,976	0,921	0,415	0,000	0,000	0,506	0,0351
9,0 (PS)	1,324	-0,058	949,976	1,037	0,467	0,000	0,000	0,570	0,0445
10,0 (PS)	1,323	-0,061	949,976	1,154	0,518	0,000	0,000	0,636	0,0550
11,0 (PS)	1,322	-0,065	949,975	1,269	0,569	0,000	0,000	0,700	0,0667
12,0 (PS)	1,320	-0,069	949,976	1,383	0,620	0,000	0,000	0,763	0,0794
13,0 (PS)	1,318	-0,073	949,976	1,496	0,671	0,000	0,000	0,825	0,0933
14,0 (PS)	1,315	-0,077	949,976	1,607	0,721	0,000	0,000	0,885	0,1082
15,0 (PS)	1,311	-0,082	949,975	1,716	0,772	0,000	0,000	0,944	0,1242
16,0 (PS)	1,306	-0,086	949,975	1,824	0,822	0,000	0,000	1,002	0,1412
17,0 (PS)	1,301	-0,091	949,976	1,930	0,872	0,000	0,000	1,058	0,1592
18,0 (PS)	1,293	-0,097	949,976	2,032	0,922	0,000	0,000	1,110	0,1781
19,0 (PS)	1,284	-0,104	949,975	2,126	0,971	0,000	0,000	1,155	0,1979
20,0 (PS)	1,271	-0,110	949,973	2,214	1,020	0,000	0,000	1,194	0,2184
21,0 (PS)	1,257	-0,116	949,971	2,297	1,069	0,000	0,000	1,228	0,2395
22,0 (PS)	1,240	-0,122	949,971	2,374	1,117	0,000	0,000	1,257	0,2612
23,0 (PS)	1,222	-0,129	949,970	2,446	1,165	0,000	0,000	1,281	0,2834
24,0 (PS)	1,202	-0,138	949,975	2,510	1,213	0,000	0,000	1,297	0,3059
25,0 (PS)	1,182	-0,149	949,975	2,567	1,260	0,000	0,000	1,307	0,3286
26,0 (PS)	1,162	-0,160	949,975	2,617	1,307	0,000	0,000	1,310	0,3515
27,0 (PS)	1,141	-0,171	949,975	2,662	1,354	0,000	0,000	1,308	0,3743
28,0 (PS)	1,120	-0,182	949,975	2,702	1,400	0,000	0,000	1,302	0,3971
29,0 (PS)	1,098	-0,193	949,968	2,739	1,446	0,000	0,000	1,293	0,4198
30,0 (PS)	1,074	-0,203	949,971	2,773	1,491	0,000	0,000	1,282	0,4422
31,0 (PS)	1,048	-0,212	949,973	2,805	1,536	0,000	0,000	1,269	0,4645
32,0 (PS)	1,020	-0,222	949,975	2,835	1,580	0,000	0,000	1,255	0,4865
33,0 (PS)	0,991	-0,231	949,975	2,864	1,624	0,000	0,000	1,239	0,5083
34,0 (PS)	0,960	-0,240	949,971	2,890	1,668	0,000	0,000	1,222	0,5298
35,0 (PS)	0,927	-0,249	949,974	2,914	1,710	0,000	0,000	1,204	0,5510
36,0 (PS)	0,893	-0,257	949,976	2,937	1,753	0,000	0,000	1,184	0,5718
37,0 (PS)	0,856	-0,266	949,973	2,959	1,795	0,000	0,000	1,164	0,5923



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	3,579 m	\geq	1,000 m	Complies
Combined heeling moment	1,9 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	110,380 t*m			
Required freeboard	1,696 m	\geq	0,000 m	Complies
Weight	110,380 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers full ALU

2020.056_003 IW-NET barge 3 units abreast

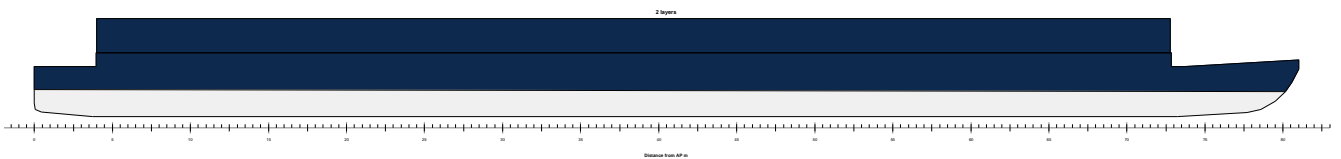
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_003_IW-NET 3 Units abreast.fbm

Design length	81,000 m	Midship location	40,500 m
Length over all	81,000 m	Water density	1,0000
Design beam	9,500 m	Mean shell thickness	0,0000 m
Maximum beam	9,500 m	Appendage coefficient	1,0000
Design draft	1,830 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	3,072 m
Draft aft pp	1,729 m	GG'	0,000 m
Mean moulded draft	1,674 m	VCG'	3,072 m
Draft forward pp	1,619 m	Max VCG'	4,501 m
Trim	-0,109 m	GM solid	2,428 m
LCF	39,695 m	G'M liquid	2,428 m
LCB	38,645 m	Immersion rate	7,541 tonne/cm
KM	5,500 m	MCT	48,572 t*m

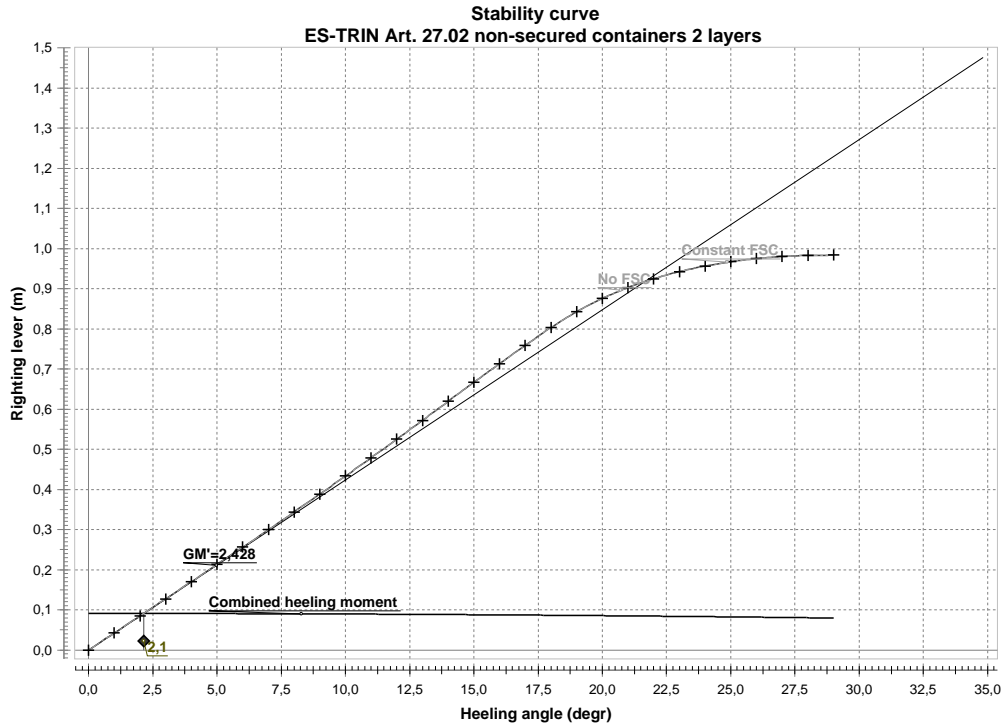
Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers full			1020,000	38,390	0,000 (CL)	3,400	0,000
Lightship			191,876	40,026	0,000 (CL)	1,331	
Deadweight			1020,000	38,390	0,000 (CL)	3,400	0,000
Displacement			1211,876	38,649	0,000 (CL)	3,072	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,674	-0,109	1211,876	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,674	-0,110	1211,876	0,096	0,054	0,000	0,000	0,042	0,0004
2,0 (PS)	1,674	-0,110	1211,873	0,192	0,107	0,000	0,000	0,085	0,0015
3,0 (PS)	1,674	-0,111	1211,869	0,288	0,161	0,000	0,000	0,127	0,0033
4,0 (PS)	1,674	-0,112	1211,865	0,384	0,214	0,000	0,000	0,170	0,0059
5,0 (PS)	1,674	-0,113	1211,876	0,481	0,268	0,000	0,000	0,213	0,0093
6,0 (PS)	1,673	-0,115	1211,876	0,577	0,321	0,000	0,000	0,256	0,0134
7,0 (PS)	1,673	-0,116	1211,876	0,674	0,374	0,000	0,000	0,300	0,0182
8,0 (PS)	1,673	-0,119	1211,876	0,772	0,428	0,000	0,000	0,344	0,0238
9,0 (PS)	1,672	-0,121	1211,876	0,869	0,481	0,000	0,000	0,388	0,0302
10,0 (PS)	1,672	-0,124	1211,876	0,967	0,534	0,000	0,000	0,433	0,0374
11,0 (PS)	1,671	-0,127	1211,876	1,065	0,586	0,000	0,000	0,479	0,0454
12,0 (PS)	1,670	-0,131	1211,876	1,164	0,639	0,000	0,000	0,525	0,0541
13,0 (PS)	1,670	-0,135	1211,876	1,263	0,691	0,000	0,000	0,572	0,0637
14,0 (PS)	1,669	-0,139	1211,876	1,363	0,743	0,000	0,000	0,620	0,0741
15,0 (PS)	1,668	-0,144	1211,876	1,462	0,795	0,000	0,000	0,667	0,0853
16,0 (PS)	1,666	-0,149	1211,876	1,560	0,847	0,000	0,000	0,713	0,0974
17,0 (PS)	1,663	-0,154	1211,876	1,657	0,898	0,000	0,000	0,759	0,1102
18,0 (PS)	1,660	-0,161	1211,876	1,753	0,949	0,000	0,000	0,803	0,1239
19,0 (PS)	1,657	-0,171	1211,876	1,843	1,000	0,000	0,000	0,843	0,1382
20,0 (PS)	1,656	-0,183	1211,886	1,927	1,051	0,000	0,000	0,876	0,1532
21,0 (PS)	1,656	-0,196	1211,875	2,004	1,101	0,000	0,000	0,903	0,1688
22,0 (PS)	1,657	-0,210	1211,867	2,076	1,151	0,000	0,000	0,925	0,1847
23,0 (PS)	1,656	-0,223	1211,875	2,143	1,200	0,000	0,000	0,943	0,2010
24,0 (PS)	1,654	-0,236	1211,874	2,206	1,250	0,000	0,000	0,957	0,2176
25,0 (PS)	1,650	-0,249	1211,875	2,266	1,298	0,000	0,000	0,967	0,2344
26,0 (PS)	1,644	-0,261	1211,875	2,322	1,347	0,000	0,000	0,975	0,2514
27,0 (PS)	1,637	-0,273	1211,871	2,375	1,395	0,000	0,000	0,980	0,2684
28,0 (PS)	1,628	-0,284	1211,875	2,425	1,442	0,000	0,000	0,983	0,2856
29,0 (PS)	1,618	-0,295	1211,866	2,473	1,490	0,000	0,000	0,984	0,3027



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	2,428 m	>=	1,000 m	Complies
Combined heeling moment	2,1 degr	<=	5,0 degr	Complies
Calculated heeling moment (upright)	110,380 t*m			
Required freeboard	1,293 m	>=	0,000 m	Complies
Weight	110,380 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers empty 3 layers ALU

2020.056_003 IW-NET barge 3 units abreast

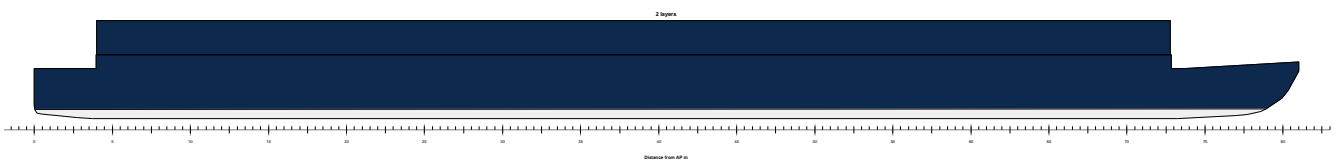
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_003_IW-NET 3 Units abreast.fbm

Design length	81,000 m	Midship location	40,500 m
Length over all	81,000 m	Water density	1,0000
Design beam	9,500 m	Mean shell thickness	0,0000 m
Maximum beam	9,500 m	Appendage coefficient	1,0000
Design draft	1,830 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	3,212 m
Draft aft pp	0,583 m	GG'	0,000 m
Mean moulded draft	0,605 m	VCG'	3,212 m
Draft forward pp	0,627 m	Max VCG'	8,506 m
Trim	0,044 m	GM solid	10,332 m
LCF	38,832 m	G'M liquid	10,332 m
LCB	39,153 m	Immersion rate	7,359 tonne/cm
KM	13,544 m	MCT	45,340 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

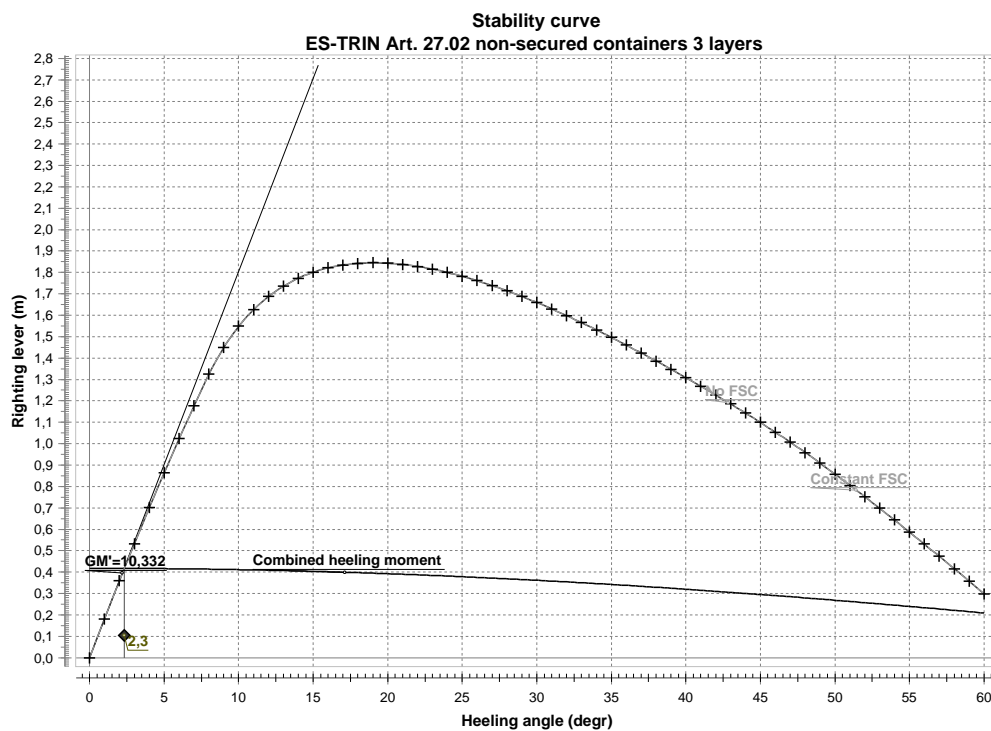
Containers empty			147,000	38,390	0,000 (CL)	3,400	0,000
3rd layer empty			73,500	38,390	0,000 (CL)	7,748	0,000
Totals for Containers			220,500	38,390	0,000 (CL)	4,849	0,000
Lightship			191,876	40,026	0,000 (CL)	1,331	
Deadweight			220,500	38,390	0,000 (CL)	4,849	0,000
Displacement			412,376	39,151	0,000 (CL)	3,212	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	0,605	0,044	412,375	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	0,605	0,044	412,376	0,236	0,056	0,000	0,000	0,180	0,0016
2,0 (PS)	0,605	0,044	412,376	0,471	0,112	0,000	0,000	0,359	0,0063
3,0 (PS)	0,603	0,043	412,376	0,701	0,168	0,000	0,000	0,533	0,0141
4,0 (PS)	0,602	0,043	412,374	0,925	0,224	0,000	0,000	0,701	0,0249
5,0 (PS)	0,599	0,042	412,373	1,145	0,280	0,000	0,000	0,865	0,0385
6,0 (PS)	0,595	0,042	412,375	1,359	0,336	0,000	0,000	1,023	0,0550
7,0 (PS)	0,591	0,041	412,373	1,569	0,391	0,000	0,000	1,177	0,0742
8,0 (PS)	0,586	0,041	412,375	1,772	0,447	0,000	0,000	1,325	0,0961
9,0 (PS)	0,577	0,043	412,374	1,953	0,503	0,000	0,000	1,451	0,1203
10,0 (PS)	0,564	0,044	412,375	2,107	0,558	0,000	0,000	1,549	0,1466
11,0 (PS)	0,548	0,046	412,375	2,240	0,613	0,000	0,000	1,627	0,1743
12,0 (PS)	0,528	0,048	412,373	2,356	0,668	0,000	0,000	1,688	0,2033
13,0 (PS)	0,505	0,049	412,375	2,459	0,723	0,000	0,000	1,736	0,2332
14,0 (PS)	0,480	0,050	412,373	2,550	0,777	0,000	0,000	1,773	0,2638
15,0 (PS)	0,452	0,052	412,375	2,632	0,831	0,000	0,000	1,801	0,2950
16,0 (PS)	0,421	0,053	412,374	2,707	0,885	0,000	0,000	1,821	0,3266
17,0 (PS)	0,389	0,054	412,373	2,774	0,939	0,000	0,000	1,835	0,3585
18,0 (PS)	0,354	0,056	412,373	2,835	0,993	0,000	0,000	1,842	0,3906
19,0 (PS)	0,317	0,057	412,372	2,891	1,046	0,000	0,000	1,845	0,4228
20,0 (PS)	0,278	0,058	412,372	2,942	1,099	0,000	0,000	1,843	0,4550
21,0 (PS)	0,237	0,059	412,372	2,989	1,151	0,000	0,000	1,837	0,4871
22,0 (PS)	0,195	0,060	412,372	3,031	1,203	0,000	0,000	1,828	0,5191
23,0 (PS)	0,150	0,061	412,373	3,071	1,255	0,000	0,000	1,815	0,5509
24,0 (PS)	0,103	0,061	412,374	3,107	1,307	0,000	0,000	1,800	0,5825
25,0 (PS)	0,054	0,062	412,374	3,139	1,358	0,000	0,000	1,782	0,6137
26,0 (PS)	0,004	0,063	412,375	3,170	1,408	0,000	0,000	1,761	0,6447
27,0 (PS)	-0,049	0,063	412,373	3,197	1,458	0,000	0,000	1,739	0,6752
28,0 (PS)	-0,104	0,064	412,374	3,222	1,508	0,000	0,000	1,714	0,7053
29,0 (PS)	-0,161	0,064	412,375	3,245	1,557	0,000	0,000	1,688	0,7350
30,0 (PS)	-0,220	0,064	412,373	3,265	1,606	0,000	0,000	1,659	0,7642
31,0 (PS)	-0,281	0,065	412,374	3,284	1,654	0,000	0,000	1,630	0,7929
32,0 (PS)	-0,345	0,065	412,375	3,301	1,702	0,000	0,000	1,598	0,8211
33,0 (PS)	-0,411	0,065	412,375	3,315	1,750	0,000	0,000	1,566	0,8487
34,0 (PS)	-0,479	0,065	412,373	3,328	1,796	0,000	0,000	1,532	0,8758
35,0 (PS)	-0,550	0,065	412,374	3,339	1,842	0,000	0,000	1,497	0,9022
36,0 (PS)	-0,624	0,065	412,375	3,349	1,888	0,000	0,000	1,461	0,9280
37,0 (PS)	-0,701	0,065	412,372	3,357	1,933	0,000	0,000	1,424	0,9532
38,0 (PS)	-0,781	0,065	412,374	3,364	1,978	0,000	0,000	1,386	0,9777
39,0 (PS)	-0,863	0,065	412,375	3,369	2,022	0,000	0,000	1,347	1,0016
40,0 (PS)	-0,950	0,065	412,375	3,373	2,065	0,000	0,000	1,308	1,0247
41,0 (PS)	-1,040	0,065	412,373	3,375	2,107	0,000	0,000	1,268	1,0472
42,0 (PS)	-1,133	0,064	412,375	3,377	2,149	0,000	0,000	1,227	1,0690
43,0 (PS)	-1,230	0,064	412,376	3,377	2,191	0,000	0,000	1,186	1,0901
44,0 (PS)	-1,332	0,064	412,376	3,375	2,231	0,000	0,000	1,144	1,1104
45,0 (PS)	-1,437	0,064	412,373	3,371	2,271	0,000	0,000	1,100	1,1300
46,0 (PS)	-1,545	0,064	412,373	3,365	2,311	0,000	0,000	1,054	1,1488
47,0 (PS)	-1,658	0,063	412,374	3,356	2,349	0,000	0,000	1,007	1,1667
48,0 (PS)	-1,775	0,062	412,374	3,346	2,387	0,000	0,000	0,958	1,1839
49,0 (PS)	-1,897	0,061	412,374	3,333	2,424	0,000	0,000	0,909	1,2002
50,0 (PS)	-2,023	0,059	412,375	3,318	2,461	0,000	0,000	0,858	1,2156

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
51,0 (PS)	-2,155	0,057	412,375	3,302	2,496	0,000	0,000	0,806	1,2301
52,0 (PS)	-2,294	0,055	412,375	3,284	2,531	0,000	0,000	0,752	1,2437
53,0 (PS)	-2,438	0,052	412,375	3,264	2,565	0,000	0,000	0,698	1,2564
54,0 (PS)	-2,589	0,049	412,375	3,242	2,599	0,000	0,000	0,643	1,2681
55,0 (PS)	-2,748	0,046	412,375	3,219	2,631	0,000	0,000	0,587	1,2788
56,0 (PS)	-2,915	0,043	412,375	3,194	2,663	0,000	0,000	0,531	1,2886
57,0 (PS)	-3,091	0,039	412,375	3,168	2,694	0,000	0,000	0,474	1,2974
58,0 (PS)	-3,276	0,035	412,375	3,140	2,724	0,000	0,000	0,416	1,3051
59,0 (PS)	-3,472	0,030	412,375	3,110	2,753	0,000	0,000	0,357	1,3119
60,0 (PS)	-3,680	0,025	412,374	3,080	2,782	0,000	0,000	0,298	1,3176



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	10,332 m	\geq	1,000 m	Complies
Combined heeling moment	2,3 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	172,250 t*m			
Required freeboard	2,383 m	\geq	0,000 m	Complies
Weight	172,250 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers 70 % full 3 layers ALU

2020.056_003 IW-NET barge 3 units abreast

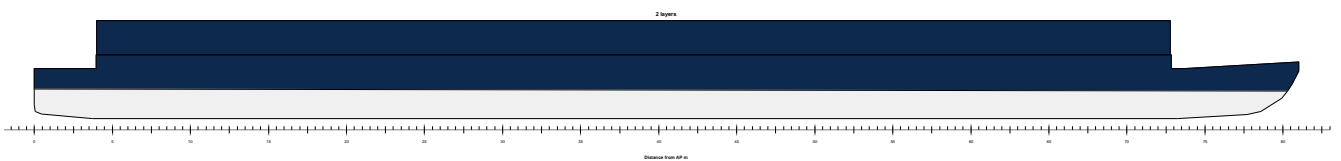
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_003_IW-NET 3 Units abreast.fbm

Design length	81,000 m	Midship location	40,500 m
Length over all	81,000 m	Water density	1,0000
Design beam	9,500 m	Mean shell thickness	0,0000 m
Maximum beam	9,500 m	Appendage coefficient	1,0000
Design draft	1,830 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	4,341 m
Draft aft pp	1,900 m	GG'	0,000 m
Mean moulded draft	1,829 m	VCG'	4,341 m
Draft forward pp	1,758 m	Max VCG'	3,731 m
Trim	-0,143 m	GM solid	0,841 m
LCF	39,786 m	G'M liquid	0,841 m
LCB	38,619 m	Immersion rate	7,558 tonne/cm
KM	5,182 m	MCT	48,679 t*m

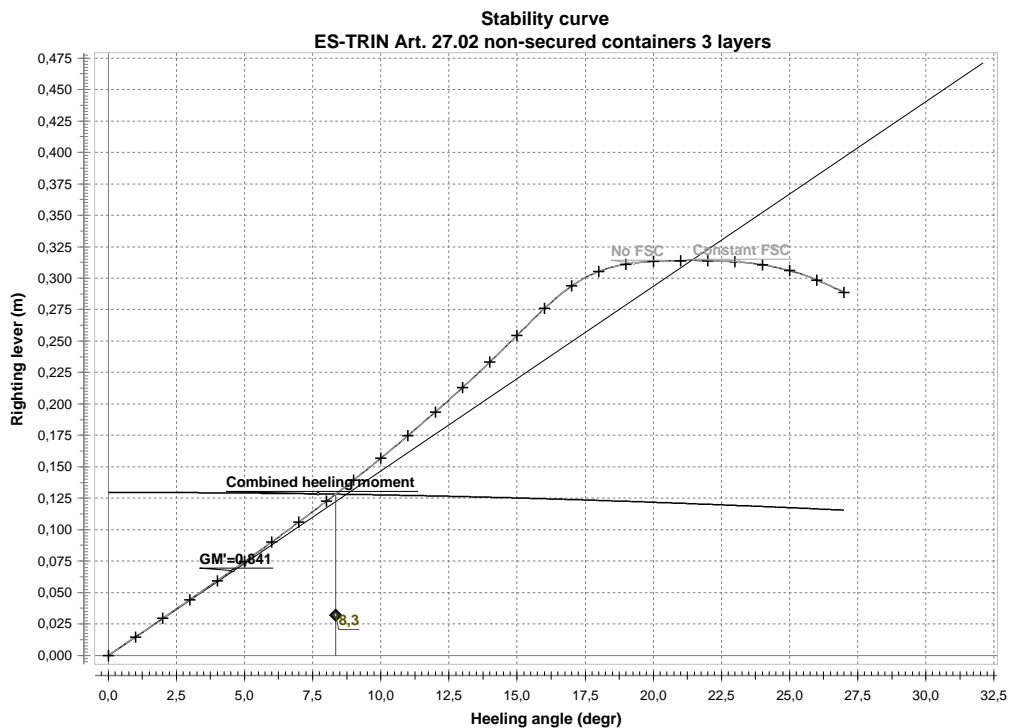
Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers 70 % full			758,100	38,390	0,000 (CL)	3,400	0,000
3rd layer 70 % full			379,050	38,390	0,000 (CL)	7,748	0,000
Totals for Containers			1137,150	38,390	0,000 (CL)	4,849	0,000
Lightship			191,876	40,026	0,000 (CL)	1,331	
Deadweight			1137,150	38,390	0,000 (CL)	4,849	0,000
Displacement			1329,026	38,626	0,000 (CL)	4,341	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,829	-0,143	1329,026	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,829	-0,143	1329,026	0,090	0,076	0,000	0,000	0,015	0,0001
2,0 (PS)	1,829	-0,143	1329,024	0,181	0,152	0,000	0,000	0,029	0,0005
3,0 (PS)	1,829	-0,144	1329,020	0,271	0,227	0,000	0,000	0,044	0,0012
4,0 (PS)	1,829	-0,145	1329,016	0,362	0,303	0,000	0,000	0,059	0,0021
5,0 (PS)	1,828	-0,146	1329,013	0,453	0,378	0,000	0,000	0,075	0,0032
6,0 (PS)	1,828	-0,147	1329,026	0,544	0,454	0,000	0,000	0,090	0,0047
7,0 (PS)	1,828	-0,149	1329,026	0,635	0,529	0,000	0,000	0,106	0,0064
8,0 (PS)	1,828	-0,151	1329,026	0,727	0,604	0,000	0,000	0,123	0,0084
9,0 (PS)	1,827	-0,154	1329,026	0,819	0,679	0,000	0,000	0,139	0,0107
10,0 (PS)	1,827	-0,156	1329,026	0,911	0,754	0,000	0,000	0,157	0,0132
11,0 (PS)	1,826	-0,159	1329,026	1,003	0,828	0,000	0,000	0,175	0,0161
12,0 (PS)	1,826	-0,163	1329,026	1,096	0,903	0,000	0,000	0,194	0,0193
13,0 (PS)	1,825	-0,166	1329,026	1,190	0,977	0,000	0,000	0,213	0,0229
14,0 (PS)	1,824	-0,170	1329,026	1,284	1,050	0,000	0,000	0,233	0,0268
15,0 (PS)	1,823	-0,174	1329,026	1,378	1,124	0,000	0,000	0,254	0,0310
16,0 (PS)	1,823	-0,180	1329,026	1,472	1,197	0,000	0,000	0,276	0,0357
17,0 (PS)	1,822	-0,190	1329,026	1,563	1,269	0,000	0,000	0,294	0,0407
18,0 (PS)	1,824	-0,202	1329,031	1,647	1,342	0,000	0,000	0,305	0,0459
19,0 (PS)	1,827	-0,215	1329,031	1,724	1,413	0,000	0,000	0,311	0,0513
20,0 (PS)	1,831	-0,227	1329,026	1,798	1,485	0,000	0,000	0,313	0,0567
21,0 (PS)	1,834	-0,239	1329,025	1,870	1,556	0,000	0,000	0,314	0,0622
22,0 (PS)	1,838	-0,249	1329,025	1,940	1,626	0,000	0,000	0,314	0,0677
23,0 (PS)	1,841	-0,261	1329,025	2,009	1,696	0,000	0,000	0,313	0,0732
24,0 (PS)	1,843	-0,273	1329,024	2,076	1,766	0,000	0,000	0,311	0,0786
25,0 (PS)	1,844	-0,285	1329,024	2,141	1,835	0,000	0,000	0,306	0,0840
26,0 (PS)	1,843	-0,298	1329,026	2,202	1,903	0,000	0,000	0,299	0,0893
27,0 (PS)	1,841	-0,310	1329,024	2,260	1,971	0,000	0,000	0,289	0,0944



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	0,841 m	\geq	1,000 m	FAILS
Combined heeling moment	8,3 degr	\leq	5,0 degr	FAILS
Calculated heeling moment (upright)	172,250 t*m			
Required freeboard	0,595 m	\geq	0,000 m	Complies
Weight	172,250 t			
Trv. location of weight	1,000 m			

The condition does NOT comply with the stability criteria

Containers full 3 layers ALU

2020.056_003 IW-NET barge 3 units abreast

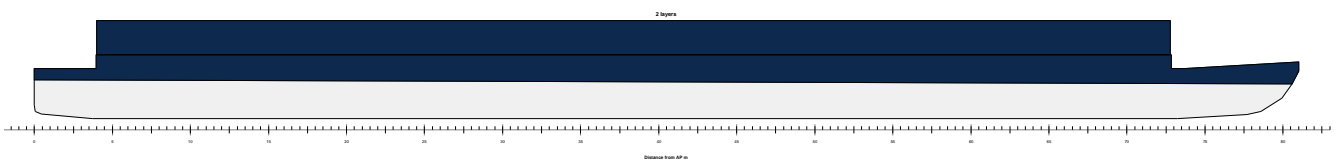
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_003_IW-NET 3 Units abreast.fbm

Design length	81,000 m	Midship location	40,500 m
Length over all	81,000 m	Water density	1,0000
Design beam	9,500 m	Mean shell thickness	0,0000 m
Maximum beam	9,500 m	Appendage coefficient	1,0000
Design draft	1,830 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	4,457 m
Draft aft pp	2,479 m	GG'	0,000 m
Mean moulded draft	2,346 m	VCG'	4,457 m
Draft forward pp	2,213 m	Max VCG'	3,409 m
Trim	-0,266 m	GM solid	0,046 m
LCF	40,049 m	G'M liquid	0,046 m
LCB	38,561 m	Immersion rate	7,608 tonne/cm
KM	4,504 m	MCT	49,529 t*m

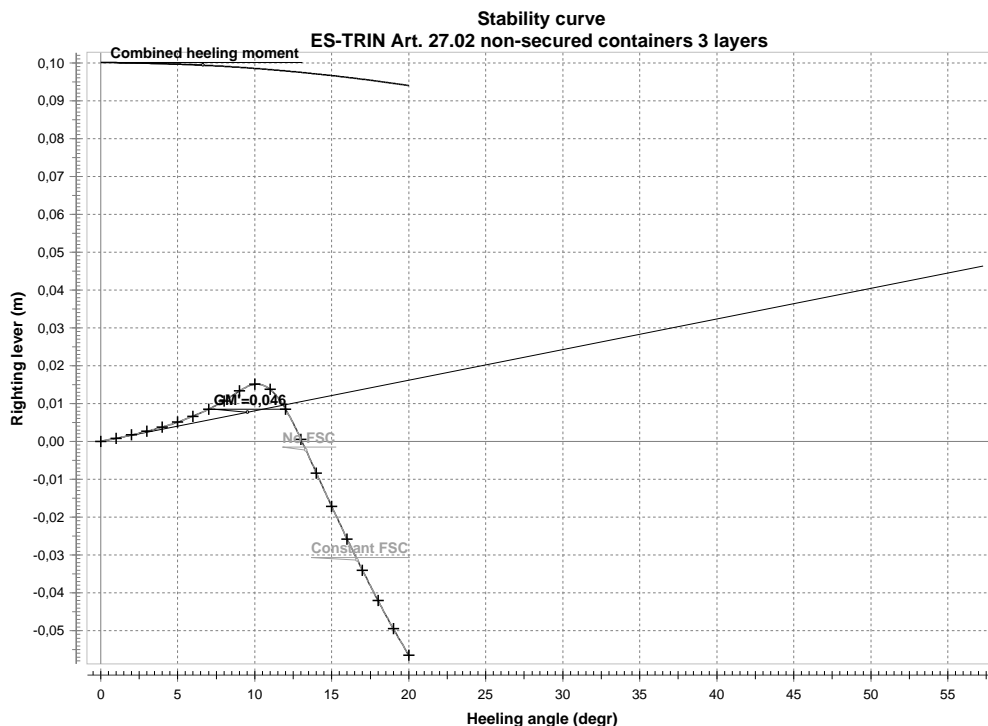
Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers full			1020,000	38,390	0,000 (CL)	3,400	0,000
3rd layer full			510,000	38,390	0,000 (CL)	7,748	0,000
Totals for Containers			1530,000	38,390	0,000 (CL)	4,849	0,000
Lightship			191,876	40,026	0,000 (CL)	1,331	
Deadweight			1530,000	38,390	0,000 (CL)	4,849	0,000
Displacement			1721,876	38,572	0,000 (CL)	4,457	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	2,346	-0,266	1721,875	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	2,346	-0,266	1721,876	0,079	0,078	0,000	0,000	0,001	0,0000
2,0 (PS)	2,346	-0,266	1721,875	0,157	0,156	0,000	0,000	0,002	0,0000
3,0 (PS)	2,346	-0,267	1721,874	0,236	0,233	0,000	0,000	0,003	0,0001
4,0 (PS)	2,346	-0,267	1721,872	0,315	0,311	0,000	0,000	0,004	0,0001
5,0 (PS)	2,346	-0,268	1721,870	0,394	0,388	0,000	0,000	0,005	0,0002
6,0 (PS)	2,345	-0,270	1721,868	0,473	0,466	0,000	0,000	0,007	0,0003
7,0 (PS)	2,345	-0,271	1721,866	0,552	0,543	0,000	0,000	0,008	0,0004
8,0 (PS)	2,345	-0,273	1721,864	0,631	0,620	0,000	0,000	0,011	0,0006
9,0 (PS)	2,345	-0,274	1721,883	0,711	0,697	0,000	0,000	0,013	0,0008
10,0 (PS)	2,345	-0,279	1721,878	0,789	0,774	0,000	0,000	0,015	0,0011
11,0 (PS)	2,347	-0,290	1721,883	0,864	0,850	0,000	0,000	0,014	0,0013
12,0 (PS)	2,351	-0,304	1721,883	0,935	0,927	0,000	0,000	0,009	0,0015
13,0 (PS)	2,357	-0,315	1721,878	1,003	1,003	0,000	0,000	0,001	0,0016
14,0 (PS)	2,364	-0,324	1721,876	1,070	1,078	0,000	0,000	-0,008	0,0016
15,0 (PS)	2,371	-0,333	1721,882	1,136	1,154	0,000	0,000	-0,017	0,0016
16,0 (PS)	2,379	-0,341	1721,879	1,203	1,229	0,000	0,000	-0,026	0,0016
17,0 (PS)	2,387	-0,350	1721,878	1,269	1,303	0,000	0,000	-0,034	0,0016
18,0 (PS)	2,395	-0,357	1721,877	1,335	1,377	0,000	0,000	-0,042	0,0016
19,0 (PS)	2,403	-0,365	1721,876	1,402	1,451	0,000	0,000	-0,049	0,0016
20,0 (PS)	2,412	-0,372	1721,876	1,468	1,524	0,000	0,000	-0,056	0,0016



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	0,046 m	\geq	1,000 m	FAILS
Combined heeling moment	180,0 degr	\leq	5,0 degr	FAILS
Calculated heeling moment (upright)	172,250 t*m			

Required freeboard	-100,000 m	>=	0,000 m	FAILS
Weight	172,250 t			
Trv. location of weight	1,000 m			

The condition does NOT comply with the stability criteria

Summary of intact stability

Description	Density	Draft	Draft BoK	Trim	List	Displ.	VCG'	Max VCG'	GM'	Complies
		m	m	m	degr	t	m	m	m	
Containers empty	1,0000	0,672	0,672	0,058	0,0 (CL)	597,565	2,019	14,093	15,443	Complies
Containers 70 % full	1,0000	1,523	1,523	-0,057	0,0 (CL)	1412,365	2,816	6,958	5,363	Complies
Containers full	1,0000	1,883	1,883	-0,128	0,0 (CL)	1761,565	2,932	5,932	4,001	Complies
Containers empty 3 layers	1,0000	0,775	0,775	0,049	0,0 (CL)	695,565	2,826	11,386	12,339	Complies
Containers 70 % full 3 layers	1,0000	2,044	2,044	-0,164	0,0 (CL)	1917,765	4,116	5,248	2,426	Complies
Containers full 3 layers	1,0000	2,581	2,581	-0,294	0,0 (CL)	2441,565	4,273	4,575	1,392	Complies
Containers empty ALU	1,0000	0,549	0,549	0,048	0,0 (CL)	481,024	2,198	16,728	19,204	Complies
Containers 70 % full ALU	1,0000	1,402	1,402	-0,055	0,0 (CL)	1295,824	2,954	7,432	5,809	Complies
Containers full ALU	1,0000	1,763	1,763	-0,122	0,0 (CL)	1645,024	3,048	6,233	4,232	Complies
Containers empty 3 layers ALU	1,0000	0,652	0,652	0,040	0,0 (CL)	579,024	3,137	13,140	14,843	Complies
Containers 70 % full 3 layers ALU	1,0000	1,924	1,924	-0,157	0,0 (CL)	1801,224	4,299	5,448	2,526	Complies
Containers full 3 layers ALU	1,0000	2,462	2,462	-0,282	0,0 (CL)	2325,024	4,423	4,749	1,393	Complies

Components of deadweight

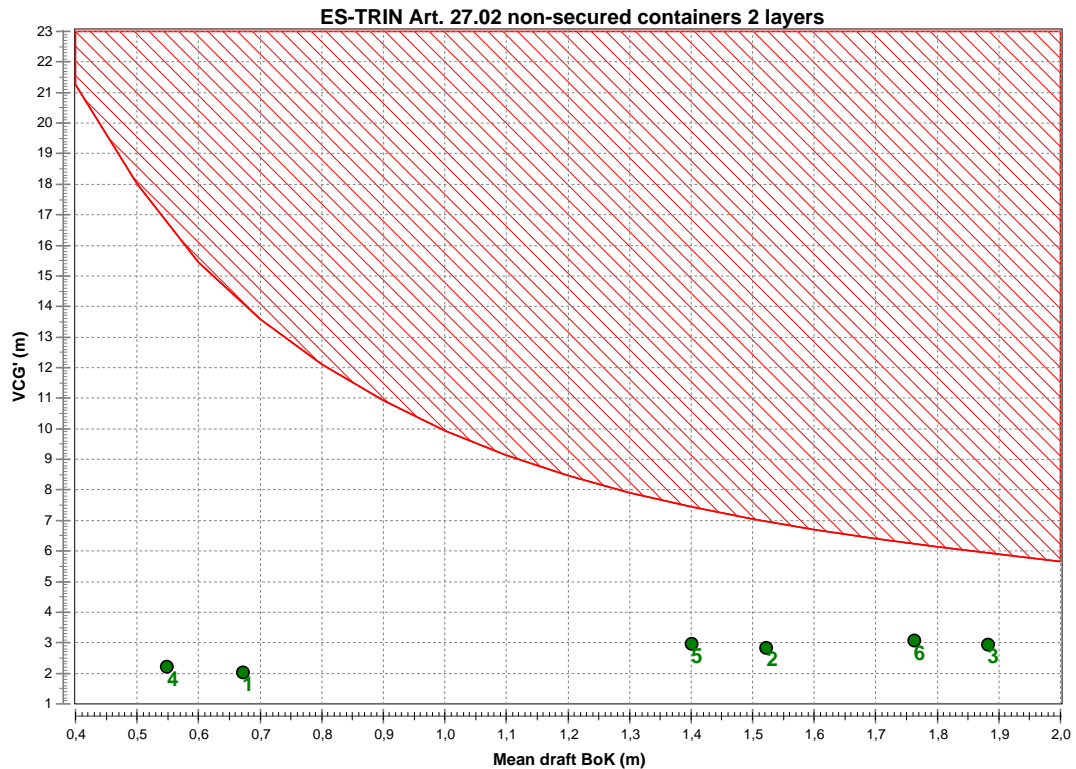
Loading condition	Deadweight	Containers t
Containers empty	196,000	196,000
Containers 70 % full	1010,800	1010,800
Containers full	1360,000	1360,000
Containers empty 3 layers	294,000	294,000
Containers 70 % full 3 layers	1516,200	1516,200
Containers full 3 layers	2040,000	2040,000
Containers empty ALU	196,000	196,000
Containers 70 % full ALU	1010,800	1010,800
Containers full ALU	1360,000	1360,000
Containers empty 3 layers ALU	294,000	294,000
Containers 70 % full 3 layers ALU	1516,200	1516,200
Containers full 3 layers ALU	2040,000	2040,000

Maximum VCG' envelope

Criteria : ES-TRIN Art. 27.02 non-secured containers 2 layers

Calculated for average trim : -0,043 m

Wind silhouette : 2 layers



Loading conditions:

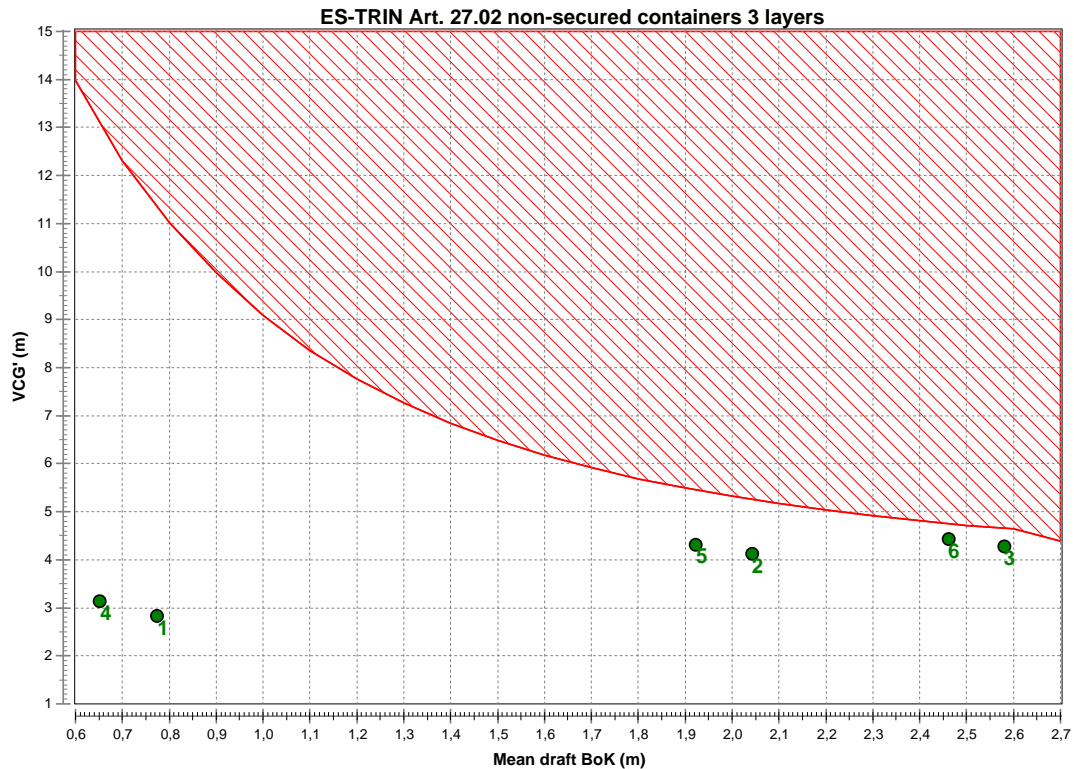
1. Containers empty
2. Containers 70 % full
3. Containers full
4. Containers empty ALU
5. Containers 70 % full ALU
6. Containers full ALU

Maximum VCG' envelope

Criteria : ES-TRIN Art. 27.02 non-secured containers 3 layers

Calculated for average trim : -0,135 m

Wind silhouette : 2 layers



Loading conditions:

1. Containers empty 3 layers
2. Containers 70 % full 3 layers
3. Containers full 3 layers
4. Containers empty 3 layers ALU
5. Containers 70 % full 3 layers ALU
6. Containers full 3 layers ALU

Containers empty

2020.056_004_v2 IW-NET NEWS Evolution

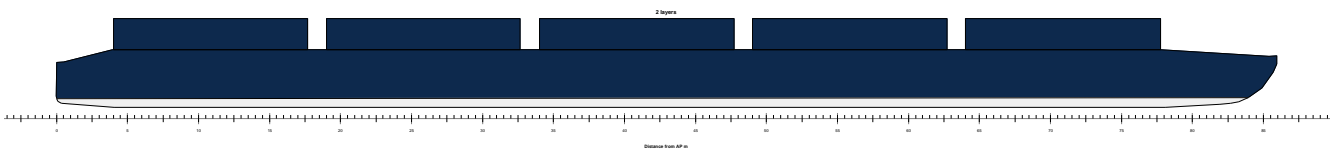
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_004_v2_IW-NETNEWS Evolution v2.fbm

Design length	85,920 m	Midship location	42,960 m
Length over all	85,920 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,600 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,019 m
Draft aft pp	0,643 m	GG'	0,000 m
Mean moulded draft	0,672 m	VCG'	2,019 m
Draft forward pp	0,701 m	Max VCG'	14,093 m
Trim	0,058 m	GM solid	15,443 m
LCF	41,412 m	G'M liquid	15,443 m
LCB	41,801 m	Immersion rate	9,471 tonne/cm
KM	17,462 m	MCT	62,793 t*m

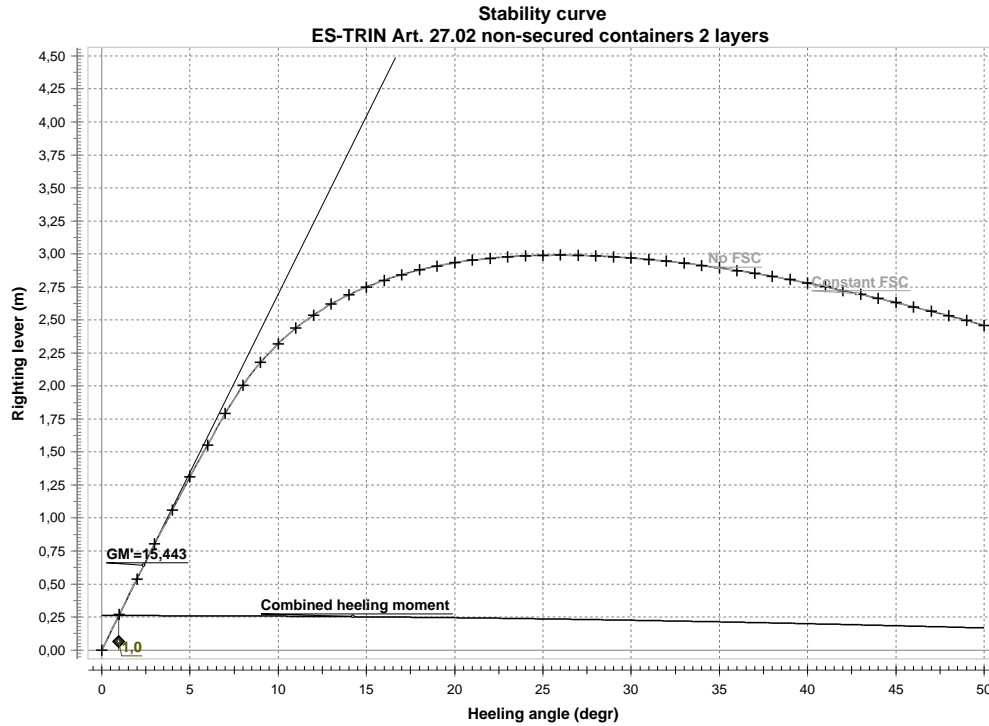
Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers empty			196,000	40,858	0,000 (CL)	3,400	0,000
Lightship			401,565	42,259	0,000 (CL)	1,345	
Deadweight			196,000	40,858	0,000 (CL)	3,400	0,000
Displacement			597,565	41,799	0,000 (CL)	2,019	0,000

Righting levers

Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	0,672	0,058	597,564	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	0,672	0,058	597,565	0,305	0,035	0,000	0,000	0,270	0,0024
2,0 (PS)	0,672	0,058	597,565	0,609	0,070	0,000	0,000	0,539	0,0094
3,0 (PS)	0,671	0,057	597,565	0,908	0,106	0,000	0,000	0,802	0,0211
4,0 (PS)	0,669	0,056	597,564	1,200	0,141	0,000	0,000	1,060	0,0374
5,0 (PS)	0,666	0,055	597,565	1,486	0,176	0,000	0,000	1,310	0,0581
6,0 (PS)	0,662	0,054	597,562	1,765	0,211	0,000	0,000	1,554	0,0831
7,0 (PS)	0,657	0,054	597,564	2,037	0,246	0,000	0,000	1,791	0,1123
8,0 (PS)	0,649	0,055	597,563	2,286	0,281	0,000	0,000	2,005	0,1454
9,0 (PS)	0,636	0,057	597,563	2,494	0,316	0,000	0,000	2,178	0,1820
10,0 (PS)	0,617	0,059	597,563	2,671	0,351	0,000	0,000	2,320	0,2213
11,0 (PS)	0,594	0,061	597,560	2,823	0,385	0,000	0,000	2,438	0,2628
12,0 (PS)	0,567	0,063	597,562	2,956	0,420	0,000	0,000	2,537	0,3063
13,0 (PS)	0,537	0,064	597,560	3,074	0,454	0,000	0,000	2,620	0,3513
14,0 (PS)	0,503	0,066	597,563	3,179	0,488	0,000	0,000	2,690	0,3977
15,0 (PS)	0,467	0,067	597,562	3,273	0,523	0,000	0,000	2,750	0,4451
16,0 (PS)	0,428	0,069	597,562	3,357	0,557	0,000	0,000	2,801	0,4936
17,0 (PS)	0,386	0,070	597,562	3,434	0,590	0,000	0,000	2,843	0,5429
18,0 (PS)	0,341	0,071	597,562	3,503	0,624	0,000	0,000	2,879	0,5928
19,0 (PS)	0,294	0,072	597,563	3,566	0,657	0,000	0,000	2,909	0,6433
20,0 (PS)	0,245	0,073	597,563	3,623	0,691	0,000	0,000	2,933	0,6943
21,0 (PS)	0,193	0,074	597,561	3,676	0,724	0,000	0,000	2,952	0,7457
22,0 (PS)	0,139	0,075	597,562	3,724	0,756	0,000	0,000	2,967	0,7973
23,0 (PS)	0,083	0,076	597,563	3,767	0,789	0,000	0,000	2,978	0,8492
24,0 (PS)	0,024	0,076	597,561	3,807	0,821	0,000	0,000	2,986	0,9013
25,0 (PS)	-0,037	0,077	597,562	3,843	0,853	0,000	0,000	2,990	0,9534
26,0 (PS)	-0,100	0,077	597,563	3,876	0,885	0,000	0,000	2,991	1,0056
27,0 (PS)	-0,166	0,077	597,559	3,906	0,917	0,000	0,000	2,989	1,0578
28,0 (PS)	-0,234	0,078	597,561	3,933	0,948	0,000	0,000	2,985	1,1100
29,0 (PS)	-0,305	0,078	597,563	3,957	0,979	0,000	0,000	2,978	1,1620
30,0 (PS)	-0,378	0,078	597,563	3,979	1,010	0,000	0,000	2,969	1,2139
31,0 (PS)	-0,454	0,078	597,559	3,998	1,040	0,000	0,000	2,958	1,2657
32,0 (PS)	-0,533	0,078	597,561	4,015	1,070	0,000	0,000	2,945	1,3172
33,0 (PS)	-0,615	0,078	597,563	4,030	1,100	0,000	0,000	2,930	1,3685
34,0 (PS)	-0,700	0,078	597,564	4,042	1,129	0,000	0,000	2,913	1,4194
35,0 (PS)	-0,788	0,078	597,564	4,053	1,158	0,000	0,000	2,895	1,4701
36,0 (PS)	-0,879	0,078	597,561	4,061	1,187	0,000	0,000	2,875	1,5205
37,0 (PS)	-0,974	0,078	597,563	4,068	1,215	0,000	0,000	2,853	1,5705
38,0 (PS)	-1,072	0,077	597,564	4,073	1,243	0,000	0,000	2,830	1,6201
39,0 (PS)	-1,174	0,077	597,564	4,076	1,271	0,000	0,000	2,805	1,6692
40,0 (PS)	-1,280	0,076	597,565	4,077	1,298	0,000	0,000	2,779	1,7180
41,0 (PS)	-1,391	0,075	597,561	4,077	1,325	0,000	0,000	2,752	1,7662
42,0 (PS)	-1,505	0,074	597,563	4,075	1,351	0,000	0,000	2,724	1,8140
43,0 (PS)	-1,624	0,073	597,564	4,071	1,377	0,000	0,000	2,694	1,8613
44,0 (PS)	-1,748	0,072	597,565	4,066	1,403	0,000	0,000	2,663	1,9081
45,0 (PS)	-1,878	0,071	597,561	4,059	1,428	0,000	0,000	2,632	1,9543
46,0 (PS)	-2,013	0,069	597,563	4,051	1,452	0,000	0,000	2,599	1,9999
47,0 (PS)	-2,154	0,068	597,565	4,042	1,477	0,000	0,000	2,566	2,0450
48,0 (PS)	-2,302	0,067	597,562	4,032	1,500	0,000	0,000	2,531	2,0895
49,0 (PS)	-2,456	0,067	597,565	4,020	1,524	0,000	0,000	2,496	2,1334
50,0 (PS)	-2,617	0,067	597,565	4,006	1,547	0,000	0,000	2,459	2,1766



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	15,443 m	>=	1,000 m	Complies
Combined heeling moment	1,0 degr	<=	5,0 degr	Complies
Calculated heeling moment (upright)	155,630 t*m			
Required freeboard	2,407 m	>=	0,000 m	Complies
Weight	155,630 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers 70 % full

2020.056_004_v2 IW-NET NEWS Evolution

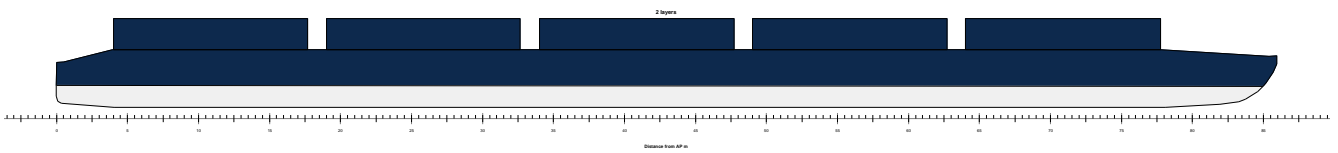
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_004_v2_IW-NETNEWS Evolution v2.fbm

Design length	85,920 m	Midship location	42,960 m
Length over all	85,920 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,600 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,816 m
Draft aft pp	1,551 m	GG'	0,000 m
Mean moulded draft	1,523 m	VCG'	2,816 m
Draft forward pp	1,494 m	Max VCG'	6,958 m
Trim	-0,057 m	GM solid	5,363 m
LCF	42,098 m	G'M liquid	5,363 m
LCB	41,255 m	Immersion rate	9,639 tonne/cm
KM	8,179 m	MCT	65,948 t*m

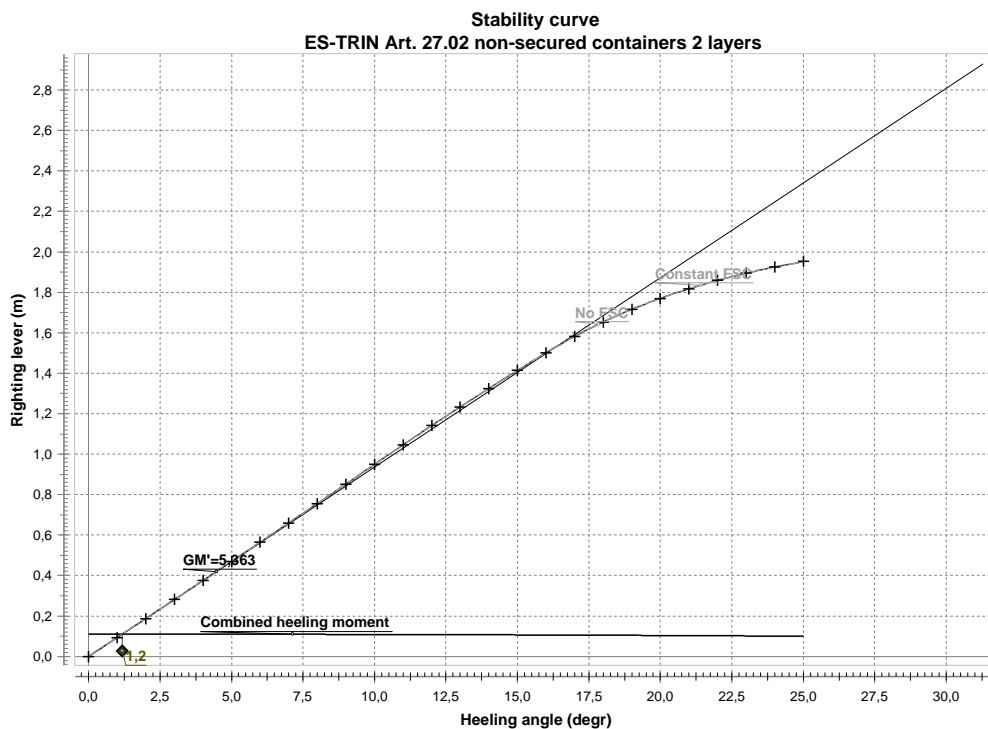
Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers 70 % full			1010,800	40,858	0,000 (CL)	3,400	0,000
Lightship			401,565	42,259	0,000 (CL)	1,345	
Deadweight			1010,800	40,858	0,000 (CL)	3,400	0,000
Displacement			1412,365	41,256	0,000 (CL)	2,816	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,523	-0,057	1412,365	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,522	-0,057	1412,364	0,143	0,049	0,000	0,000	0,094	0,0008
2,0 (PS)	1,522	-0,058	1412,360	0,286	0,098	0,000	0,000	0,187	0,0033
3,0 (PS)	1,522	-0,059	1412,355	0,429	0,147	0,000	0,000	0,281	0,0074
4,0 (PS)	1,522	-0,060	1412,351	0,572	0,196	0,000	0,000	0,375	0,0131
5,0 (PS)	1,522	-0,062	1412,365	0,715	0,245	0,000	0,000	0,470	0,0205
6,0 (PS)	1,521	-0,065	1412,365	0,859	0,294	0,000	0,000	0,565	0,0295
7,0 (PS)	1,521	-0,067	1412,365	1,003	0,343	0,000	0,000	0,660	0,0402
8,0 (PS)	1,520	-0,071	1412,352	1,148	0,392	0,000	0,000	0,756	0,0525
9,0 (PS)	1,520	-0,074	1412,365	1,293	0,440	0,000	0,000	0,852	0,0665
10,0 (PS)	1,519	-0,078	1412,365	1,438	0,489	0,000	0,000	0,949	0,0823
11,0 (PS)	1,518	-0,083	1412,379	1,583	0,537	0,000	0,000	1,046	0,0997
12,0 (PS)	1,516	-0,088	1412,365	1,726	0,585	0,000	0,000	1,141	0,1188
13,0 (PS)	1,513	-0,093	1412,363	1,867	0,633	0,000	0,000	1,233	0,1395
14,0 (PS)	1,509	-0,099	1412,359	2,006	0,681	0,000	0,000	1,324	0,1618
15,0 (PS)	1,504	-0,105	1412,355	2,142	0,729	0,000	0,000	1,414	0,1857
16,0 (PS)	1,499	-0,111	1412,365	2,277	0,776	0,000	0,000	1,501	0,2112
17,0 (PS)	1,491	-0,119	1412,363	2,405	0,823	0,000	0,000	1,582	0,2381
18,0 (PS)	1,481	-0,128	1412,360	2,523	0,870	0,000	0,000	1,653	0,2663
19,0 (PS)	1,467	-0,137	1412,358	2,632	0,917	0,000	0,000	1,716	0,2957
20,0 (PS)	1,451	-0,146	1412,360	2,733	0,963	0,000	0,000	1,770	0,3262
21,0 (PS)	1,433	-0,156	1412,363	2,826	1,009	0,000	0,000	1,817	0,3575
22,0 (PS)	1,412	-0,165	1412,364	2,913	1,055	0,000	0,000	1,859	0,3896
23,0 (PS)	1,389	-0,174	1412,361	2,995	1,100	0,000	0,000	1,894	0,4223
24,0 (PS)	1,363	-0,183	1412,364	3,071	1,145	0,000	0,000	1,925	0,4557
25,0 (PS)	1,335	-0,192	1412,361	3,142	1,190	0,000	0,000	1,952	0,4895



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	5,363 m	\geq	1,000 m	Complies
Combined heeling moment	1,2 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	155,630 t*m			
Required freeboard	1,531 m	\geq	0,000 m	Complies
Weight	155,630 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers full

2020.056_004_v2 IW-NET NEWS Evolution

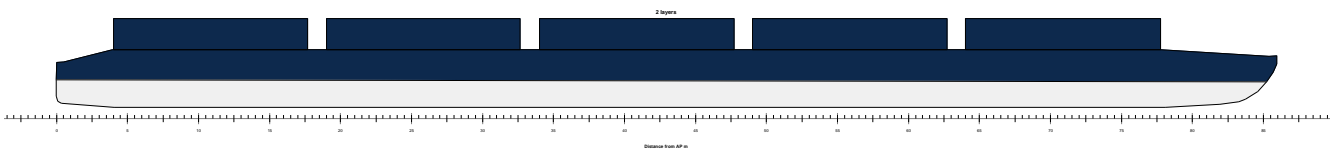
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_004_v2_IW-NETNEWS Evolution v2.fbm

Design length	85,920 m	Midship location	42,960 m
Length over all	85,920 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,600 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,932 m
Draft aft pp	1,947 m	GG'	0,000 m
Mean moulded draft	1,883 m	VCG'	2,932 m
Draft forward pp	1,819 m	Max VCG'	5,932 m
Trim	-0,128 m	GM solid	4,001 m
LCF	42,314 m	G'M liquid	4,001 m
LCB	41,174 m	Immersion rate	9,688 tonne/cm
KM	6,932 m	MCT	66,900 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

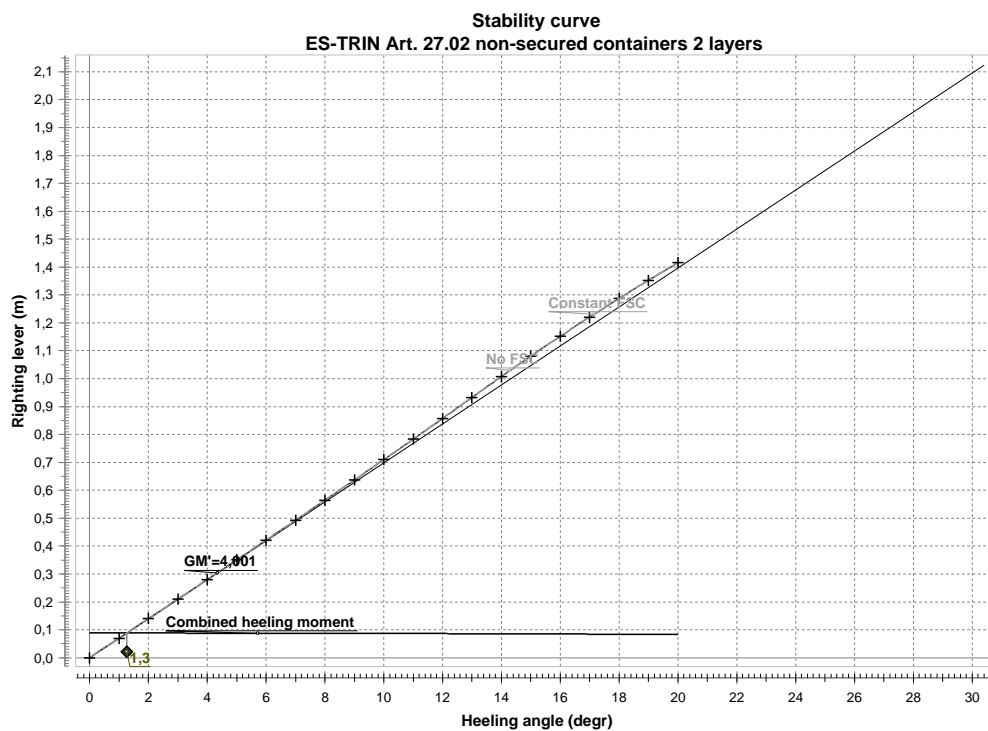
Containers full			1360,000	40,858	0,000 (CL)	3,400	0,000
Lightship			401,565	42,259	0,000 (CL)	1,345	
Deadweight			1360,000	40,858	0,000 (CL)	3,400	0,000
Displacement			1761,565	41,177	0,000 (CL)	2,932	0,000

Righting levers

Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrاد
0,0 (CL)	1,883	-0,128	1761,565	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,883	-0,129	1761,564	0,121	0,051	0,000	0,000	0,070	0,0006
2,0 (PS)	1,883	-0,129	1761,561	0,242	0,102	0,000	0,000	0,140	0,0024
3,0 (PS)	1,883	-0,130	1761,557	0,363	0,153	0,000	0,000	0,210	0,0055
4,0 (PS)	1,883	-0,131	1761,554	0,485	0,204	0,000	0,000	0,280	0,0098
5,0 (PS)	1,882	-0,133	1761,552	0,606	0,256	0,000	0,000	0,351	0,0153
6,0 (PS)	1,882	-0,135	1761,551	0,728	0,306	0,000	0,000	0,421	0,0220
7,0 (PS)	1,882	-0,137	1761,551	0,850	0,357	0,000	0,000	0,493	0,0300
8,0 (PS)	1,881	-0,140	1761,552	0,972	0,408	0,000	0,000	0,564	0,0392
9,0 (PS)	1,881	-0,143	1761,553	1,095	0,459	0,000	0,000	0,637	0,0497
10,0 (PS)	1,880	-0,146	1761,552	1,219	0,509	0,000	0,000	0,710	0,0614

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
11,0 (PS)	1,879	-0,150	1761,547	1,343	0,559	0,000	0,000	0,783	0,0745
12,0 (PS)	1,879	-0,155	1761,565	1,467	0,610	0,000	0,000	0,858	0,0888
13,0 (PS)	1,878	-0,159	1761,548	1,592	0,659	0,000	0,000	0,933	0,1044
14,0 (PS)	1,877	-0,166	1761,567	1,717	0,709	0,000	0,000	1,008	0,1213
15,0 (PS)	1,876	-0,174	1761,571	1,840	0,759	0,000	0,000	1,081	0,1396
16,0 (PS)	1,874	-0,183	1761,562	1,960	0,808	0,000	0,000	1,152	0,1591
17,0 (PS)	1,872	-0,192	1761,555	2,078	0,857	0,000	0,000	1,221	0,1798
18,0 (PS)	1,869	-0,202	1761,558	2,194	0,906	0,000	0,000	1,288	0,2017
19,0 (PS)	1,866	-0,211	1761,560	2,307	0,954	0,000	0,000	1,353	0,2247
20,0 (PS)	1,862	-0,221	1761,560	2,418	1,003	0,000	0,000	1,415	0,2489



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	4,001 m	\geq	1,000 m	Complies
Combined heeling moment	1,3 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	155,630 t*m			
Required freeboard	1,127 m	\geq	0,000 m	Complies
Weight	155,630 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers empty 3 layers

2020.056_004_v2 IW-NET NEWS Evolution

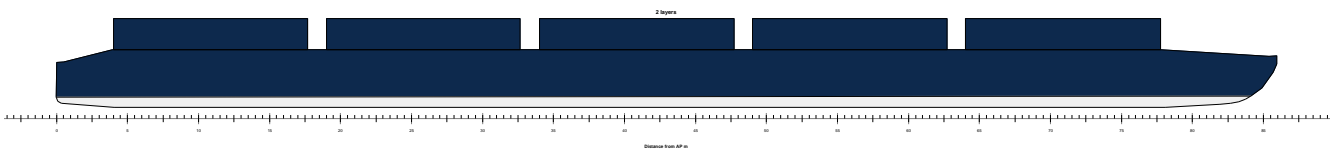
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_004_v2_IW-NETNEWS Evolution v2.fbm

Design length	85,920 m	Midship location	42,960 m
Length over all	85,920 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,600 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,826 m
Draft aft pp	0,751 m	GG'	0,000 m
Mean moulded draft	0,775 m	VCG'	2,826 m
Draft forward pp	0,800 m	Max VCG'	11,386 m
Trim	0,049 m	GM solid	12,339 m
LCF	41,503 m	G'M liquid	12,339 m
LCB	41,668 m	Immersion rate	9,500 tonne/cm
KM	15,166 m	MCT	63,280 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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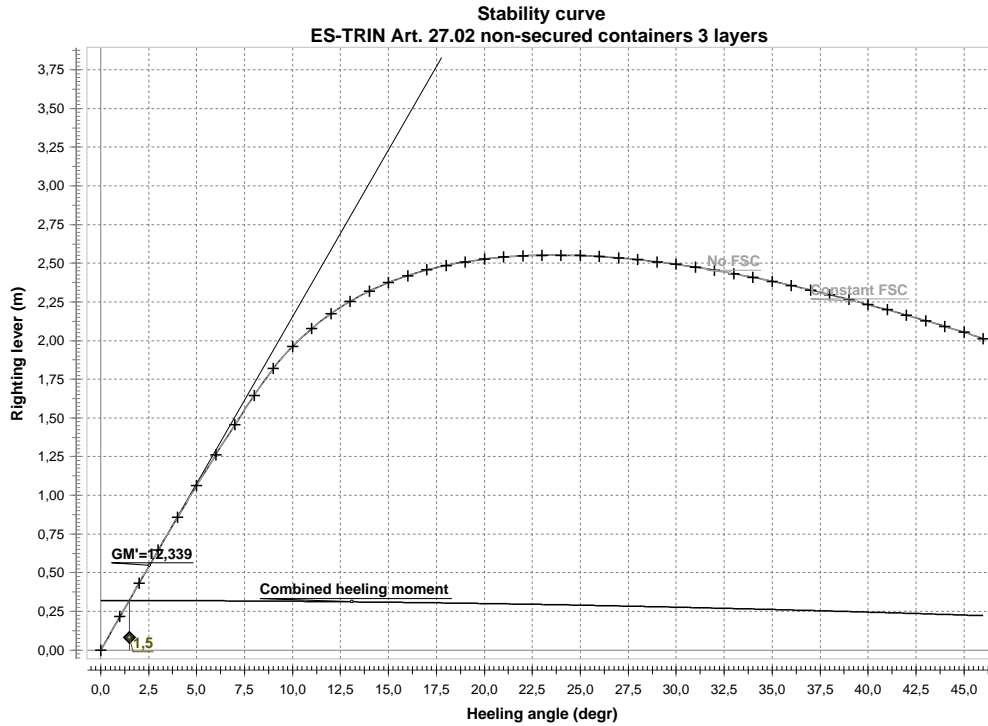
Containers

Containers empty			196,000	40,858	0,000 (CL)	3,400	0,000
3rd layer empty			98,000	40,858	0,000 (CL)	7,748	0,000
Totals for Containers			294,000	40,858	0,000 (CL)	4,849	0,000

Lightship			401,565	42,259	0,000 (CL)	1,345	
Deadweight			294,000	40,858	0,000 (CL)	4,849	0,000
Displacement			695,565	41,667	0,000 (CL)	2,826	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	0,775	0,049	695,565	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	0,775	0,049	695,560	0,265	0,049	0,000	0,000	0,215	0,0019
2,0 (PS)	0,775	0,048	695,565	0,529	0,099	0,000	0,000	0,431	0,0075
3,0 (PS)	0,775	0,047	695,565	0,794	0,148	0,000	0,000	0,646	0,0169
4,0 (PS)	0,774	0,046	695,565	1,054	0,197	0,000	0,000	0,857	0,0300
5,0 (PS)	0,772	0,044	695,563	1,308	0,246	0,000	0,000	1,062	0,0468
6,0 (PS)	0,769	0,043	695,565	1,557	0,295	0,000	0,000	1,262	0,0671
7,0 (PS)	0,765	0,041	695,562	1,801	0,344	0,000	0,000	1,456	0,0908
8,0 (PS)	0,760	0,040	695,564	2,039	0,393	0,000	0,000	1,645	0,1179
9,0 (PS)	0,753	0,039	695,564	2,262	0,442	0,000	0,000	1,819	0,1482
10,0 (PS)	0,741	0,039	695,564	2,452	0,491	0,000	0,000	1,962	0,1812
11,0 (PS)	0,724	0,040	695,561	2,617	0,539	0,000	0,000	2,078	0,2165
12,0 (PS)	0,703	0,040	695,563	2,762	0,588	0,000	0,000	2,174	0,2536
13,0 (PS)	0,678	0,040	695,561	2,890	0,636	0,000	0,000	2,254	0,2923
14,0 (PS)	0,650	0,040	695,563	3,004	0,684	0,000	0,000	2,320	0,3322
15,0 (PS)	0,619	0,040	695,562	3,106	0,731	0,000	0,000	2,375	0,3732
16,0 (PS)	0,585	0,040	695,562	3,199	0,779	0,000	0,000	2,420	0,4151
17,0 (PS)	0,548	0,040	695,562	3,283	0,826	0,000	0,000	2,457	0,4576
18,0 (PS)	0,508	0,040	695,562	3,360	0,873	0,000	0,000	2,486	0,5008
19,0 (PS)	0,466	0,040	695,562	3,430	0,920	0,000	0,000	2,509	0,5444
20,0 (PS)	0,422	0,040	695,563	3,494	0,967	0,000	0,000	2,527	0,5883
21,0 (PS)	0,375	0,040	695,560	3,553	1,013	0,000	0,000	2,540	0,6326
22,0 (PS)	0,326	0,040	695,562	3,607	1,059	0,000	0,000	2,548	0,6770
23,0 (PS)	0,274	0,039	695,563	3,656	1,104	0,000	0,000	2,552	0,7215
24,0 (PS)	0,220	0,039	695,559	3,702	1,150	0,000	0,000	2,552	0,7660
25,0 (PS)	0,163	0,038	695,561	3,744	1,194	0,000	0,000	2,549	0,8105
26,0 (PS)	0,104	0,037	695,563	3,782	1,239	0,000	0,000	2,543	0,8550
27,0 (PS)	0,043	0,037	695,564	3,818	1,283	0,000	0,000	2,535	0,8993
28,0 (PS)	-0,021	0,036	695,560	3,850	1,327	0,000	0,000	2,523	0,9435
29,0 (PS)	-0,087	0,035	695,562	3,879	1,370	0,000	0,000	2,509	0,9874
30,0 (PS)	-0,156	0,034	695,563	3,906	1,413	0,000	0,000	2,493	1,0310
31,0 (PS)	-0,228	0,033	695,564	3,931	1,456	0,000	0,000	2,475	1,0744
32,0 (PS)	-0,302	0,032	695,560	3,953	1,498	0,000	0,000	2,455	1,1174
33,0 (PS)	-0,380	0,031	695,562	3,972	1,539	0,000	0,000	2,433	1,1601
34,0 (PS)	-0,460	0,030	695,563	3,990	1,580	0,000	0,000	2,409	1,2023
35,0 (PS)	-0,543	0,028	695,564	4,005	1,621	0,000	0,000	2,384	1,2442
36,0 (PS)	-0,630	0,026	695,558	4,018	1,661	0,000	0,000	2,356	1,2855
37,0 (PS)	-0,719	0,024	695,561	4,029	1,701	0,000	0,000	2,328	1,3264
38,0 (PS)	-0,812	0,022	695,563	4,037	1,740	0,000	0,000	2,297	1,3668
39,0 (PS)	-0,909	0,020	695,564	4,045	1,779	0,000	0,000	2,266	1,4066
40,0 (PS)	-1,010	0,018	695,565	4,050	1,817	0,000	0,000	2,233	1,4459
41,0 (PS)	-1,114	0,015	695,561	4,053	1,854	0,000	0,000	2,199	1,4845
42,0 (PS)	-1,223	0,013	695,564	4,056	1,891	0,000	0,000	2,164	1,5226
43,0 (PS)	-1,337	0,010	695,565	4,056	1,927	0,000	0,000	2,129	1,5601
44,0 (PS)	-1,455	0,008	695,564	4,055	1,963	0,000	0,000	2,092	1,5969
45,0 (PS)	-1,578	0,007	695,565	4,052	1,998	0,000	0,000	2,054	1,6331
46,0 (PS)	-1,706	0,006	695,572	4,046	2,033	0,000	0,000	2,013	1,6686



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	12,339 m	>=	1,000 m	Complies
Combined heeling moment	1,5 degr	<=	5,0 degr	Complies
Calculated heeling moment (upright)	222,500 t*m			
Required freeboard	2,256 m	>=	0,000 m	Complies
Deck immersion angle	30,6 degr			
Max allowed ratio static angle/deck immersion angle	0,049	<=	1,000	Complies
Weight	222,500 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers 70 % full 3 layers

2020.056_004_v2 IW-NET NEWS Evolution

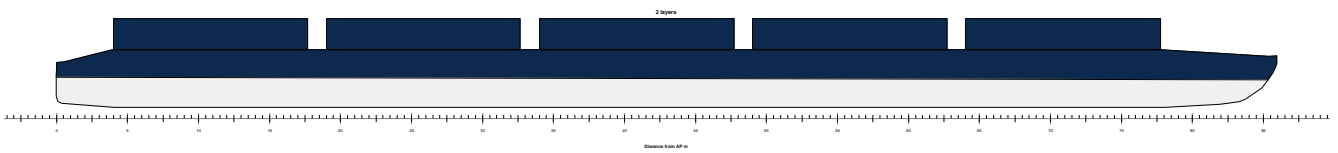
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_004_v2_IW-NETNEWS Evolution v2.fbm

Design length	85,920 m	Midship location	42,960 m
Length over all	85,920 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,600 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	4,116 m
Draft aft pp	2,126 m	GG'	0,000 m
Mean moulded draft	2,044 m	VCG'	4,116 m
Draft forward pp	1,962 m	Max VCG'	5,248 m
Trim	-0,164 m	GM solid	2,426 m
LCF	42,399 m	G'M liquid	2,426 m
LCB	41,145 m	Immersion rate	9,708 tonne/cm
KM	6,541 m	MCT	67,026 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers 70 % full			1010,800	40,858	0,000 (CL)	3,400	0,000
3rd layer 70 % full			505,400	40,858	0,000 (CL)	7,748	0,000
Totals for Containers			1516,200	40,858	0,000 (CL)	4,849	0,000

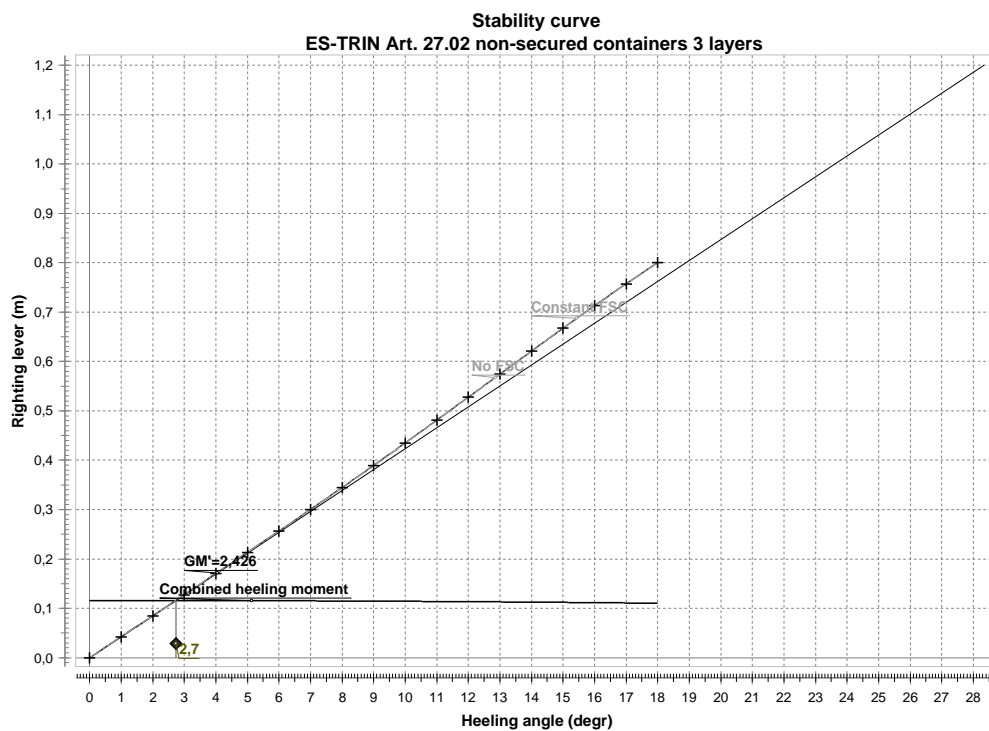
Lightship			401,565	42,259	0,000 (CL)	1,345	
Deadweight			1516,200	40,858	0,000 (CL)	4,849	0,000
Displacement			1917,765	41,151	0,000 (CL)	4,116	0,000

Righting levers

Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	2,044	-0,164	1917,765	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	2,044	-0,164	1917,764	0,114	0,072	0,000	0,000	0,042	0,0004
2,0 (PS)	2,044	-0,165	1917,762	0,228	0,144	0,000	0,000	0,085	0,0015
3,0 (PS)	2,044	-0,166	1917,758	0,343	0,215	0,000	0,000	0,127	0,0033
4,0 (PS)	2,044	-0,167	1917,756	0,457	0,287	0,000	0,000	0,170	0,0059
5,0 (PS)	2,043	-0,168	1917,754	0,572	0,359	0,000	0,000	0,213	0,0093
6,0 (PS)	2,043	-0,170	1917,753	0,687	0,430	0,000	0,000	0,257	0,0134
7,0 (PS)	2,043	-0,172	1917,753	0,802	0,502	0,000	0,000	0,300	0,0182
8,0 (PS)	2,042	-0,175	1917,754	0,917	0,573	0,000	0,000	0,345	0,0239

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
9,0 (PS)	2,042	-0,178	1917,754	1,033	0,644	0,000	0,000	0,389	0,0303
10,0 (PS)	2,041	-0,181	1917,754	1,150	0,715	0,000	0,000	0,435	0,0375
11,0 (PS)	2,041	-0,184	1917,754	1,266	0,785	0,000	0,000	0,481	0,0454
12,0 (PS)	2,040	-0,189	1917,764	1,383	0,856	0,000	0,000	0,528	0,0543
13,0 (PS)	2,040	-0,196	1917,769	1,500	0,926	0,000	0,000	0,574	0,0639
14,0 (PS)	2,040	-0,203	1917,764	1,617	0,996	0,000	0,000	0,621	0,0743
15,0 (PS)	2,040	-0,211	1917,761	1,733	1,065	0,000	0,000	0,667	0,0855
16,0 (PS)	2,040	-0,221	1917,765	1,847	1,134	0,000	0,000	0,713	0,0976
17,0 (PS)	2,040	-0,230	1917,764	1,961	1,203	0,000	0,000	0,757	0,1104
18,0 (PS)	2,039	-0,239	1917,765	2,072	1,272	0,000	0,000	0,800	0,1240



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	2,426 m	\geq	1,000 m	Complies
Combined heeling moment	2,7 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	222,500 t*m			
Required freeboard	0,800 m	\geq	0,000 m	Complies
Deck immersion angle	10,6 degr			
Max allowed ratio static angle/deck immersion angle	0,258	\leq	1,000	Complies
Weight	222,500 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers full 3 layers

2020.056_004_v2 IW-NET NEWS Evolution

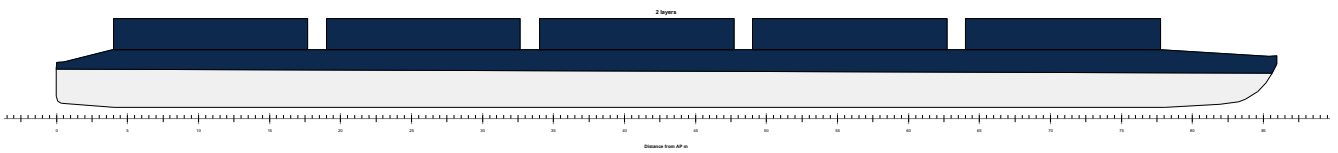
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_004_v2_IW-NETNEWS Evolution v2.fbm

Design length	85,920 m	Midship location	42,960 m
Length over all	85,920 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,600 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	4,273 m
Draft aft pp	2,728 m	GG'	0,000 m
Mean moulded draft	2,581 m	VCG'	4,273 m
Draft forward pp	2,434 m	Max VCG'	4,575 m
Trim	-0,294 m	GM solid	1,392 m
LCF	42,642 m	G'M liquid	1,392 m
LCB	41,078 m	Immersion rate	9,764 tonne/cm
KM	5,665 m	MCT	68,042 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers full			1360,000	40,858	0,000 (CL)	3,400	0,000
3rd layer full			680,000	40,858	0,000 (CL)	7,748	0,000
Totals for Containers			2040,000	40,858	0,000 (CL)	4,849	0,000

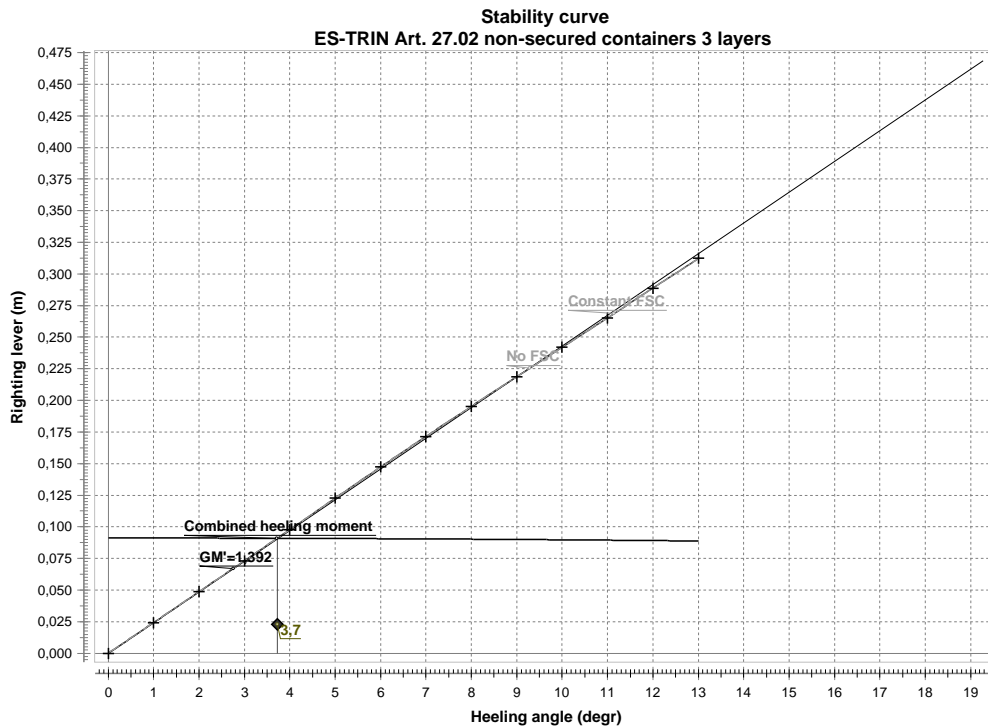
Lightship			401,565	42,259	0,000 (CL)	1,345	
Deadweight			2040,000	40,858	0,000 (CL)	4,849	0,000
Displacement			2441,565	41,088	0,000 (CL)	4,273	0,000

Righting levers

Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	2,581	-0,294	2441,565	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	2,581	-0,294	2441,565	0,099	0,075	0,000	0,000	0,024	0,0002
2,0 (PS)	2,581	-0,294	2441,564	0,198	0,149	0,000	0,000	0,049	0,0008
3,0 (PS)	2,581	-0,295	2441,563	0,297	0,224	0,000	0,000	0,073	0,0019
4,0 (PS)	2,581	-0,296	2441,561	0,396	0,298	0,000	0,000	0,098	0,0034
5,0 (PS)	2,581	-0,297	2441,564	0,495	0,372	0,000	0,000	0,123	0,0053
6,0 (PS)	2,581	-0,300	2441,581	0,594	0,447	0,000	0,000	0,147	0,0077
7,0 (PS)	2,581	-0,305	2441,584	0,692	0,521	0,000	0,000	0,171	0,0105
8,0 (PS)	2,582	-0,311	2441,582	0,790	0,595	0,000	0,000	0,195	0,0137

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
9,0 (PS)	2,583	-0,318	2441,578	0,887	0,668	0,000	0,000	0,219	0,0173
10,0 (PS)	2,585	-0,326	2441,573	0,984	0,742	0,000	0,000	0,242	0,0213
11,0 (PS)	2,587	-0,333	2441,569	1,081	0,815	0,000	0,000	0,265	0,0257
12,0 (PS)	2,589	-0,339	2441,566	1,177	0,888	0,000	0,000	0,289	0,0306
13,0 (PS)	2,591	-0,345	2441,565	1,274	0,961	0,000	0,000	0,312	0,0358



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	1,392 m	\geq	1,000 m	Complies
Combined heeling moment	3,7 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	222,500 t*m			
Required freeboard	0,100 m	\geq	0,000 m	Complies
Deck immersion angle	4,7 degr			
Max allowed ratio static angle/deck immersion angle	0,789	\leq	1,000	Complies
Weight	222,500 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers empty ALU

2020.056_004_v2 IW-NET NEWS Evolution

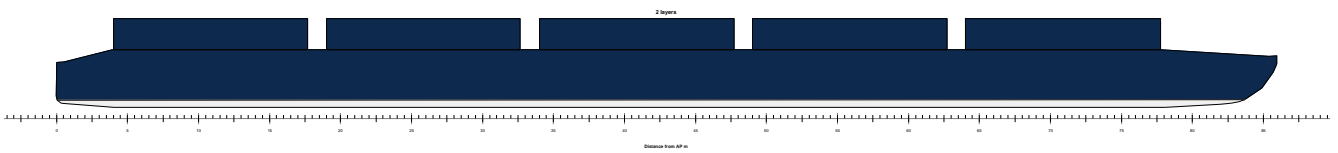
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_004_v2_IW-NETNEWS Evolution v2.fbm

Design length	85,920 m	Midship location	42,960 m
Length over all	85,920 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,600 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,198 m
Draft aft pp	0,525 m	GG'	0,000 m
Mean moulded draft	0,549 m	VCG'	2,198 m
Draft forward pp	0,572 m	Max VCG'	16,728 m
Trim	0,048 m	GM solid	19,204 m
LCF	41,294 m	G'M liquid	19,204 m
LCB	41,769 m	Immersion rate	9,426 tonne/cm
KM	21,402 m	MCT	61,934 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

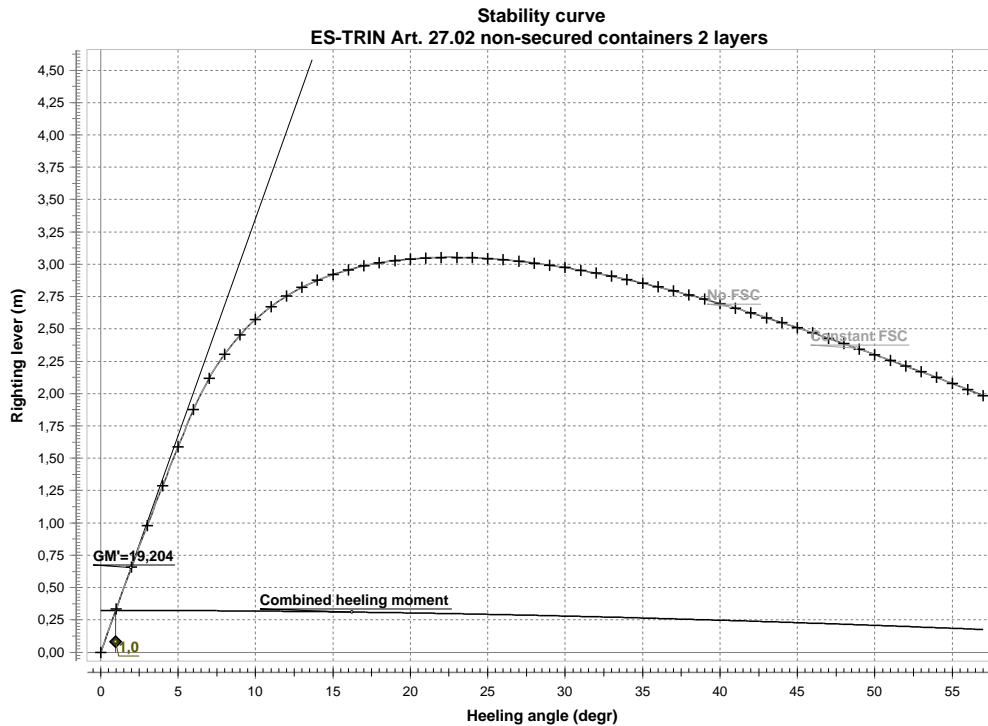
Containers empty			196,000	40,858	0,000 (CL)	3,400	0,000
Lightship			285,024	42,393	0,000 (CL)	1,371	
Deadweight			196,000	40,858	0,000 (CL)	3,400	0,000
Displacement			481,024	41,768	0,000 (CL)	2,198	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	0,549	0,048	481,023	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	0,548	0,048	481,024	0,372	0,038	0,000	0,000	0,334	0,0029
2,0 (PS)	0,547	0,048	481,024	0,737	0,077	0,000	0,000	0,660	0,0116
3,0 (PS)	0,545	0,047	481,023	1,093	0,115	0,000	0,000	0,978	0,0259
4,0 (PS)	0,542	0,047	481,024	1,440	0,153	0,000	0,000	1,287	0,0457
5,0 (PS)	0,538	0,047	481,019	1,778	0,192	0,000	0,000	1,586	0,0708
6,0 (PS)	0,533	0,047	481,020	2,105	0,230	0,000	0,000	1,876	0,1010
7,0 (PS)	0,522	0,050	481,023	2,384	0,268	0,000	0,000	2,116	0,1359
8,0 (PS)	0,505	0,053	481,022	2,609	0,306	0,000	0,000	2,303	0,1746
9,0 (PS)	0,482	0,056	481,022	2,796	0,344	0,000	0,000	2,452	0,2161
10,0 (PS)	0,456	0,059	481,023	2,955	0,382	0,000	0,000	2,573	0,2600
11,0 (PS)	0,425	0,061	481,021	3,091	0,419	0,000	0,000	2,672	0,3058
12,0 (PS)	0,390	0,064	481,022	3,210	0,457	0,000	0,000	2,753	0,3532
13,0 (PS)	0,353	0,066	481,021	3,314	0,494	0,000	0,000	2,820	0,4018
14,0 (PS)	0,312	0,068	481,020	3,407	0,532	0,000	0,000	2,875	0,4515
15,0 (PS)	0,269	0,070	481,022	3,489	0,569	0,000	0,000	2,921	0,5021
16,0 (PS)	0,223	0,072	481,022	3,563	0,606	0,000	0,000	2,957	0,5534
17,0 (PS)	0,174	0,074	481,022	3,630	0,643	0,000	0,000	2,987	0,6053
18,0 (PS)	0,123	0,075	481,019	3,689	0,679	0,000	0,000	3,010	0,6577
19,0 (PS)	0,070	0,077	481,020	3,743	0,716	0,000	0,000	3,028	0,7104
20,0 (PS)	0,014	0,078	481,021	3,792	0,752	0,000	0,000	3,040	0,7633
21,0 (PS)	-0,043	0,079	481,022	3,836	0,788	0,000	0,000	3,049	0,8165
22,0 (PS)	-0,104	0,081	481,020	3,876	0,823	0,000	0,000	3,053	0,8697
23,0 (PS)	-0,166	0,082	481,021	3,912	0,859	0,000	0,000	3,053	0,9230
24,0 (PS)	-0,230	0,083	481,022	3,944	0,894	0,000	0,000	3,050	0,9763
25,0 (PS)	-0,297	0,084	481,020	3,973	0,929	0,000	0,000	3,044	1,0294
26,0 (PS)	-0,367	0,085	481,021	3,998	0,963	0,000	0,000	3,035	1,0825
27,0 (PS)	-0,438	0,086	481,022	4,021	0,998	0,000	0,000	3,023	1,1354
28,0 (PS)	-0,512	0,086	481,023	4,041	1,032	0,000	0,000	3,009	1,1880
29,0 (PS)	-0,589	0,087	481,020	4,058	1,065	0,000	0,000	2,993	1,2404
30,0 (PS)	-0,668	0,088	481,022	4,073	1,099	0,000	0,000	2,974	1,2925
31,0 (PS)	-0,750	0,088	481,022	4,085	1,132	0,000	0,000	2,953	1,3442
32,0 (PS)	-0,835	0,089	481,023	4,096	1,165	0,000	0,000	2,931	1,3955
33,0 (PS)	-0,923	0,089	481,020	4,104	1,197	0,000	0,000	2,907	1,4465
34,0 (PS)	-1,013	0,090	481,022	4,110	1,229	0,000	0,000	2,881	1,4970
35,0 (PS)	-1,107	0,090	481,022	4,114	1,261	0,000	0,000	2,853	1,5470
36,0 (PS)	-1,204	0,090	481,023	4,116	1,292	0,000	0,000	2,824	1,5966
37,0 (PS)	-1,305	0,090	481,020	4,117	1,323	0,000	0,000	2,794	1,6456
38,0 (PS)	-1,409	0,091	481,021	4,115	1,353	0,000	0,000	2,762	1,6941
39,0 (PS)	-1,518	0,091	481,022	4,112	1,383	0,000	0,000	2,729	1,7420
40,0 (PS)	-1,630	0,091	481,023	4,108	1,413	0,000	0,000	2,695	1,7894
41,0 (PS)	-1,747	0,091	481,023	4,102	1,442	0,000	0,000	2,660	1,8361
42,0 (PS)	-1,868	0,091	481,020	4,094	1,471	0,000	0,000	2,624	1,8822
43,0 (PS)	-1,995	0,091	481,022	4,085	1,499	0,000	0,000	2,586	1,9277
44,0 (PS)	-2,126	0,091	481,023	4,075	1,527	0,000	0,000	2,548	1,9725
45,0 (PS)	-2,263	0,090	481,023	4,063	1,554	0,000	0,000	2,509	2,0166
46,0 (PS)	-2,406	0,090	481,024	4,050	1,581	0,000	0,000	2,469	2,0601
47,0 (PS)	-2,555	0,089	481,021	4,035	1,607	0,000	0,000	2,428	2,1028
48,0 (PS)	-2,710	0,089	481,022	4,019	1,633	0,000	0,000	2,386	2,1448
49,0 (PS)	-2,873	0,088	481,023	4,002	1,659	0,000	0,000	2,344	2,1861
50,0 (PS)	-3,044	0,087	481,024	3,984	1,684	0,000	0,000	2,301	2,2266

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
51,0 (PS)	-3,223	0,086	481,020	3,965	1,708	0,000	0,000	2,257	2,2664
52,0 (PS)	-3,410	0,085	481,022	3,945	1,732	0,000	0,000	2,213	2,3054
53,0 (PS)	-3,608	0,083	481,024	3,924	1,755	0,000	0,000	2,169	2,3436
54,0 (PS)	-3,816	0,082	481,022	3,902	1,778	0,000	0,000	2,124	2,3811
55,0 (PS)	-4,036	0,082	481,024	3,879	1,800	0,000	0,000	2,079	2,4178
56,0 (PS)	-4,266	0,083	481,024	3,854	1,822	0,000	0,000	2,032	2,4536
57,0 (PS)	-4,509	0,084	481,025	3,826	1,843	0,000	0,000	1,983	2,4887



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	19,204 m	\geq	1,000 m	Complies
Combined heeling moment	1,0 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	155,630 t*m			
Required freeboard	2,535 m	\geq	0,000 m	Complies
Weight	155,630 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers 70 % full ALU

2020.056_004_v2 IW-NET NEWS Evolution

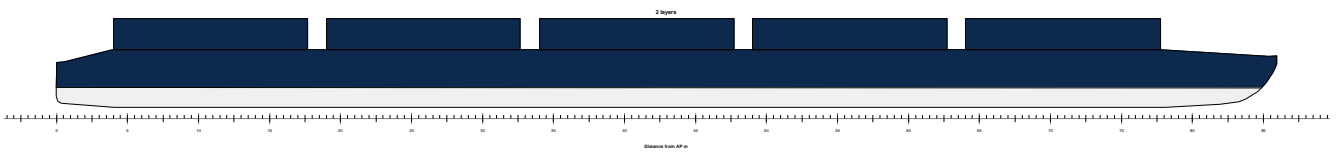
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_004_v2_IW-NETNEWS Evolution v2.fbm

Design length	85,920 m	Midship location	42,960 m
Length over all	85,920 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,600 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,954 m
Draft aft pp	1,429 m	GG'	0,000 m
Mean moulded draft	1,402 m	VCG'	2,954 m
Draft forward pp	1,374 m	Max VCG'	7,432 m
Trim	-0,055 m	GM solid	5,809 m
LCF	42,010 m	G'M liquid	5,809 m
LCB	41,194 m	Immersion rate	9,619 tonne/cm
KM	8,763 m	MCT	65,532 t*m

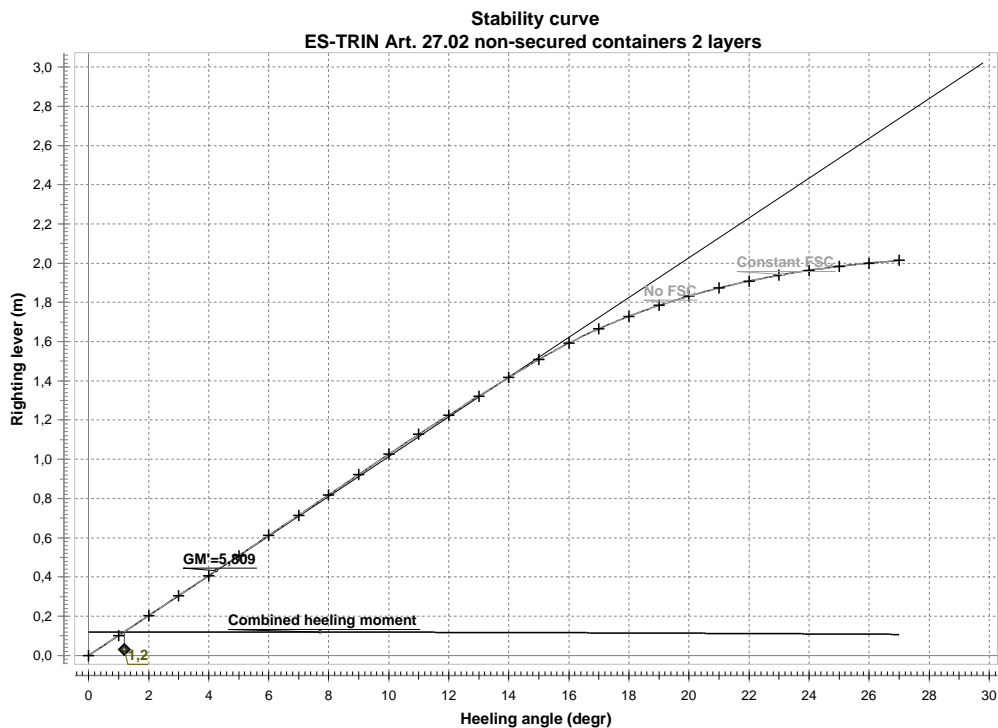
Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers 70 % full			1010,800	40,858	0,000 (CL)	3,400	0,000
Lightship			285,024	42,393	0,000 (CL)	1,371	
Deadweight			1010,800	40,858	0,000 (CL)	3,400	0,000
Displacement			1295,824	41,196	0,000 (CL)	2,954	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,402	-0,055	1295,824	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,401	-0,055	1295,822	0,153	0,052	0,000	0,000	0,101	0,0009
2,0 (PS)	1,401	-0,056	1295,818	0,306	0,103	0,000	0,000	0,203	0,0035
3,0 (PS)	1,401	-0,057	1295,813	0,459	0,155	0,000	0,000	0,305	0,0080
4,0 (PS)	1,401	-0,058	1295,824	0,613	0,206	0,000	0,000	0,406	0,0142
5,0 (PS)	1,401	-0,060	1295,824	0,766	0,257	0,000	0,000	0,509	0,0222
6,0 (PS)	1,400	-0,063	1295,824	0,920	0,309	0,000	0,000	0,611	0,0319
7,0 (PS)	1,400	-0,066	1295,824	1,075	0,360	0,000	0,000	0,715	0,0435
8,0 (PS)	1,399	-0,069	1295,824	1,229	0,411	0,000	0,000	0,818	0,0569
9,0 (PS)	1,398	-0,073	1295,824	1,385	0,462	0,000	0,000	0,923	0,0721
10,0 (PS)	1,397	-0,077	1295,824	1,539	0,513	0,000	0,000	1,026	0,0891
11,0 (PS)	1,395	-0,082	1295,822	1,691	0,564	0,000	0,000	1,127	0,1079
12,0 (PS)	1,392	-0,087	1295,817	1,840	0,614	0,000	0,000	1,226	0,1284
13,0 (PS)	1,388	-0,092	1295,824	1,987	0,664	0,000	0,000	1,322	0,1506
14,0 (PS)	1,383	-0,098	1295,823	2,132	0,715	0,000	0,000	1,417	0,1746
15,0 (PS)	1,378	-0,104	1295,822	2,274	0,764	0,000	0,000	1,509	0,2001
16,0 (PS)	1,369	-0,112	1295,813	2,407	0,814	0,000	0,000	1,593	0,2272
17,0 (PS)	1,357	-0,119	1295,822	2,529	0,864	0,000	0,000	1,665	0,2556
18,0 (PS)	1,343	-0,127	1295,822	2,642	0,913	0,000	0,000	1,729	0,2853
19,0 (PS)	1,325	-0,134	1295,822	2,746	0,962	0,000	0,000	1,785	0,3159
20,0 (PS)	1,304	-0,143	1295,822	2,843	1,010	0,000	0,000	1,832	0,3475
21,0 (PS)	1,281	-0,151	1295,814	2,932	1,059	0,000	0,000	1,873	0,3799
22,0 (PS)	1,256	-0,160	1295,820	3,015	1,106	0,000	0,000	1,908	0,4129
23,0 (PS)	1,229	-0,169	1295,823	3,092	1,154	0,000	0,000	1,938	0,4464
24,0 (PS)	1,199	-0,178	1295,813	3,164	1,201	0,000	0,000	1,963	0,4805
25,0 (PS)	1,166	-0,187	1295,821	3,232	1,248	0,000	0,000	1,984	0,5149
26,0 (PS)	1,132	-0,195	1295,823	3,295	1,295	0,000	0,000	2,000	0,5497
27,0 (PS)	1,095	-0,203	1295,822	3,355	1,341	0,000	0,000	2,014	0,5847



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	5,809 m	\geq	1,000 m	Complies
Combined heeling moment	1,2 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	155,630 t*m			
Required freeboard	1,652 m	\geq	0,000 m	Complies
Weight	155,630 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers full ALU

2020.056_004_v2 IW-NET NEWS Evolution

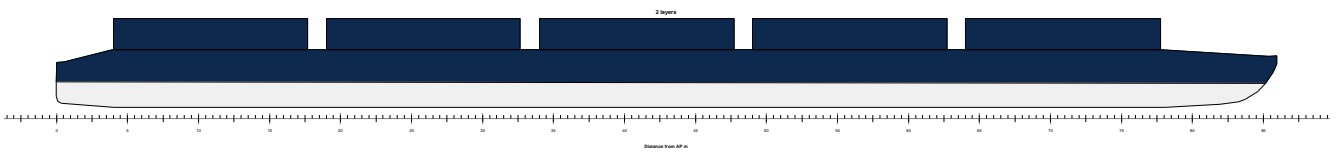
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_004_v2_IW-NETNEWS Evolution v2.fbm

Design length	85,920 m	Midship location	42,960 m
Length over all	85,920 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,600 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	3,048 m
Draft aft pp	1,824 m	GG'	0,000 m
Mean moulded draft	1,763 m	VCG'	3,048 m
Draft forward pp	1,702 m	Max VCG'	6,233 m
Trim	-0,122 m	GM solid	4,232 m
LCF	42,240 m	G'M liquid	4,232 m
LCB	41,120 m	Immersion rate	9,671 tonne/cm
KM	7,281 m	MCT	66,542 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

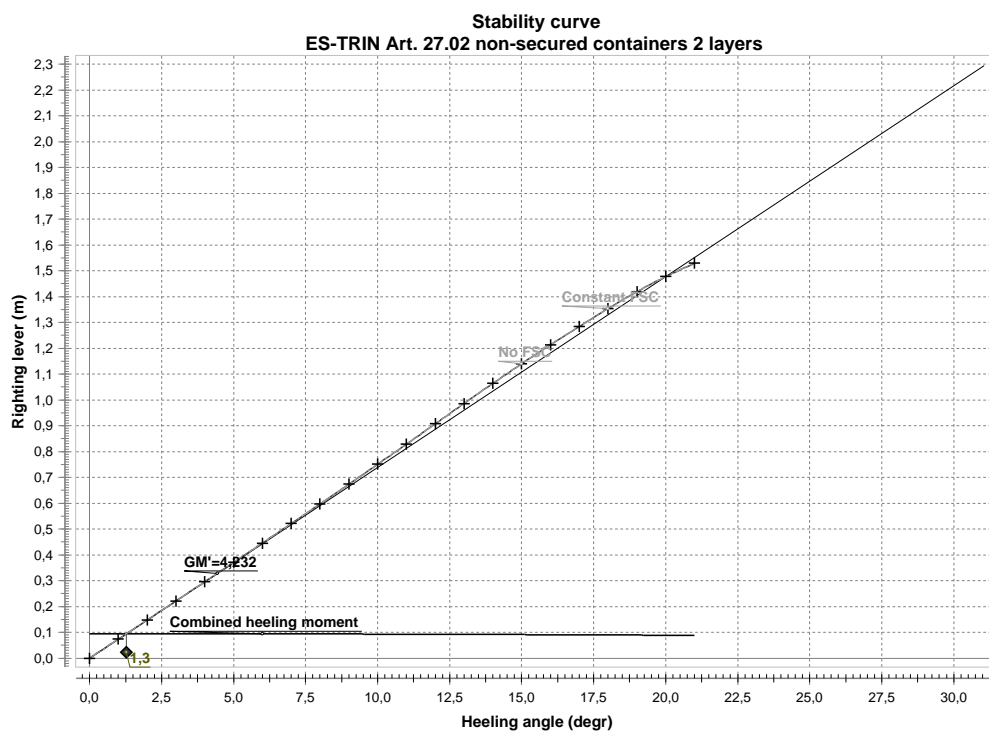
Containers full			1360,000	40,858	0,000 (CL)	3,400	0,000
Lightship			285,024	42,393	0,000 (CL)	1,371	
Deadweight			1360,000	40,858	0,000 (CL)	3,400	0,000
Displacement			1645,024	41,124	0,000 (CL)	3,048	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,763	-0,122	1645,024	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,763	-0,123	1645,023	0,127	0,053	0,000	0,000	0,074	0,0006
2,0 (PS)	1,763	-0,123	1645,019	0,254	0,106	0,000	0,000	0,148	0,0026
3,0 (PS)	1,763	-0,124	1645,015	0,381	0,160	0,000	0,000	0,222	0,0058
4,0 (PS)	1,762	-0,125	1645,012	0,509	0,213	0,000	0,000	0,296	0,0103
5,0 (PS)	1,762	-0,127	1645,010	0,637	0,266	0,000	0,000	0,371	0,0161
6,0 (PS)	1,762	-0,129	1645,009	0,764	0,319	0,000	0,000	0,446	0,0233
7,0 (PS)	1,761	-0,132	1645,009	0,893	0,372	0,000	0,000	0,521	0,0317
8,0 (PS)	1,761	-0,135	1645,011	1,021	0,424	0,000	0,000	0,597	0,0415
9,0 (PS)	1,760	-0,138	1645,011	1,151	0,477	0,000	0,000	0,674	0,0526
10,0 (PS)	1,760	-0,142	1645,009	1,280	0,529	0,000	0,000	0,751	0,0650

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
11,0 (PS)	1,759	-0,146	1645,016	1,410	0,582	0,000	0,000	0,829	0,0788
12,0 (PS)	1,758	-0,150	1645,040	1,541	0,634	0,000	0,000	0,907	0,0939
13,0 (PS)	1,757	-0,155	1645,024	1,672	0,686	0,000	0,000	0,986	0,1104
14,0 (PS)	1,755	-0,161	1645,024	1,802	0,737	0,000	0,000	1,064	0,1283
15,0 (PS)	1,753	-0,168	1645,020	1,929	0,789	0,000	0,000	1,140	0,1476
16,0 (PS)	1,749	-0,177	1645,024	2,054	0,840	0,000	0,000	1,213	0,1681
17,0 (PS)	1,746	-0,186	1645,023	2,176	0,891	0,000	0,000	1,285	0,1899
18,0 (PS)	1,742	-0,196	1645,023	2,296	0,942	0,000	0,000	1,354	0,2129
19,0 (PS)	1,736	-0,207	1645,022	2,411	0,992	0,000	0,000	1,419	0,2372
20,0 (PS)	1,729	-0,219	1645,021	2,520	1,043	0,000	0,000	1,478	0,2624
21,0 (PS)	1,719	-0,231	1645,024	2,622	1,092	0,000	0,000	1,529	0,2887



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	4,232 m	\geq	1,000 m	Complies
Combined heeling moment	1,3 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	155,630 t*m			
Required freeboard	1,248 m	\geq	0,000 m	Complies
Weight	155,630 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers empty 3 layers ALU

2020.056_004_v2 IW-NET NEWS Evolution

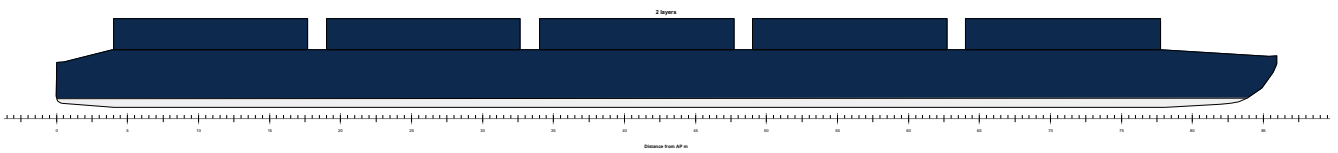
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_004_v2_IW-NETNEWS Evolution v2.fbm

Design length	85,920 m	Midship location	42,960 m
Length over all	85,920 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,600 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	3,137 m
Draft aft pp	0,632 m	GG'	0,000 m
Mean moulded draft	0,652 m	VCG'	3,137 m
Draft forward pp	0,672 m	Max VCG'	13,140 m
Trim	0,040 m	GM solid	14,843 m
LCF	41,382 m	G'M liquid	14,843 m
LCB	41,615 m	Immersion rate	9,463 tonne/cm
KM	17,980 m	MCT	62,562 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers empty			196,000	40,858	0,000 (CL)	3,400	0,000
3rd layer empty			98,000	40,858	0,000 (CL)	7,748	0,000
Totals for Containers			294,000	40,858	0,000 (CL)	4,849	0,000

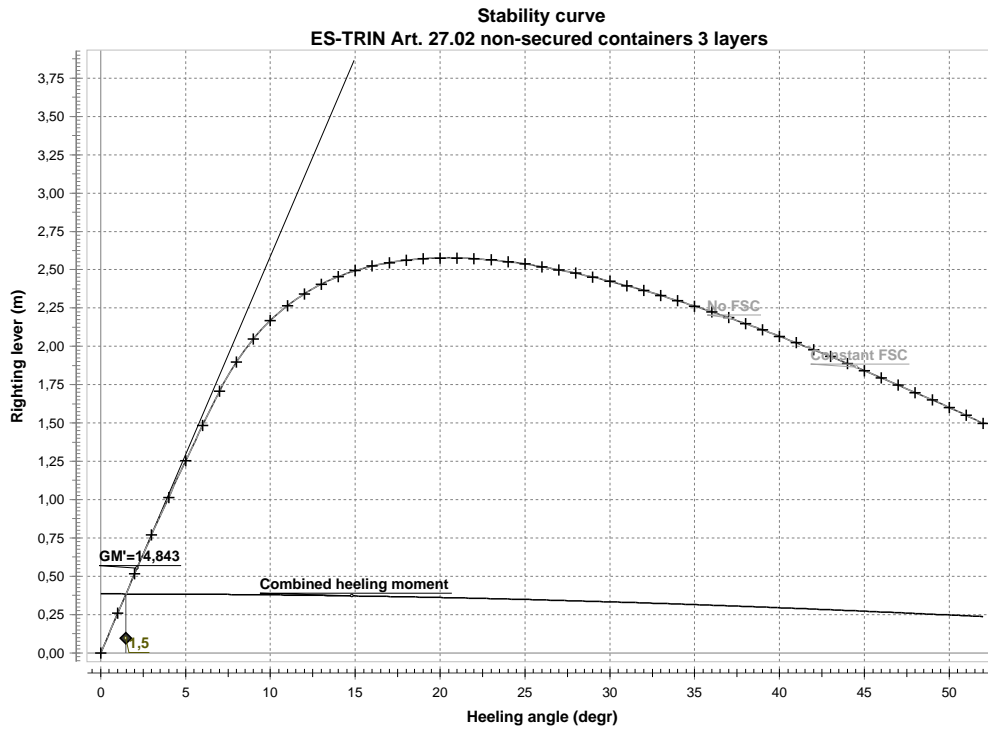
Lightship			285,024	42,393	0,000 (CL)	1,371	
Deadweight			294,000	40,858	0,000 (CL)	4,849	0,000
Displacement			579,024	41,614	0,000 (CL)	3,137	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	0,652	0,040	579,023	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	0,652	0,040	579,024	0,314	0,055	0,000	0,000	0,259	0,0023
2,0 (PS)	0,652	0,040	579,024	0,627	0,109	0,000	0,000	0,517	0,0090
3,0 (PS)	0,651	0,039	579,024	0,933	0,164	0,000	0,000	0,769	0,0203
4,0 (PS)	0,649	0,038	579,022	1,233	0,219	0,000	0,000	1,014	0,0358
5,0 (PS)	0,645	0,037	579,023	1,525	0,273	0,000	0,000	1,252	0,0556
6,0 (PS)	0,641	0,036	579,020	1,811	0,328	0,000	0,000	1,483	0,0795
7,0 (PS)	0,636	0,035	579,022	2,089	0,382	0,000	0,000	1,707	0,1074
8,0 (PS)	0,627	0,036	579,020	2,335	0,437	0,000	0,000	1,898	0,1389
9,0 (PS)	0,612	0,037	579,020	2,540	0,491	0,000	0,000	2,049	0,1734
10,0 (PS)	0,592	0,038	579,021	2,714	0,545	0,000	0,000	2,169	0,2102
11,0 (PS)	0,568	0,039	579,022	2,864	0,599	0,000	0,000	2,265	0,2490
12,0 (PS)	0,540	0,040	579,020	2,995	0,652	0,000	0,000	2,343	0,2892
13,0 (PS)	0,508	0,041	579,022	3,111	0,706	0,000	0,000	2,405	0,3307
14,0 (PS)	0,474	0,041	579,021	3,214	0,759	0,000	0,000	2,455	0,3731
15,0 (PS)	0,436	0,042	579,020	3,306	0,812	0,000	0,000	2,494	0,4163
16,0 (PS)	0,396	0,043	579,020	3,389	0,865	0,000	0,000	2,524	0,4601
17,0 (PS)	0,353	0,043	579,020	3,464	0,917	0,000	0,000	2,546	0,5043
18,0 (PS)	0,308	0,044	579,020	3,531	0,969	0,000	0,000	2,562	0,5489
19,0 (PS)	0,260	0,044	579,021	3,593	1,021	0,000	0,000	2,572	0,5937
20,0 (PS)	0,210	0,044	579,022	3,649	1,073	0,000	0,000	2,576	0,6387
21,0 (PS)	0,157	0,044	579,019	3,700	1,124	0,000	0,000	2,576	0,6836
22,0 (PS)	0,102	0,045	579,021	3,747	1,175	0,000	0,000	2,572	0,7286
23,0 (PS)	0,045	0,045	579,022	3,789	1,226	0,000	0,000	2,564	0,7734
24,0 (PS)	-0,015	0,045	579,023	3,828	1,276	0,000	0,000	2,552	0,8180
25,0 (PS)	-0,077	0,044	579,020	3,863	1,326	0,000	0,000	2,537	0,8624
26,0 (PS)	-0,141	0,044	579,021	3,895	1,375	0,000	0,000	2,520	0,9066
27,0 (PS)	-0,208	0,044	579,022	3,924	1,424	0,000	0,000	2,499	0,9504
28,0 (PS)	-0,277	0,044	579,019	3,949	1,473	0,000	0,000	2,477	0,9938
29,0 (PS)	-0,348	0,043	579,021	3,973	1,521	0,000	0,000	2,452	1,0368
30,0 (PS)	-0,423	0,043	579,022	3,993	1,569	0,000	0,000	2,425	1,0794
31,0 (PS)	-0,500	0,042	579,023	4,011	1,616	0,000	0,000	2,396	1,1214
32,0 (PS)	-0,580	0,041	579,018	4,027	1,662	0,000	0,000	2,365	1,1630
33,0 (PS)	-0,662	0,041	579,020	4,041	1,709	0,000	0,000	2,332	1,2040
34,0 (PS)	-0,748	0,040	579,022	4,052	1,754	0,000	0,000	2,298	1,2444
35,0 (PS)	-0,837	0,039	579,023	4,062	1,799	0,000	0,000	2,262	1,2842
36,0 (PS)	-0,929	0,038	579,023	4,070	1,844	0,000	0,000	2,226	1,3233
37,0 (PS)	-1,025	0,037	579,020	4,075	1,888	0,000	0,000	2,187	1,3619
38,0 (PS)	-1,124	0,036	579,022	4,079	1,931	0,000	0,000	2,148	1,3997
39,0 (PS)	-1,227	0,035	579,023	4,082	1,974	0,000	0,000	2,107	1,4368
40,0 (PS)	-1,334	0,034	579,023	4,082	2,017	0,000	0,000	2,066	1,4732
41,0 (PS)	-1,445	0,032	579,024	4,081	2,058	0,000	0,000	2,023	1,5089
42,0 (PS)	-1,561	0,030	579,020	4,078	2,099	0,000	0,000	1,979	1,5438
43,0 (PS)	-1,681	0,028	579,022	4,073	2,140	0,000	0,000	1,934	1,5780
44,0 (PS)	-1,807	0,026	579,023	4,067	2,179	0,000	0,000	1,888	1,6113
45,0 (PS)	-1,937	0,024	579,024	4,060	2,218	0,000	0,000	1,842	1,6439
46,0 (PS)	-2,074	0,021	579,019	4,051	2,257	0,000	0,000	1,795	1,6756
47,0 (PS)	-2,216	0,019	579,022	4,041	2,294	0,000	0,000	1,747	1,7065
48,0 (PS)	-2,365	0,016	579,024	4,030	2,331	0,000	0,000	1,699	1,7366
49,0 (PS)	-2,521	0,014	579,022	4,018	2,368	0,000	0,000	1,650	1,7658
50,0 (PS)	-2,684	0,012	579,024	4,004	2,403	0,000	0,000	1,601	1,7942

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
51,0 (PS)	-2,854	0,010	579,024	3,987	2,438	0,000	0,000	1,549	1,8217
52,0 (PS)	-3,031	0,009	579,025	3,969	2,472	0,000	0,000	1,496	1,8483



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	14,843 m	\geq	1,000 m	Complies
Combined heeling moment	1,5 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	222,500 t*m			
Required freeboard	2,383 m	\geq	0,000 m	Complies
Deck immersion angle	35,2 degr			
Max allowed ratio static angle/deck immersion angle	0,042	\leq	1,000	Complies
Weight	222,500 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers 70 % full 3 layers ALU

2020.056_004_v2 IW-NET NEWS Evolution

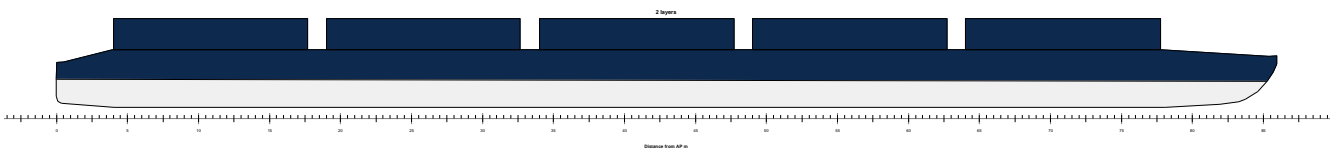
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_004_v2_IW-NETNEWS Evolution v2.fbm

Design length	85,920 m	Midship location	42,960 m
Length over all	85,920 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,600 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	4,299 m
Draft aft pp	2,002 m	GG'	0,000 m
Mean moulded draft	1,924 m	VCG'	4,299 m
Draft forward pp	1,846 m	Max VCG'	5,448 m
Trim	-0,157 m	GM solid	2,526 m
LCF	42,330 m	G'M liquid	2,526 m
LCB	41,094 m	Immersion rate	9,692 tonne/cm
KM	6,824 m	MCT	66,688 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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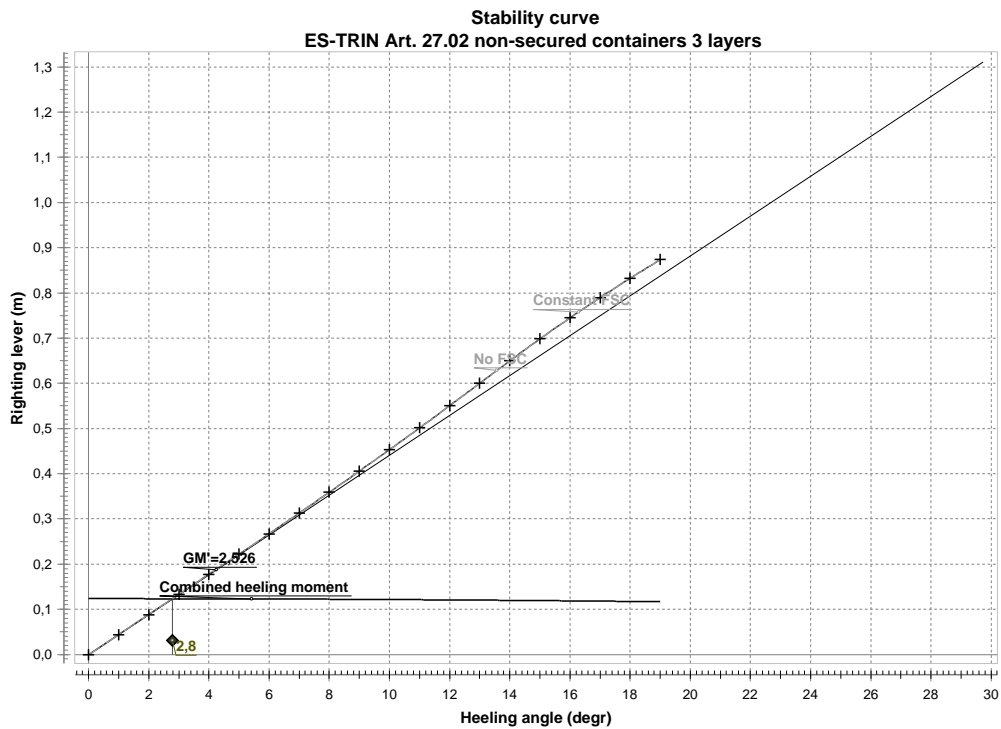
Containers

Containers 70 % full			1010,800	40,858	0,000 (CL)	3,400	0,000
3rd layer 70 % full			505,400	40,858	0,000 (CL)	7,748	0,000
Totals for Containers			1516,200	40,858	0,000 (CL)	4,849	0,000

Lightship			285,024	42,393	0,000 (CL)	1,371	
Deadweight			1516,200	40,858	0,000 (CL)	4,849	0,000
Displacement			1801,224	41,101	0,000 (CL)	4,299	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,924	-0,157	1801,224	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,924	-0,157	1801,223	0,119	0,075	0,000	0,000	0,044	0,0004
2,0 (PS)	1,924	-0,157	1801,220	0,238	0,150	0,000	0,000	0,088	0,0015
3,0 (PS)	1,924	-0,158	1801,216	0,358	0,225	0,000	0,000	0,133	0,0035
4,0 (PS)	1,923	-0,159	1801,213	0,477	0,300	0,000	0,000	0,177	0,0062
5,0 (PS)	1,923	-0,161	1801,211	0,597	0,375	0,000	0,000	0,222	0,0097
6,0 (PS)	1,923	-0,163	1801,210	0,716	0,449	0,000	0,000	0,267	0,0139
7,0 (PS)	1,922	-0,165	1801,211	0,837	0,524	0,000	0,000	0,313	0,0190
8,0 (PS)	1,922	-0,168	1801,212	0,957	0,598	0,000	0,000	0,359	0,0248
9,0 (PS)	1,921	-0,171	1801,212	1,078	0,673	0,000	0,000	0,406	0,0315
10,0 (PS)	1,921	-0,174	1801,212	1,200	0,747	0,000	0,000	0,453	0,0390
11,0 (PS)	1,920	-0,178	1801,209	1,322	0,820	0,000	0,000	0,501	0,0473
12,0 (PS)	1,919	-0,182	1801,224	1,444	0,894	0,000	0,000	0,550	0,0565
13,0 (PS)	1,919	-0,187	1801,224	1,567	0,967	0,000	0,000	0,600	0,0666
14,0 (PS)	1,918	-0,194	1801,215	1,690	1,040	0,000	0,000	0,650	0,0775
15,0 (PS)	1,917	-0,203	1801,227	1,811	1,113	0,000	0,000	0,698	0,0892
16,0 (PS)	1,916	-0,213	1801,223	1,930	1,185	0,000	0,000	0,745	0,1018
17,0 (PS)	1,915	-0,222	1801,218	2,046	1,257	0,000	0,000	0,789	0,1152
18,0 (PS)	1,912	-0,232	1801,221	2,161	1,328	0,000	0,000	0,832	0,1294
19,0 (PS)	1,910	-0,242	1801,223	2,273	1,400	0,000	0,000	0,874	0,1443



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	2,526 m	\geq	1,000 m	Complies
Combined heeling moment	2,8 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	222,500 t*m			
Required freeboard	0,918 m	\geq	0,000 m	Complies

Deck immersion angle	11,8 degr			
Max. allowed ratio static angle/deck immersion angle	0,238	<=	1,000	Complies
Weight	222,500 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers full 3 layers ALU

2020.056_004_v2 IW-NET NEWS Evolution

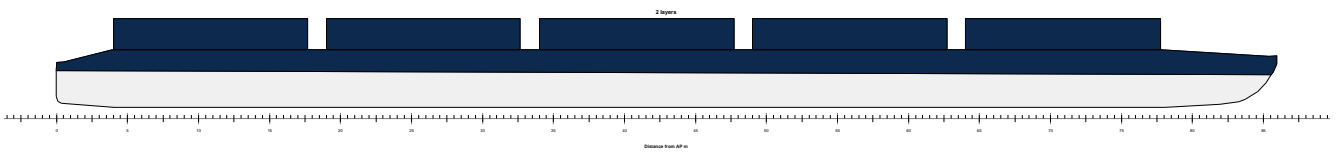
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_004_v2_IW-NETNEWS Evolution v2.fbm

Design length	85,920 m	Midship location	42,960 m
Length over all	85,920 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,600 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	4,423 m
Draft aft pp	2,603 m	GG'	0,000 m
Mean moulded draft	2,462 m	VCG'	4,423 m
Draft forward pp	2,321 m	Max VCG'	4,749 m
Trim	-0,282 m	GM solid	1,393 m
LCF	42,590 m	G'M liquid	1,393 m
LCB	41,035 m	Immersion rate	9,752 tonne/cm
KM	5,816 m	MCT	67,771 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers full			1360,000	40,858	0,000 (CL)	3,400	0,000
3rd layer full			680,000	40,858	0,000 (CL)	7,748	0,000
Totals for Containers			2040,000	40,858	0,000 (CL)	4,849	0,000

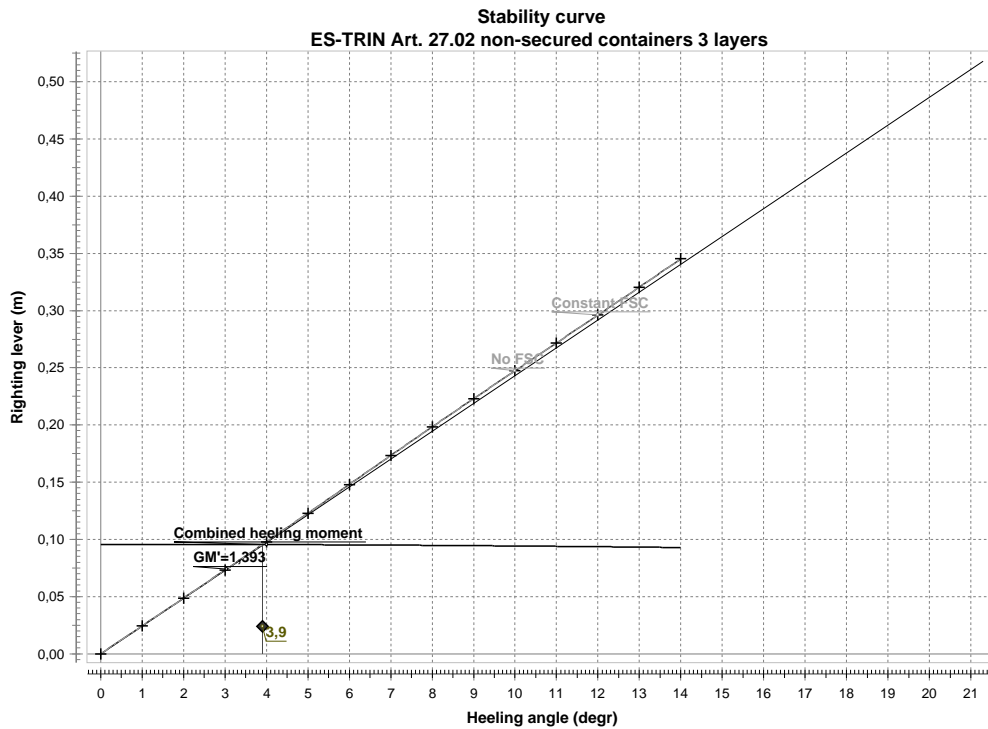
Lightship			285,024	42,393	0,000 (CL)	1,371	
Deadweight			2040,000	40,858	0,000 (CL)	4,849	0,000
Displacement			2325,024	41,046	0,000 (CL)	4,423	0,000

Righting levers

Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	2,462	-0,282	2325,024	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	2,462	-0,282	2325,024	0,102	0,077	0,000	0,000	0,024	0,0002
2,0 (PS)	2,462	-0,283	2325,022	0,203	0,154	0,000	0,000	0,049	0,0008
3,0 (PS)	2,462	-0,284	2325,021	0,305	0,231	0,000	0,000	0,073	0,0019
4,0 (PS)	2,462	-0,284	2325,019	0,406	0,309	0,000	0,000	0,098	0,0034
5,0 (PS)	2,461	-0,286	2325,018	0,508	0,385	0,000	0,000	0,123	0,0053
6,0 (PS)	2,461	-0,287	2325,017	0,610	0,462	0,000	0,000	0,148	0,0077
7,0 (PS)	2,461	-0,289	2325,033	0,712	0,539	0,000	0,000	0,173	0,0105
8,0 (PS)	2,461	-0,294	2325,040	0,814	0,616	0,000	0,000	0,198	0,0137

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
9,0 (PS)	2,462	-0,300	2325,040	0,915	0,692	0,000	0,000	0,223	0,0174
10,0 (PS)	2,462	-0,307	2325,038	1,015	0,768	0,000	0,000	0,247	0,0215
11,0 (PS)	2,464	-0,315	2325,034	1,116	0,844	0,000	0,000	0,272	0,0261
12,0 (PS)	2,465	-0,322	2325,029	1,216	0,920	0,000	0,000	0,296	0,0310
13,0 (PS)	2,467	-0,329	2325,026	1,315	0,995	0,000	0,000	0,321	0,0364
14,0 (PS)	2,469	-0,335	2325,024	1,415	1,070	0,000	0,000	0,345	0,0422



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	1,393 m	\geq	1,000 m	Complies
Combined heeling moment	3,9 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	222,500 t*m			
Required freeboard	0,207 m	\geq	0,000 m	Complies
Deck immersion angle	6,0 degr			
Max allowed ratio static angle/deck immersion angle	0,655	\leq	1,000	Complies
Weight	222,500 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Summary of intact stability

Description	Density	Draft	Draft BoK	Trim	List	Displ.	VCG'	Max VCG'	GM'	Complies
		m	m	m	degr	t	m	m	m	
Containers empty	1,0000	0,635	0,635	0,083	0,0 (CL)	834,180	2,058	31,243	34,985	Complies
Containers 70 % full	1,0000	1,496	1,496	0,015	0,0 (CL)	2056,380	2,913	14,557	13,085	Complies
Containers full	1,0000	1,861	1,861	-0,035	0,0 (CL)	2580,180	3,031	12,024	10,130	Complies
Containers empty 3 layers	1,0000	0,739	0,739	0,079	0,0 (CL)	981,180	2,925	26,437	28,818	Complies
Containers 70 % full 3 layers	1,0000	2,024	2,024	-0,060	0,0 (CL)	2814,480	4,240	10,850	8,012	Complies
Containers full 3 layers	1,0000	2,569	2,569	-0,157	0,0 (CL)	3600,180	4,394	8,781	5,740	Complies
Containers empty ALU	1,0000	0,526	0,526	0,068	0,0 (CL)	682,760	2,262	36,287	41,468	Complies
Containers 70 % full ALU	1,0000	1,390	1,390	0,012	0,0 (CL)	1904,960	3,054	15,564	14,069	Complies
Containers full ALU	1,0000	1,756	1,756	-0,035	0,0 (CL)	2428,760	3,149	12,639	10,698	Complies
Containers empty 3 layers ALU	1,0000	0,631	0,631	0,066	0,0 (CL)	829,760	3,250	30,170	33,978	Complies
Containers 70 % full 3 layers ALU	1,0000	1,919	1,919	-0,059	0,0 (CL)	2663,060	4,416	11,337	8,402	Complies
Containers full 3 layers ALU	1,0000	2,464	2,464	-0,152	0,0 (CL)	3448,760	4,536	9,286	5,922	Complies

Components of deadweight

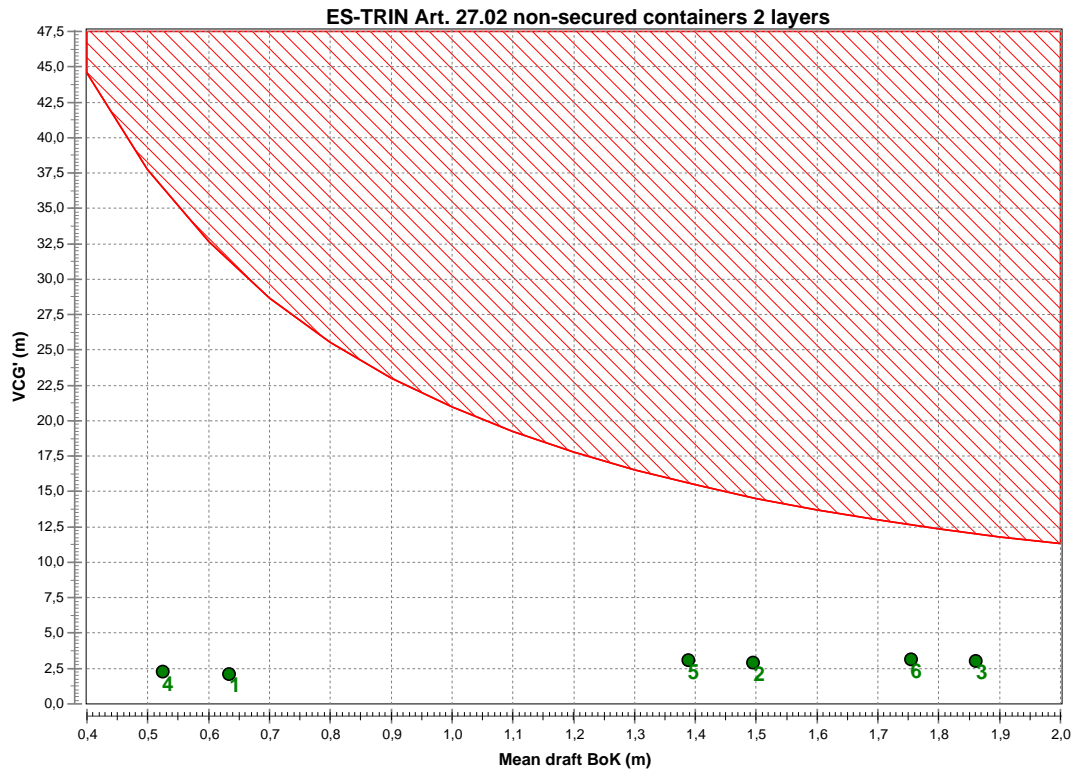
Loading condition	Deadweight	Containers t
Containers empty	294,000	294,000
Containers 70 % full	1516,200	1516,200
Containers full	2040,000	2040,000
Containers empty 3 layers	441,000	441,000
Containers 70 % full 3 layers	2274,300	2274,300
Containers full 3 layers	3060,000	3060,000
Containers empty ALU	294,000	294,000
Containers 70 % full ALU	1516,200	1516,200
Containers full ALU	2040,000	2040,000
Containers empty 3 layers ALU	441,000	441,000
Containers 70 % full 3 layers ALU	2274,300	2274,300
Containers full 3 layers ALU	3060,000	3060,000

Maximum VCG' envelope

Criteria : ES-TRIN Art. 27.02 non-secured containers 2 layers

Calculated for average trim : 0,018 m

Wind silhouette : 2 layers



Loading conditions:

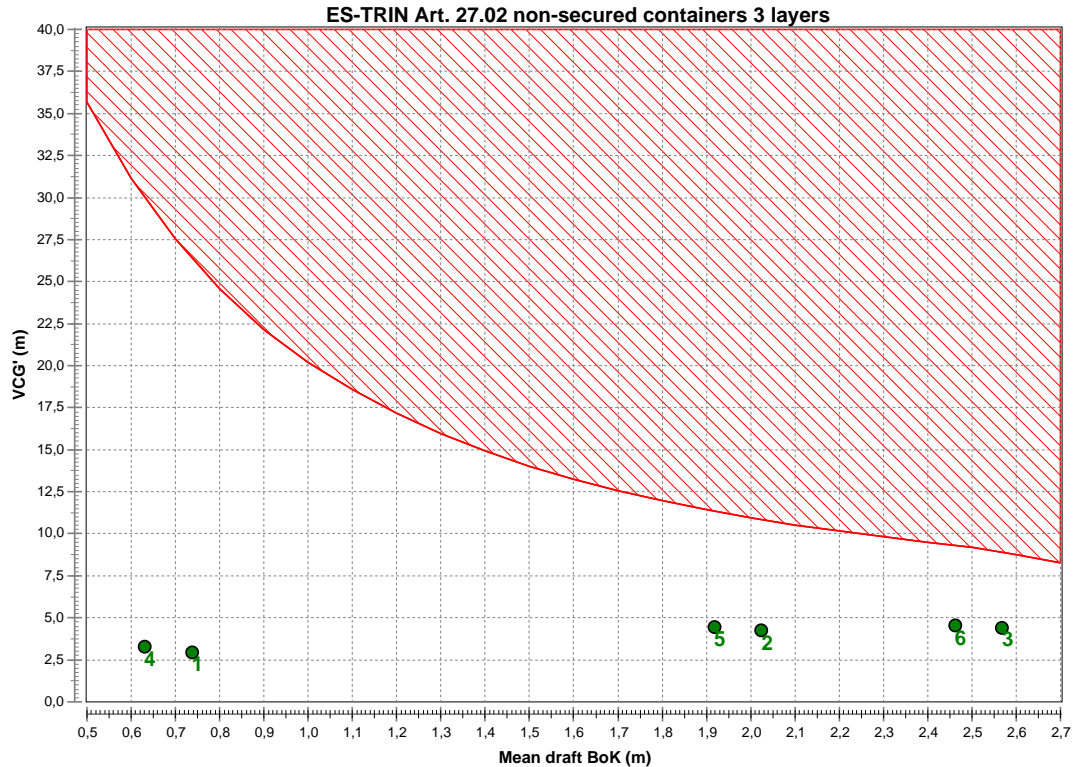
1. Containers empty
2. Containers 70 % full
3. Containers full
4. Containers empty ALU
5. Containers 70 % full ALU
6. Containers full ALU

Maximum VCG' envelope

Criteria : ES-TRIN Art. 27.02 non-secured containers 3 layers

Calculated for average trim : -0,047 m

Wind silhouette : 3 layers



Loading conditions:

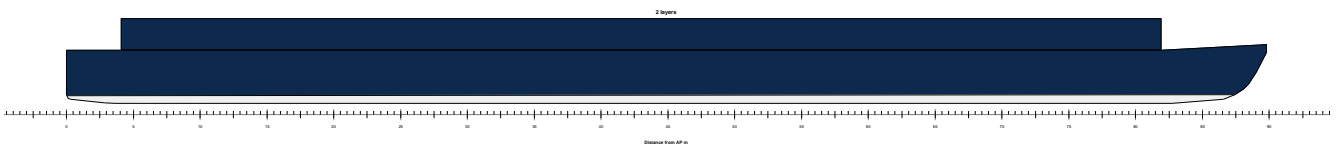
1. Containers empty 3 layers
2. Containers 70 % full 3 layers
3. Containers full 3 layers
4. Containers empty 3 layers ALU
5. Containers 70 % full 3 layers ALU
6. Containers full 3 layers ALU

Containers empty

2020.056_005_v2 IW-NET barge Containers transverse v2

Designer Bernhard Bieringer
 Created by Bernhard Bieringer
 Comment
 Filename 2020_056_005_v2_IW-NETContainers transverse v2.fbm

Design length	89,800 m	Midship location	44,900 m
Length over all	89,800 m	Water density	1,0000
Design beam	16,280 m	Mean shell thickness	0,0000 m
Maximum beam	16,280 m	Appendage coefficient	1,0000
Design draft	2,630 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,058 m
Draft aft pp	0,593 m	GG'	0,000 m
Mean moulded draft	0,635 m	VCG'	2,058 m
Draft forward pp	0,676 m	Max VCG'	31,243 m
Trim	0,083 m	GM solid	34,985 m
LCF	43,186 m	G'M liquid	34,985 m
LCB	43,949 m	Immersion rate	14,026 tonne/cm
KM	37,043 m	MCT	96,538 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

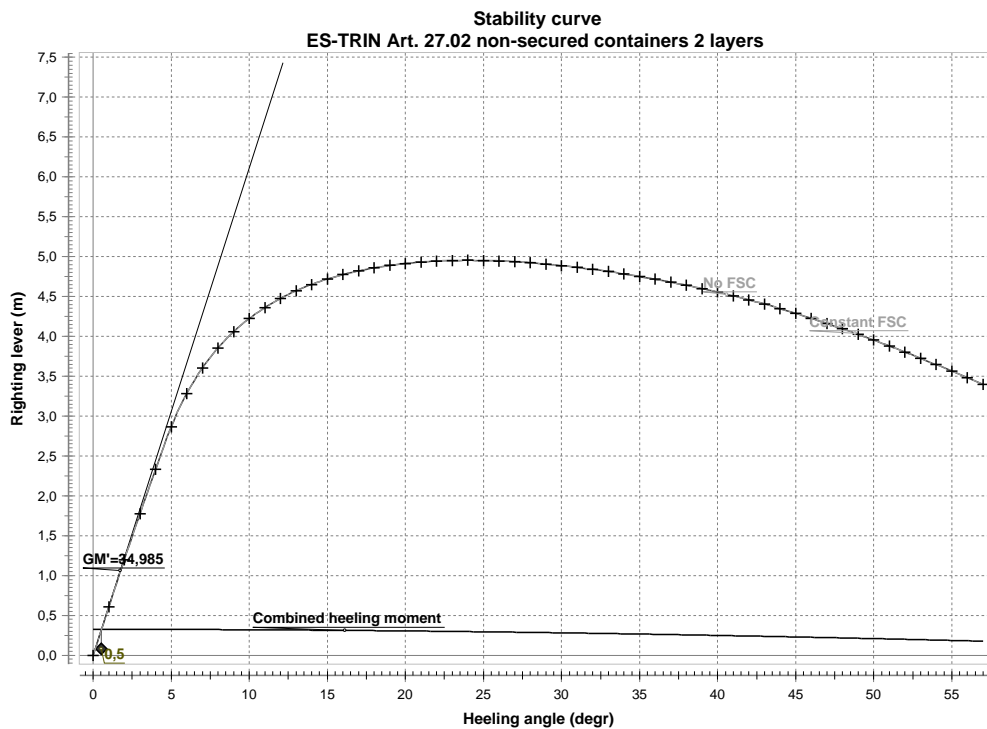
Containers empty			294,000	42,997	0,000 (CL)	3,496	0,000
Lightship			540,180	44,465	0,000 (CL)	1,276	
Deadweight			294,000	42,997	0,000 (CL)	3,496	0,000
Displacement			834,180	43,948	0,000 (CL)	2,058	0,000

Righting levers

Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	0,635	0,083	834,178	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	0,634	0,083	834,180	0,642	0,036	0,000	0,000	0,606	0,0053
2,0 (PS)	0,632	0,082	834,179	1,269	0,072	0,000	0,000	1,197	0,0211
3,0 (PS)	0,629	0,081	834,175	1,881	0,108	0,000	0,000	1,773	0,0470
4,0 (PS)	0,624	0,081	834,179	2,475	0,144	0,000	0,000	2,332	0,0828
5,0 (PS)	0,617	0,083	834,178	3,044	0,179	0,000	0,000	2,865	0,1283
6,0 (PS)	0,599	0,089	834,174	3,500	0,215	0,000	0,000	3,285	0,1821
7,0 (PS)	0,572	0,095	834,172	3,855	0,251	0,000	0,000	3,604	0,2424
8,0 (PS)	0,536	0,100	834,174	4,142	0,286	0,000	0,000	3,856	0,3076
9,0 (PS)	0,493	0,105	834,176	4,380	0,322	0,000	0,000	4,058	0,3767
10,0 (PS)	0,444	0,109	834,173	4,581	0,357	0,000	0,000	4,223	0,4490
11,0 (PS)	0,391	0,114	834,177	4,753	0,393	0,000	0,000	4,360	0,5239
12,0 (PS)	0,332	0,118	834,176	4,903	0,428	0,000	0,000	4,475	0,6011
13,0 (PS)	0,269	0,122	834,177	5,033	0,463	0,000	0,000	4,570	0,6800
14,0 (PS)	0,202	0,125	834,177	5,149	0,498	0,000	0,000	4,651	0,7605
15,0 (PS)	0,132	0,129	834,174	5,251	0,533	0,000	0,000	4,718	0,8423
16,0 (PS)	0,058	0,132	834,176	5,342	0,567	0,000	0,000	4,774	0,9251
17,0 (PS)	-0,019	0,135	834,172	5,423	0,602	0,000	0,000	4,821	1,0089
18,0 (PS)	-0,100	0,137	834,175	5,495	0,636	0,000	0,000	4,859	1,0934
19,0 (PS)	-0,183	0,140	834,177	5,560	0,670	0,000	0,000	4,889	1,1784
20,0 (PS)	-0,270	0,142	834,172	5,617	0,704	0,000	0,000	4,913	1,2640
21,0 (PS)	-0,360	0,144	834,175	5,669	0,738	0,000	0,000	4,931	1,3499
22,0 (PS)	-0,453	0,146	834,177	5,714	0,771	0,000	0,000	4,943	1,4361
23,0 (PS)	-0,550	0,148	834,178	5,755	0,804	0,000	0,000	4,950	1,5224
24,0 (PS)	-0,649	0,150	834,173	5,790	0,837	0,000	0,000	4,953	1,6089
25,0 (PS)	-0,752	0,152	834,176	5,821	0,870	0,000	0,000	4,951	1,6953
26,0 (PS)	-0,857	0,153	834,177	5,848	0,902	0,000	0,000	4,945	1,7817
27,0 (PS)	-0,967	0,155	834,178	5,870	0,935	0,000	0,000	4,936	1,8679
28,0 (PS)	-1,079	0,156	834,174	5,889	0,966	0,000	0,000	4,923	1,9539
29,0 (PS)	-1,196	0,158	834,176	5,905	0,998	0,000	0,000	4,907	2,0397
30,0 (PS)	-1,316	0,159	834,178	5,917	1,029	0,000	0,000	4,887	2,1252
31,0 (PS)	-1,439	0,160	834,179	5,925	1,060	0,000	0,000	4,865	2,2103
32,0 (PS)	-1,567	0,161	834,174	5,931	1,091	0,000	0,000	4,840	2,2950
33,0 (PS)	-1,699	0,162	834,177	5,934	1,121	0,000	0,000	4,813	2,3792
34,0 (PS)	-1,835	0,163	834,178	5,934	1,151	0,000	0,000	4,782	2,4630
35,0 (PS)	-1,976	0,164	834,179	5,931	1,181	0,000	0,000	4,750	2,5462
36,0 (PS)	-2,122	0,165	834,176	5,925	1,210	0,000	0,000	4,715	2,6288
37,0 (PS)	-2,272	0,166	834,179	5,917	1,239	0,000	0,000	4,679	2,7108
38,0 (PS)	-2,428	0,167	834,180	5,907	1,267	0,000	0,000	4,640	2,7921
39,0 (PS)	-2,590	0,168	834,178	5,894	1,295	0,000	0,000	4,599	2,8727
40,0 (PS)	-2,757	0,170	834,180	5,878	1,323	0,000	0,000	4,555	2,9526
41,0 (PS)	-2,929	0,172	834,180	5,859	1,350	0,000	0,000	4,508	3,0317
42,0 (PS)	-3,106	0,175	834,180	5,835	1,377	0,000	0,000	4,458	3,1099
43,0 (PS)	-3,289	0,177	834,177	5,808	1,404	0,000	0,000	4,404	3,1873
44,0 (PS)	-3,478	0,179	834,179	5,778	1,430	0,000	0,000	4,348	3,2636
45,0 (PS)	-3,674	0,180	834,179	5,744	1,456	0,000	0,000	4,288	3,3390
46,0 (PS)	-3,877	0,182	834,180	5,707	1,481	0,000	0,000	4,226	3,4133
47,0 (PS)	-4,087	0,183	834,180	5,667	1,505	0,000	0,000	4,161	3,4865
48,0 (PS)	-4,305	0,184	834,180	5,624	1,530	0,000	0,000	4,094	3,5586
49,0 (PS)	-4,532	0,185	834,180	5,578	1,554	0,000	0,000	4,025	3,6294
50,0 (PS)	-4,768	0,186	834,180	5,530	1,577	0,000	0,000	3,953	3,6990

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
51,0 (PS)	-5,015	0,187	834,180	5,479	1,600	0,000	0,000	3,879	3,7674
52,0 (PS)	-5,272	0,188	834,180	5,425	1,622	0,000	0,000	3,803	3,8344
53,0 (PS)	-5,541	0,189	834,180	5,369	1,644	0,000	0,000	3,725	3,9001
54,0 (PS)	-5,822	0,190	834,173	5,310	1,665	0,000	0,000	3,645	3,9644
55,0 (PS)	-6,118	0,191	834,177	5,249	1,686	0,000	0,000	3,563	4,0273
56,0 (PS)	-6,428	0,192	834,179	5,186	1,707	0,000	0,000	3,480	4,0888
57,0 (PS)	-6,756	0,194	834,180	5,121	1,726	0,000	0,000	3,394	4,1488



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	34,985 m	\geq	1,000 m	Complies
Combined heeling moment	0,5 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	270,900 t*m			
Required freeboard	2,460 m	\geq	0,000 m	Complies
Weight	270,900 t			
Trv. location of weight	1,000 m			

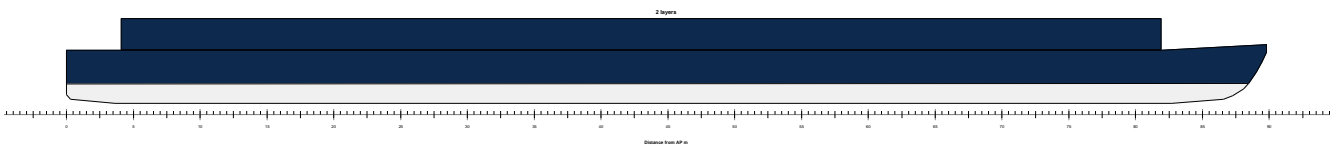
The condition complies with the stability criteria

Containers 70 % full

2020.056_005_v2 IW-NET barge Containers transverse v2

Designer Bernhard Bieringer
 Created by Bernhard Bieringer
 Comment
 Filename 2020_056_005_v2_IW-NETContainers transverse v2.fbm

Design length	89,800 m	Midship location	44,900 m
Length over all	89,800 m	Water density	1,0000
Design beam	16,280 m	Mean shell thickness	0,0000 m
Maximum beam	16,280 m	Appendage coefficient	1,0000
Design draft	2,630 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,913 m
Draft aft pp	1,488 m	GG'	0,000 m
Mean moulded draft	1,496 m	VCG'	2,913 m
Draft forward pp	1,503 m	Max VCG'	14,557 m
Trim	0,015 m	GM solid	13,085 m
LCF	43,864 m	G'M liquid	13,085 m
LCB	43,383 m	Immersion rate	14,280 tonne/cm
KM	15,998 m	MCT	101,513 t*m

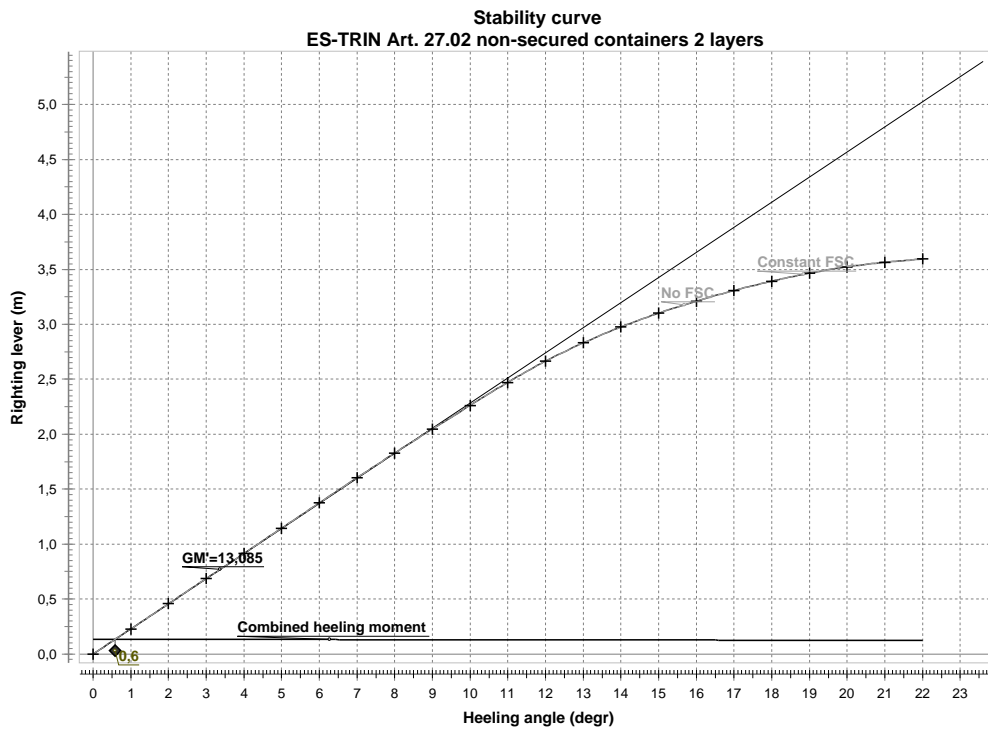
Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers 70 % full			1516,200	42,997	0,000 (CL)	3,496	0,000
Lightship			540,180	44,465	0,000 (CL)	1,276	
Deadweight			1516,200	42,997	0,000 (CL)	3,496	0,000
Displacement			2056,380	43,383	0,000 (CL)	2,913	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,496	0,015	2056,367	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,496	0,015	2056,380	0,279	0,051	0,000	0,000	0,228	0,0020
2,0 (PS)	1,496	0,014	2056,380	0,559	0,102	0,000	0,000	0,457	0,0080
3,0 (PS)	1,495	0,012	2056,379	0,838	0,152	0,000	0,000	0,686	0,0179
4,0 (PS)	1,495	0,009	2056,379	1,118	0,203	0,000	0,000	0,915	0,0319
5,0 (PS)	1,494	0,006	2056,379	1,399	0,254	0,000	0,000	1,145	0,0499
6,0 (PS)	1,493	0,002	2056,379	1,680	0,304	0,000	0,000	1,375	0,0719
7,0 (PS)	1,492	-0,003	2056,377	1,959	0,355	0,000	0,000	1,604	0,0979
8,0 (PS)	1,490	-0,008	2056,371	2,234	0,405	0,000	0,000	1,829	0,1278
9,0 (PS)	1,486	-0,014	2056,379	2,504	0,456	0,000	0,000	2,048	0,1617
10,0 (PS)	1,481	-0,020	2056,379	2,768	0,506	0,000	0,000	2,262	0,1993
11,0 (PS)	1,475	-0,026	2056,378	3,028	0,556	0,000	0,000	2,472	0,2406
12,0 (PS)	1,465	-0,033	2056,363	3,271	0,606	0,000	0,000	2,665	0,2855
13,0 (PS)	1,449	-0,040	2056,377	3,487	0,655	0,000	0,000	2,831	0,3335
14,0 (PS)	1,428	-0,047	2056,376	3,680	0,705	0,000	0,000	2,976	0,3842
15,0 (PS)	1,402	-0,053	2056,378	3,855	0,754	0,000	0,000	3,101	0,4373
16,0 (PS)	1,371	-0,059	2056,371	4,014	0,803	0,000	0,000	3,211	0,4924
17,0 (PS)	1,336	-0,066	2056,379	4,160	0,852	0,000	0,000	3,308	0,5493
18,0 (PS)	1,297	-0,072	2056,377	4,293	0,900	0,000	0,000	3,393	0,6078
19,0 (PS)	1,254	-0,079	2056,371	4,414	0,948	0,000	0,000	3,466	0,6676
20,0 (PS)	1,211	-0,088	2056,379	4,519	0,996	0,000	0,000	3,523	0,7287
21,0 (PS)	1,166	-0,099	2056,380	4,608	1,044	0,000	0,000	3,565	0,7905
22,0 (PS)	1,121	-0,110	2056,374	4,685	1,091	0,000	0,000	3,594	0,8530



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	13,085 m	\geq	1,000 m	Complies
Combined heeling moment	0,6 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	270,900 t*m			
Required freeboard	1,620 m	\geq	0,000 m	Complies
Weight	270,900 t			
Trv. location of weight	1,000 m			

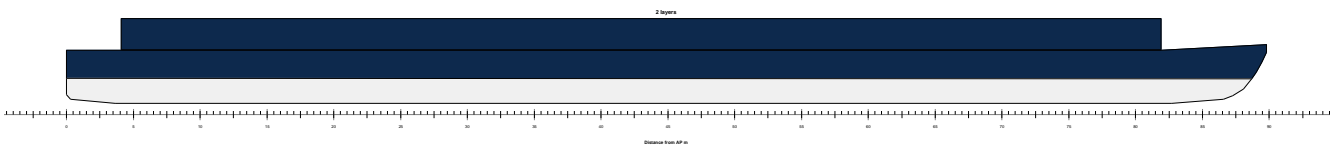
The condition complies with the stability criteria

Containers full

2020.056_005_v2 IW-NET barge Containers transverse v2

Designer Bernhard Bieringer
 Created by Bernhard Bieringer
 Comment
 Filename 2020_056_005_v2_IW-NETContainers transverse v2.fbm

Design length	89,800 m	Midship location	44,900 m
Length over all	89,800 m	Water density	1,0000
Design beam	16,280 m	Mean shell thickness	0,0000 m
Maximum beam	16,280 m	Appendage coefficient	1,0000
Design draft	2,630 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	3,031 m
Draft aft pp	1,879 m	GG'	0,000 m
Mean moulded draft	1,861 m	VCG'	3,031 m
Draft forward pp	1,844 m	Max VCG'	12,024 m
Trim	-0,035 m	GM solid	10,130 m
LCF	44,069 m	G'M liquid	10,130 m
LCB	43,303 m	Immersion rate	14,347 tonne/cm
KM	13,161 m	MCT	102,837 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

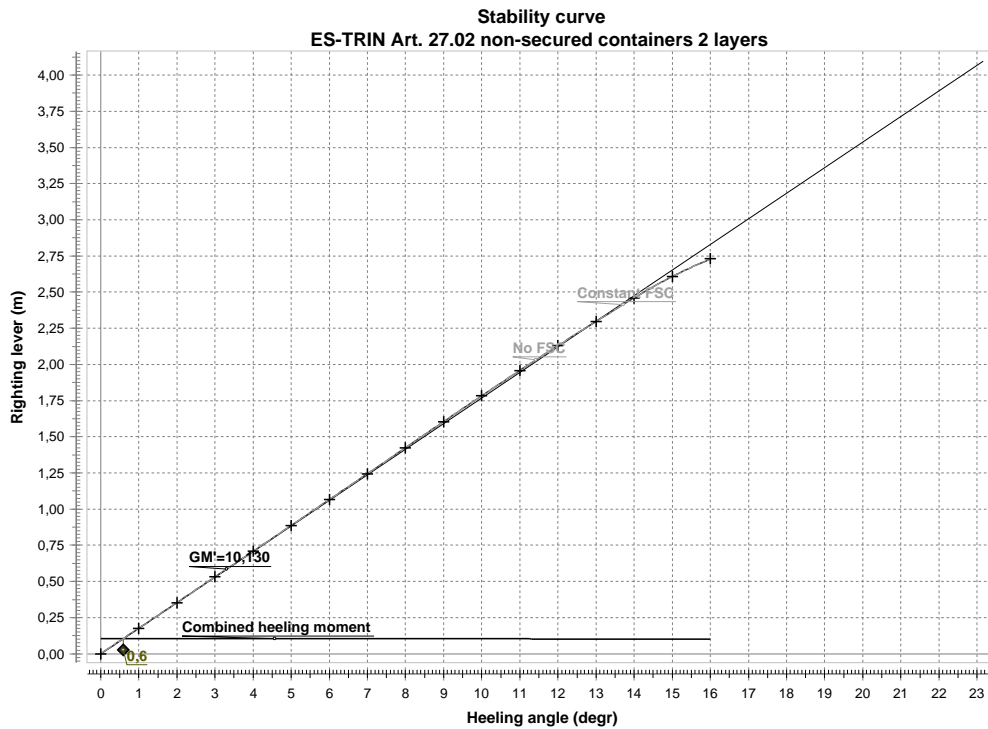
Containers full			2040,000	42,997	0,000 (CL)	3,496	0,000
Lightship			540,180	44,465	0,000 (CL)	1,276	
Deadweight			2040,000	42,997	0,000 (CL)	3,496	0,000
Displacement			2580,180	43,304	0,000 (CL)	3,031	0,000

Righting levers

Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	1,861	-0,035	2580,173	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,861	-0,035	2580,164	0,230	0,053	0,000	0,000	0,177	0,0015
2,0 (PS)	1,861	-0,036	2580,159	0,460	0,106	0,000	0,000	0,354	0,0062
3,0 (PS)	1,861	-0,037	2580,157	0,690	0,159	0,000	0,000	0,531	0,0139
4,0 (PS)	1,860	-0,040	2580,157	0,920	0,211	0,000	0,000	0,708	0,0247
5,0 (PS)	1,860	-0,043	2580,160	1,151	0,264	0,000	0,000	0,886	0,0386
6,0 (PS)	1,859	-0,046	2580,164	1,382	0,317	0,000	0,000	1,065	0,0557
7,0 (PS)	1,859	-0,050	2580,166	1,614	0,369	0,000	0,000	1,244	0,0758
8,0 (PS)	1,858	-0,055	2580,166	1,846	0,422	0,000	0,000	1,424	0,0991
9,0 (PS)	1,857	-0,061	2580,158	2,079	0,474	0,000	0,000	1,605	0,1255
10,0 (PS)	1,855	-0,067	2580,180	2,310	0,526	0,000	0,000	1,783	0,1551

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
11,0 (PS)	1,852	-0,074	2580,179	2,537	0,578	0,000	0,000	1,958	0,1878
12,0 (PS)	1,847	-0,081	2580,179	2,760	0,630	0,000	0,000	2,129	0,2234
13,0 (PS)	1,842	-0,089	2580,161	2,979	0,682	0,000	0,000	2,297	0,2621
14,0 (PS)	1,834	-0,097	2580,179	3,194	0,733	0,000	0,000	2,461	0,3036
15,0 (PS)	1,823	-0,108	2580,172	3,393	0,785	0,000	0,000	2,608	0,3479
16,0 (PS)	1,809	-0,122	2580,180	3,565	0,836	0,000	0,000	2,730	0,3945



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	10,130 m	\geq	1,000 m	Complies
Combined heeling moment	0,6 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	270,900 t*m			
Required freeboard	1,241 m	\geq	0,000 m	Complies
Weight	270,900 t			
Trv. location of weight	1,000 m			

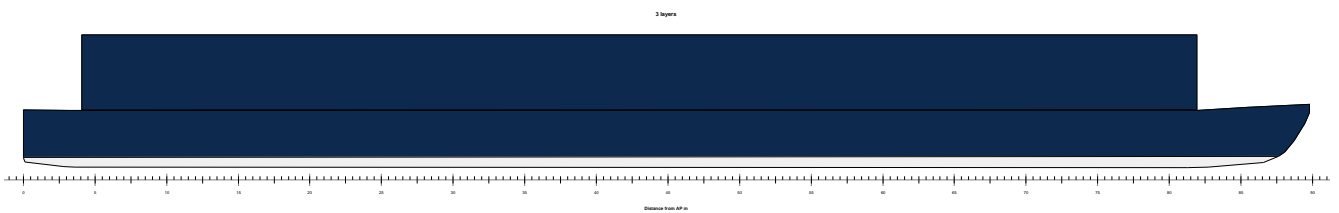
The condition complies with the stability criteria

Containers empty 3 layers

2020.056_005_v2 IW-NET barge Containers transverse v2

Designer Bernhard Bieringer
 Created by Bernhard Bieringer
 Comment
 Filename 2020_056_005_v2_IW-NETContainers transverse v2.fbm

Design length	89,800 m	Midship location	44,900 m
Length over all	89,800 m	Water density	1,0000
Design beam	16,280 m	Mean shell thickness	0,0000 m
Maximum beam	16,280 m	Appendage coefficient	1,0000
Design draft	2,630 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,925 m
Draft aft pp	0,700 m	GG'	0,000 m
Mean moulded draft	0,739 m	VCG'	2,925 m
Draft forward pp	0,779 m	Max VCG'	26,437 m
Trim	0,079 m	GM solid	28,818 m
LCF	43,279 m	G'M liquid	28,818 m
LCB	43,807 m	Immersion rate	14,074 tonne/cm
KM	31,743 m	MCT	97,403 t*m

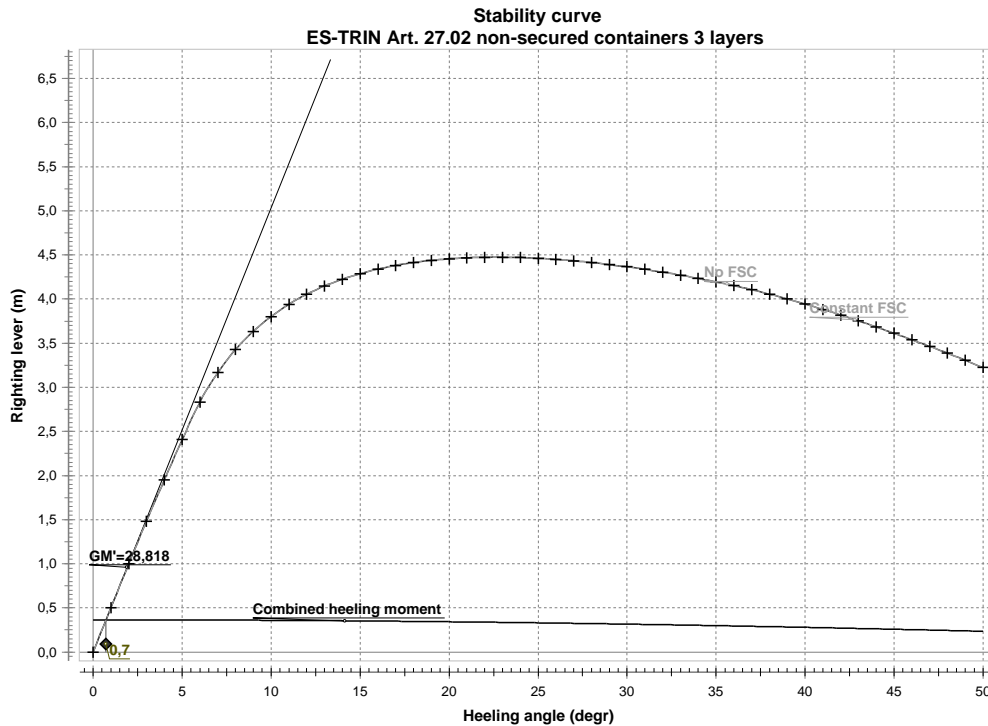
Description	Density	Filling	Weight	LCG	TCG	VCG	FSM
		%	t	m	m	m	t*m

Containers

Containers empty			294,000	42,997	0,000 (CL)	3,496	0,000
Containers empty 3 layers			147,000	42,997	0,000 (CL)	7,840	0,000
Totals for Containers			441,000	42,997	0,000 (CL)	4,944	0,000
Lightship			540,180	44,465	0,000 (CL)	1,276	
Deadweight			441,000	42,997	0,000 (CL)	4,944	0,000
Displacement			981,180	43,805	0,000 (CL)	2,925	0,000

Righting levers

Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	0,739	0,079	981,179	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	0,739	0,079	981,176	0,554	0,051	0,000	0,000	0,503	0,0044
2,0 (PS)	0,738	0,078	981,180	1,101	0,102	0,000	0,000	0,999	0,0175
3,0 (PS)	0,736	0,077	981,178	1,635	0,153	0,000	0,000	1,481	0,0392
4,0 (PS)	0,732	0,075	981,173	2,155	0,204	0,000	0,000	1,951	0,0691
5,0 (PS)	0,726	0,074	981,179	2,662	0,255	0,000	0,000	2,408	0,1072
6,0 (PS)	0,718	0,075	981,177	3,139	0,306	0,000	0,000	2,833	0,1530
7,0 (PS)	0,700	0,079	981,175	3,523	0,356	0,000	0,000	3,167	0,2055
8,0 (PS)	0,673	0,082	981,176	3,834	0,407	0,000	0,000	3,427	0,2632
9,0 (PS)	0,638	0,085	981,177	4,092	0,458	0,000	0,000	3,634	0,3248
10,0 (PS)	0,597	0,088	981,174	4,310	0,508	0,000	0,000	3,802	0,3898
11,0 (PS)	0,551	0,091	981,170	4,498	0,558	0,000	0,000	3,940	0,4574
12,0 (PS)	0,500	0,093	981,177	4,661	0,608	0,000	0,000	4,053	0,5272
13,0 (PS)	0,444	0,096	981,177	4,805	0,658	0,000	0,000	4,147	0,5988
14,0 (PS)	0,384	0,098	981,171	4,932	0,708	0,000	0,000	4,224	0,6718
15,0 (PS)	0,320	0,100	981,174	5,045	0,757	0,000	0,000	4,288	0,7461
16,0 (PS)	0,253	0,102	981,176	5,146	0,806	0,000	0,000	4,339	0,8214
17,0 (PS)	0,182	0,104	981,171	5,236	0,855	0,000	0,000	4,381	0,8976
18,0 (PS)	0,107	0,105	981,175	5,318	0,904	0,000	0,000	4,414	0,9743
19,0 (PS)	0,030	0,106	981,177	5,391	0,952	0,000	0,000	4,439	1,0516
20,0 (PS)	-0,051	0,108	981,170	5,457	1,000	0,000	0,000	4,457	1,1292
21,0 (PS)	-0,135	0,109	981,174	5,516	1,048	0,000	0,000	4,468	1,2071
22,0 (PS)	-0,223	0,110	981,176	5,569	1,096	0,000	0,000	4,474	1,2851
23,0 (PS)	-0,313	0,110	981,178	5,617	1,143	0,000	0,000	4,475	1,3632
24,0 (PS)	-0,407	0,111	981,172	5,660	1,190	0,000	0,000	4,470	1,4413
25,0 (PS)	-0,504	0,112	981,175	5,698	1,236	0,000	0,000	4,462	1,5193
26,0 (PS)	-0,604	0,112	981,177	5,732	1,282	0,000	0,000	4,450	1,5970
27,0 (PS)	-0,708	0,113	981,179	5,761	1,328	0,000	0,000	4,433	1,6746
28,0 (PS)	-0,815	0,113	981,173	5,787	1,373	0,000	0,000	4,414	1,7518
29,0 (PS)	-0,926	0,113	981,177	5,809	1,418	0,000	0,000	4,391	1,8286
30,0 (PS)	-1,040	0,113	981,178	5,827	1,462	0,000	0,000	4,365	1,9050
31,0 (PS)	-1,158	0,113	981,171	5,842	1,506	0,000	0,000	4,336	1,9809
32,0 (PS)	-1,281	0,113	981,177	5,854	1,550	0,000	0,000	4,304	2,0563
33,0 (PS)	-1,407	0,113	981,179	5,863	1,593	0,000	0,000	4,270	2,1312
34,0 (PS)	-1,538	0,113	981,174	5,869	1,635	0,000	0,000	4,234	2,2054
35,0 (PS)	-1,673	0,113	981,180	5,872	1,677	0,000	0,000	4,195	2,2789
36,0 (PS)	-1,812	0,114	981,180	5,871	1,719	0,000	0,000	4,152	2,3518
37,0 (PS)	-1,954	0,115	981,180	5,865	1,760	0,000	0,000	4,105	2,4238
38,0 (PS)	-2,101	0,115	981,176	5,855	1,801	0,000	0,000	4,054	2,4951
39,0 (PS)	-2,251	0,115	981,179	5,841	1,841	0,000	0,000	4,000	2,5653
40,0 (PS)	-2,406	0,114	981,179	5,823	1,880	0,000	0,000	3,943	2,6347
41,0 (PS)	-2,566	0,113	981,180	5,801	1,919	0,000	0,000	3,882	2,7030
42,0 (PS)	-2,731	0,112	981,180	5,776	1,957	0,000	0,000	3,819	2,7702
43,0 (PS)	-2,901	0,111	981,180	5,747	1,995	0,000	0,000	3,753	2,8363
44,0 (PS)	-3,076	0,110	981,180	5,716	2,032	0,000	0,000	3,684	2,9012
45,0 (PS)	-3,258	0,108	981,180	5,681	2,068	0,000	0,000	3,613	2,9648
46,0 (PS)	-3,446	0,106	981,180	5,643	2,104	0,000	0,000	3,539	3,0273
47,0 (PS)	-3,641	0,105	981,173	5,602	2,139	0,000	0,000	3,463	3,0884
48,0 (PS)	-3,843	0,103	981,177	5,559	2,173	0,000	0,000	3,385	3,1481
49,0 (PS)	-4,053	0,101	981,179	5,513	2,207	0,000	0,000	3,305	3,2065
50,0 (PS)	-4,272	0,099	981,180	5,464	2,240	0,000	0,000	3,224	3,2635



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	28,818 m	>=	1,000 m	Complies
Combined heeling moment	0,7 degr	<=	5,0 degr	Complies
Calculated heeling moment (upright)	358,160 t*m			
Required freeboard	2,331 m	>=	0,000 m	Complies
Deck immersion angle	26,0 degr			
Max allowed ratio static angle/deck immersion angle	0,028	<=	1,000	Complies
Weight	358,160 t			
Trv. location of weight	1,000 m			

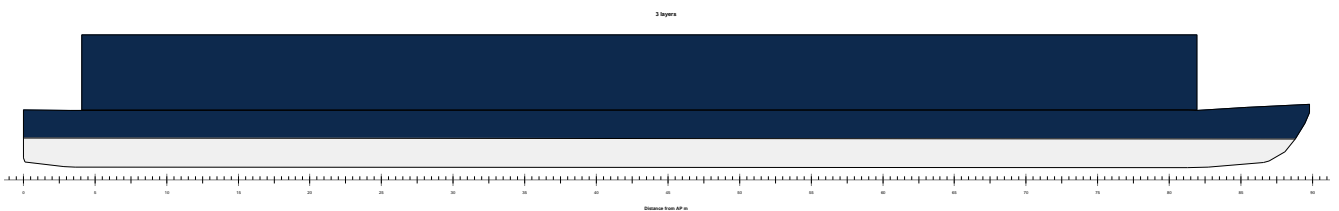
The condition complies with the stability criteria

Containers 70 % full 3 layers

2020.056_005_v2 IW-NET barge Containers transverse v2

Designer Bernhard Bieringer
 Created by Bernhard Bieringer
 Comment
 Filename 2020_056_005_v2_IW-NETContainers transverse v2.fbm

Design length	89,800 m	Midship location	44,900 m
Length over all	89,800 m	Water density	1,0000
Design beam	16,280 m	Mean shell thickness	0,0000 m
Maximum beam	16,280 m	Appendage coefficient	1,0000
Design draft	2,630 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	4,240 m
Draft aft pp	2,054 m	GG'	0,000 m
Mean moulded draft	2,024 m	VCG'	4,240 m
Draft forward pp	1,994 m	Max VCG'	10,850 m
Trim	-0,060 m	GM solid	8,012 m
LCF	44,149 m	G'M liquid	8,012 m
LCB	43,277 m	Immersion rate	14,373 tonne/cm
KM	12,252 m	MCT	102,995 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers 70 % full			1516,200	42,997	0,000 (CL)	3,496	0,000
Containers 70 % full 3 layers			758,100	42,997	0,000 (CL)	7,840	0,000
Totals for Containers			2274,300	42,997	0,000 (CL)	4,944	0,000

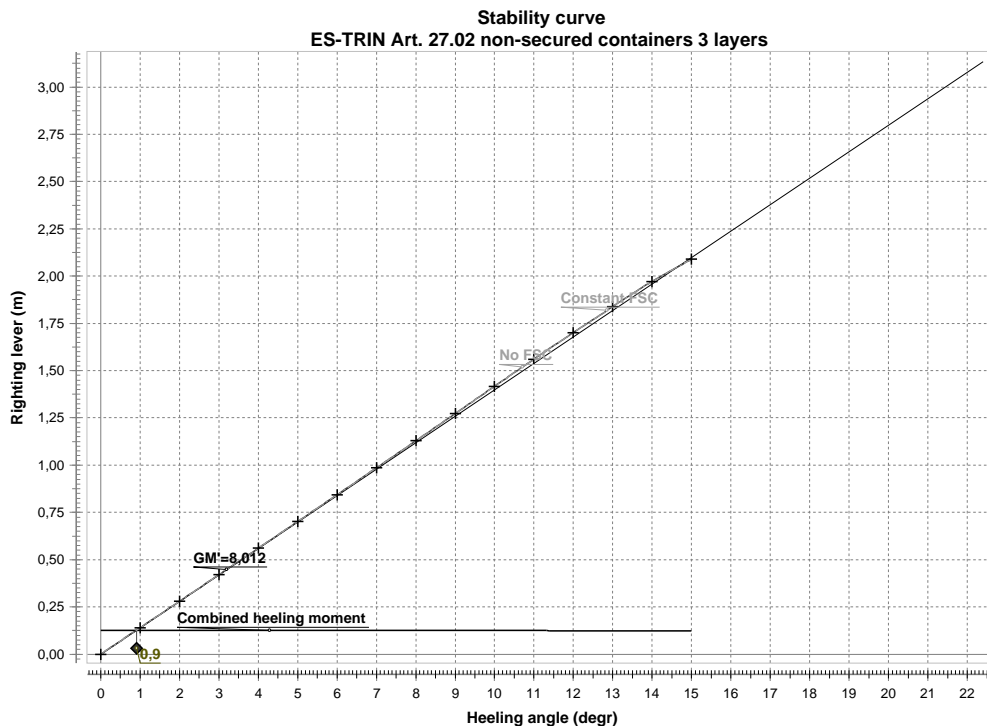
Lightship			540,180	44,465	0,000 (CL)	1,276	
Deadweight			2274,300	42,997	0,000 (CL)	4,944	0,000
Displacement			2814,480	43,279	0,000 (CL)	4,240	0,000

Righting levers

Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	2,024	-0,060	2814,474	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	2,024	-0,060	2814,468	0,214	0,074	0,000	0,000	0,140	0,0012
2,0 (PS)	2,024	-0,061	2814,465	0,428	0,148	0,000	0,000	0,280	0,0049
3,0 (PS)	2,024	-0,063	2814,464	0,642	0,222	0,000	0,000	0,420	0,0110
4,0 (PS)	2,023	-0,065	2814,465	0,856	0,296	0,000	0,000	0,561	0,0195
5,0 (PS)	2,023	-0,068	2814,467	1,071	0,370	0,000	0,000	0,702	0,0306
6,0 (PS)	2,022	-0,071	2814,471	1,286	0,443	0,000	0,000	0,843	0,0440

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
7,0 (PS)	2,022	-0,075	2814,475	1,502	0,517	0,000	0,000	0,985	0,0600
8,0 (PS)	2,021	-0,079	2814,478	1,719	0,590	0,000	0,000	1,129	0,0784
9,0 (PS)	2,020	-0,084	2814,482	1,936	0,663	0,000	0,000	1,273	0,0994
10,0 (PS)	2,019	-0,090	2814,488	2,154	0,736	0,000	0,000	1,418	0,1229
11,0 (PS)	2,017	-0,097	2814,479	2,370	0,809	0,000	0,000	1,561	0,1489
12,0 (PS)	2,014	-0,104	2814,483	2,583	0,882	0,000	0,000	1,701	0,1773
13,0 (PS)	2,010	-0,112	2814,475	2,792	0,954	0,000	0,000	1,839	0,2082
14,0 (PS)	2,005	-0,122	2814,480	2,998	1,026	0,000	0,000	1,972	0,2415
15,0 (PS)	2,001	-0,136	2814,480	3,186	1,097	0,000	0,000	2,089	0,2770



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	8,012 m	\geq	1,000 m	Complies
Combined heeling moment	0,9 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	358,160 t*m			
Required freeboard	1,023 m	\geq	0,000 m	Complies
Deck immersion angle	8,4 degr			
Max allowed ratio static angle/deck immersion angle	0,108	\leq	1,000	Complies
Weight	358,160 t			
Trv. location of weight	1,000 m			

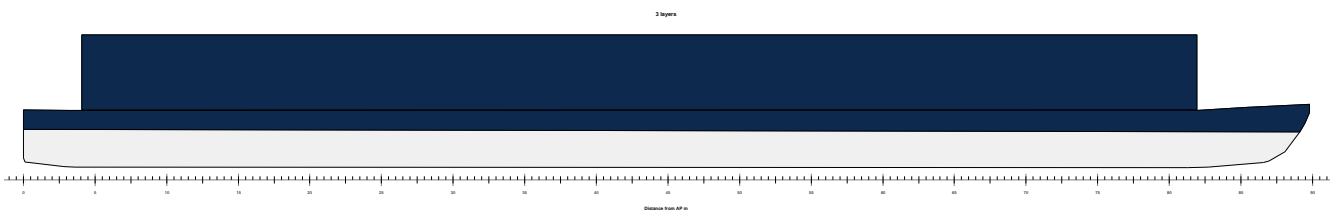
The condition complies with the stability criteria

Containers full 3 layers

2020.056_005_v2 IW-NET barge Containers transverse v2

Designer Bernhard Bieringer
 Created by Bernhard Bieringer
 Comment
 Filename 2020_056_005_v2_IW-NETContainers transverse v2.fbm

Design length	89,800 m	Midship location	44,900 m
Length over all	89,800 m	Water density	1,0000
Design beam	16,280 m	Mean shell thickness	0,0000 m
Maximum beam	16,280 m	Appendage coefficient	1,0000
Design draft	2,630 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	4,394 m
Draft aft pp	2,647 m	GG'	0,000 m
Mean moulded draft	2,569 m	VCG'	4,394 m
Draft forward pp	2,490 m	Max VCG'	8,781 m
Trim	-0,157 m	GM solid	5,740 m
LCF	44,378 m	G'M liquid	5,740 m
LCB	43,212 m	Immersion rate	14,448 tonne/cm
KM	10,134 m	MCT	104,393 t*m

Description	Density	Filling	Weight	LCG	TCG	VCG	FSM
		%	t	m	m	m	t*m

Containers

Containers full			2040,000	42,997	0,000 (CL)	3,496	0,000
Containers full 3 layers			1020,000	42,997	0,000 (CL)	7,840	0,000
Totals for Containers			3060,000	42,997	0,000 (CL)	4,944	0,000

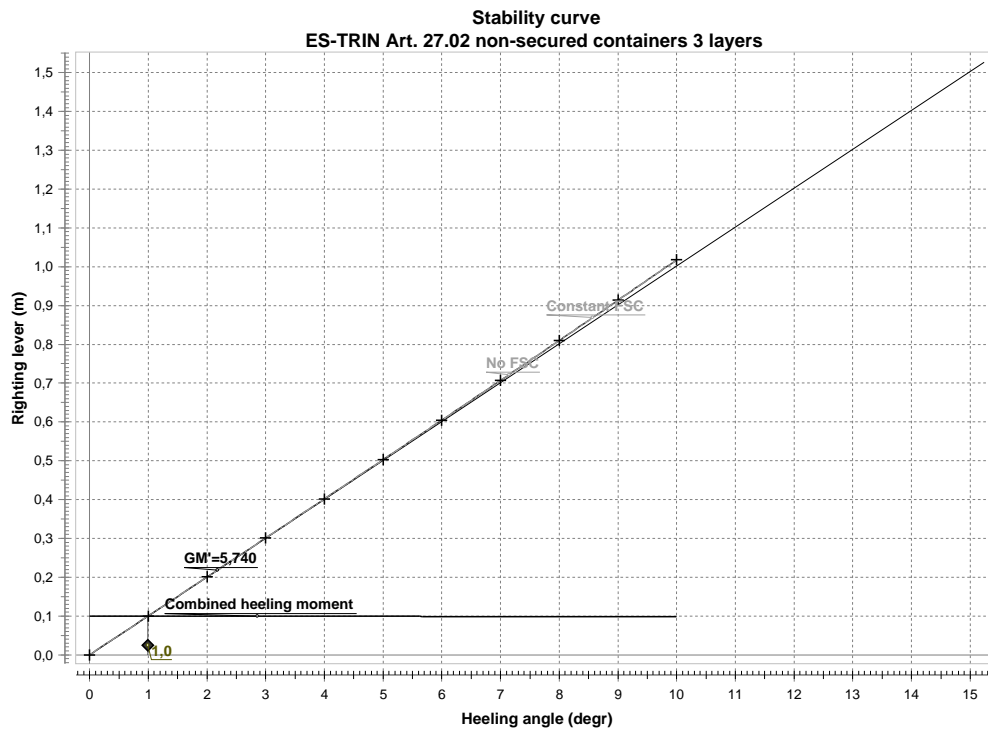
Lightship			540,180	44,465	0,000 (CL)	1,276	
Deadweight			3060,000	42,997	0,000 (CL)	4,944	0,000
Displacement			3600,180	43,217	0,000 (CL)	4,394	0,000

Righting levers

Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	2,569	-0,157	3600,178	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	2,569	-0,157	3600,177	0,177	0,077	0,000	0,000	0,100	0,0009
2,0 (PS)	2,569	-0,158	3600,176	0,354	0,153	0,000	0,000	0,201	0,0035
3,0 (PS)	2,568	-0,159	3600,177	0,531	0,230	0,000	0,000	0,301	0,0079
4,0 (PS)	2,568	-0,160	3600,178	0,708	0,306	0,000	0,000	0,402	0,0140
5,0 (PS)	2,568	-0,162	3600,179	0,886	0,383	0,000	0,000	0,503	0,0219
6,0 (PS)	2,567	-0,165	3600,180	1,064	0,459	0,000	0,000	0,605	0,0316

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
7,0 (PS)	2,567	-0,168	3600,180	1,242	0,535	0,000	0,000	0,707	0,0430
8,0 (PS)	2,566	-0,171	3600,179	1,421	0,611	0,000	0,000	0,810	0,0562
9,0 (PS)	2,566	-0,175	3600,179	1,601	0,687	0,000	0,000	0,914	0,0713
10,0 (PS)	2,565	-0,181	3600,186	1,781	0,763	0,000	0,000	1,018	0,0881



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	5,740 m	\geq	1,000 m	Complies
Combined heeling moment	1,0 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	358,160 t*m			
Required freeboard	0,420 m	\geq	0,000 m	Complies
Deck immersion angle	4,1 degr			
Max allowed ratio static angle/deck immersion angle	0,242	\leq	1,000	Complies
Weight	358,160 t			
Trv. location of weight	1,000 m			

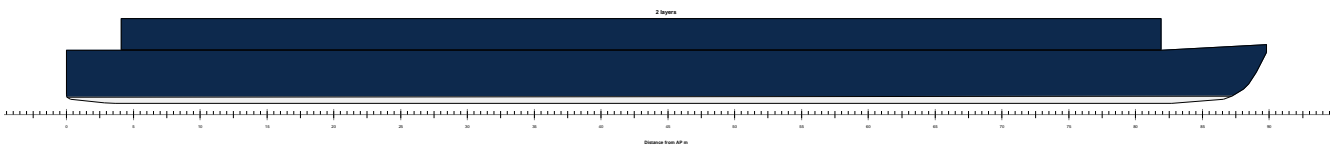
The condition complies with the stability criteria

Containers empty ALU

2020.056_005_v2 IW-NET barge Containers transverse v2

Designer Bernhard Bieringer
 Created by Bernhard Bieringer
 Comment
 Filename 2020_056_005_v2_IW-NETContainers transverse v2.fbm

Design length	89,800 m	Midship location	44,900 m
Length over all	89,800 m	Water density	1,0000
Design beam	16,280 m	Mean shell thickness	0,0000 m
Maximum beam	16,280 m	Appendage coefficient	1,0000
Design draft	2,630 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,262 m
Draft aft pp	0,492 m	GG'	0,000 m
Mean moulded draft	0,526 m	VCG'	2,262 m
Draft forward pp	0,560 m	Max VCG'	36,287 m
Trim	0,068 m	GM solid	41,468 m
LCF	43,118 m	G'M liquid	41,468 m
LCB	43,925 m	Immersion rate	13,846 tonne/cm
KM	43,729 m	MCT	94,618 t*m

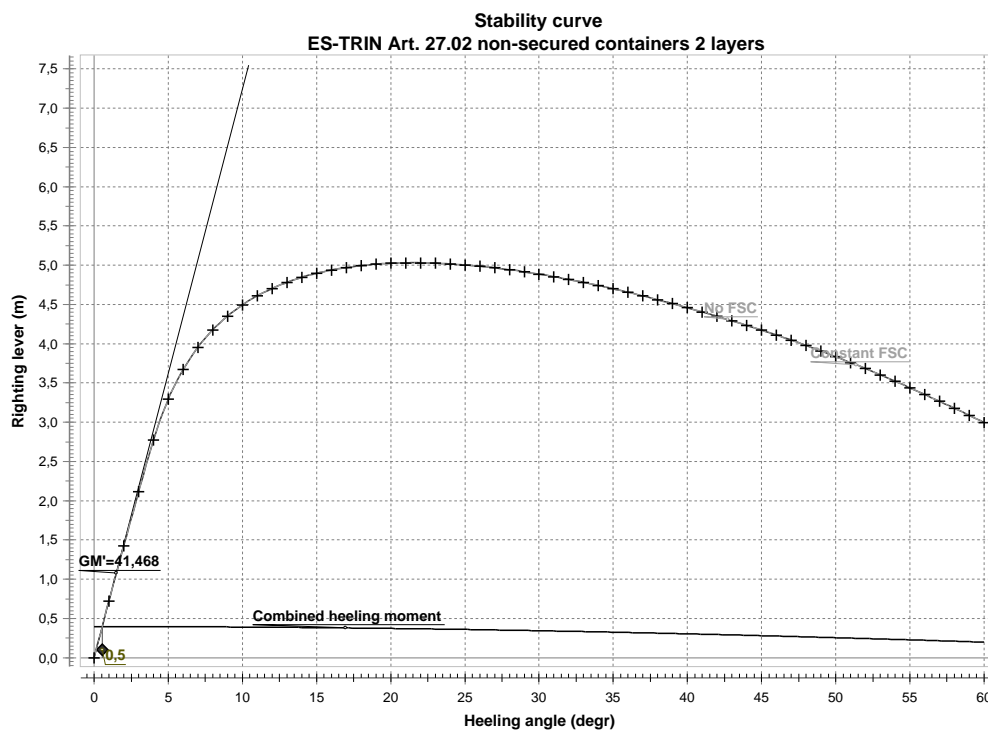
Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
Containers							
Containers empty			294,000	42,997	0,000 (CL)	3,496	0,000
Lightship			388,760	44,624	0,000 (CL)	1,328	
Deadweight			294,000	42,997	0,000 (CL)	3,496	0,000
Displacement			682,760	43,923	0,000 (CL)	2,262	0,000

Righting levers

Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	0,526	0,068	682,754	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	0,525	0,068	682,759	0,761	0,039	0,000	0,000	0,722	0,0063
2,0 (PS)	0,522	0,068	682,757	1,506	0,079	0,000	0,000	1,427	0,0251
3,0 (PS)	0,517	0,068	682,759	2,231	0,118	0,000	0,000	2,113	0,0560
4,0 (PS)	0,511	0,070	682,759	2,931	0,158	0,000	0,000	2,773	0,0988
5,0 (PS)	0,494	0,077	682,759	3,492	0,197	0,000	0,000	3,294	0,1519
6,0 (PS)	0,466	0,084	682,757	3,906	0,236	0,000	0,000	3,670	0,2129
7,0 (PS)	0,427	0,091	682,756	4,229	0,276	0,000	0,000	3,954	0,2795
8,0 (PS)	0,382	0,096	682,757	4,489	0,315	0,000	0,000	4,175	0,3505
9,0 (PS)	0,329	0,102	682,758	4,704	0,354	0,000	0,000	4,351	0,4250
10,0 (PS)	0,272	0,107	682,756	4,886	0,393	0,000	0,000	4,493	0,5022
11,0 (PS)	0,209	0,112	682,755	5,040	0,432	0,000	0,000	4,609	0,5817
12,0 (PS)	0,143	0,116	682,754	5,174	0,470	0,000	0,000	4,704	0,6630
13,0 (PS)	0,072	0,120	682,755	5,291	0,509	0,000	0,000	4,782	0,7458
14,0 (PS)	-0,003	0,124	682,756	5,393	0,547	0,000	0,000	4,846	0,8298
15,0 (PS)	-0,080	0,128	682,757	5,483	0,585	0,000	0,000	4,897	0,9149
16,0 (PS)	-0,162	0,131	682,755	5,562	0,623	0,000	0,000	4,939	1,0007
17,0 (PS)	-0,246	0,134	682,757	5,632	0,661	0,000	0,000	4,971	1,0872
18,0 (PS)	-0,333	0,137	682,754	5,695	0,699	0,000	0,000	4,996	1,1742
19,0 (PS)	-0,424	0,140	682,756	5,749	0,736	0,000	0,000	5,013	1,2615
20,0 (PS)	-0,518	0,142	682,757	5,798	0,773	0,000	0,000	5,024	1,3491
21,0 (PS)	-0,614	0,145	682,753	5,840	0,810	0,000	0,000	5,030	1,4369
22,0 (PS)	-0,714	0,147	682,756	5,877	0,847	0,000	0,000	5,030	1,5247
23,0 (PS)	-0,816	0,150	682,757	5,909	0,884	0,000	0,000	5,025	1,6124
24,0 (PS)	-0,922	0,152	682,758	5,936	0,920	0,000	0,000	5,016	1,7001
25,0 (PS)	-1,031	0,154	682,755	5,959	0,956	0,000	0,000	5,003	1,7875
26,0 (PS)	-1,143	0,156	682,756	5,978	0,991	0,000	0,000	4,987	1,8747
27,0 (PS)	-1,259	0,157	682,757	5,993	1,027	0,000	0,000	4,966	1,9616
28,0 (PS)	-1,378	0,159	682,758	6,005	1,062	0,000	0,000	4,943	2,0480
29,0 (PS)	-1,500	0,161	682,754	6,012	1,096	0,000	0,000	4,916	2,1341
30,0 (PS)	-1,626	0,162	682,756	6,017	1,131	0,000	0,000	4,886	2,2196
31,0 (PS)	-1,756	0,164	682,758	6,019	1,165	0,000	0,000	4,854	2,3046
32,0 (PS)	-1,890	0,165	682,758	6,017	1,198	0,000	0,000	4,819	2,3890
33,0 (PS)	-2,029	0,167	682,754	6,013	1,232	0,000	0,000	4,781	2,4728
34,0 (PS)	-2,171	0,168	682,756	6,006	1,265	0,000	0,000	4,741	2,5559
35,0 (PS)	-2,318	0,169	682,757	5,996	1,297	0,000	0,000	4,699	2,6383
36,0 (PS)	-2,470	0,171	682,759	5,984	1,329	0,000	0,000	4,655	2,7199
37,0 (PS)	-2,627	0,172	682,759	5,969	1,361	0,000	0,000	4,608	2,8008
38,0 (PS)	-2,790	0,173	682,756	5,952	1,392	0,000	0,000	4,560	2,8808
39,0 (PS)	-2,958	0,174	682,758	5,933	1,423	0,000	0,000	4,509	2,9599
40,0 (PS)	-3,132	0,175	682,759	5,911	1,454	0,000	0,000	4,457	3,0382
41,0 (PS)	-3,312	0,176	682,753	5,887	1,484	0,000	0,000	4,404	3,1155
42,0 (PS)	-3,499	0,177	682,757	5,861	1,513	0,000	0,000	4,348	3,1919
43,0 (PS)	-3,693	0,178	682,759	5,834	1,542	0,000	0,000	4,291	3,2673
44,0 (PS)	-3,895	0,180	682,755	5,804	1,571	0,000	0,000	4,233	3,3417
45,0 (PS)	-4,105	0,182	682,759	5,772	1,599	0,000	0,000	4,173	3,4150
46,0 (PS)	-4,323	0,184	682,760	5,737	1,627	0,000	0,000	4,110	3,4873
47,0 (PS)	-4,549	0,187	682,760	5,699	1,654	0,000	0,000	4,045	3,5585
48,0 (PS)	-4,783	0,190	682,760	5,658	1,681	0,000	0,000	3,977	3,6285
49,0 (PS)	-5,027	0,192	682,755	5,614	1,707	0,000	0,000	3,907	3,6973
50,0 (PS)	-5,281	0,195	682,758	5,567	1,732	0,000	0,000	3,834	3,7649

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
51,0 (PS)	-5,546	0,197	682,759	5,517	1,758	0,000	0,000	3,759	3,8311
52,0 (PS)	-5,822	0,199	682,759	5,464	1,782	0,000	0,000	3,682	3,8961
53,0 (PS)	-6,111	0,201	682,760	5,409	1,806	0,000	0,000	3,602	3,9596
54,0 (PS)	-6,414	0,203	682,760	5,351	1,830	0,000	0,000	3,521	4,0218
55,0 (PS)	-6,732	0,204	682,760	5,290	1,853	0,000	0,000	3,438	4,0825
56,0 (PS)	-7,066	0,206	682,760	5,228	1,875	0,000	0,000	3,353	4,1418
57,0 (PS)	-7,417	0,208	682,760	5,163	1,897	0,000	0,000	3,266	4,1996
58,0 (PS)	-7,789	0,209	682,760	5,095	1,918	0,000	0,000	3,177	4,2558
59,0 (PS)	-8,181	0,211	682,760	5,026	1,939	0,000	0,000	3,087	4,3105
60,0 (PS)	-8,597	0,213	682,760	4,954	1,959	0,000	0,000	2,996	4,3636



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	41,468 m	\geq	1,000 m	Complies
Combined heeling moment	0,5 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	270,900 t*m			
Required freeboard	2,573 m	\geq	0,000 m	Complies
Weight	270,900 t			
Trv. location of weight	1,000 m			

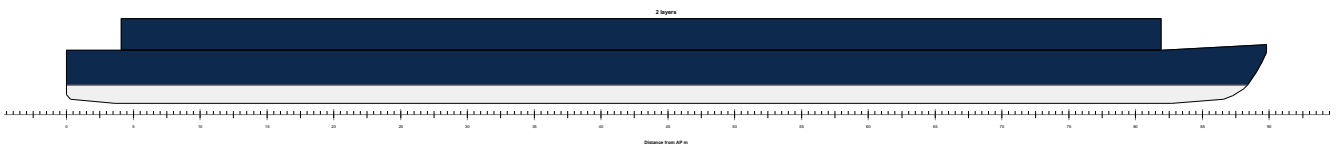
The condition complies with the stability criteria

Containers 70 % full ALU

2020.056_005_v2 IW-NET barge Containers transverse v2

Designer Bernhard Bieringer
 Created by Bernhard Bieringer
 Comment
 Filename 2020_056_005_v2_IW-NETContainers transverse v2.fbm

Design length	89,800 m	Midship location	44,900 m
Length over all	89,800 m	Water density	1,0000
Design beam	16,280 m	Mean shell thickness	0,0000 m
Maximum beam	16,280 m	Appendage coefficient	1,0000
Design draft	2,630 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	3,054 m
Draft aft pp	1,384 m	GG'	0,000 m
Mean moulded draft	1,390 m	VCG'	3,054 m
Draft forward pp	1,396 m	Max VCG'	15,564 m
Trim	0,012 m	GM solid	14,069 m
LCF	43,792 m	G'M liquid	14,069 m
LCB	43,329 m	Immersion rate	14,257 tonne/cm
KM	17,123 m	MCT	101,008 t*m

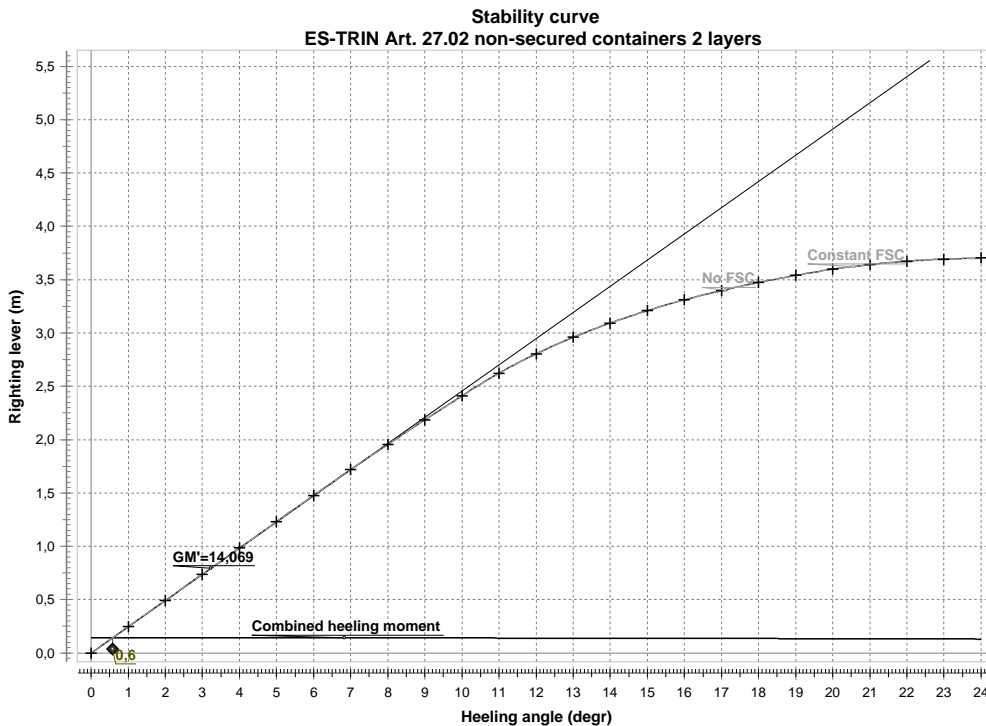
Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers 70 % full			1516,200	42,997	0,000 (CL)	3,496	0,000
Lightship			388,760	44,624	0,000 (CL)	1,328	
Deadweight			1516,200	42,997	0,000 (CL)	3,496	0,000
Displacement			1904,960	43,329	0,000 (CL)	3,054	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,390	0,012	1904,945	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,390	0,011	1904,960	0,299	0,053	0,000	0,000	0,246	0,0021
2,0 (PS)	1,389	0,010	1904,959	0,598	0,107	0,000	0,000	0,491	0,0086
3,0 (PS)	1,389	0,008	1904,959	0,897	0,160	0,000	0,000	0,737	0,0193
4,0 (PS)	1,389	0,006	1904,959	1,197	0,213	0,000	0,000	0,984	0,0343
5,0 (PS)	1,388	0,002	1904,959	1,497	0,266	0,000	0,000	1,231	0,0536
6,0 (PS)	1,387	-0,002	1904,957	1,796	0,319	0,000	0,000	1,477	0,0773
7,0 (PS)	1,385	-0,007	1904,950	2,091	0,372	0,000	0,000	1,719	0,1052
8,0 (PS)	1,382	-0,012	1904,959	2,380	0,425	0,000	0,000	1,955	0,1372
9,0 (PS)	1,377	-0,018	1904,958	2,664	0,478	0,000	0,000	2,186	0,1734
10,0 (PS)	1,371	-0,024	1904,957	2,941	0,530	0,000	0,000	2,411	0,2135
11,0 (PS)	1,362	-0,031	1904,958	3,206	0,583	0,000	0,000	2,623	0,2575
12,0 (PS)	1,347	-0,037	1904,953	3,439	0,635	0,000	0,000	2,804	0,3049
13,0 (PS)	1,327	-0,043	1904,948	3,646	0,687	0,000	0,000	2,959	0,3552
14,0 (PS)	1,301	-0,050	1904,948	3,832	0,739	0,000	0,000	3,093	0,4081
15,0 (PS)	1,270	-0,056	1904,952	3,999	0,790	0,000	0,000	3,209	0,4631
16,0 (PS)	1,235	-0,062	1904,957	4,151	0,842	0,000	0,000	3,310	0,5200
17,0 (PS)	1,196	-0,067	1904,949	4,290	0,893	0,000	0,000	3,397	0,5785
18,0 (PS)	1,152	-0,073	1904,957	4,417	0,944	0,000	0,000	3,474	0,6385
19,0 (PS)	1,105	-0,079	1904,951	4,534	0,994	0,000	0,000	3,540	0,6997
20,0 (PS)	1,054	-0,085	1904,960	4,641	1,044	0,000	0,000	3,597	0,7620
21,0 (PS)	1,002	-0,093	1904,957	4,736	1,094	0,000	0,000	3,642	0,8252
22,0 (PS)	0,948	-0,103	1904,960	4,817	1,144	0,000	0,000	3,673	0,8891
23,0 (PS)	0,893	-0,114	1904,960	4,886	1,193	0,000	0,000	3,693	0,9534
24,0 (PS)	0,838	-0,125	1904,957	4,945	1,242	0,000	0,000	3,703	1,0179



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	14,069 m	\geq	1,000 m	Complies
Combined heeling moment	0,6 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	270,900 t*m			
Required freeboard	1,728 m	\geq	0,000 m	Complies
Weight	270,900 t			
Trv. location of weight	1,000 m			

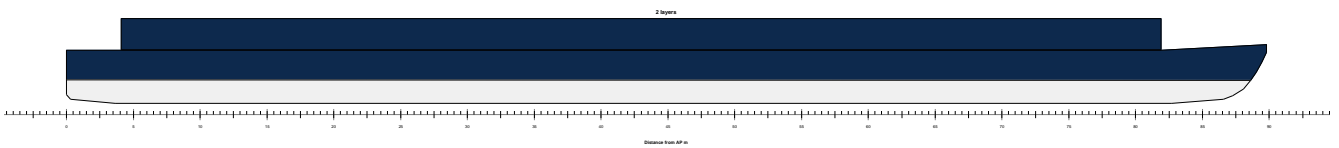
The condition complies with the stability criteria

Containers full ALU

2020.056_005_v2 IW-NET barge Containers transverse v2

Designer Bernhard Bieringer
 Created by Bernhard Bieringer
 Comment
 Filename 2020_056_005_v2_IW-NETContainers transverse v2.fbm

Design length	89,800 m	Midship location	44,900 m
Length over all	89,800 m	Water density	1,0000
Design beam	16,280 m	Mean shell thickness	0,0000 m
Maximum beam	16,280 m	Appendage coefficient	1,0000
Design draft	2,630 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	3,149 m
Draft aft pp	1,773 m	GG'	0,000 m
Mean moulded draft	1,756 m	VCG'	3,149 m
Draft forward pp	1,738 m	Max VCG'	12,639 m
Trim	-0,035 m	GM solid	10,698 m
LCF	44,009 m	G'M liquid	10,698 m
LCB	43,256 m	Immersion rate	14,328 tonne/cm
KM	13,847 m	MCT	102,406 t*m

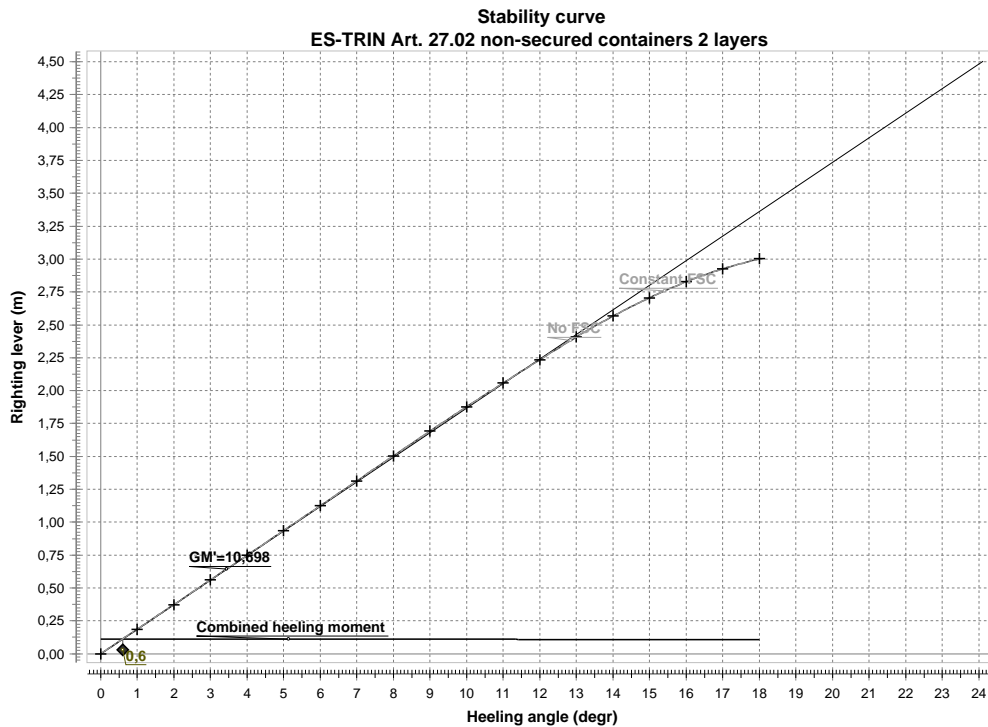
Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
Containers							
Containers full			2040,000	42,997	0,000 (CL)	3,496	0,000
Lightship			388,760	44,624	0,000 (CL)	1,328	
Deadweight			2040,000	42,997	0,000 (CL)	3,496	0,000
Displacement			2428,760	43,257	0,000 (CL)	3,149	0,000

Righting levers

Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	1,756	-0,035	2428,751	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,756	-0,035	2428,741	0,242	0,055	0,000	0,000	0,187	0,0016
2,0 (PS)	1,755	-0,036	2428,760	0,483	0,110	0,000	0,000	0,374	0,0065
3,0 (PS)	1,755	-0,038	2428,760	0,726	0,165	0,000	0,000	0,561	0,0147
4,0 (PS)	1,755	-0,040	2428,760	0,968	0,220	0,000	0,000	0,748	0,0261
5,0 (PS)	1,754	-0,043	2428,760	1,211	0,274	0,000	0,000	0,936	0,0408
6,0 (PS)	1,754	-0,047	2428,760	1,454	0,329	0,000	0,000	1,125	0,0588
7,0 (PS)	1,753	-0,051	2428,760	1,698	0,384	0,000	0,000	1,314	0,0801
8,0 (PS)	1,752	-0,056	2428,760	1,942	0,438	0,000	0,000	1,504	0,1046
9,0 (PS)	1,750	-0,062	2428,759	2,185	0,493	0,000	0,000	1,693	0,1325
10,0 (PS)	1,747	-0,069	2428,757	2,424	0,547	0,000	0,000	1,877	0,1637

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
11,0 (PS)	1,743	-0,076	2428,755	2,659	0,601	0,000	0,000	2,058	0,1981
12,0 (PS)	1,738	-0,083	2428,755	2,890	0,655	0,000	0,000	2,235	0,2355
13,0 (PS)	1,732	-0,091	2428,756	3,116	0,708	0,000	0,000	2,408	0,2760
14,0 (PS)	1,721	-0,101	2428,742	3,329	0,762	0,000	0,000	2,567	0,3195
15,0 (PS)	1,706	-0,110	2428,751	3,521	0,815	0,000	0,000	2,706	0,3655
16,0 (PS)	1,685	-0,121	2428,745	3,696	0,868	0,000	0,000	2,828	0,4138
17,0 (PS)	1,663	-0,134	2428,760	3,847	0,921	0,000	0,000	2,926	0,4641
18,0 (PS)	1,640	-0,149	2428,746	3,975	0,973	0,000	0,000	3,002	0,5159



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	10,698 m	\geq	1,000 m	Complies
Combined heeling moment	0,6 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	270,900 t*m			
Required freeboard	1,346 m	\geq	0,000 m	Complies
Weight	270,900 t			
Trv. location of weight	1,000 m			

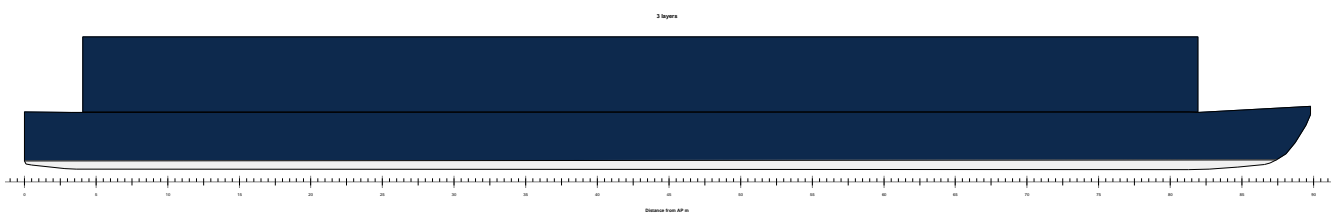
The condition complies with the stability criteria

Containers empty 3 layers ALU

2020.056_005_v2 IW-NET barge Containers transverse v2

Designer Bernhard Bieringer
 Created by Bernhard Bieringer
 Comment
 Filename 2020_056_005_v2_IW-NETContainers transverse v2.fbm

Design length	89,800 m	Midship location	44,900 m
Length over all	89,800 m	Water density	1,0000
Design beam	16,280 m	Mean shell thickness	0,0000 m
Maximum beam	16,280 m	Appendage coefficient	1,0000
Design draft	2,630 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	3,250 m
Draft aft pp	0,598 m	GG'	0,000 m
Mean moulded draft	0,631 m	VCG'	3,250 m
Draft forward pp	0,664 m	Max VCG'	30,170 m
Trim	0,066 m	GM solid	33,978 m
LCF	43,171 m	G'M liquid	33,978 m
LCB	43,761 m	Immersion rate	14,022 tonne/cm
KM	37,228 m	MCT	96,349 t*m

Description	Density	Filling	Weight	LCG	TCG	VCG	FSM
		%	t	m	m	m	t*m

Containers

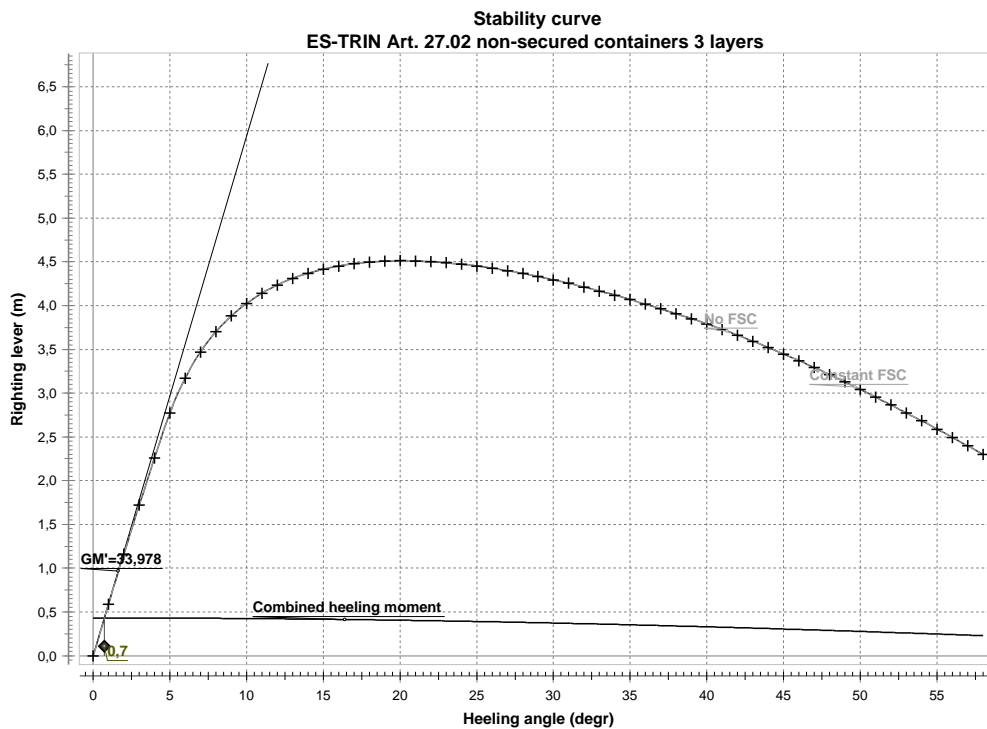
Containers empty			294,000	42,997	0,000 (CL)	3,496	0,000
Containers empty 3 layers			147,000	42,997	0,000 (CL)	7,840	0,000
Totals for Containers			441,000	42,997	0,000 (CL)	4,944	0,000
Lightship			388,760	44,624	0,000 (CL)	1,328	
Deadweight			441,000	42,997	0,000 (CL)	4,944	0,000
Displacement			829,760	43,759	0,000 (CL)	3,250	0,000

Righting levers

Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	0,631	0,066	829,758	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	0,631	0,066	829,760	0,645	0,057	0,000	0,000	0,588	0,0051
2,0 (PS)	0,629	0,065	829,759	1,275	0,113	0,000	0,000	1,161	0,0204
3,0 (PS)	0,625	0,064	829,755	1,889	0,170	0,000	0,000	1,719	0,0456
4,0 (PS)	0,620	0,064	829,759	2,487	0,227	0,000	0,000	2,260	0,0803
5,0 (PS)	0,613	0,065	829,758	3,057	0,283	0,000	0,000	2,774	0,1244
6,0 (PS)	0,595	0,070	829,754	3,512	0,340	0,000	0,000	3,172	0,1764
7,0 (PS)	0,568	0,074	829,752	3,866	0,396	0,000	0,000	3,470	0,2345
8,0 (PS)	0,531	0,078	829,754	4,152	0,452	0,000	0,000	3,700	0,2972
9,0 (PS)	0,488	0,082	829,756	4,389	0,508	0,000	0,000	3,881	0,3634
10,0 (PS)	0,439	0,085	829,752	4,590	0,564	0,000	0,000	4,025	0,4324
11,0 (PS)	0,385	0,088	829,757	4,761	0,620	0,000	0,000	4,141	0,5037
12,0 (PS)	0,326	0,091	829,756	4,910	0,676	0,000	0,000	4,235	0,5769
13,0 (PS)	0,263	0,094	829,756	5,041	0,731	0,000	0,000	4,310	0,6515
14,0 (PS)	0,196	0,096	829,757	5,156	0,786	0,000	0,000	4,370	0,7272
15,0 (PS)	0,126	0,099	829,754	5,258	0,841	0,000	0,000	4,416	0,8039
16,0 (PS)	0,052	0,101	829,756	5,348	0,896	0,000	0,000	4,452	0,8813
17,0 (PS)	-0,026	0,103	829,758	5,429	0,950	0,000	0,000	4,479	0,9593
18,0 (PS)	-0,107	0,105	829,755	5,501	1,004	0,000	0,000	4,497	1,0376
19,0 (PS)	-0,190	0,106	829,757	5,565	1,058	0,000	0,000	4,507	1,1162
20,0 (PS)	-0,277	0,108	829,758	5,622	1,112	0,000	0,000	4,511	1,1949
21,0 (PS)	-0,368	0,109	829,754	5,674	1,165	0,000	0,000	4,509	1,2736
22,0 (PS)	-0,461	0,110	829,756	5,719	1,217	0,000	0,000	4,502	1,3522
23,0 (PS)	-0,557	0,111	829,758	5,759	1,270	0,000	0,000	4,489	1,4307
24,0 (PS)	-0,657	0,112	829,753	5,794	1,322	0,000	0,000	4,472	1,5089
25,0 (PS)	-0,760	0,113	829,755	5,825	1,373	0,000	0,000	4,451	1,5868
26,0 (PS)	-0,866	0,114	829,757	5,851	1,425	0,000	0,000	4,427	1,6643
27,0 (PS)	-0,975	0,114	829,758	5,874	1,475	0,000	0,000	4,398	1,7413
28,0 (PS)	-1,088	0,115	829,753	5,892	1,526	0,000	0,000	4,367	1,8178
29,0 (PS)	-1,204	0,115	829,756	5,908	1,576	0,000	0,000	4,332	1,8937
30,0 (PS)	-1,325	0,116	829,757	5,919	1,625	0,000	0,000	4,294	1,9690
31,0 (PS)	-1,449	0,116	829,759	5,928	1,674	0,000	0,000	4,254	2,0436
32,0 (PS)	-1,576	0,116	829,753	5,933	1,722	0,000	0,000	4,211	2,1175
33,0 (PS)	-1,709	0,117	829,756	5,936	1,770	0,000	0,000	4,166	2,1906
34,0 (PS)	-1,845	0,117	829,758	5,935	1,817	0,000	0,000	4,118	2,2629
35,0 (PS)	-1,986	0,117	829,759	5,932	1,864	0,000	0,000	4,068	2,3343
36,0 (PS)	-2,132	0,117	829,755	5,927	1,910	0,000	0,000	4,017	2,4049
37,0 (PS)	-2,283	0,117	829,758	5,919	1,956	0,000	0,000	3,963	2,4745
38,0 (PS)	-2,439	0,117	829,760	5,908	2,001	0,000	0,000	3,907	2,5432
39,0 (PS)	-2,601	0,117	829,758	5,895	2,045	0,000	0,000	3,850	2,6109
40,0 (PS)	-2,768	0,117	829,760	5,879	2,089	0,000	0,000	3,790	2,6776
41,0 (PS)	-2,940	0,118	829,760	5,860	2,132	0,000	0,000	3,728	2,7432
42,0 (PS)	-3,118	0,119	829,760	5,836	2,175	0,000	0,000	3,662	2,8077
43,0 (PS)	-3,301	0,119	829,756	5,809	2,216	0,000	0,000	3,593	2,8710
44,0 (PS)	-3,491	0,119	829,758	5,779	2,258	0,000	0,000	3,521	2,9331
45,0 (PS)	-3,687	0,119	829,759	5,745	2,298	0,000	0,000	3,447	2,9939
46,0 (PS)	-3,890	0,118	829,760	5,708	2,338	0,000	0,000	3,370	3,0534
47,0 (PS)	-4,101	0,117	829,760	5,668	2,377	0,000	0,000	3,291	3,1115
48,0 (PS)	-4,320	0,116	829,760	5,625	2,415	0,000	0,000	3,210	3,1683
49,0 (PS)	-4,547	0,114	829,760	5,579	2,453	0,000	0,000	3,127	3,2236
50,0 (PS)	-4,784	0,113	829,760	5,531	2,490	0,000	0,000	3,041	3,2774

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
51,0 (PS)	-5,031	0,111	829,760	5,480	2,526	0,000	0,000	2,954	3,3297
52,0 (PS)	-5,288	0,109	829,760	5,426	2,561	0,000	0,000	2,865	3,3805
53,0 (PS)	-5,558	0,107	829,760	5,370	2,595	0,000	0,000	2,775	3,4297
54,0 (PS)	-5,840	0,105	829,760	5,311	2,629	0,000	0,000	2,682	3,4773
55,0 (PS)	-6,136	0,103	829,754	5,251	2,662	0,000	0,000	2,589	3,5233
56,0 (PS)	-6,448	0,101	829,757	5,187	2,694	0,000	0,000	2,493	3,5677
57,0 (PS)	-6,776	0,098	829,759	5,122	2,726	0,000	0,000	2,397	3,6104
58,0 (PS)	-7,122	0,096	829,760	5,055	2,756	0,000	0,000	2,299	3,6513



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	33,978 m	\geq	1,000 m	Complies
Combined heeling moment	0,7 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	358,160 t*m			
Required freeboard	2,444 m	\geq	0,000 m	Complies
Deck immersion angle	30,4 degr			
Max allowed ratio static angle/deck immersion angle	0,024	\leq	1,000	Complies
Weight	358,160 t			
Trv. location of weight	1,000 m			

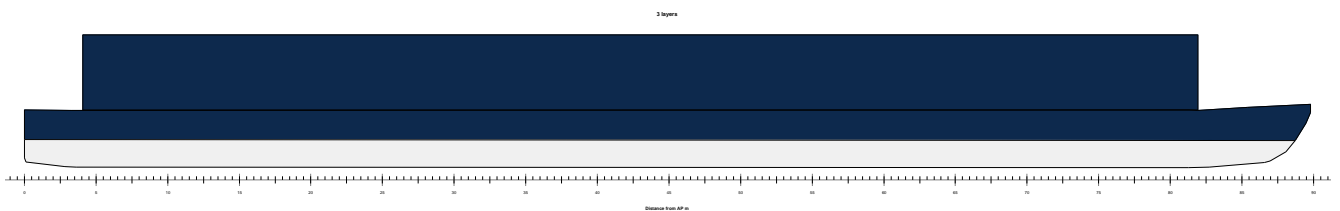
The condition complies with the stability criteria

Containers 70 % full 3 layers ALU

2020.056_005_v2 IW-NET barge Containers transverse v2

Designer Bernhard Bieringer
 Created by Bernhard Bieringer
 Comment
 Filename 2020_056_005_v2_IW-NETContainers transverse v2.fbm

Design length	89,800 m	Midship location	44,900 m
Length over all	89,800 m	Water density	1,0000
Design beam	16,280 m	Mean shell thickness	0,0000 m
Maximum beam	16,280 m	Appendage coefficient	1,0000
Design draft	2,630 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	4,416 m
Draft aft pp	1,948 m	GG'	0,000 m
Mean moulded draft	1,919 m	VCG'	4,416 m
Draft forward pp	1,889 m	Max VCG'	11,337 m
Trim	-0,059 m	GM solid	8,402 m
LCF	44,094 m	G'M liquid	8,402 m
LCB	43,232 m	Immersion rate	14,355 tonne/cm
KM	12,818 m	MCT	102,591 t*m

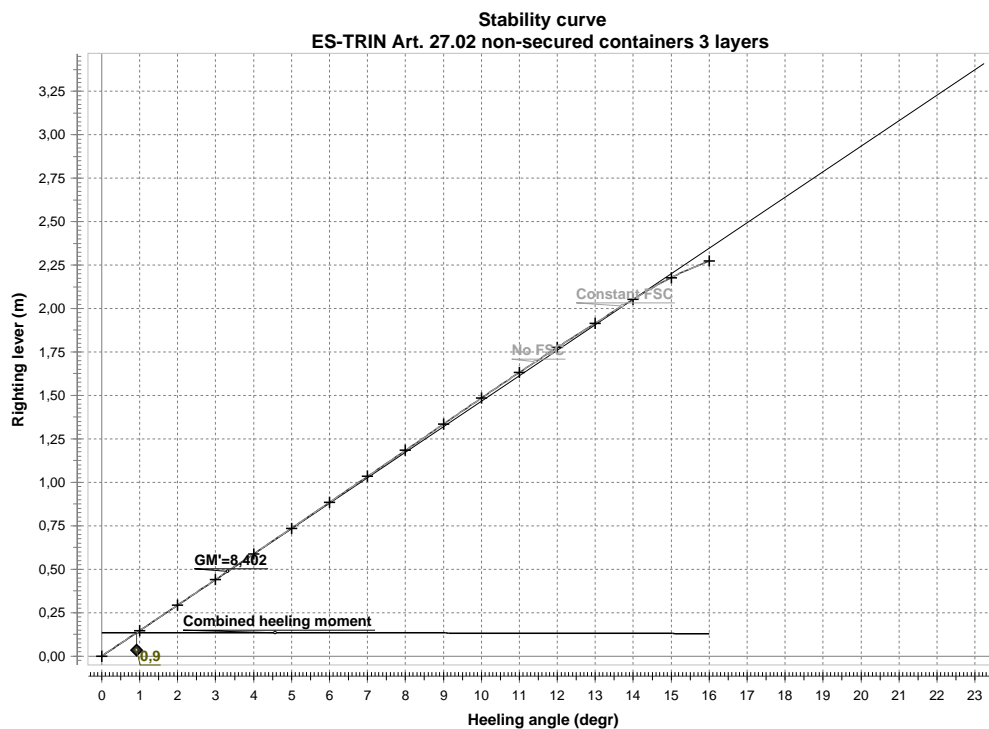
Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers 70 % full			1516,200	42,997	0,000 (CL)	3,496	0,000
Containers 70 % full 3 layers			758,100	42,997	0,000 (CL)	7,840	0,000
Totals for Containers			2274,300	42,997	0,000 (CL)	4,944	0,000
Lightship			388,760	44,624	0,000 (CL)	1,328	
Deadweight			2274,300	42,997	0,000 (CL)	4,944	0,000
Displacement			2663,060	43,235	0,000 (CL)	4,416	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,919	-0,059	2663,053	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,919	-0,060	2663,045	0,224	0,077	0,000	0,000	0,147	0,0013
2,0 (PS)	1,919	-0,060	2663,041	0,448	0,154	0,000	0,000	0,293	0,0051
3,0 (PS)	1,918	-0,062	2663,039	0,672	0,231	0,000	0,000	0,440	0,0115
4,0 (PS)	1,918	-0,064	2663,039	0,896	0,308	0,000	0,000	0,588	0,0205
5,0 (PS)	1,917	-0,067	2663,042	1,121	0,385	0,000	0,000	0,736	0,0320
6,0 (PS)	1,917	-0,070	2663,045	1,346	0,462	0,000	0,000	0,884	0,0462
7,0 (PS)	1,916	-0,075	2663,049	1,572	0,538	0,000	0,000	1,033	0,0629
8,0 (PS)	1,915	-0,079	2663,051	1,798	0,615	0,000	0,000	1,184	0,0823
9,0 (PS)	1,914	-0,085	2663,056	2,025	0,691	0,000	0,000	1,334	0,1042
10,0 (PS)	1,913	-0,091	2663,060	2,252	0,767	0,000	0,000	1,485	0,1288
11,0 (PS)	1,910	-0,098	2663,060	2,474	0,843	0,000	0,000	1,632	0,1560
12,0 (PS)	1,906	-0,105	2663,060	2,694	0,918	0,000	0,000	1,776	0,1858
13,0 (PS)	1,901	-0,113	2663,071	2,909	0,993	0,000	0,000	1,916	0,2180
14,0 (PS)	1,895	-0,122	2663,060	3,122	1,068	0,000	0,000	2,053	0,2527
15,0 (PS)	1,886	-0,135	2663,062	3,321	1,143	0,000	0,000	2,178	0,2896
16,0 (PS)	1,876	-0,152	2663,060	3,490	1,217	0,000	0,000	2,272	0,3285



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	8,402 m	\geq	1,000 m	Complies
Combined heeling moment	0,9 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	358,160 t*m			
Required freeboard	1,128 m	\geq	0,000 m	Complies
Deck immersion angle	9,2 degr			
Max allowed ratio static angle/deck immersion angle	0,100	\leq	1,000	Complies
Weight	358,160 t			

Trv. location of weight	1,000 m
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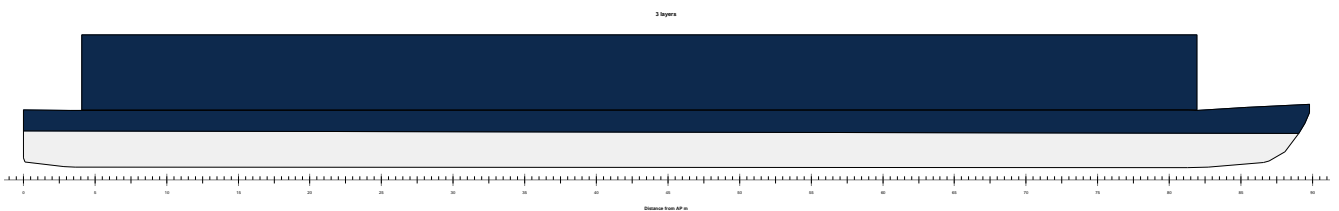
The condition complies with the stability criteria

Containers full 3 layers ALU

2020.056_005_v2 IW-NET barge Containers transverse v2

Designer Bernhard Bieringer
 Created by Bernhard Bieringer
 Comment
 Filename 2020_056_005_v2_IW-NETContainers transverse v2.fbm

Design length	89,800 m	Midship location	44,900 m
Length over all	89,800 m	Water density	1,0000
Design beam	16,280 m	Mean shell thickness	0,0000 m
Maximum beam	16,280 m	Appendage coefficient	1,0000
Design draft	2,630 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	4,536 m
Draft aft pp	2,540 m	GG'	0,000 m
Mean moulded draft	2,464 m	VCG'	4,536 m
Draft forward pp	2,388 m	Max VCG'	9,286 m
Trim	-0,152 m	GM solid	5,922 m
LCF	44,335 m	G'M liquid	5,922 m
LCB	43,175 m	Immersion rate	14,434 tonne/cm
KM	10,458 m	MCT	104,061 t*m

Description	Density	Filling	Weight	LCG	TCG	VCG	FSM
		%	t	m	m	m	t*m

Containers

Containers full			2040,000	42,997	0,000 (CL)	3,496	0,000
Containers full 3 layers			1020,000	42,997	0,000 (CL)	7,840	0,000
Totals for Containers			3060,000	42,997	0,000 (CL)	4,944	0,000

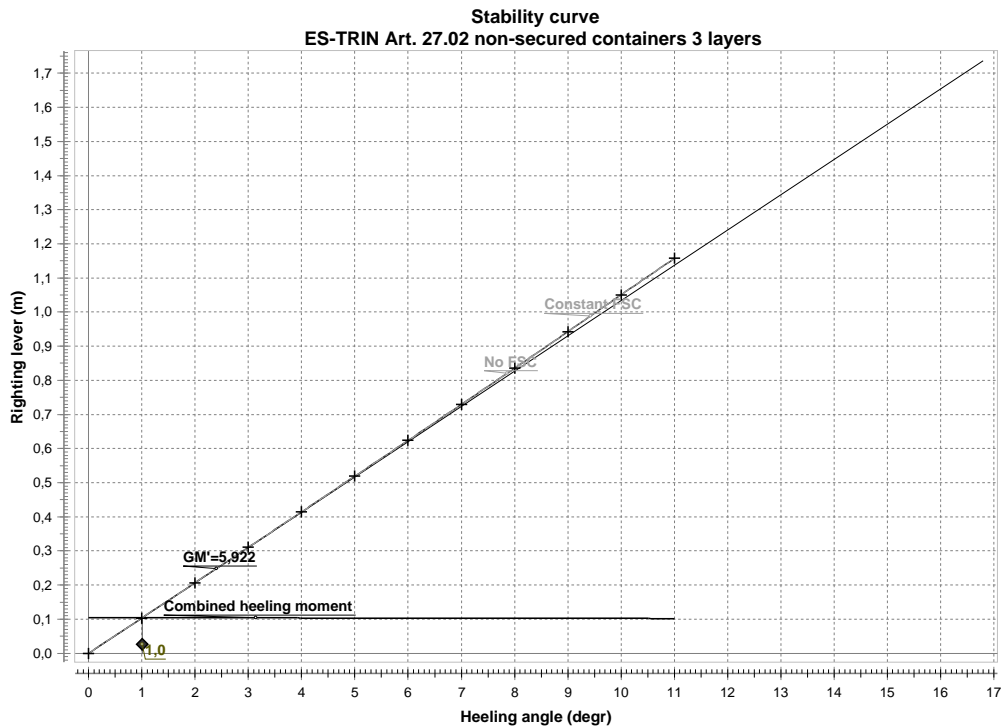
Lightship			388,760	44,624	0,000 (CL)	1,328	
Deadweight			3060,000	42,997	0,000 (CL)	4,944	0,000
Displacement			3448,760	43,180	0,000 (CL)	4,536	0,000

Righting levers

Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	2,464	-0,152	3448,757	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	2,464	-0,153	3448,755	0,183	0,079	0,000	0,000	0,103	0,0009
2,0 (PS)	2,464	-0,153	3448,755	0,365	0,158	0,000	0,000	0,207	0,0036
3,0 (PS)	2,464	-0,155	3448,755	0,548	0,237	0,000	0,000	0,311	0,0081
4,0 (PS)	2,463	-0,156	3448,756	0,731	0,316	0,000	0,000	0,414	0,0144
5,0 (PS)	2,463	-0,158	3448,758	0,914	0,395	0,000	0,000	0,519	0,0226
6,0 (PS)	2,462	-0,161	3448,759	1,098	0,474	0,000	0,000	0,624	0,0326

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
7,0 (PS)	2,462	-0,164	3448,760	1,282	0,553	0,000	0,000	0,729	0,0444
8,0 (PS)	2,461	-0,168	3448,760	1,467	0,631	0,000	0,000	0,835	0,0580
9,0 (PS)	2,461	-0,172	3448,759	1,652	0,710	0,000	0,000	0,943	0,0735
10,0 (PS)	2,460	-0,177	3448,759	1,838	0,788	0,000	0,000	1,051	0,0909
11,0 (PS)	2,459	-0,185	3448,769	2,023	0,866	0,000	0,000	1,157	0,1102



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	5,922 m	\geq	1,000 m	Complies
Combined heeling moment	1,0 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	358,160 t*m			
Required freeboard	0,525 m	\geq	0,000 m	Complies
Deck immersion angle	4,9 degr			
Max allowed ratio static angle/deck immersion angle	0,206	\leq	1,000	Complies
Weight	358,160 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Summary of intact stability

Description	Density	Draft	Draft BoK	Trim	List	Displ.	VCG'	Max VCG'	GM'	Complies
		m	m	m	degr	t	m	m	m	
Containers empty	1,0000	0,665	0,665	0,064	0,0 (CL)	539,754	1,823	9,520	10,487	Complies
Containers 70 % full	1,0000	1,500	1,500	-0,034	0,0 (CL)	1273,074	2,732	4,867	3,215	Complies
Containers full	1,0000	1,855	1,855	-0,096	0,0 (CL)	1587,354	2,864	4,125	2,261	Complies
Containers empty 3 layers	1,0000	0,766	0,766	0,056	0,0 (CL)	627,954	2,656	7,238	8,069	Complies
Containers 70 % full 3 layers	1,0000	2,013	2,013	-0,127	0,0 (CL)	1727,934	4,052	3,626	0,822	FAILS
Containers full 3 layers	1,0000	2,541	2,541	-0,240	0,0 (CL)	2199,354	4,223	3,338	0,115	FAILS
Containers empty ALU	1,0000	0,546	0,546	0,050	0,0 (CL)	436,990	2,060	11,155	12,910	Complies
Containers 70 % full ALU	1,0000	1,384	1,384	-0,036	0,0 (CL)	1170,310	2,900	5,154	3,430	Complies
Containers full ALU	1,0000	1,739	1,739	-0,095	0,0 (CL)	1484,590	3,006	4,347	2,341	Complies
Containers empty 3 layers ALU	1,0000	0,648	0,648	0,044	0,0 (CL)	525,190	3,015	8,248	9,607	Complies
Containers 70 % full 3 layers ALU	1,0000	1,897	1,897	-0,124	0,0 (CL)	1625,170	4,257	3,724	0,795	FAILS
Containers full 3 layers ALU	1,0000	2,426	2,426	-0,234	0,0 (CL)	2096,590	4,390	3,410	0,034	FAILS

Components of deadweight

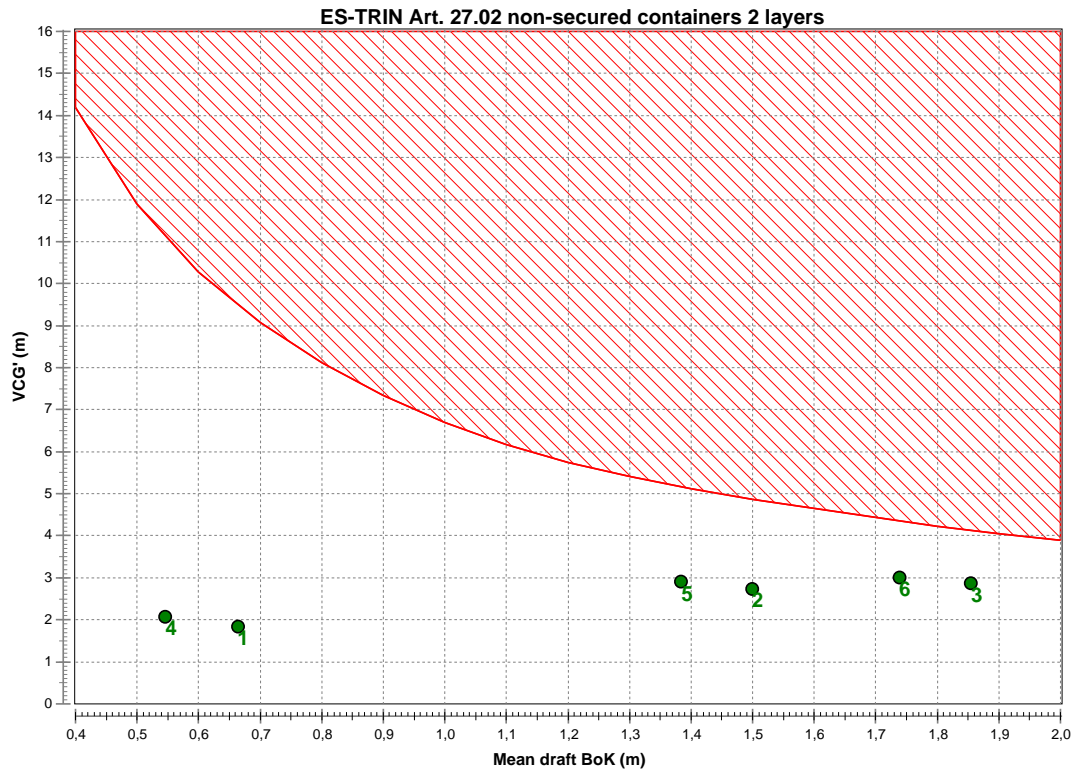
Loading condition	Deadweight	Containers t
Containers empty	176,400	176,400
Containers 70 % full	909,720	909,720
Containers full	1224,000	1224,000
Containers empty 3 layers	264,600	264,600
Containers 70 % full 3 layers	1364,580	1364,580
Containers full 3 layers	1836,000	1836,000
Containers empty ALU	176,400	176,400
Containers 70 % full ALU	909,720	909,720
Containers full ALU	1224,000	1224,000
Containers empty 3 layers ALU	264,600	264,600
Containers 70 % full 3 layers ALU	1364,580	1364,580
Containers full 3 layers ALU	1836,000	1836,000

Maximum VCG' envelope

Criteria : ES-TRIN Art. 27.02 non-secured containers 2 layers

Calculated for average trim : -0,025 m

Wind silhouette : 2 layers



Loading conditions:

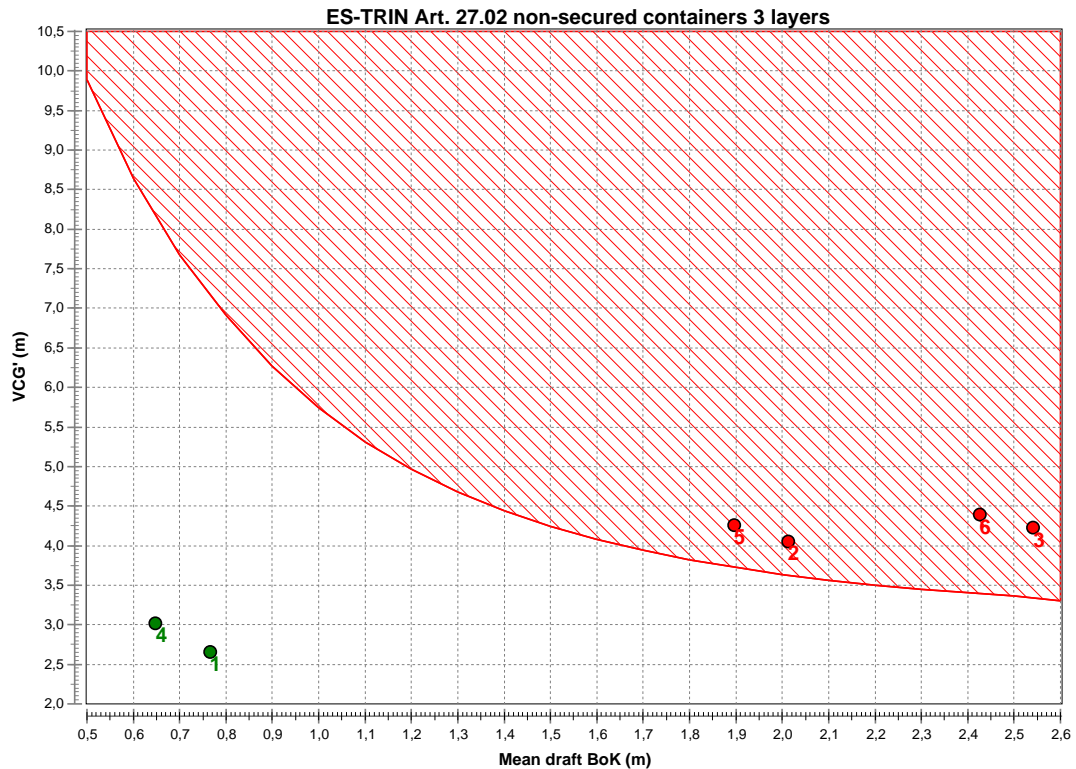
1. Containers empty
2. Containers 70 % full
3. Containers full
4. Containers empty ALU
5. Containers 70 % full ALU
6. Containers full ALU

Maximum VCG' envelope

Criteria : ES-TRIN Art. 27.02 non-secured containers 3 layers

Calculated for average trim : -0,104 m

Wind silhouette : 2 layers



Loading conditions:

1. Containers empty 3 layers
2. Containers 70 % full 3 layers
3. Containers full 3 layers
4. Containers empty 3 layers ALU
5. Containers 70 % full 3 layers ALU
6. Containers full 3 layers ALU

Containers empty

2020.056_006 IW-NET barge 3 abreast long

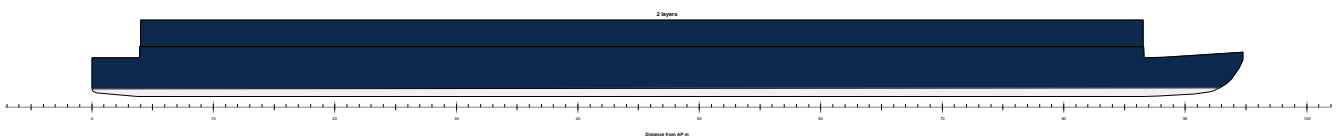
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_006_IW-NET 3 Units abreast long.fbm

Design length	94,770 m	Midship location	47,385 m
Length over all	94,766 m	Water density	1,0000
Design beam	9,500 m	Mean shell thickness	0,0000 m
Maximum beam	9,500 m	Appendage coefficient	1,0000
Design draft	1,850 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	1,823 m
Draft aft pp	0,633 m	GG'	0,000 m
Mean moulded draft	0,665 m	VCG'	1,823 m
Draft forward pp	0,697 m	Max VCG'	9,520 m
Trim	0,064 m	GM solid	10,487 m
LCF	45,782 m	G'M liquid	10,487 m
LCB	46,322 m	Immersion rate	8,686 tonne/cm
KM	12,311 m	MCT	63,816 t*m

Description	Density	Filling	Weight	LCG	TCG	VCG	FSM
		%	t	m	m	m	t*m

Containers

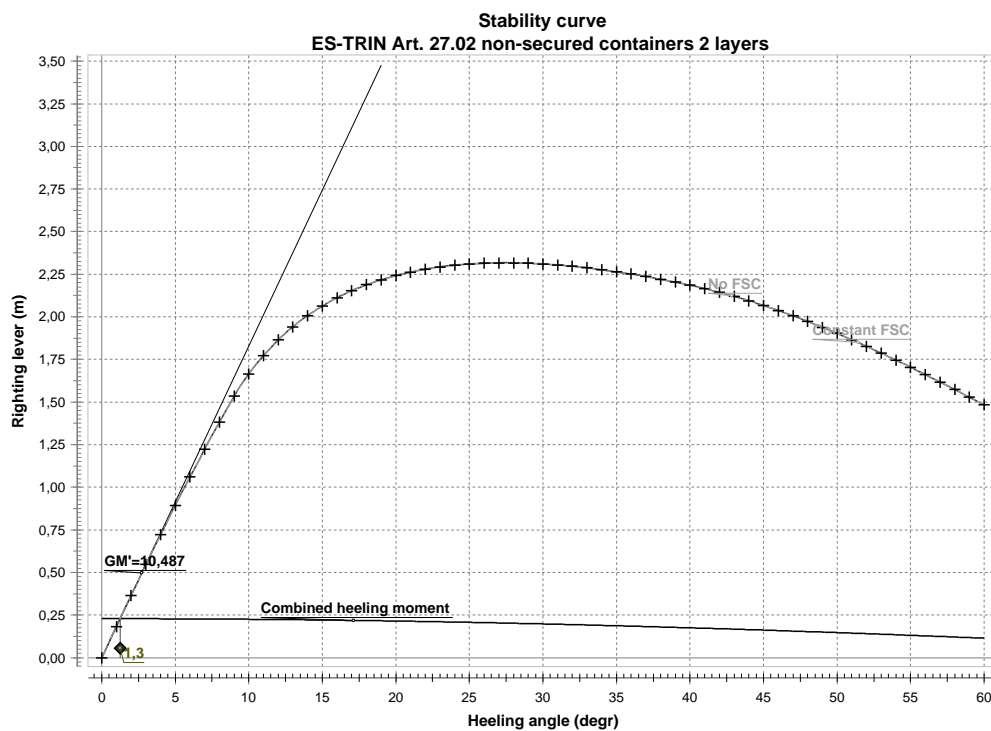
Containers empty			176,400	45,273	0,000 (CL)	3,400	0,000
No containers			0,000	0,000	0,000 (CL)	0,000	0,000
Totals for Containers			176,400	45,273	0,000 (CL)	3,400	0,000
Lightship			363,354	46,830	0,000 (CL)	1,058	
Deadweight			176,400	45,273	0,000 (CL)	3,400	0,000
Displacement			539,754	46,321	0,000 (CL)	1,823	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	0,665	0,064	539,753	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	0,665	0,064	539,754	0,215	0,032	0,000	0,000	0,183	0,0016
2,0 (PS)	0,665	0,064	539,754	0,430	0,064	0,000	0,000	0,366	0,0064
3,0 (PS)	0,664	0,063	539,754	0,642	0,095	0,000	0,000	0,547	0,0144
4,0 (PS)	0,663	0,063	539,754	0,850	0,127	0,000	0,000	0,722	0,0254
5,0 (PS)	0,661	0,062	539,754	1,053	0,159	0,000	0,000	0,894	0,0395
6,0 (PS)	0,658	0,062	539,754	1,251	0,191	0,000	0,000	1,061	0,0566
7,0 (PS)	0,654	0,062	539,753	1,446	0,222	0,000	0,000	1,223	0,0765
8,0 (PS)	0,650	0,061	539,750	1,636	0,254	0,000	0,000	1,382	0,0993
9,0 (PS)	0,644	0,062	539,752	1,819	0,285	0,000	0,000	1,534	0,1248
10,0 (PS)	0,635	0,064	539,752	1,981	0,317	0,000	0,000	1,664	0,1527
11,0 (PS)	0,622	0,066	539,753	2,121	0,348	0,000	0,000	1,773	0,1827
12,0 (PS)	0,606	0,069	539,749	2,243	0,379	0,000	0,000	1,864	0,2145
13,0 (PS)	0,586	0,071	539,752	2,352	0,410	0,000	0,000	1,942	0,2477
14,0 (PS)	0,564	0,073	539,749	2,449	0,441	0,000	0,000	2,008	0,2822
15,0 (PS)	0,539	0,075	539,752	2,536	0,472	0,000	0,000	2,064	0,3177
16,0 (PS)	0,512	0,077	539,751	2,615	0,503	0,000	0,000	2,112	0,3542
17,0 (PS)	0,482	0,078	539,750	2,686	0,533	0,000	0,000	2,153	0,3914
18,0 (PS)	0,450	0,080	539,753	2,751	0,563	0,000	0,000	2,188	0,4293
19,0 (PS)	0,417	0,082	539,752	2,811	0,594	0,000	0,000	2,218	0,4678
20,0 (PS)	0,380	0,084	539,752	2,866	0,624	0,000	0,000	2,242	0,5067
21,0 (PS)	0,342	0,085	539,752	2,916	0,653	0,000	0,000	2,263	0,5460
22,0 (PS)	0,302	0,087	539,752	2,963	0,683	0,000	0,000	2,280	0,5857
23,0 (PS)	0,260	0,088	539,749	3,005	0,712	0,000	0,000	2,293	0,6256
24,0 (PS)	0,216	0,090	539,750	3,045	0,742	0,000	0,000	2,303	0,6657
25,0 (PS)	0,170	0,091	539,751	3,081	0,771	0,000	0,000	2,310	0,7059
26,0 (PS)	0,122	0,092	539,752	3,114	0,799	0,000	0,000	2,315	0,7463
27,0 (PS)	0,072	0,093	539,749	3,145	0,828	0,000	0,000	2,317	0,7867
28,0 (PS)	0,020	0,094	539,751	3,173	0,856	0,000	0,000	2,317	0,8272
29,0 (PS)	-0,034	0,096	539,752	3,198	0,884	0,000	0,000	2,314	0,8676
30,0 (PS)	-0,090	0,097	539,753	3,222	0,912	0,000	0,000	2,310	0,9079
31,0 (PS)	-0,149	0,098	539,750	3,243	0,939	0,000	0,000	2,304	0,9482
32,0 (PS)	-0,210	0,098	539,752	3,263	0,966	0,000	0,000	2,297	0,9884
33,0 (PS)	-0,273	0,099	539,753	3,280	0,993	0,000	0,000	2,287	1,0284
34,0 (PS)	-0,339	0,100	539,749	3,296	1,020	0,000	0,000	2,277	1,0682
35,0 (PS)	-0,408	0,101	539,751	3,310	1,046	0,000	0,000	2,264	1,1078
36,0 (PS)	-0,479	0,102	539,752	3,323	1,072	0,000	0,000	2,251	1,1472
37,0 (PS)	-0,553	0,102	539,753	3,334	1,097	0,000	0,000	2,236	1,1864
38,0 (PS)	-0,630	0,103	539,750	3,343	1,123	0,000	0,000	2,220	1,2253
39,0 (PS)	-0,710	0,104	539,752	3,351	1,148	0,000	0,000	2,203	1,2639
40,0 (PS)	-0,793	0,105	539,753	3,358	1,172	0,000	0,000	2,185	1,3022
41,0 (PS)	-0,880	0,106	539,754	3,362	1,196	0,000	0,000	2,166	1,3402
42,0 (PS)	-0,969	0,108	539,749	3,364	1,220	0,000	0,000	2,144	1,3778
43,0 (PS)	-1,061	0,109	539,750	3,364	1,244	0,000	0,000	2,120	1,4150
44,0 (PS)	-1,157	0,110	539,751	3,361	1,267	0,000	0,000	2,095	1,4518
45,0 (PS)	-1,255	0,112	539,751	3,356	1,289	0,000	0,000	2,067	1,4881
46,0 (PS)	-1,358	0,112	539,752	3,349	1,312	0,000	0,000	2,037	1,5239
47,0 (PS)	-1,464	0,113	539,752	3,339	1,334	0,000	0,000	2,006	1,5592
48,0 (PS)	-1,574	0,114	539,752	3,328	1,355	0,000	0,000	1,973	1,5939
49,0 (PS)	-1,688	0,114	539,752	3,315	1,376	0,000	0,000	1,939	1,6281
50,0 (PS)	-1,807	0,114	539,752	3,300	1,397	0,000	0,000	1,903	1,6616

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
51,0 (PS)	-1,932	0,114	539,752	3,283	1,417	0,000	0,000	1,866	1,6945
52,0 (PS)	-2,062	0,114	539,752	3,264	1,437	0,000	0,000	1,827	1,7267
53,0 (PS)	-2,197	0,114	539,752	3,244	1,456	0,000	0,000	1,787	1,7583
54,0 (PS)	-2,339	0,114	539,752	3,222	1,475	0,000	0,000	1,747	1,7891
55,0 (PS)	-2,489	0,114	539,752	3,198	1,494	0,000	0,000	1,705	1,8192
56,0 (PS)	-2,646	0,113	539,751	3,173	1,512	0,000	0,000	1,661	1,8486
57,0 (PS)	-2,811	0,112	539,752	3,147	1,529	0,000	0,000	1,617	1,8772
58,0 (PS)	-2,986	0,110	539,752	3,119	1,546	0,000	0,000	1,573	1,9051
59,0 (PS)	-3,173	0,109	539,753	3,091	1,563	0,000	0,000	1,528	1,9321
60,0 (PS)	-3,372	0,107	539,754	3,063	1,579	0,000	0,000	1,484	1,9584



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	10,487 m	\geq	1,000 m	Complies
Combined heeling moment	1,3 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	123,580 t*m			
Required freeboard	2,404 m	\geq	0,000 m	Complies
Weight	123,580 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers 70 % full

2020.056_006 IW-NET barge 3 abreast long

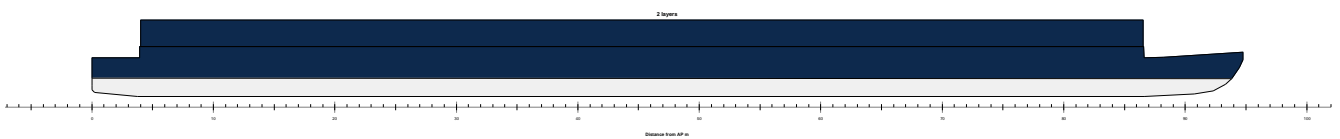
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_006_IW-NET3 Units abreast long.fbm

Design length	94,770 m	Midship location	47,385 m
Length over all	94,766 m	Water density	1,0000
Design beam	9,500 m	Mean shell thickness	0,0000 m
Maximum beam	9,500 m	Appendage coefficient	1,0000
Design draft	1,850 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,732 m
Draft aft pp	1,517 m	GG'	0,000 m
Mean moulded draft	1,500 m	VCG'	2,732 m
Draft forward pp	1,483 m	Max VCG'	4,867 m
Trim	-0,034 m	GM solid	3,215 m
LCF	46,482 m	G'M liquid	3,215 m
LCB	45,717 m	Immersion rate	8,830 tonne/cm
KM	5,946 m	MCT	66,845 t*m

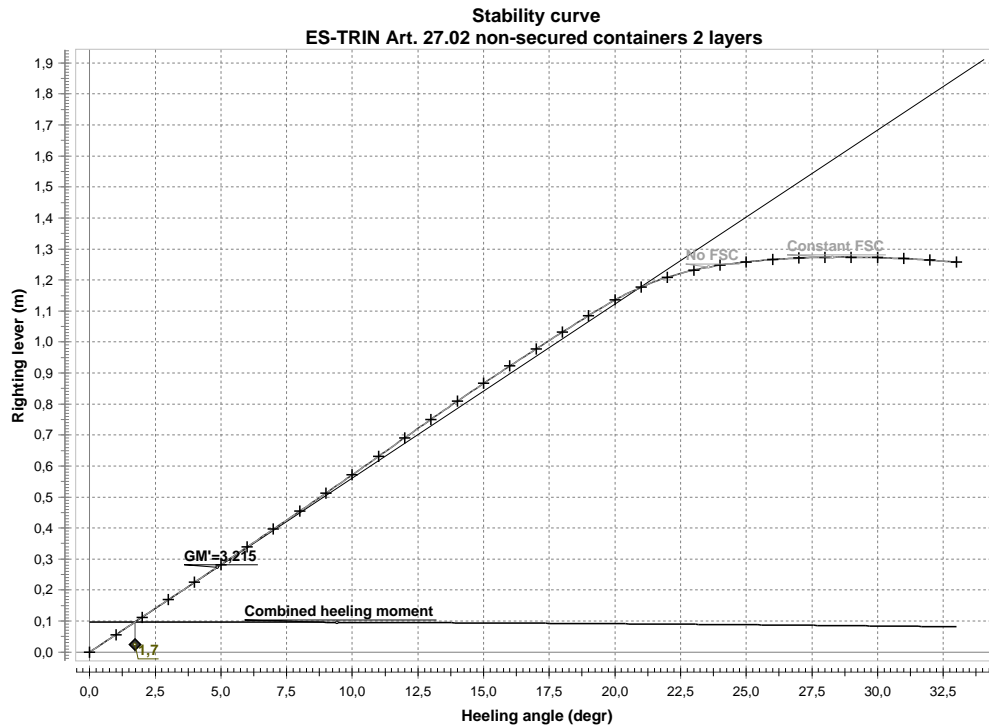
Description	Density	Filling	Weight	LCG	TCG	VCG	FSM
		%	t	m	m	m	t*m

Containers

Containers 70 % full			909,720	45,273	0,000 (CL)	3,400	0,000
No containers			0,000	0,000	0,000 (CL)	0,000	0,000
Totals for Containers			909,720	45,273	0,000 (CL)	3,400	0,000
Lightship			363,354	46,830	0,000 (CL)	1,058	
Deadweight			909,720	45,273	0,000 (CL)	3,400	0,000
Displacement			1273,074	45,717	0,000 (CL)	2,732	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,500	-0,034	1273,074	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,500	-0,034	1273,074	0,104	0,048	0,000	0,000	0,056	0,0005
2,0 (PS)	1,500	-0,035	1273,071	0,208	0,095	0,000	0,000	0,112	0,0020
3,0 (PS)	1,500	-0,035	1273,067	0,312	0,143	0,000	0,000	0,169	0,0044
4,0 (PS)	1,500	-0,036	1273,063	0,416	0,191	0,000	0,000	0,225	0,0078
5,0 (PS)	1,500	-0,038	1273,074	0,520	0,238	0,000	0,000	0,282	0,0123
6,0 (PS)	1,499	-0,039	1273,074	0,624	0,286	0,000	0,000	0,339	0,0177
7,0 (PS)	1,499	-0,041	1273,074	0,729	0,333	0,000	0,000	0,396	0,0241
8,0 (PS)	1,499	-0,043	1273,074	0,834	0,380	0,000	0,000	0,454	0,0315
9,0 (PS)	1,498	-0,045	1273,074	0,940	0,427	0,000	0,000	0,513	0,0400
10,0 (PS)	1,498	-0,047	1273,074	1,046	0,474	0,000	0,000	0,571	0,0494
11,0 (PS)	1,497	-0,050	1273,074	1,152	0,521	0,000	0,000	0,631	0,0599
12,0 (PS)	1,497	-0,053	1273,074	1,259	0,568	0,000	0,000	0,691	0,0714
13,0 (PS)	1,496	-0,057	1273,074	1,365	0,614	0,000	0,000	0,751	0,0840
14,0 (PS)	1,494	-0,061	1273,074	1,470	0,661	0,000	0,000	0,809	0,0976
15,0 (PS)	1,491	-0,065	1273,074	1,573	0,707	0,000	0,000	0,866	0,1123
16,0 (PS)	1,488	-0,069	1273,074	1,675	0,753	0,000	0,000	0,922	0,1279
17,0 (PS)	1,485	-0,073	1273,074	1,776	0,799	0,000	0,000	0,978	0,1445
18,0 (PS)	1,480	-0,077	1273,073	1,876	0,844	0,000	0,000	1,032	0,1620
19,0 (PS)	1,475	-0,082	1273,072	1,975	0,889	0,000	0,000	1,085	0,1805
20,0 (PS)	1,468	-0,087	1273,073	2,070	0,934	0,000	0,000	1,135	0,1999
21,0 (PS)	1,460	-0,095	1273,071	2,156	0,979	0,000	0,000	1,177	0,2201
22,0 (PS)	1,451	-0,104	1273,073	2,232	1,023	0,000	0,000	1,209	0,2409
23,0 (PS)	1,443	-0,114	1273,068	2,299	1,067	0,000	0,000	1,232	0,2622
24,0 (PS)	1,434	-0,124	1273,062	2,359	1,111	0,000	0,000	1,248	0,2838
25,0 (PS)	1,424	-0,133	1273,073	2,413	1,154	0,000	0,000	1,258	0,3057
26,0 (PS)	1,413	-0,142	1273,064	2,463	1,197	0,000	0,000	1,266	0,3278
27,0 (PS)	1,400	-0,150	1273,068	2,511	1,240	0,000	0,000	1,271	0,3499
28,0 (PS)	1,386	-0,158	1273,071	2,556	1,282	0,000	0,000	1,273	0,3721
29,0 (PS)	1,370	-0,166	1273,073	2,598	1,324	0,000	0,000	1,274	0,3943
30,0 (PS)	1,352	-0,173	1273,064	2,638	1,366	0,000	0,000	1,272	0,4165
31,0 (PS)	1,333	-0,181	1273,070	2,676	1,407	0,000	0,000	1,269	0,4387
32,0 (PS)	1,311	-0,187	1273,073	2,712	1,448	0,000	0,000	1,264	0,4608
33,0 (PS)	1,288	-0,194	1273,066	2,746	1,488	0,000	0,000	1,258	0,4828



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	3,215 m	\geq	1,000 m	Complies
Combined heeling moment	1,7 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	123,580 t*m			
Required freeboard	1,539 m	\geq	0,000 m	Complies
Weight	123,580 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers full

2020.056_006 IW-NET barge 3 abreast long

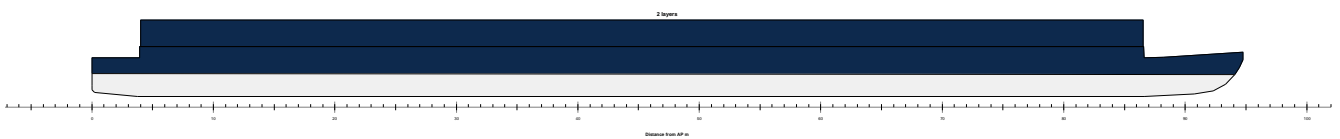
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_006_IW-NET3 Units abreast long.fbm

Design length	94,770 m	Midship location	47,385 m
Length over all	94,766 m	Water density	1,0000
Design beam	9,500 m	Mean shell thickness	0,0000 m
Maximum beam	9,500 m	Appendage coefficient	1,0000
Design draft	1,850 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,864 m
Draft aft pp	1,903 m	GG'	0,000 m
Mean moulded draft	1,855 m	VCG'	2,864 m
Draft forward pp	1,807 m	Max VCG'	4,125 m
Trim	-0,096 m	GM solid	2,261 m
LCF	46,698 m	G'M liquid	2,261 m
LCB	45,627 m	Immersion rate	8,871 tonne/cm
KM	5,125 m	MCT	67,727 t*m

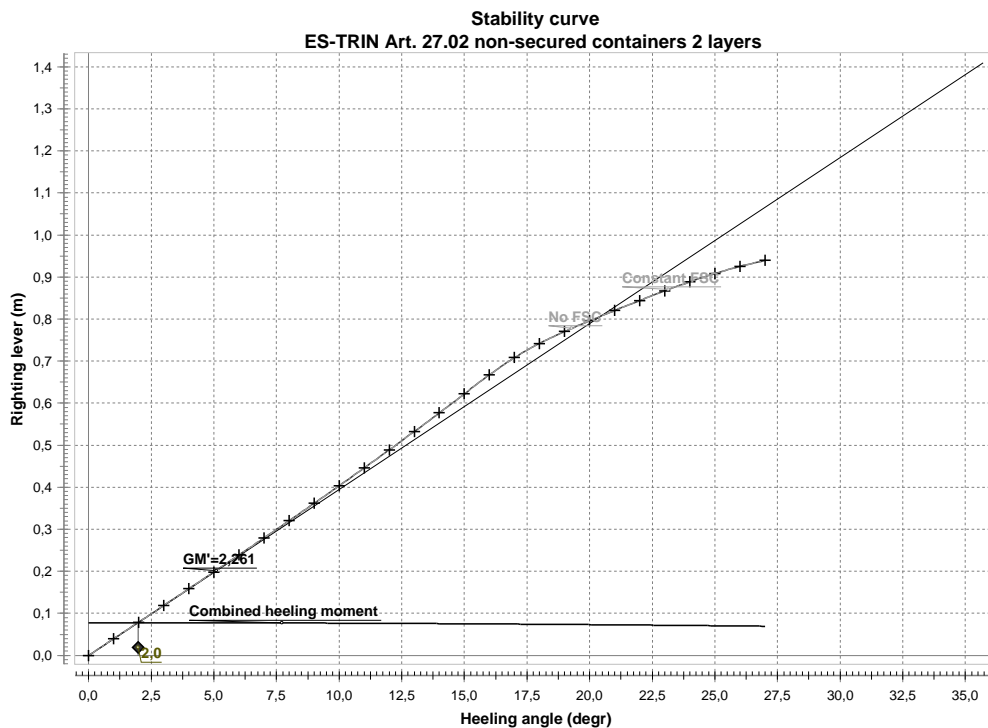
Description	Density	Filling	Weight	LCG	TCG	VCG	FSM
		%	t	m	m	m	t*m

Containers

Containers full			1224,000	45,273	0,000 (CL)	3,400	0,000
Lightship			363,354	46,830	0,000 (CL)	1,058	
Deadweight			1224,000	45,273	0,000 (CL)	3,400	0,000
Displacement			1587,354	45,629	0,000 (CL)	2,864	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,855	-0,096	1587,353	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,855	-0,096	1587,354	0,089	0,050	0,000	0,000	0,039	0,0003
2,0 (PS)	1,855	-0,096	1587,353	0,179	0,100	0,000	0,000	0,079	0,0014
3,0 (PS)	1,855	-0,097	1587,350	0,269	0,150	0,000	0,000	0,119	0,0031
4,0 (PS)	1,854	-0,098	1587,346	0,358	0,200	0,000	0,000	0,158	0,0055
5,0 (PS)	1,854	-0,099	1587,343	0,448	0,250	0,000	0,000	0,198	0,0086
6,0 (PS)	1,854	-0,100	1587,339	0,538	0,299	0,000	0,000	0,239	0,0124
7,0 (PS)	1,854	-0,102	1587,354	0,628	0,349	0,000	0,000	0,279	0,0170
8,0 (PS)	1,854	-0,103	1587,354	0,719	0,399	0,000	0,000	0,320	0,0222
9,0 (PS)	1,853	-0,105	1587,354	0,810	0,448	0,000	0,000	0,362	0,0281
10,0 (PS)	1,853	-0,107	1587,354	0,901	0,497	0,000	0,000	0,403	0,0348
11,0 (PS)	1,852	-0,110	1587,354	0,992	0,546	0,000	0,000	0,446	0,0422
12,0 (PS)	1,852	-0,113	1587,354	1,084	0,595	0,000	0,000	0,489	0,0504
13,0 (PS)	1,851	-0,116	1587,354	1,177	0,644	0,000	0,000	0,532	0,0593
14,0 (PS)	1,851	-0,119	1587,354	1,270	0,693	0,000	0,000	0,577	0,0690
15,0 (PS)	1,850	-0,122	1587,354	1,363	0,741	0,000	0,000	0,622	0,0794
16,0 (PS)	1,850	-0,127	1587,354	1,457	0,789	0,000	0,000	0,667	0,0907
17,0 (PS)	1,850	-0,136	1587,356	1,545	0,837	0,000	0,000	0,708	0,1027
18,0 (PS)	1,853	-0,146	1587,363	1,627	0,885	0,000	0,000	0,742	0,1154
19,0 (PS)	1,857	-0,156	1587,360	1,703	0,932	0,000	0,000	0,770	0,1286
20,0 (PS)	1,862	-0,165	1587,362	1,775	0,980	0,000	0,000	0,796	0,1422
21,0 (PS)	1,866	-0,174	1587,353	1,847	1,026	0,000	0,000	0,820	0,1563
22,0 (PS)	1,870	-0,182	1587,353	1,917	1,073	0,000	0,000	0,844	0,1709
23,0 (PS)	1,873	-0,190	1587,353	1,986	1,119	0,000	0,000	0,867	0,1858
24,0 (PS)	1,876	-0,199	1587,353	2,053	1,165	0,000	0,000	0,889	0,2011
25,0 (PS)	1,878	-0,208	1587,352	2,119	1,210	0,000	0,000	0,908	0,2168
26,0 (PS)	1,878	-0,217	1587,353	2,181	1,255	0,000	0,000	0,925	0,2328
27,0 (PS)	1,877	-0,226	1587,351	2,240	1,300	0,000	0,000	0,939	0,2491



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	2,261 m	>=	1,000 m	Complies
Combined heeling moment	2,0 degr	<=	5,0 degr	Complies
Calculated heeling moment (upright)	123,580 t*m			
Required freeboard	1,133 m	>=	0,000 m	Complies
Weight	123,580 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers empty 3 layers

2020.056_006 IW-NET barge 3 abreast long

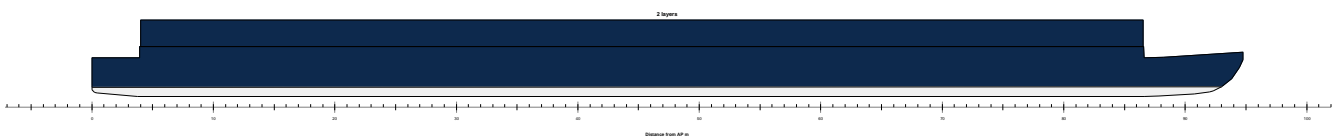
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_006_IW-NET 3 Units abreast long.fbm

Design length	94,770 m	Midship location	47,385 m
Length over all	94,766 m	Water density	1,0000
Design beam	9,500 m	Mean shell thickness	0,0000 m
Maximum beam	9,500 m	Appendage coefficient	1,0000
Design draft	1,850 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,656 m
Draft aft pp	0,738 m	GG'	0,000 m
Mean moulded draft	0,766 m	VCG'	2,656 m
Draft forward pp	0,794 m	Max VCG'	7,238 m
Trim	0,056 m	GM solid	8,069 m
LCF	45,872 m	G'M liquid	8,069 m
LCB	46,175 m	Immersion rate	8,711 tonne/cm
KM	10,724 m	MCT	64,301 t*m

Description	Density	Filling	Weight	LCG	TCG	VCG	FSM
		%	t	m	m	m	t*m

Containers

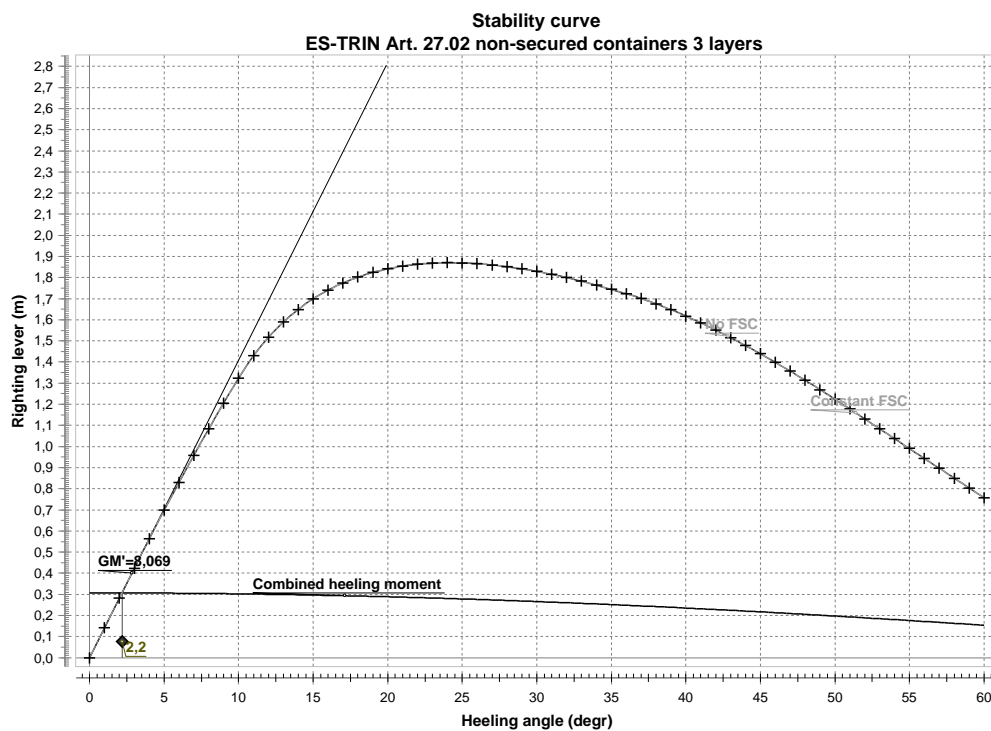
Containers empty			176,400	45,273	0,000 (CL)	3,400	0,000
3rd layer empty			88,200	45,273	0,000 (CL)	7,748	0,000
Totals for Containers			264,600	45,273	0,000 (CL)	4,849	0,000
Lightship			363,354	46,830	0,000 (CL)	1,058	
Deadweight			264,600	45,273	0,000 (CL)	4,849	0,000
Displacement			627,954	46,174	0,000 (CL)	2,656	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	0,766	0,056	627,954	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	0,766	0,056	627,950	0,187	0,046	0,000	0,000	0,141	0,0012
2,0 (PS)	0,766	0,056	627,954	0,374	0,093	0,000	0,000	0,282	0,0049
3,0 (PS)	0,766	0,055	627,954	0,562	0,139	0,000	0,000	0,423	0,0111
4,0 (PS)	0,765	0,054	627,954	0,747	0,185	0,000	0,000	0,562	0,0197
5,0 (PS)	0,764	0,054	627,954	0,930	0,231	0,000	0,000	0,698	0,0307
6,0 (PS)	0,762	0,053	627,954	1,108	0,278	0,000	0,000	0,830	0,0440
7,0 (PS)	0,759	0,052	627,950	1,283	0,324	0,000	0,000	0,959	0,0596
8,0 (PS)	0,756	0,051	627,954	1,454	0,370	0,000	0,000	1,084	0,0775
9,0 (PS)	0,752	0,050	627,953	1,622	0,415	0,000	0,000	1,206	0,0975
10,0 (PS)	0,747	0,049	627,954	1,786	0,461	0,000	0,000	1,324	0,1195
11,0 (PS)	0,739	0,050	627,948	1,936	0,507	0,000	0,000	1,430	0,1436
12,0 (PS)	0,728	0,050	627,951	2,069	0,552	0,000	0,000	1,517	0,1693
13,0 (PS)	0,714	0,051	627,953	2,186	0,597	0,000	0,000	1,589	0,1965
14,0 (PS)	0,696	0,052	627,950	2,292	0,642	0,000	0,000	1,649	0,2247
15,0 (PS)	0,676	0,053	627,953	2,387	0,687	0,000	0,000	1,699	0,2540
16,0 (PS)	0,654	0,054	627,952	2,473	0,732	0,000	0,000	1,741	0,2840
17,0 (PS)	0,628	0,055	627,950	2,551	0,776	0,000	0,000	1,775	0,3147
18,0 (PS)	0,601	0,055	627,949	2,623	0,821	0,000	0,000	1,802	0,3459
19,0 (PS)	0,571	0,056	627,953	2,689	0,865	0,000	0,000	1,824	0,3776
20,0 (PS)	0,540	0,057	627,952	2,749	0,908	0,000	0,000	1,841	0,4096
21,0 (PS)	0,506	0,057	627,952	2,806	0,952	0,000	0,000	1,854	0,4418
22,0 (PS)	0,470	0,058	627,952	2,857	0,995	0,000	0,000	1,863	0,4743
23,0 (PS)	0,432	0,058	627,948	2,905	1,038	0,000	0,000	1,868	0,5068
24,0 (PS)	0,392	0,059	627,950	2,950	1,080	0,000	0,000	1,870	0,5394
25,0 (PS)	0,350	0,059	627,951	2,991	1,122	0,000	0,000	1,869	0,5721
26,0 (PS)	0,306	0,060	627,952	3,030	1,164	0,000	0,000	1,865	0,6047
27,0 (PS)	0,260	0,060	627,948	3,065	1,206	0,000	0,000	1,860	0,6372
28,0 (PS)	0,212	0,060	627,950	3,098	1,247	0,000	0,000	1,851	0,6696
29,0 (PS)	0,162	0,061	627,952	3,129	1,287	0,000	0,000	1,841	0,7018
30,0 (PS)	0,110	0,061	627,953	3,157	1,328	0,000	0,000	1,829	0,7338
31,0 (PS)	0,055	0,061	627,950	3,183	1,368	0,000	0,000	1,815	0,7656
32,0 (PS)	-0,002	0,061	627,952	3,207	1,407	0,000	0,000	1,800	0,7972
33,0 (PS)	-0,061	0,061	627,953	3,229	1,446	0,000	0,000	1,783	0,8284
34,0 (PS)	-0,123	0,061	627,949	3,249	1,485	0,000	0,000	1,764	0,8594
35,0 (PS)	-0,187	0,061	627,952	3,268	1,523	0,000	0,000	1,745	0,8900
36,0 (PS)	-0,254	0,061	627,953	3,285	1,561	0,000	0,000	1,724	0,9203
37,0 (PS)	-0,324	0,061	627,953	3,299	1,598	0,000	0,000	1,701	0,9502
38,0 (PS)	-0,395	0,061	627,953	3,311	1,635	0,000	0,000	1,676	0,9796
39,0 (PS)	-0,469	0,061	627,954	3,319	1,671	0,000	0,000	1,648	1,0086
40,0 (PS)	-0,544	0,061	627,949	3,325	1,707	0,000	0,000	1,618	1,0371
41,0 (PS)	-0,622	0,060	627,949	3,328	1,742	0,000	0,000	1,586	1,0651
42,0 (PS)	-0,702	0,059	627,950	3,329	1,777	0,000	0,000	1,552	1,0925
43,0 (PS)	-0,785	0,058	627,950	3,327	1,811	0,000	0,000	1,516	1,1193
44,0 (PS)	-0,871	0,057	627,950	3,323	1,845	0,000	0,000	1,478	1,1454
45,0 (PS)	-0,960	0,055	627,950	3,317	1,878	0,000	0,000	1,439	1,1708
46,0 (PS)	-1,051	0,053	627,950	3,309	1,910	0,000	0,000	1,399	1,1956
47,0 (PS)	-1,147	0,051	627,950	3,299	1,942	0,000	0,000	1,357	1,2197
48,0 (PS)	-1,246	0,049	627,949	3,287	1,973	0,000	0,000	1,313	1,2430
49,0 (PS)	-1,348	0,046	627,949	3,273	2,004	0,000	0,000	1,269	1,2655
50,0 (PS)	-1,455	0,044	627,949	3,258	2,034	0,000	0,000	1,223	1,2872

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
51,0 (PS)	-1,568	0,041	627,950	3,241	2,064	0,000	0,000	1,177	1,3082
52,0 (PS)	-1,686	0,038	627,951	3,224	2,093	0,000	0,000	1,131	1,3283
53,0 (PS)	-1,811	0,035	627,952	3,205	2,121	0,000	0,000	1,085	1,3477
54,0 (PS)	-1,942	0,032	627,953	3,186	2,148	0,000	0,000	1,038	1,3662
55,0 (PS)	-2,081	0,029	627,954	3,166	2,175	0,000	0,000	0,991	1,3839
56,0 (PS)	-2,229	0,027	627,950	3,146	2,202	0,000	0,000	0,944	1,4008
57,0 (PS)	-2,385	0,025	627,953	3,124	2,227	0,000	0,000	0,897	1,4169
58,0 (PS)	-2,551	0,022	627,954	3,102	2,252	0,000	0,000	0,850	1,4321
59,0 (PS)	-2,728	0,020	627,950	3,080	2,276	0,000	0,000	0,803	1,4465
60,0 (PS)	-2,917	0,019	627,954	3,057	2,300	0,000	0,000	0,757	1,4602



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	8,069 m	\geq	1,000 m	Complies
Combined heeling moment	2,2 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	192,770 t*m			
Required freeboard	2,229 m	\geq	0,000 m	Complies
Weight	192,770 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers 70 % full 3 layers

2020.056_006 IW-NET barge 3 abreast long

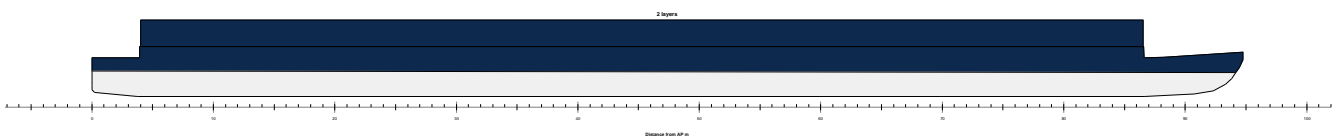
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_006_IW-NET3 Units abreast long.fbm

Design length	94,770 m	Midship location	47,385 m
Length over all	94,766 m	Water density	1,0000
Design beam	9,500 m	Mean shell thickness	0,0000 m
Maximum beam	9,500 m	Appendage coefficient	1,0000
Design draft	1,850 m		



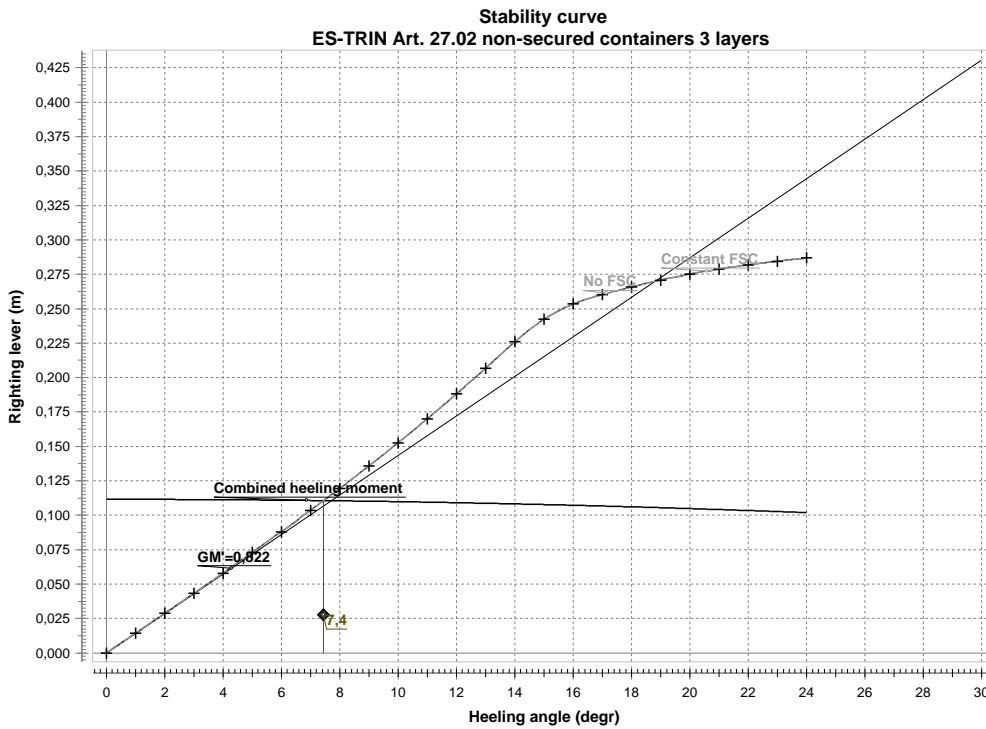
Hydrostatic particulars

List	0,0 (CL) degr	VCG	4,052 m
Draft aft pp	2,076 m	GG'	0,000 m
Mean moulded draft	2,013 m	VCG'	4,052 m
Draft forward pp	1,949 m	Max VCG'	3,626 m
Trim	-0,127 m	GM solid	0,822 m
LCF	46,784 m	G'M liquid	0,822 m
LCB	45,596 m	Immersion rate	8,888 tonne/cm
KM	4,874 m	MCT	67,874 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
Containers							
Containers 70 % full			909,720	45,273	0,000 (CL)	3,400	0,000
3rd layer 70 % full			454,860	45,273	0,000 (CL)	7,748	0,000
Totals for Containers			1364,580	45,273	0,000 (CL)	4,849	0,000
Lightship			363,354	46,830	0,000 (CL)	1,058	
Deadweight			1364,580	45,273	0,000 (CL)	4,849	0,000
Displacement			1727,934	45,600	0,000 (CL)	4,052	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	2,013	-0,127	1727,933	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	2,013	-0,127	1727,934	0,085	0,071	0,000	0,000	0,014	0,0001
2,0 (PS)	2,013	-0,127	1727,933	0,170	0,141	0,000	0,000	0,029	0,0005
3,0 (PS)	2,013	-0,128	1727,931	0,255	0,212	0,000	0,000	0,043	0,0011
4,0 (PS)	2,013	-0,129	1727,928	0,341	0,283	0,000	0,000	0,058	0,0020
5,0 (PS)	2,012	-0,130	1727,925	0,426	0,353	0,000	0,000	0,073	0,0032
6,0 (PS)	2,012	-0,131	1727,922	0,512	0,424	0,000	0,000	0,088	0,0046
7,0 (PS)	2,012	-0,132	1727,919	0,597	0,494	0,000	0,000	0,104	0,0062
8,0 (PS)	2,012	-0,134	1727,934	0,683	0,564	0,000	0,000	0,119	0,0082
9,0 (PS)	2,011	-0,136	1727,934	0,770	0,634	0,000	0,000	0,136	0,0104
10,0 (PS)	2,011	-0,138	1727,934	0,856	0,704	0,000	0,000	0,153	0,0129
11,0 (PS)	2,011	-0,140	1727,934	0,943	0,773	0,000	0,000	0,170	0,0157
12,0 (PS)	2,010	-0,142	1727,934	1,031	0,842	0,000	0,000	0,188	0,0189
13,0 (PS)	2,010	-0,145	1727,934	1,118	0,912	0,000	0,000	0,207	0,0223
14,0 (PS)	2,009	-0,149	1727,934	1,206	0,980	0,000	0,000	0,226	0,0261
15,0 (PS)	2,010	-0,156	1727,945	1,291	1,049	0,000	0,000	0,242	0,0302
16,0 (PS)	2,014	-0,167	1727,935	1,370	1,117	0,000	0,000	0,253	0,0345
17,0 (PS)	2,020	-0,176	1727,945	1,445	1,185	0,000	0,000	0,260	0,0390
18,0 (PS)	2,027	-0,184	1727,935	1,518	1,252	0,000	0,000	0,266	0,0436
19,0 (PS)	2,033	-0,193	1727,934	1,590	1,319	0,000	0,000	0,271	0,0483
20,0 (PS)	2,040	-0,201	1727,925	1,661	1,386	0,000	0,000	0,275	0,0530
21,0 (PS)	2,046	-0,209	1727,934	1,731	1,452	0,000	0,000	0,279	0,0579
22,0 (PS)	2,052	-0,217	1727,921	1,800	1,518	0,000	0,000	0,282	0,0628
23,0 (PS)	2,057	-0,224	1727,928	1,868	1,583	0,000	0,000	0,285	0,0677
24,0 (PS)	2,062	-0,232	1727,933	1,935	1,648	0,000	0,000	0,287	0,0727



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	0,822 m	\geq	1,000 m	FAILS
Combined heeling moment	7,4 degr	\leq	5,0 degr	FAILS
Calculated heeling moment (upright)	192,770 t*m			
Required freeboard	0,497 m	\geq	0,000 m	Complies
Weight	192,770 t			
Trv. location of weight	1,000 m			

The condition does NOT comply with the stability criteria

Containers full 3 layers

2020.056_006 IW-NET barge 3 abreast long

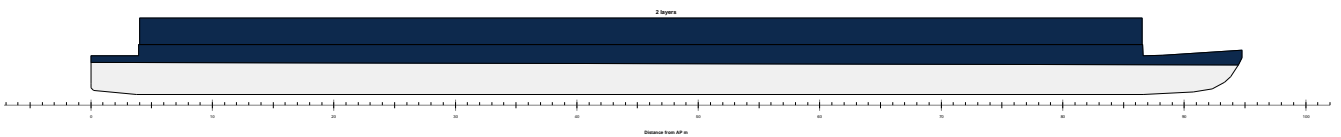
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_006_IW-NET3 Units abreast long.fbm

Design length	94,770 m	Midship location	47,385 m
Length over all	94,766 m	Water density	1,0000
Design beam	9,500 m	Mean shell thickness	0,0000 m
Maximum beam	9,500 m	Appendage coefficient	1,0000
Design draft	1,850 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	4,223 m
Draft aft pp	2,662 m	GG'	0,000 m
Mean moulded draft	2,541 m	VCG'	4,223 m
Draft forward pp	2,421 m	Max VCG'	3,338 m
Trim	-0,240 m	GM solid	0,115 m
LCF	47,033 m	G'M liquid	0,115 m
LCB	45,522 m	Immersion rate	8,935 tonne/cm
KM	4,338 m	MCT	68,843 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers full			1224,000	45,273	0,000 (CL)	3,400	0,000
3rd layer full			612,000	45,273	0,000 (CL)	7,748	0,000
Totals for Containers			1836,000	45,273	0,000 (CL)	4,849	0,000

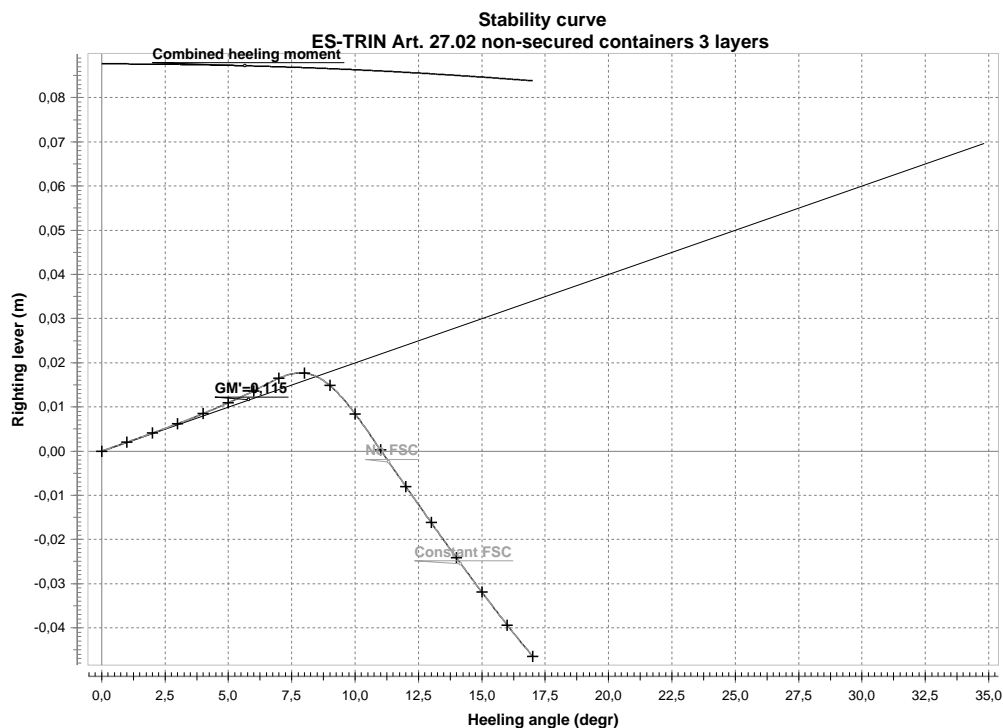
Lightship			363,354	46,830	0,000 (CL)	1,058	
Deadweight			1836,000	45,273	0,000 (CL)	4,849	0,000
Displacement			2199,354	45,530	0,000 (CL)	4,223	0,000

Righting levers

Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	2,541	-0,240	2199,353	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	2,541	-0,241	2199,354	0,076	0,074	0,000	0,000	0,002	0,0000
2,0 (PS)	2,541	-0,241	2199,354	0,151	0,147	0,000	0,000	0,004	0,0001
3,0 (PS)	2,541	-0,241	2199,353	0,227	0,221	0,000	0,000	0,006	0,0002
4,0 (PS)	2,541	-0,242	2199,352	0,303	0,295	0,000	0,000	0,008	0,0003
5,0 (PS)	2,541	-0,242	2199,351	0,379	0,368	0,000	0,000	0,011	0,0005
6,0 (PS)	2,541	-0,243	2199,349	0,455	0,441	0,000	0,000	0,014	0,0007
7,0 (PS)	2,541	-0,244	2199,354	0,531	0,515	0,000	0,000	0,017	0,0009
8,0 (PS)	2,542	-0,251	2199,357	0,605	0,588	0,000	0,000	0,018	0,0012

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
9,0 (PS)	2,545	-0,263	2199,358	0,675	0,661	0,000	0,000	0,015	0,0015
10,0 (PS)	2,551	-0,273	2199,356	0,742	0,733	0,000	0,000	0,008	0,0017
11,0 (PS)	2,557	-0,281	2199,376	0,806	0,806	0,000	0,000	0,000	0,0018
12,0 (PS)	2,565	-0,288	2199,359	0,870	0,878	0,000	0,000	-0,008	0,0018
13,0 (PS)	2,572	-0,295	2199,357	0,934	0,950	0,000	0,000	-0,016	0,0018
14,0 (PS)	2,580	-0,301	2199,356	0,997	1,022	0,000	0,000	-0,024	0,0018
15,0 (PS)	2,588	-0,306	2199,355	1,061	1,093	0,000	0,000	-0,032	0,0018
16,0 (PS)	2,596	-0,311	2199,355	1,125	1,164	0,000	0,000	-0,039	0,0018
17,0 (PS)	2,605	-0,316	2199,354	1,188	1,235	0,000	0,000	-0,046	0,0018



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	0,115 m	\geq	1,000 m	FAILS
Combined heeling moment	180,0 degr	\leq	5,0 degr	FAILS
Calculated heeling moment (upright)	192,770 t*m			
Required freeboard	-100,000 m	\geq	0,000 m	FAILS
Weight	192,770 t			
Trv. location of weight	1,000 m			

The condition does NOT comply with the stability criteria

Containers empty ALU

2020.056_006 IW-NET barge 3 abreast long

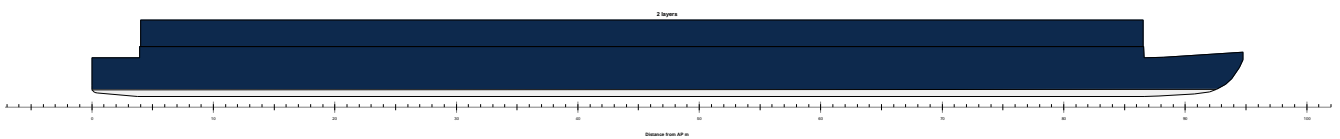
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_006_IW-NET 3 Units abreast long.fbm

Design length	94,770 m	Midship location	47,385 m
Length over all	94,766 m	Water density	1,0000
Design beam	9,500 m	Mean shell thickness	0,0000 m
Maximum beam	9,500 m	Appendage coefficient	1,0000
Design draft	1,850 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,060 m
Draft aft pp	0,521 m	GG'	0,000 m
Mean moulded draft	0,546 m	VCG'	2,060 m
Draft forward pp	0,571 m	Max VCG'	11,155 m
Trim	0,050 m	GM solid	12,910 m
LCF	45,668 m	G'M liquid	12,910 m
LCB	46,264 m	Immersion rate	8,648 tonne/cm
KM	14,970 m	MCT	62,997 t*m

Description	Density	Filling	Weight	LCG	TCG	VCG	FSM
		%	t	m	m	m	t*m

Containers

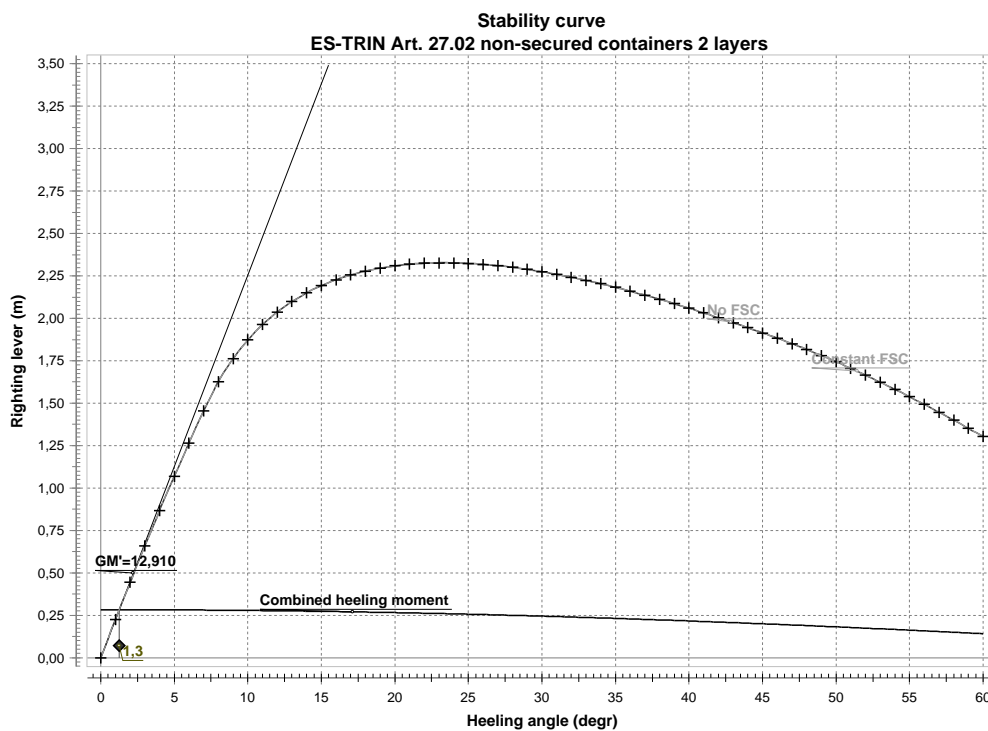
Containers empty			176,400	45,273	0,000 (CL)	3,400	0,000
Lightship			260,590	46,934	0,000 (CL)	1,153	
Deadweight			176,400	45,273	0,000 (CL)	3,400	0,000
Displacement			436,990	46,264	0,000 (CL)	2,060	0,000

Righting levers

Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	0,546	0,050	436,989	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	0,546	0,050	436,990	0,261	0,036	0,000	0,000	0,225	0,0020
2,0 (PS)	0,545	0,050	436,990	0,516	0,072	0,000	0,000	0,444	0,0078
3,0 (PS)	0,544	0,050	436,990	0,766	0,108	0,000	0,000	0,658	0,0174
4,0 (PS)	0,541	0,050	436,989	1,010	0,144	0,000	0,000	0,866	0,0307
5,0 (PS)	0,538	0,050	436,990	1,248	0,180	0,000	0,000	1,068	0,0476
6,0 (PS)	0,534	0,051	436,988	1,480	0,215	0,000	0,000	1,265	0,0680
7,0 (PS)	0,529	0,051	436,989	1,707	0,251	0,000	0,000	1,456	0,0917
8,0 (PS)	0,522	0,053	436,988	1,913	0,287	0,000	0,000	1,626	0,1187
9,0 (PS)	0,509	0,056	436,988	2,084	0,322	0,000	0,000	1,762	0,1483
10,0 (PS)	0,493	0,059	436,989	2,230	0,358	0,000	0,000	1,872	0,1800
11,0 (PS)	0,473	0,062	436,989	2,356	0,393	0,000	0,000	1,963	0,2135
12,0 (PS)	0,450	0,064	436,987	2,465	0,428	0,000	0,000	2,037	0,2485
13,0 (PS)	0,424	0,067	436,989	2,562	0,463	0,000	0,000	2,099	0,2846
14,0 (PS)	0,396	0,069	436,987	2,649	0,498	0,000	0,000	2,150	0,3217
15,0 (PS)	0,365	0,071	436,986	2,726	0,533	0,000	0,000	2,193	0,3596
16,0 (PS)	0,331	0,074	436,988	2,795	0,568	0,000	0,000	2,227	0,3982
17,0 (PS)	0,296	0,076	436,988	2,858	0,602	0,000	0,000	2,256	0,4373
18,0 (PS)	0,258	0,078	436,987	2,915	0,637	0,000	0,000	2,279	0,4769
19,0 (PS)	0,219	0,080	436,987	2,967	0,671	0,000	0,000	2,296	0,5168
20,0 (PS)	0,177	0,082	436,987	3,014	0,705	0,000	0,000	2,310	0,5570
21,0 (PS)	0,134	0,083	436,987	3,057	0,738	0,000	0,000	2,319	0,5974
22,0 (PS)	0,088	0,085	436,987	3,096	0,772	0,000	0,000	2,325	0,6379
23,0 (PS)	0,041	0,087	436,988	3,132	0,805	0,000	0,000	2,327	0,6785
24,0 (PS)	-0,008	0,088	436,988	3,165	0,838	0,000	0,000	2,327	0,7191
25,0 (PS)	-0,060	0,090	436,989	3,194	0,871	0,000	0,000	2,324	0,7597
26,0 (PS)	-0,113	0,091	436,987	3,221	0,903	0,000	0,000	2,318	0,8002
27,0 (PS)	-0,168	0,093	436,988	3,246	0,935	0,000	0,000	2,310	0,8406
28,0 (PS)	-0,225	0,094	436,989	3,267	0,967	0,000	0,000	2,300	0,8809
29,0 (PS)	-0,284	0,095	436,986	3,287	0,999	0,000	0,000	2,288	0,9209
30,0 (PS)	-0,346	0,096	436,988	3,305	1,030	0,000	0,000	2,275	0,9607
31,0 (PS)	-0,410	0,098	436,988	3,320	1,061	0,000	0,000	2,259	1,0003
32,0 (PS)	-0,476	0,099	436,986	3,334	1,092	0,000	0,000	2,242	1,0396
33,0 (PS)	-0,544	0,100	436,987	3,346	1,122	0,000	0,000	2,224	1,0786
34,0 (PS)	-0,615	0,101	436,988	3,356	1,152	0,000	0,000	2,204	1,1172
35,0 (PS)	-0,689	0,102	436,989	3,364	1,182	0,000	0,000	2,183	1,1555
36,0 (PS)	-0,765	0,103	436,986	3,371	1,211	0,000	0,000	2,160	1,1934
37,0 (PS)	-0,844	0,104	436,988	3,376	1,240	0,000	0,000	2,137	1,2309
38,0 (PS)	-0,927	0,105	436,989	3,380	1,268	0,000	0,000	2,112	1,2680
39,0 (PS)	-1,012	0,106	436,989	3,383	1,296	0,000	0,000	2,086	1,3046
40,0 (PS)	-1,101	0,106	436,987	3,384	1,324	0,000	0,000	2,060	1,3408
41,0 (PS)	-1,193	0,107	436,988	3,384	1,352	0,000	0,000	2,032	1,3765
42,0 (PS)	-1,289	0,108	436,989	3,382	1,378	0,000	0,000	2,004	1,4117
43,0 (PS)	-1,390	0,109	436,986	3,379	1,405	0,000	0,000	1,975	1,4464
44,0 (PS)	-1,494	0,109	436,988	3,376	1,431	0,000	0,000	1,945	1,4806
45,0 (PS)	-1,603	0,110	436,989	3,371	1,457	0,000	0,000	1,914	1,5143
46,0 (PS)	-1,717	0,111	436,990	3,365	1,482	0,000	0,000	1,883	1,5474
47,0 (PS)	-1,835	0,113	436,987	3,357	1,507	0,000	0,000	1,851	1,5800
48,0 (PS)	-1,958	0,115	436,987	3,348	1,531	0,000	0,000	1,817	1,6120
49,0 (PS)	-2,086	0,116	436,988	3,336	1,555	0,000	0,000	1,781	1,6434
50,0 (PS)	-2,220	0,118	436,988	3,322	1,578	0,000	0,000	1,744	1,6742

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
51,0 (PS)	-2,359	0,119	436,989	3,306	1,601	0,000	0,000	1,705	1,7043
52,0 (PS)	-2,504	0,120	436,989	3,289	1,623	0,000	0,000	1,665	1,7337
53,0 (PS)	-2,656	0,122	436,989	3,269	1,645	0,000	0,000	1,624	1,7624
54,0 (PS)	-2,815	0,122	436,989	3,248	1,667	0,000	0,000	1,581	1,7904
55,0 (PS)	-2,982	0,123	436,989	3,225	1,687	0,000	0,000	1,538	1,8176
56,0 (PS)	-3,157	0,124	436,989	3,201	1,708	0,000	0,000	1,493	1,8441
57,0 (PS)	-3,342	0,124	436,989	3,174	1,728	0,000	0,000	1,447	1,8697
58,0 (PS)	-3,537	0,124	436,989	3,147	1,747	0,000	0,000	1,400	1,8946
59,0 (PS)	-3,744	0,125	436,989	3,118	1,766	0,000	0,000	1,352	1,9186
60,0 (PS)	-3,962	0,125	436,989	3,087	1,784	0,000	0,000	1,303	1,9417



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	12,910 m	\geq	1,000 m	Complies
Combined heeling moment	1,3 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	123,580 t*m			
Required freeboard	2,528 m	\geq	0,000 m	Complies
Weight	123,580 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers 70 % full ALU

2020.056_006 IW-NET barge 3 abreast long

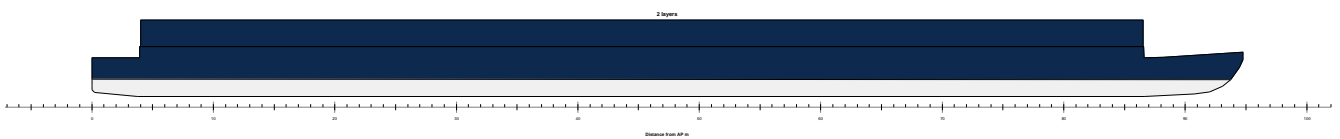
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_006_IW-NET3 Units abreast long.fbm

Design length	94,770 m	Midship location	47,385 m
Length over all	94,766 m	Water density	1,0000
Design beam	9,500 m	Mean shell thickness	0,0000 m
Maximum beam	9,500 m	Appendage coefficient	1,0000
Design draft	1,850 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,900 m
Draft aft pp	1,402 m	GG'	0,000 m
Mean moulded draft	1,384 m	VCG'	2,900 m
Draft forward pp	1,366 m	Max VCG'	5,154 m
Trim	-0,036 m	GM solid	3,430 m
LCF	46,394 m	G'M liquid	3,430 m
LCB	45,642 m	Immersion rate	8,813 tonne/cm
KM	6,329 m	MCT	66,461 t*m

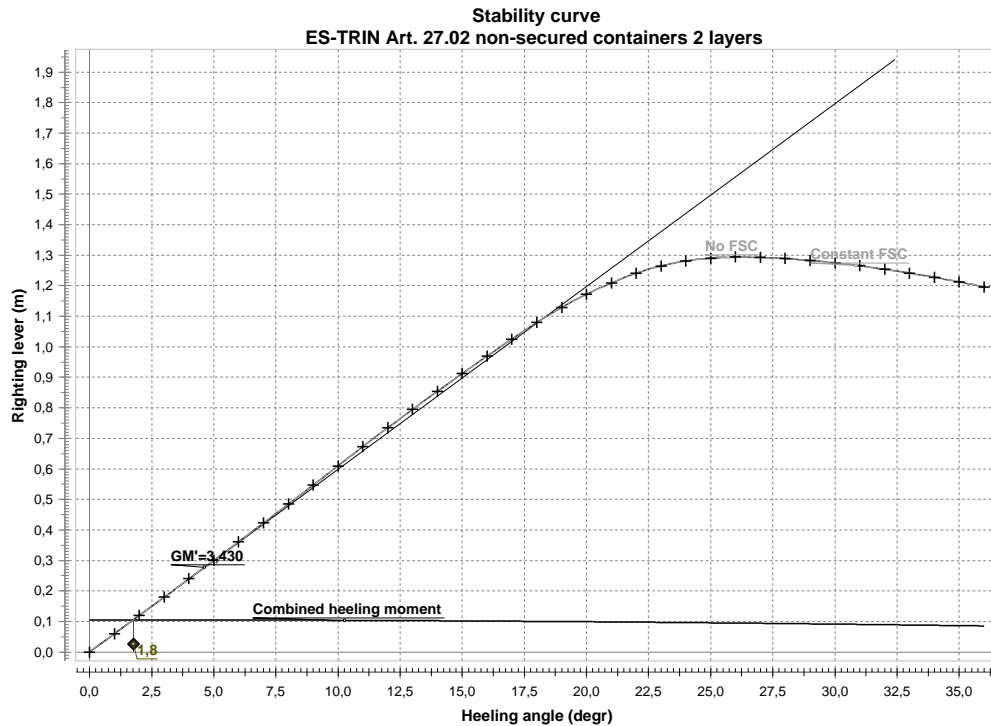
Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers 70 % full			909,720	45,273	0,000 (CL)	3,400	0,000
Lightship			260,590	46,934	0,000 (CL)	1,153	
Deadweight			909,720	45,273	0,000 (CL)	3,400	0,000
Displacement			1170,310	45,643	0,000 (CL)	2,900	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,384	-0,036	1170,310	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,384	-0,036	1170,309	0,110	0,051	0,000	0,000	0,060	0,0005
2,0 (PS)	1,384	-0,037	1170,307	0,221	0,101	0,000	0,000	0,120	0,0021
3,0 (PS)	1,384	-0,037	1170,302	0,332	0,152	0,000	0,000	0,180	0,0047
4,0 (PS)	1,383	-0,038	1170,310	0,442	0,202	0,000	0,000	0,240	0,0084
5,0 (PS)	1,383	-0,040	1170,310	0,553	0,253	0,000	0,000	0,301	0,0131
6,0 (PS)	1,383	-0,041	1170,310	0,665	0,303	0,000	0,000	0,362	0,0189
7,0 (PS)	1,383	-0,043	1170,310	0,776	0,353	0,000	0,000	0,423	0,0257
8,0 (PS)	1,382	-0,045	1170,310	0,888	0,404	0,000	0,000	0,485	0,0336
9,0 (PS)	1,382	-0,048	1170,310	1,000	0,454	0,000	0,000	0,547	0,0426
10,0 (PS)	1,381	-0,050	1170,310	1,113	0,504	0,000	0,000	0,610	0,0527
11,0 (PS)	1,381	-0,053	1170,310	1,226	0,553	0,000	0,000	0,673	0,0639
12,0 (PS)	1,379	-0,056	1170,310	1,338	0,603	0,000	0,000	0,735	0,0762
13,0 (PS)	1,377	-0,060	1170,310	1,448	0,652	0,000	0,000	0,795	0,0896
14,0 (PS)	1,375	-0,064	1170,310	1,556	0,701	0,000	0,000	0,855	0,1040
15,0 (PS)	1,371	-0,068	1170,310	1,663	0,750	0,000	0,000	0,913	0,1194
16,0 (PS)	1,367	-0,072	1170,309	1,769	0,799	0,000	0,000	0,970	0,1358
17,0 (PS)	1,362	-0,076	1170,309	1,873	0,848	0,000	0,000	1,026	0,1532
18,0 (PS)	1,357	-0,080	1170,309	1,976	0,896	0,000	0,000	1,080	0,1716
19,0 (PS)	1,349	-0,086	1170,307	2,073	0,944	0,000	0,000	1,129	0,1909
20,0 (PS)	1,339	-0,091	1170,310	2,164	0,992	0,000	0,000	1,172	0,2110
21,0 (PS)	1,326	-0,097	1170,309	2,249	1,039	0,000	0,000	1,209	0,2318
22,0 (PS)	1,312	-0,103	1170,308	2,328	1,086	0,000	0,000	1,241	0,2532
23,0 (PS)	1,296	-0,111	1170,303	2,398	1,133	0,000	0,000	1,265	0,2750
24,0 (PS)	1,280	-0,120	1170,309	2,461	1,179	0,000	0,000	1,281	0,2973
25,0 (PS)	1,264	-0,129	1170,309	2,516	1,225	0,000	0,000	1,290	0,3197
26,0 (PS)	1,248	-0,139	1170,308	2,565	1,271	0,000	0,000	1,294	0,3423
27,0 (PS)	1,231	-0,148	1170,309	2,609	1,316	0,000	0,000	1,293	0,3649
28,0 (PS)	1,212	-0,157	1170,300	2,650	1,361	0,000	0,000	1,289	0,3874
29,0 (PS)	1,192	-0,165	1170,304	2,689	1,406	0,000	0,000	1,283	0,4098
30,0 (PS)	1,170	-0,173	1170,307	2,725	1,450	0,000	0,000	1,275	0,4322
31,0 (PS)	1,147	-0,181	1170,308	2,759	1,493	0,000	0,000	1,265	0,4543
32,0 (PS)	1,122	-0,189	1170,309	2,791	1,537	0,000	0,000	1,254	0,4763
33,0 (PS)	1,095	-0,196	1170,305	2,821	1,579	0,000	0,000	1,242	0,4981
34,0 (PS)	1,066	-0,203	1170,308	2,849	1,621	0,000	0,000	1,228	0,5197
35,0 (PS)	1,035	-0,210	1170,310	2,876	1,663	0,000	0,000	1,213	0,5409
36,0 (PS)	1,003	-0,217	1170,308	2,901	1,704	0,000	0,000	1,196	0,5620



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	3,430 m	\geq	1,000 m	Complies
Combined heeling moment	1,8 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	123,580 t*m			
Required freeboard	1,651 m	\geq	0,000 m	Complies
Weight	123,580 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers full ALU

2020.056_006 IW-NET barge 3 abreast long

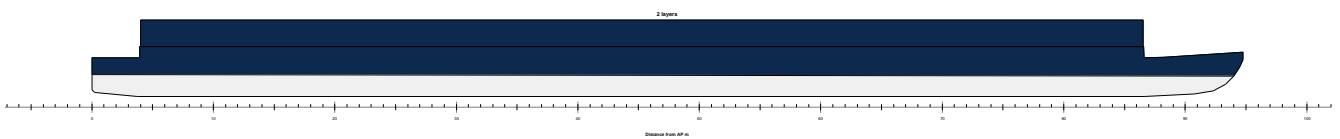
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_006_IW-NET3 Units abreast long.fbm

Design length	94,770 m	Midship location	47,385 m
Length over all	94,766 m	Water density	1,0000
Design beam	9,500 m	Mean shell thickness	0,0000 m
Maximum beam	9,500 m	Appendage coefficient	1,0000
Design draft	1,850 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	3,006 m
Draft aft pp	1,786 m	GG'	0,000 m
Mean moulded draft	1,739 m	VCG'	3,006 m
Draft forward pp	1,692 m	Max VCG'	4,347 m
Trim	-0,095 m	GM solid	2,341 m
LCF	46,625 m	G'M liquid	2,341 m
LCB	45,562 m	Immersion rate	8,857 tonne/cm
KM	5,347 m	MCT	67,398 t*m

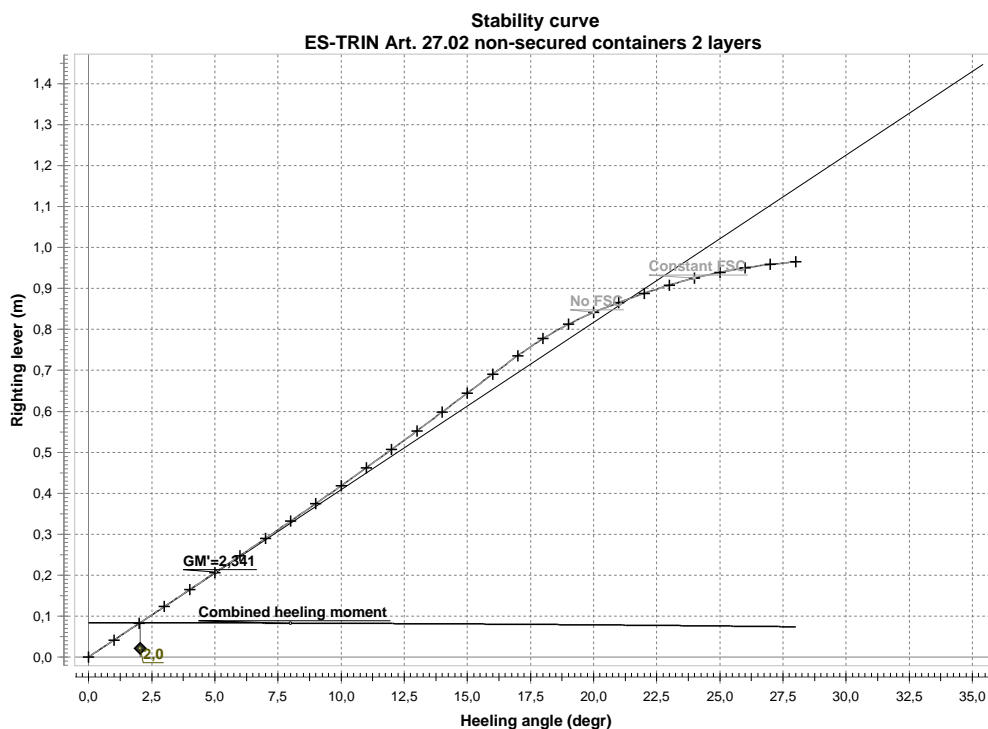
Description	Density	Filling	Weight	LCG	TCG	VCG	FSM
		%	t	m	m	m	t*m

Containers

Containers full			1224,000	45,273	0,000 (CL)	3,400	0,000
Lightship			260,590	46,934	0,000 (CL)	1,153	
Deadweight			1224,000	45,273	0,000 (CL)	3,400	0,000
Displacement			1484,590	45,565	0,000 (CL)	3,006	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,739	-0,095	1484,590	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,739	-0,095	1484,590	0,093	0,052	0,000	0,000	0,041	0,0004
2,0 (PS)	1,739	-0,095	1484,588	0,187	0,105	0,000	0,000	0,082	0,0014
3,0 (PS)	1,739	-0,096	1484,585	0,280	0,157	0,000	0,000	0,123	0,0032
4,0 (PS)	1,739	-0,097	1484,581	0,374	0,210	0,000	0,000	0,164	0,0057
5,0 (PS)	1,738	-0,098	1484,577	0,467	0,262	0,000	0,000	0,205	0,0089
6,0 (PS)	1,738	-0,099	1484,590	0,561	0,314	0,000	0,000	0,247	0,0129
7,0 (PS)	1,738	-0,100	1484,590	0,656	0,366	0,000	0,000	0,289	0,0176
8,0 (PS)	1,738	-0,102	1484,590	0,750	0,418	0,000	0,000	0,332	0,0230
9,0 (PS)	1,737	-0,104	1484,590	0,845	0,470	0,000	0,000	0,375	0,0292
10,0 (PS)	1,737	-0,107	1484,590	0,940	0,522	0,000	0,000	0,418	0,0361
11,0 (PS)	1,736	-0,109	1484,590	1,035	0,573	0,000	0,000	0,462	0,0437
12,0 (PS)	1,736	-0,112	1484,590	1,132	0,625	0,000	0,000	0,507	0,0522
13,0 (PS)	1,735	-0,115	1484,590	1,228	0,676	0,000	0,000	0,552	0,0614
14,0 (PS)	1,735	-0,119	1484,590	1,325	0,727	0,000	0,000	0,598	0,0715
15,0 (PS)	1,734	-0,123	1484,590	1,423	0,778	0,000	0,000	0,645	0,0823
16,0 (PS)	1,733	-0,127	1484,590	1,519	0,828	0,000	0,000	0,691	0,0940
17,0 (PS)	1,731	-0,132	1484,590	1,615	0,879	0,000	0,000	0,736	0,1064
18,0 (PS)	1,729	-0,140	1484,590	1,706	0,929	0,000	0,000	0,778	0,1196
19,0 (PS)	1,729	-0,150	1484,591	1,791	0,979	0,000	0,000	0,813	0,1335
20,0 (PS)	1,730	-0,160	1484,590	1,869	1,028	0,000	0,000	0,841	0,1480
21,0 (PS)	1,733	-0,170	1484,588	1,943	1,077	0,000	0,000	0,866	0,1629
22,0 (PS)	1,735	-0,180	1484,585	2,014	1,126	0,000	0,000	0,888	0,1782
23,0 (PS)	1,737	-0,190	1484,580	2,083	1,174	0,000	0,000	0,909	0,1939
24,0 (PS)	1,737	-0,201	1484,589	2,148	1,222	0,000	0,000	0,926	0,2099
25,0 (PS)	1,735	-0,211	1484,589	2,210	1,270	0,000	0,000	0,940	0,2262
26,0 (PS)	1,732	-0,221	1484,582	2,268	1,318	0,000	0,000	0,951	0,2427
27,0 (PS)	1,727	-0,231	1484,588	2,323	1,365	0,000	0,000	0,959	0,2593
28,0 (PS)	1,720	-0,240	1484,590	2,376	1,411	0,000	0,000	0,965	0,2761



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	2,341 m	\geq	1,000 m	Complies
Combined heeling moment	2,0 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	123,580 t*m			
Required freeboard	1,245 m	\geq	0,000 m	Complies
Weight	123,580 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers empty 3 layers ALU

2020.056_006 IW-NET barge 3 abreast long

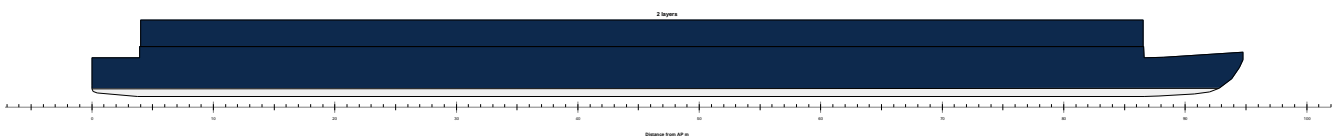
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_006_IW-NET 3 Units abreast long.fbm

Design length	94,770 m	Midship location	47,385 m
Length over all	94,766 m	Water density	1,0000
Design beam	9,500 m	Mean shell thickness	0,0000 m
Maximum beam	9,500 m	Appendage coefficient	1,0000
Design draft	1,850 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	3,015 m
Draft aft pp	0,626 m	GG'	0,000 m
Mean moulded draft	0,648 m	VCG'	3,015 m
Draft forward pp	0,670 m	Max VCG'	8,248 m
Trim	0,044 m	GM solid	9,607 m
LCF	45,753 m	G'M liquid	9,607 m
LCB	46,098 m	Immersion rate	8,679 tonne/cm
KM	12,622 m	MCT	63,613 t*m

Description	Density	Filling	Weight	LCG	TCG	VCG	FSM
		%	t	m	m	m	t*m

Containers

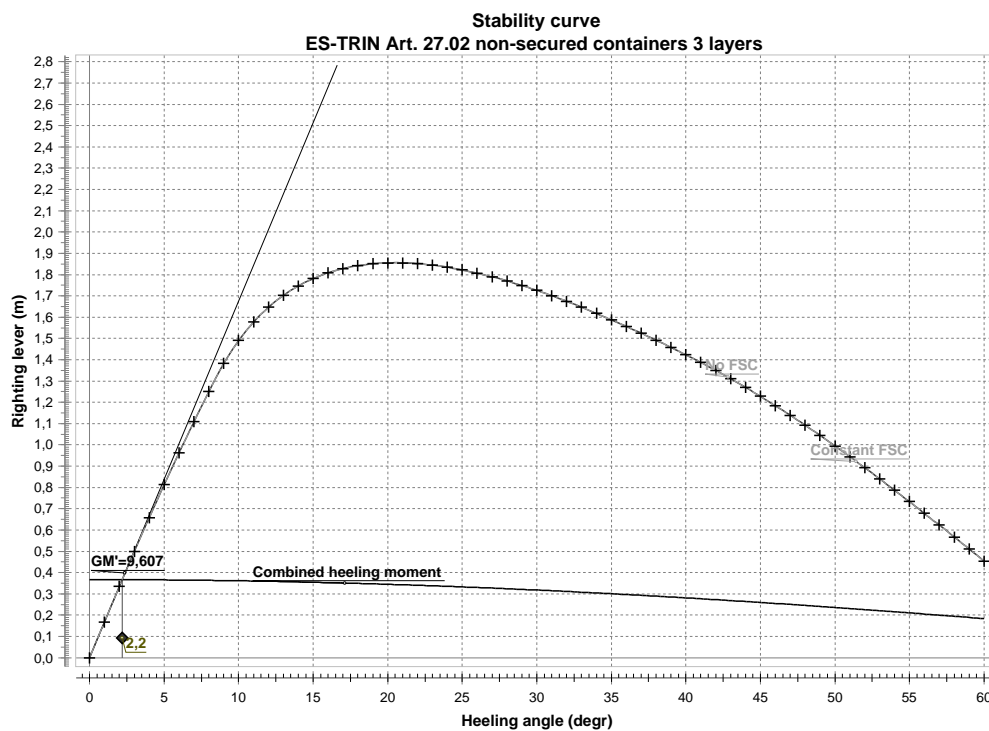
Containers empty			176,400	45,273	0,000 (CL)	3,400	0,000
3rd layer empty			88,200	45,273	0,000 (CL)	7,748	0,000
Totals for Containers			264,600	45,273	0,000 (CL)	4,849	0,000
Lightship			260,590	46,934	0,000 (CL)	1,153	
Deadweight			264,600	45,273	0,000 (CL)	4,849	0,000
Displacement			525,190	46,097	0,000 (CL)	3,015	0,000

Righting levers

Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	0,648	0,044	525,189	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	0,648	0,044	525,190	0,220	0,053	0,000	0,000	0,168	0,0015
2,0 (PS)	0,648	0,044	525,190	0,440	0,105	0,000	0,000	0,335	0,0059
3,0 (PS)	0,647	0,044	525,190	0,657	0,158	0,000	0,000	0,499	0,0131
4,0 (PS)	0,645	0,043	525,190	0,869	0,210	0,000	0,000	0,659	0,0233
5,0 (PS)	0,643	0,042	525,190	1,076	0,263	0,000	0,000	0,813	0,0361
6,0 (PS)	0,640	0,042	525,190	1,279	0,315	0,000	0,000	0,964	0,0516
7,0 (PS)	0,636	0,041	525,189	1,477	0,367	0,000	0,000	1,110	0,0697
8,0 (PS)	0,632	0,041	525,185	1,671	0,420	0,000	0,000	1,251	0,0903
9,0 (PS)	0,626	0,041	525,186	1,855	0,472	0,000	0,000	1,384	0,1133
10,0 (PS)	0,616	0,043	525,187	2,015	0,524	0,000	0,000	1,491	0,1385
11,0 (PS)	0,602	0,044	525,188	2,153	0,575	0,000	0,000	1,578	0,1653
12,0 (PS)	0,585	0,045	525,189	2,274	0,627	0,000	0,000	1,647	0,1934
13,0 (PS)	0,564	0,047	525,187	2,381	0,678	0,000	0,000	1,702	0,2227
14,0 (PS)	0,541	0,048	525,189	2,476	0,729	0,000	0,000	1,747	0,2528
15,0 (PS)	0,515	0,049	525,188	2,562	0,780	0,000	0,000	1,781	0,2836
16,0 (PS)	0,487	0,050	525,186	2,639	0,831	0,000	0,000	1,808	0,3149
17,0 (PS)	0,457	0,051	525,189	2,710	0,882	0,000	0,000	1,828	0,3467
18,0 (PS)	0,424	0,052	525,188	2,774	0,932	0,000	0,000	1,842	0,3787
19,0 (PS)	0,389	0,053	525,188	2,832	0,982	0,000	0,000	1,851	0,4109
20,0 (PS)	0,353	0,054	525,188	2,886	1,031	0,000	0,000	1,855	0,4433
21,0 (PS)	0,314	0,055	525,188	2,935	1,081	0,000	0,000	1,855	0,4757
22,0 (PS)	0,273	0,056	525,188	2,981	1,130	0,000	0,000	1,851	0,5080
23,0 (PS)	0,230	0,057	525,188	3,023	1,178	0,000	0,000	1,844	0,5403
24,0 (PS)	0,186	0,057	525,185	3,061	1,226	0,000	0,000	1,834	0,5724
25,0 (PS)	0,139	0,058	525,186	3,096	1,274	0,000	0,000	1,822	0,6043
26,0 (PS)	0,090	0,059	525,187	3,129	1,322	0,000	0,000	1,807	0,6360
27,0 (PS)	0,039	0,059	525,188	3,158	1,369	0,000	0,000	1,789	0,6673
28,0 (PS)	-0,013	0,060	525,185	3,186	1,416	0,000	0,000	1,770	0,6984
29,0 (PS)	-0,068	0,060	525,187	3,211	1,462	0,000	0,000	1,749	0,7291
30,0 (PS)	-0,125	0,060	525,188	3,233	1,508	0,000	0,000	1,726	0,7594
31,0 (PS)	-0,185	0,061	525,189	3,254	1,553	0,000	0,000	1,701	0,7893
32,0 (PS)	-0,246	0,061	525,186	3,273	1,598	0,000	0,000	1,675	0,8188
33,0 (PS)	-0,310	0,061	525,188	3,289	1,642	0,000	0,000	1,647	0,8478
34,0 (PS)	-0,377	0,061	525,189	3,304	1,686	0,000	0,000	1,618	0,8763
35,0 (PS)	-0,446	0,061	525,185	3,318	1,729	0,000	0,000	1,588	0,9043
36,0 (PS)	-0,518	0,061	525,187	3,329	1,772	0,000	0,000	1,557	0,9317
37,0 (PS)	-0,593	0,061	525,189	3,339	1,815	0,000	0,000	1,525	0,9586
38,0 (PS)	-0,670	0,061	525,189	3,348	1,856	0,000	0,000	1,492	0,9849
39,0 (PS)	-0,751	0,061	525,187	3,355	1,898	0,000	0,000	1,458	1,0107
40,0 (PS)	-0,835	0,061	525,189	3,361	1,938	0,000	0,000	1,423	1,0358
41,0 (PS)	-0,923	0,061	525,189	3,365	1,978	0,000	0,000	1,387	1,0603
42,0 (PS)	-1,014	0,061	525,190	3,368	2,018	0,000	0,000	1,350	1,0842
43,0 (PS)	-1,108	0,062	525,185	3,368	2,056	0,000	0,000	1,311	1,1075
44,0 (PS)	-1,205	0,061	525,186	3,365	2,095	0,000	0,000	1,271	1,1300
45,0 (PS)	-1,305	0,061	525,187	3,360	2,132	0,000	0,000	1,228	1,1518
46,0 (PS)	-1,409	0,060	525,187	3,353	2,169	0,000	0,000	1,184	1,1729
47,0 (PS)	-1,517	0,060	525,188	3,344	2,205	0,000	0,000	1,139	1,1931
48,0 (PS)	-1,629	0,058	525,188	3,333	2,241	0,000	0,000	1,092	1,2126
49,0 (PS)	-1,745	0,057	525,188	3,320	2,276	0,000	0,000	1,044	1,2312
50,0 (PS)	-1,866	0,055	525,188	3,305	2,310	0,000	0,000	0,995	1,2490

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
51,0 (PS)	-1,993	0,053	525,188	3,288	2,343	0,000	0,000	0,944	1,2660
52,0 (PS)	-2,125	0,051	525,188	3,269	2,376	0,000	0,000	0,893	1,2820
53,0 (PS)	-2,263	0,049	525,188	3,249	2,408	0,000	0,000	0,841	1,2971
54,0 (PS)	-2,407	0,046	525,188	3,227	2,439	0,000	0,000	0,787	1,3113
55,0 (PS)	-2,559	0,043	525,188	3,203	2,470	0,000	0,000	0,733	1,3246
56,0 (PS)	-2,718	0,040	525,187	3,178	2,500	0,000	0,000	0,679	1,3369
57,0 (PS)	-2,886	0,037	525,187	3,152	2,529	0,000	0,000	0,623	1,3483
58,0 (PS)	-3,064	0,034	525,187	3,124	2,557	0,000	0,000	0,567	1,3587
59,0 (PS)	-3,252	0,030	525,188	3,095	2,585	0,000	0,000	0,510	1,3681
60,0 (PS)	-3,453	0,026	525,189	3,065	2,611	0,000	0,000	0,454	1,3765



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	9,607 m	\geq	1,000 m	Complies
Combined heeling moment	2,2 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	192,770 t*m			
Required freeboard	2,351 m	\geq	0,000 m	Complies
Weight	192,770 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers 70 % full 3 layers ALU

2020.056_006 IW-NET barge 3 abreast long

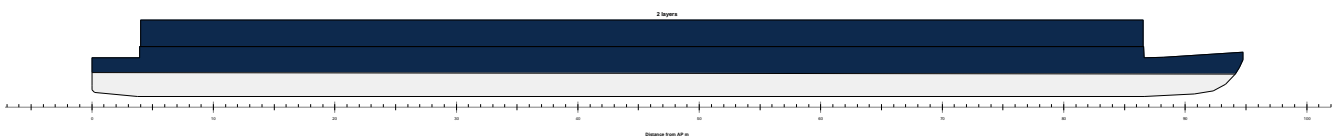
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_006_IW-NET3 Units abreast long.fbm

Design length	94,770 m	Midship location	47,385 m
Length over all	94,766 m	Water density	1,0000
Design beam	9,500 m	Mean shell thickness	0,0000 m
Maximum beam	9,500 m	Appendage coefficient	1,0000
Design draft	1,850 m		



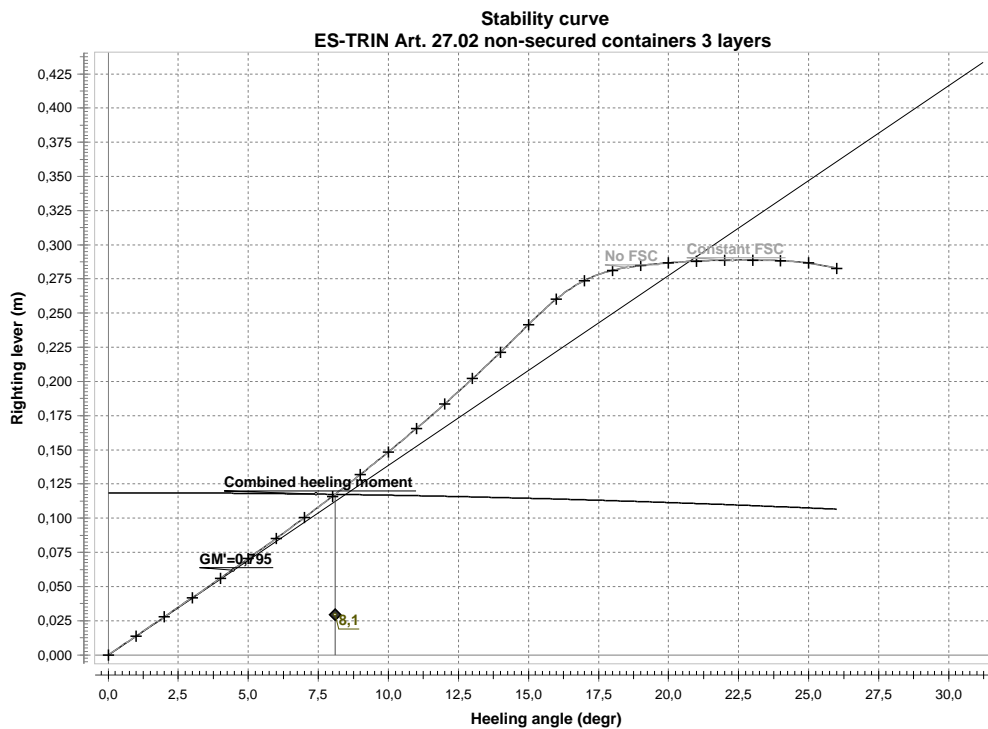
Hydrostatic particulars

List	0,0 (CL) degr	VCG	4,257 m
Draft aft pp	1,959 m	GG'	0,000 m
Mean moulded draft	1,897 m	VCG'	4,257 m
Draft forward pp	1,835 m	Max VCG'	3,724 m
Trim	-0,124 m	GM solid	0,795 m
LCF	46,716 m	G'M liquid	0,795 m
LCB	45,534 m	Immersion rate	8,875 tonne/cm
KM	5,051 m	MCT	67,562 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
Containers							
Containers 70 % full			909,720	45,273	0,000 (CL)	3,400	0,000
3rd layer 70 % full			454,860	45,273	0,000 (CL)	7,748	0,000
Totals for Containers			1364,580	45,273	0,000 (CL)	4,849	0,000
Lightship			260,590	46,934	0,000 (CL)	1,153	
Deadweight			1364,580	45,273	0,000 (CL)	4,849	0,000
Displacement			1625,170	45,539	0,000 (CL)	4,257	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,897	-0,124	1625,170	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,897	-0,124	1625,170	0,088	0,074	0,000	0,000	0,014	0,0001
2,0 (PS)	1,897	-0,125	1625,168	0,176	0,149	0,000	0,000	0,028	0,0005
3,0 (PS)	1,897	-0,125	1625,166	0,265	0,223	0,000	0,000	0,042	0,0011
4,0 (PS)	1,897	-0,126	1625,162	0,353	0,297	0,000	0,000	0,056	0,0019
5,0 (PS)	1,897	-0,127	1625,159	0,442	0,371	0,000	0,000	0,071	0,0031
6,0 (PS)	1,897	-0,128	1625,156	0,530	0,445	0,000	0,000	0,085	0,0044
7,0 (PS)	1,896	-0,130	1625,170	0,619	0,519	0,000	0,000	0,100	0,0060
8,0 (PS)	1,896	-0,131	1625,170	0,708	0,592	0,000	0,000	0,116	0,0079
9,0 (PS)	1,896	-0,133	1625,170	0,798	0,666	0,000	0,000	0,132	0,0101
10,0 (PS)	1,895	-0,135	1625,170	0,888	0,739	0,000	0,000	0,149	0,0125
11,0 (PS)	1,895	-0,138	1625,170	0,978	0,812	0,000	0,000	0,166	0,0153
12,0 (PS)	1,894	-0,141	1625,170	1,069	0,885	0,000	0,000	0,184	0,0183
13,0 (PS)	1,894	-0,143	1625,170	1,160	0,958	0,000	0,000	0,202	0,0217
14,0 (PS)	1,893	-0,147	1625,170	1,251	1,030	0,000	0,000	0,221	0,0254
15,0 (PS)	1,893	-0,150	1625,170	1,343	1,102	0,000	0,000	0,242	0,0294
16,0 (PS)	1,893	-0,157	1625,170	1,434	1,173	0,000	0,000	0,260	0,0338
17,0 (PS)	1,895	-0,167	1625,177	1,518	1,245	0,000	0,000	0,274	0,0385
18,0 (PS)	1,899	-0,178	1625,180	1,597	1,315	0,000	0,000	0,281	0,0433
19,0 (PS)	1,904	-0,188	1625,172	1,671	1,386	0,000	0,000	0,285	0,0483
20,0 (PS)	1,910	-0,198	1625,161	1,743	1,456	0,000	0,000	0,287	0,0533
21,0 (PS)	1,914	-0,206	1625,169	1,814	1,525	0,000	0,000	0,288	0,0583
22,0 (PS)	1,919	-0,215	1625,169	1,883	1,595	0,000	0,000	0,289	0,0633
23,0 (PS)	1,923	-0,223	1625,170	1,952	1,663	0,000	0,000	0,289	0,0684
24,0 (PS)	1,926	-0,232	1625,170	2,020	1,731	0,000	0,000	0,288	0,0734
25,0 (PS)	1,929	-0,241	1625,170	2,086	1,799	0,000	0,000	0,287	0,0784
26,0 (PS)	1,930	-0,251	1625,164	2,149	1,866	0,000	0,000	0,283	0,0834



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	0,795 m	\geq	1,000 m	FAILS
Combined heeling moment	8,1 degr	\leq	5,0 degr	FAILS
Calculated heeling moment (upright)	192,770 t*m			
Required freeboard	0,558 m	\geq	0,000 m	Complies
Weight	192,770 t			
Trv. location of weight	1,000 m			

The condition does NOT comply with the stability criteria

Containers full 3 layers ALU

2020.056_006 IW-NET barge 3 abreast long

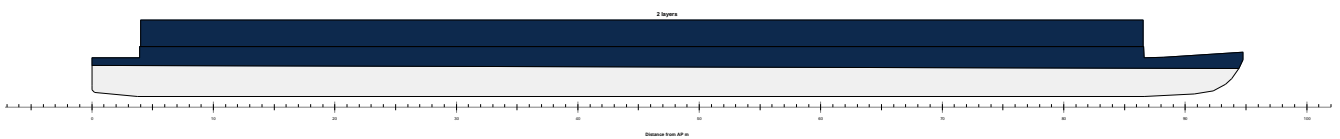
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_006_IW-NET3 Units abreast long.fbm

Design length	94,770 m	Midship location	47,385 m
Length over all	94,766 m	Water density	1,0000
Design beam	9,500 m	Mean shell thickness	0,0000 m
Maximum beam	9,500 m	Appendage coefficient	1,0000
Design draft	1,850 m		



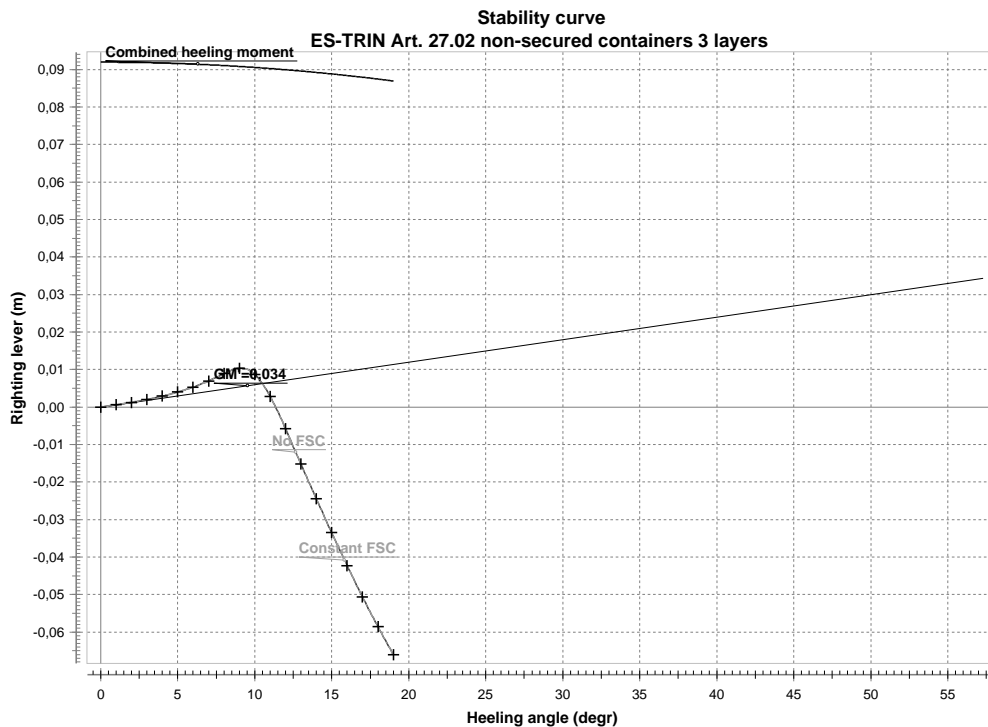
Hydrostatic particulars

List	0,0 (CL) degr	VCG	4,390 m
Draft aft pp	2,543 m	GG'	0,000 m
Mean moulded draft	2,426 m	VCG'	4,390 m
Draft forward pp	2,309 m	Max VCG'	3,410 m
Trim	-0,234 m	GM solid	0,034 m
LCF	46,980 m	G'M liquid	0,034 m
LCB	45,471 m	Immersion rate	8,925 tonne/cm
KM	4,424 m	MCT	68,590 t*m

Description	Density	Filling	Weight	LCG	TCG	VCG	FSM
		%	t	m	m	m	t*m
Containers							
Containers full			1224,000	45,273	0,000 (CL)	3,400	0,000
3rd layer full			612,000	45,273	0,000 (CL)	7,748	0,000
Totals for Containers			1836,000	45,273	0,000 (CL)	4,849	0,000
Lightship			260,590	46,934	0,000 (CL)	1,153	
Deadweight			1836,000	45,273	0,000 (CL)	4,849	0,000
Displacement			2096,590	45,479	0,000 (CL)	4,390	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	2,426	-0,234	2096,589	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	2,426	-0,234	2096,590	0,077	0,077	0,000	0,000	0,001	0,0000
2,0 (PS)	2,426	-0,234	2096,590	0,154	0,153	0,000	0,000	0,001	0,0000
3,0 (PS)	2,426	-0,235	2096,589	0,232	0,230	0,000	0,000	0,002	0,0000
4,0 (PS)	2,426	-0,235	2096,587	0,309	0,306	0,000	0,000	0,003	0,0001
5,0 (PS)	2,426	-0,236	2096,585	0,387	0,383	0,000	0,000	0,004	0,0002
6,0 (PS)	2,426	-0,237	2096,584	0,464	0,459	0,000	0,000	0,005	0,0002
7,0 (PS)	2,426	-0,238	2096,582	0,542	0,535	0,000	0,000	0,007	0,0003
8,0 (PS)	2,425	-0,239	2096,587	0,620	0,611	0,000	0,000	0,009	0,0005
9,0 (PS)	2,426	-0,243	2096,591	0,697	0,687	0,000	0,000	0,010	0,0006
10,0 (PS)	2,428	-0,253	2096,597	0,771	0,762	0,000	0,000	0,009	0,0008
11,0 (PS)	2,432	-0,264	2096,596	0,841	0,838	0,000	0,000	0,003	0,0009
12,0 (PS)	2,438	-0,274	2096,592	0,907	0,913	0,000	0,000	-0,006	0,0009
13,0 (PS)	2,445	-0,281	2096,606	0,972	0,988	0,000	0,000	-0,015	0,0009
14,0 (PS)	2,453	-0,288	2096,594	1,038	1,062	0,000	0,000	-0,024	0,0009
15,0 (PS)	2,460	-0,295	2096,593	1,103	1,136	0,000	0,000	-0,034	0,0009
16,0 (PS)	2,468	-0,301	2096,592	1,168	1,210	0,000	0,000	-0,042	0,0009
17,0 (PS)	2,476	-0,307	2096,591	1,233	1,283	0,000	0,000	-0,051	0,0009
18,0 (PS)	2,485	-0,312	2096,590	1,298	1,357	0,000	0,000	-0,059	0,0009
19,0 (PS)	2,493	-0,317	2096,590	1,363	1,429	0,000	0,000	-0,066	0,0009



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	0,034 m	\geq	1,000 m	FAILS
Combined heeling moment	180,0 degr	\leq	5,0 degr	FAILS
Calculated heeling moment (upright)	192,770 t*m			
Required freeboard	-100,000 m	\geq	0,000 m	FAILS

Weight	192,770 t
Trv. location of weight	1,000 m

The condition does NOT comply with the stability criteria

Summary of intact stability

Description	Density	Draft	Draft BoK	Trim	List	Displ.	VCG'	Max VCG'	GM'	Complies
		m	m	m	degr	t	m	m	m	
Containers empty	1,0000	0,710	0,710	0,056	0,0 (CL)	723,727	1,863	13,369	14,629	Complies
Containers 70 % full	1,0000	1,607	1,607	-0,058	0,0 (CL)	1700,767	2,746	6,639	5,068	Complies
Containers full	1,0000	1,989	1,989	-0,128	0,0 (CL)	2120,527	2,875	5,655	3,780	Complies
Containers empty 3 layers	1,0000	0,819	0,819	0,047	0,0 (CL)	841,327	2,686	10,810	11,657	Complies
Containers 70 % full 3 layers	1,0000	2,158	2,158	-0,162	0,0 (CL)	2307,247	4,061	5,059	2,235	Complies
Containers full 3 layers	1,0000	2,727	2,727	-0,288	0,0 (CL)	2936,527	4,229	3,990	1,266	FAILS
Containers empty ALU	1,0000	0,577	0,577	0,047	0,0 (CL)	580,674	2,075	15,930	18,203	Complies
Containers 70 % full ALU	1,0000	1,476	1,476	-0,054	0,0 (CL)	1557,714	2,906	7,090	5,467	Complies
Containers full ALU	1,0000	1,859	1,859	-0,120	0,0 (CL)	1977,474	3,011	5,975	3,975	Complies
Containers empty 3 layers ALU	1,0000	0,687	0,687	0,040	0,0 (CL)	698,274	3,030	12,531	14,020	Complies
Containers 70 % full 3 layers ALU	1,0000	2,028	2,028	-0,153	0,0 (CL)	2164,194	4,263	5,244	2,301	Complies
Containers full 3 layers ALU	1,0000	2,597	2,597	-0,276	0,0 (CL)	2793,474	4,395	4,520	1,240	Complies

Components of deadweight

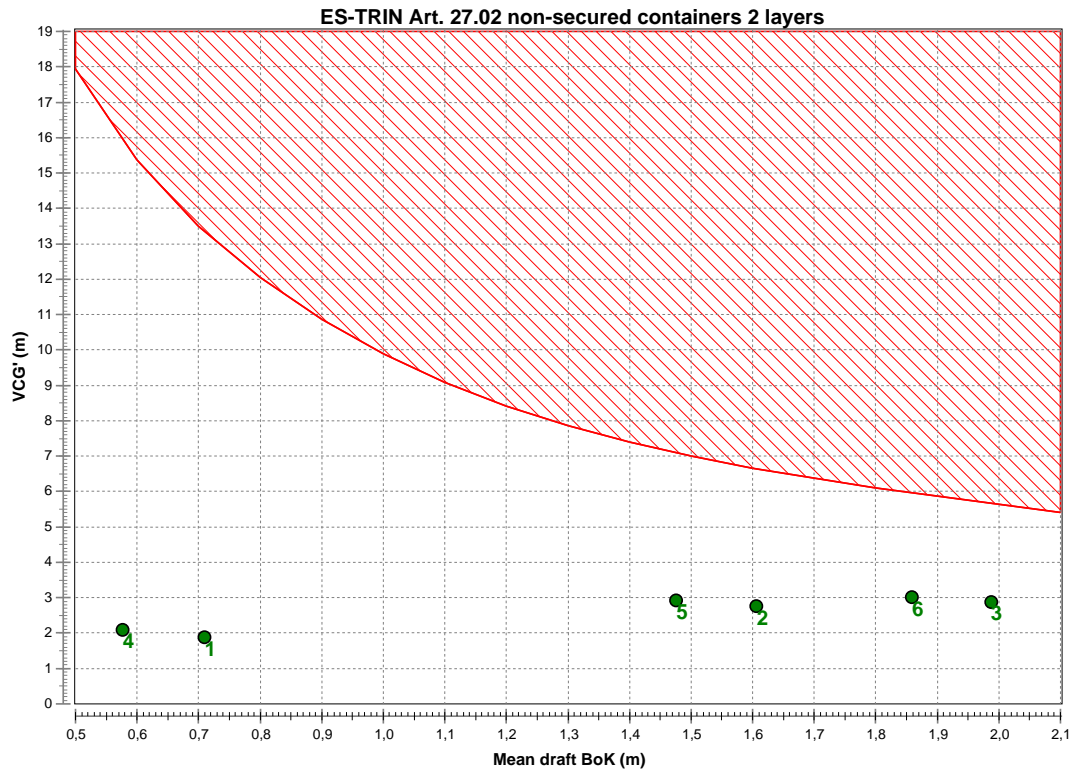
Loading condition	Deadweight	Containers t
Containers empty	235,200	235,200
Containers 70 % full	1212,240	1212,240
Containers full	1632,000	1632,000
Containers empty 3 layers	352,800	352,800
Containers 70 % full 3 layers	1818,720	1818,720
Containers full 3 layers	2448,000	2448,000
Containers empty ALU	235,200	235,200
Containers 70 % full ALU	1212,240	1212,240
Containers full ALU	1632,000	1632,000
Containers empty 3 layers ALU	352,800	352,800
Containers 70 % full 3 layers ALU	1818,720	1818,720
Containers full 3 layers ALU	2448,000	2448,000

Maximum VCG' envelope

Criteria : ES-TRIN Art. 27.02 non-secured containers 2 layers

Calculated for average trim : -0,043 m

Wind silhouette : 2 layers



Loading conditions:

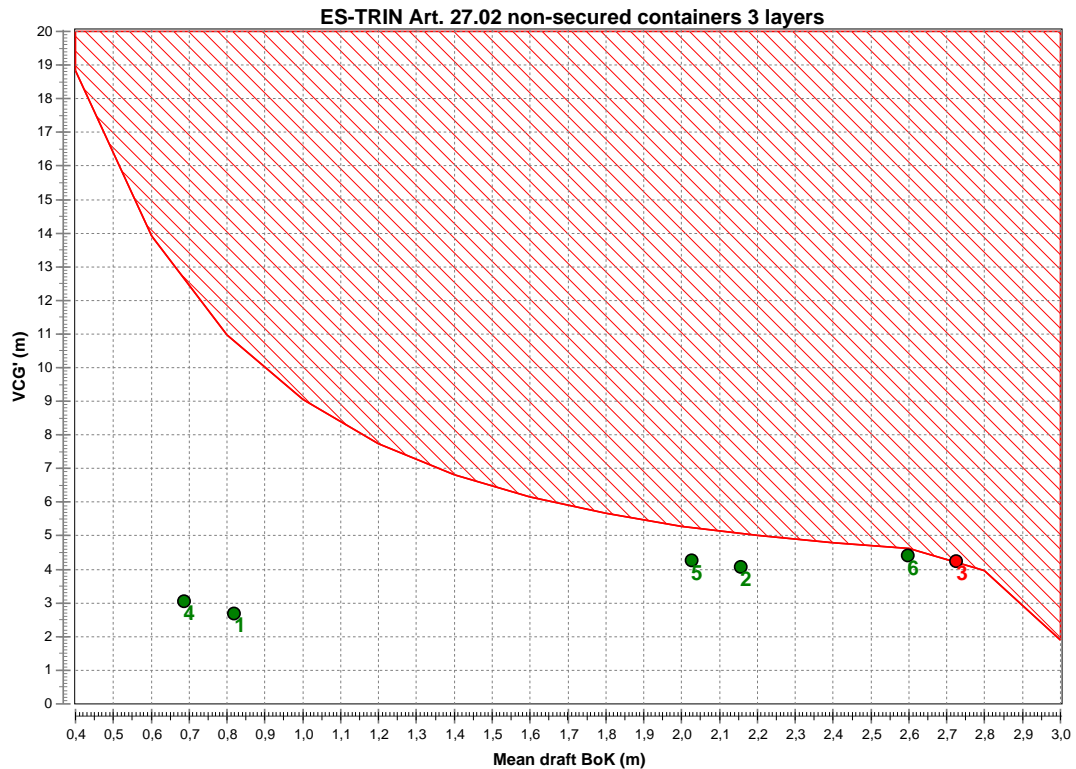
1. Containers empty
2. Containers 70 % full
3. Containers full
4. Containers empty ALU
5. Containers 70 % full ALU
6. Containers full ALU

Maximum VCG' envelope

Criteria : ES-TRIN Art. 27.02 non-secured containers 3 layers

Calculated for average trim : -0,132 m

Wind silhouette : 2 layers



Loading conditions:

1. Containers empty 3 layers
2. Containers 70 % full 3 layers
3. Containers full 3 layers
4. Containers empty 3 layers ALU
5. Containers 70 % full 3 layers ALU
6. Containers full 3 layers ALU

Containers empty

2020.056_007 IW-NET NEWS Evolution long

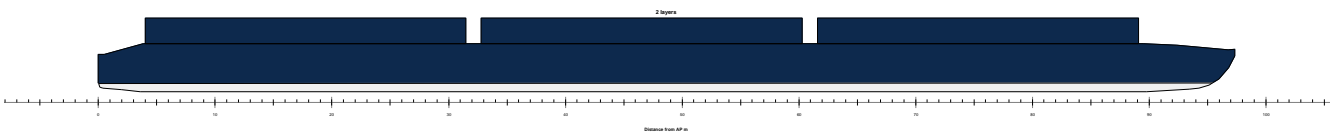
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_007_IW-NET NEWS Evolution long.fbm

Design length	97,320 m	Midship location	48,660 m
Length over all	97,320 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	2,000 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	1,863 m
Draft aft pp	0,682 m	GG'	0,000 m
Mean moulded draft	0,710 m	VCG'	1,863 m
Draft forward pp	0,739 m	Max VCG'	13,369 m
Trim	0,056 m	GM solid	14,629 m
LCF	47,145 m	G'M liquid	14,629 m
LCB	47,536 m	Immersion rate	10,788 tonne/cm
KM	16,492 m	MCT	81,944 t*m

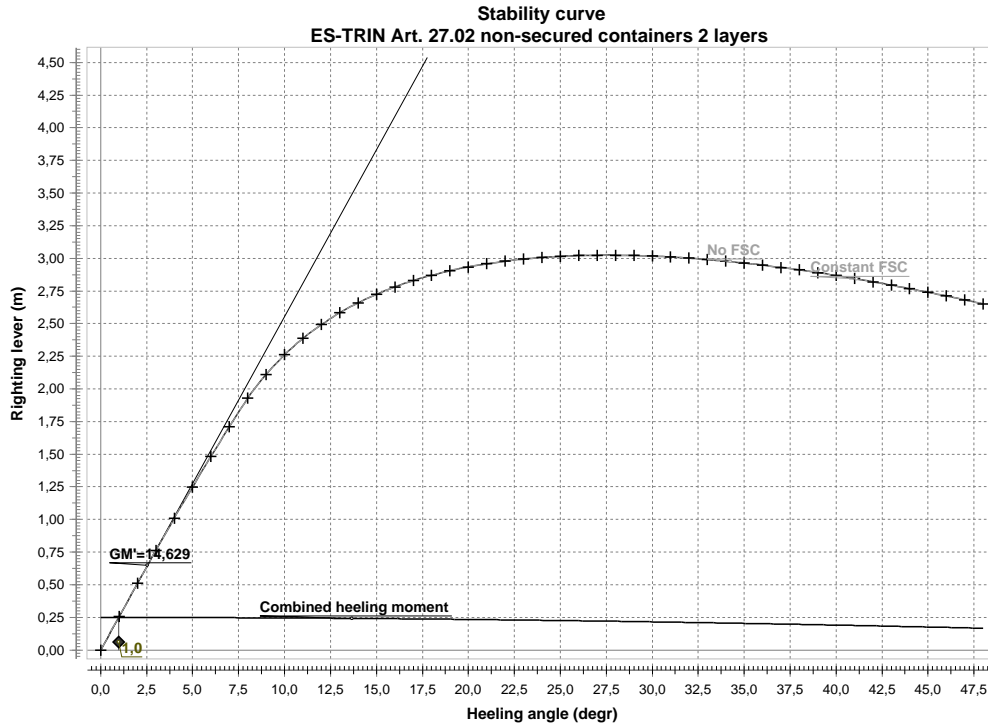
Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers empty			235,200	46,541	0,000 (CL)	3,400	0,000
Lightship			488,527	48,014	0,000 (CL)	1,123	
Deadweight			235,200	46,541	0,000 (CL)	3,400	0,000
Displacement			723,727	47,535	0,000 (CL)	1,863	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	0,710	0,056	723,726	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	0,710	0,056	723,723	0,288	0,033	0,000	0,000	0,255	0,0022
2,0 (PS)	0,710	0,056	723,727	0,576	0,065	0,000	0,000	0,511	0,0089
3,0 (PS)	0,709	0,055	723,727	0,861	0,098	0,000	0,000	0,763	0,0200
4,0 (PS)	0,708	0,054	723,726	1,139	0,130	0,000	0,000	1,009	0,0355
5,0 (PS)	0,705	0,053	723,727	1,412	0,162	0,000	0,000	1,249	0,0552
6,0 (PS)	0,702	0,052	723,725	1,678	0,195	0,000	0,000	1,483	0,0791
7,0 (PS)	0,698	0,051	723,727	1,938	0,227	0,000	0,000	1,711	0,1070
8,0 (PS)	0,692	0,052	723,720	2,188	0,259	0,000	0,000	1,929	0,1388
9,0 (PS)	0,681	0,053	723,726	2,402	0,291	0,000	0,000	2,111	0,1741
10,0 (PS)	0,665	0,055	723,722	2,584	0,324	0,000	0,000	2,261	0,2123
11,0 (PS)	0,644	0,056	723,724	2,742	0,355	0,000	0,000	2,386	0,2529
12,0 (PS)	0,620	0,058	723,720	2,879	0,387	0,000	0,000	2,492	0,2955
13,0 (PS)	0,592	0,059	723,724	3,001	0,419	0,000	0,000	2,582	0,3398
14,0 (PS)	0,560	0,060	723,722	3,109	0,451	0,000	0,000	2,659	0,3855
15,0 (PS)	0,526	0,062	723,720	3,207	0,482	0,000	0,000	2,724	0,4325
16,0 (PS)	0,489	0,063	723,725	3,294	0,514	0,000	0,000	2,781	0,4806
17,0 (PS)	0,449	0,064	723,725	3,374	0,545	0,000	0,000	2,829	0,5295
18,0 (PS)	0,407	0,065	723,725	3,446	0,576	0,000	0,000	2,870	0,5793
19,0 (PS)	0,362	0,066	723,721	3,511	0,607	0,000	0,000	2,905	0,6297
20,0 (PS)	0,314	0,067	723,722	3,571	0,637	0,000	0,000	2,934	0,6806
21,0 (PS)	0,265	0,067	723,724	3,626	0,668	0,000	0,000	2,959	0,7321
22,0 (PS)	0,213	0,068	723,725	3,676	0,698	0,000	0,000	2,979	0,7839
23,0 (PS)	0,158	0,069	723,722	3,722	0,728	0,000	0,000	2,994	0,8360
24,0 (PS)	0,101	0,069	723,724	3,764	0,758	0,000	0,000	3,007	0,8884
25,0 (PS)	0,042	0,070	723,725	3,803	0,787	0,000	0,000	3,015	0,9409
26,0 (PS)	-0,019	0,070	723,721	3,838	0,817	0,000	0,000	3,021	0,9936
27,0 (PS)	-0,083	0,070	723,723	3,870	0,846	0,000	0,000	3,024	1,0464
28,0 (PS)	-0,150	0,071	723,724	3,899	0,875	0,000	0,000	3,024	1,0992
29,0 (PS)	-0,219	0,071	723,725	3,925	0,903	0,000	0,000	3,022	1,1519
30,0 (PS)	-0,290	0,071	723,721	3,949	0,931	0,000	0,000	3,017	1,2046
31,0 (PS)	-0,365	0,071	723,723	3,970	0,960	0,000	0,000	3,010	1,2572
32,0 (PS)	-0,442	0,071	723,725	3,989	0,987	0,000	0,000	3,001	1,3097
33,0 (PS)	-0,522	0,071	723,726	4,005	1,015	0,000	0,000	2,991	1,3620
34,0 (PS)	-0,605	0,071	723,720	4,020	1,042	0,000	0,000	2,978	1,4141
35,0 (PS)	-0,691	0,071	723,723	4,032	1,069	0,000	0,000	2,964	1,4659
36,0 (PS)	-0,780	0,070	723,724	4,043	1,095	0,000	0,000	2,948	1,5175
37,0 (PS)	-0,873	0,070	723,726	4,051	1,121	0,000	0,000	2,930	1,5688
38,0 (PS)	-0,969	0,069	723,726	4,058	1,147	0,000	0,000	2,911	1,6198
39,0 (PS)	-1,069	0,069	723,721	4,063	1,172	0,000	0,000	2,890	1,6704
40,0 (PS)	-1,173	0,068	723,724	4,066	1,198	0,000	0,000	2,868	1,7207
41,0 (PS)	-1,281	0,067	723,725	4,067	1,222	0,000	0,000	2,845	1,7705
42,0 (PS)	-1,394	0,066	723,726	4,067	1,247	0,000	0,000	2,820	1,8200
43,0 (PS)	-1,511	0,065	723,727	4,065	1,271	0,000	0,000	2,794	1,8690
44,0 (PS)	-1,633	0,064	723,724	4,062	1,294	0,000	0,000	2,768	1,9175
45,0 (PS)	-1,761	0,063	723,726	4,057	1,317	0,000	0,000	2,740	1,9656
46,0 (PS)	-1,894	0,062	723,727	4,051	1,340	0,000	0,000	2,711	2,0131
47,0 (PS)	-2,033	0,062	723,727	4,044	1,363	0,000	0,000	2,682	2,0602
48,0 (PS)	-2,178	0,063	723,727	4,035	1,384	0,000	0,000	2,650	2,1067



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	14,629 m	>=	1,000 m	Complies
Combined heeling moment	1,0 degr	<=	5,0 degr	Complies
Calculated heeling moment (upright)	180,420 t*m			
Required freeboard	2,368 m	>=	0,000 m	Complies
Weight	180,420 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers 70 % full

2020.056_007 IW-NET NEWS Evolution long

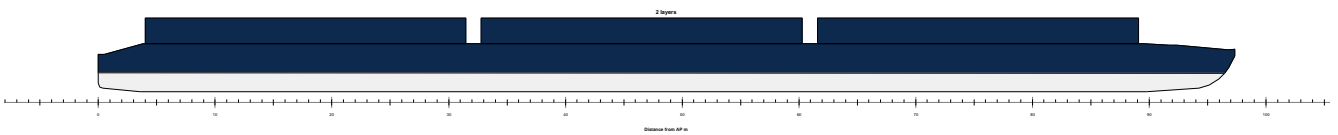
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_007_IW-NET NEWS Evolution long.fbm

Design length	97,320 m	Midship location	48,660 m
Length over all	97,320 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	2,000 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,746 m
Draft aft pp	1,636 m	GG'	0,000 m
Mean moulded draft	1,607 m	VCG'	2,746 m
Draft forward pp	1,578 m	Max VCG'	6,639 m
Trim	-0,058 m	GM solid	5,068 m
LCF	47,857 m	G'M liquid	5,068 m
LCB	46,963 m	Immersion rate	10,958 tonne/cm
KM	7,814 m	MCT	85,626 t*m

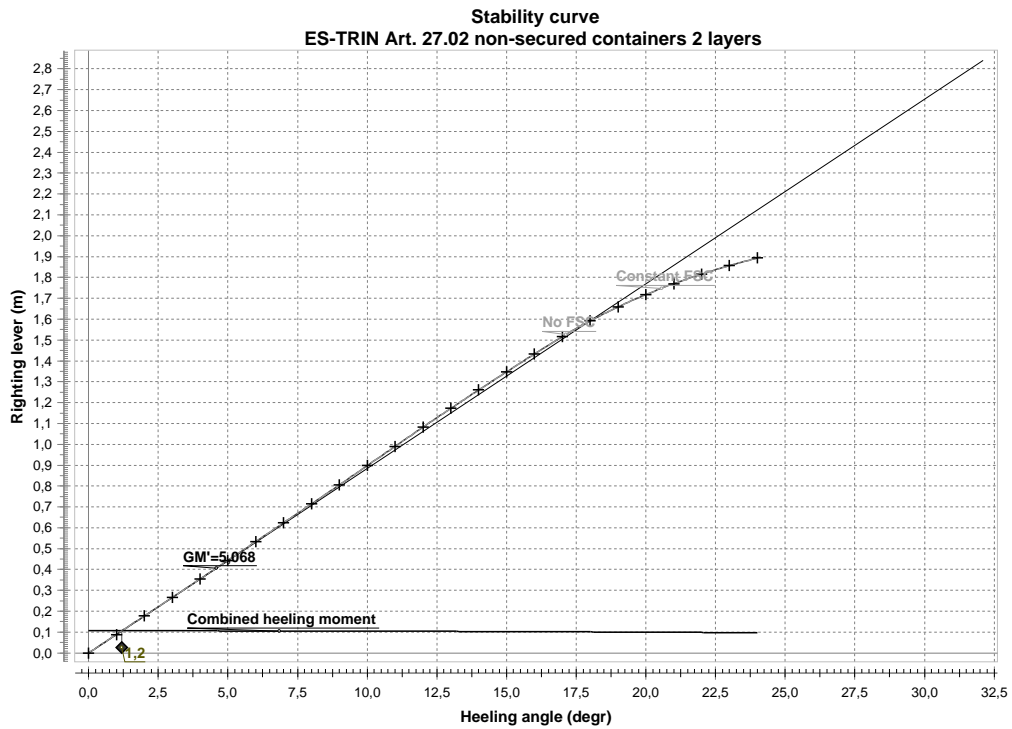
Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers 70 % full			1212,240	46,541	0,000 (CL)	3,400	0,000
Lightship			488,527	48,014	0,000 (CL)	1,123	
Deadweight			1212,240	46,541	0,000 (CL)	3,400	0,000
Displacement			1700,767	46,964	0,000 (CL)	2,746	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,607	-0,058	1700,767	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,607	-0,058	1700,766	0,136	0,048	0,000	0,000	0,088	0,0008
2,0 (PS)	1,607	-0,059	1700,763	0,273	0,096	0,000	0,000	0,177	0,0031
3,0 (PS)	1,607	-0,060	1700,759	0,409	0,144	0,000	0,000	0,266	0,0070
4,0 (PS)	1,607	-0,061	1700,756	0,546	0,192	0,000	0,000	0,355	0,0124
5,0 (PS)	1,606	-0,062	1700,755	0,683	0,239	0,000	0,000	0,444	0,0193
6,0 (PS)	1,606	-0,064	1700,755	0,821	0,287	0,000	0,000	0,534	0,0279
7,0 (PS)	1,606	-0,067	1700,755	0,958	0,335	0,000	0,000	0,624	0,0380
8,0 (PS)	1,605	-0,069	1700,757	1,097	0,382	0,000	0,000	0,714	0,0496
9,0 (PS)	1,605	-0,072	1700,773	1,235	0,430	0,000	0,000	0,806	0,0629
10,0 (PS)	1,604	-0,076	1700,767	1,374	0,477	0,000	0,000	0,898	0,0778
11,0 (PS)	1,603	-0,080	1700,767	1,514	0,524	0,000	0,000	0,990	0,0942
12,0 (PS)	1,602	-0,084	1700,750	1,653	0,571	0,000	0,000	1,082	0,1123
13,0 (PS)	1,600	-0,089	1700,766	1,790	0,618	0,000	0,000	1,172	0,1320
14,0 (PS)	1,597	-0,094	1700,764	1,925	0,664	0,000	0,000	1,261	0,1532
15,0 (PS)	1,593	-0,099	1700,761	2,058	0,711	0,000	0,000	1,348	0,1760
16,0 (PS)	1,589	-0,104	1700,759	2,190	0,757	0,000	0,000	1,433	0,2003
17,0 (PS)	1,583	-0,111	1700,750	2,318	0,803	0,000	0,000	1,516	0,2260
18,0 (PS)	1,575	-0,120	1700,765	2,440	0,849	0,000	0,000	1,592	0,2531
19,0 (PS)	1,565	-0,128	1700,764	2,553	0,894	0,000	0,000	1,659	0,2815
20,0 (PS)	1,552	-0,137	1700,764	2,657	0,939	0,000	0,000	1,718	0,3110
21,0 (PS)	1,536	-0,146	1700,766	2,754	0,984	0,000	0,000	1,770	0,3414
22,0 (PS)	1,518	-0,154	1700,762	2,845	1,029	0,000	0,000	1,816	0,3727
23,0 (PS)	1,497	-0,162	1700,766	2,930	1,073	0,000	0,000	1,857	0,4048
24,0 (PS)	1,474	-0,169	1700,764	3,010	1,117	0,000	0,000	1,893	0,4375



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	5,068 m	\geq	1,000 m	Complies
Combined heeling moment	1,2 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	180,420 t*m			
Required freeboard	1,444 m	\geq	0,000 m	Complies
Weight	180,420 t			
Trv. location of weight	1,000 m			

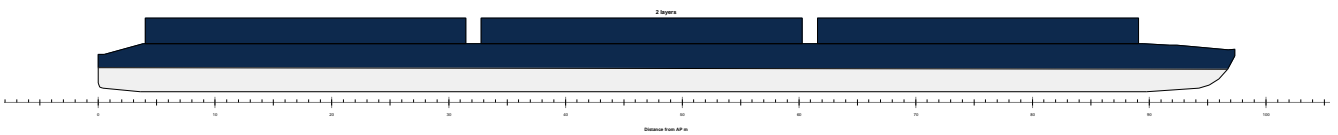
The condition complies with the stability criteria

Containers full

2020.056_007 IW-NET NEWS Evolution long

Designer Bernhard Bieringer
 Created by Bernhard Bieringer
 Comment
 Filename 2020_056_007_IW-NET NEWS Evolution long.fbm

Design length	97,320 m	Midship location	48,660 m
Length over all	97,320 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	2,000 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,875 m
Draft aft pp	2,053 m	GG'	0,000 m
Mean moulded draft	1,989 m	VCG'	2,875 m
Draft forward pp	1,925 m	Max VCG'	5,655 m
Trim	-0,128 m	GM solid	3,780 m
LCF	48,077 m	G'M liquid	3,780 m
LCB	46,877 m	Immersion rate	11,008 tonne/cm
KM	6,655 m	MCT	86,748 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

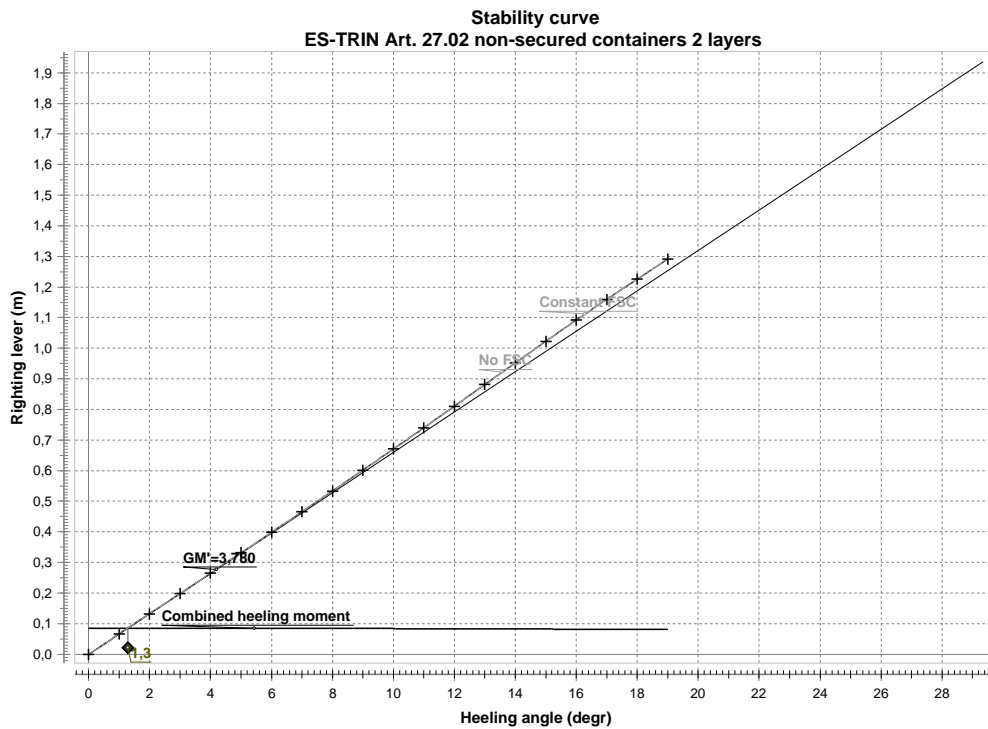
Containers full			1632,000	46,541	0,000 (CL)	3,400	0,000
Lightship			488,527	48,014	0,000 (CL)	1,123	
Deadweight			1632,000	46,541	0,000 (CL)	3,400	0,000
Displacement			2120,527	46,880	0,000 (CL)	2,875	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,989	-0,128	2120,527	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,989	-0,128	2120,526	0,116	0,050	0,000	0,000	0,066	0,0006
2,0 (PS)	1,989	-0,128	2120,524	0,232	0,100	0,000	0,000	0,132	0,0023
3,0 (PS)	1,988	-0,129	2120,521	0,349	0,150	0,000	0,000	0,198	0,0052
4,0 (PS)	1,988	-0,130	2120,519	0,465	0,201	0,000	0,000	0,265	0,0092
5,0 (PS)	1,988	-0,131	2120,517	0,582	0,251	0,000	0,000	0,331	0,0144
6,0 (PS)	1,988	-0,133	2120,517	0,699	0,301	0,000	0,000	0,398	0,0208
7,0 (PS)	1,987	-0,135	2120,517	0,816	0,350	0,000	0,000	0,466	0,0283
8,0 (PS)	1,987	-0,137	2120,518	0,934	0,400	0,000	0,000	0,533	0,0370
9,0 (PS)	1,987	-0,140	2120,519	1,051	0,450	0,000	0,000	0,602	0,0469
10,0 (PS)	1,986	-0,143	2120,519	1,170	0,499	0,000	0,000	0,671	0,0580

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
11,0 (PS)	1,986	-0,146	2120,518	1,289	0,549	0,000	0,000	0,740	0,0704
12,0 (PS)	1,985	-0,150	2120,518	1,408	0,598	0,000	0,000	0,811	0,0839
13,0 (PS)	1,984	-0,154	2120,518	1,528	0,647	0,000	0,000	0,881	0,0987
14,0 (PS)	1,984	-0,160	2120,520	1,648	0,696	0,000	0,000	0,952	0,1147
15,0 (PS)	1,984	-0,167	2120,530	1,767	0,744	0,000	0,000	1,023	0,1319
16,0 (PS)	1,983	-0,175	2120,525	1,885	0,793	0,000	0,000	1,092	0,1503
17,0 (PS)	1,982	-0,183	2120,520	2,001	0,841	0,000	0,000	1,160	0,1700
18,0 (PS)	1,980	-0,190	2120,524	2,114	0,889	0,000	0,000	1,226	0,1908
19,0 (PS)	1,978	-0,198	2120,527	2,227	0,936	0,000	0,000	1,291	0,2128



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	3,780 m	\geq	1,000 m	Complies
Combined heeling moment	1,3 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	180,420 t*m			
Required freeboard	1,019 m	\geq	0,000 m	Complies
Weight	180,420 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers empty 3 layers

2020.056_007 IW-NET NEWS Evolution long

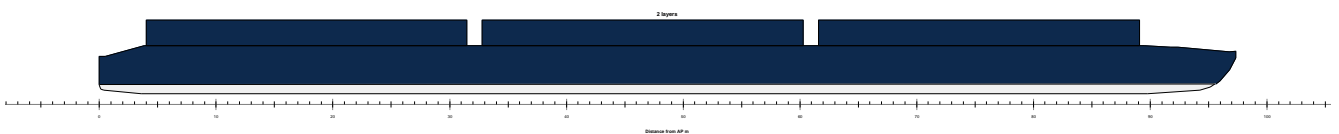
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_007_IW-NET NEWS Evolution long.fbm

Design length	97,320 m	Midship location	48,660 m
Length over all	97,320 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	2,000 m		



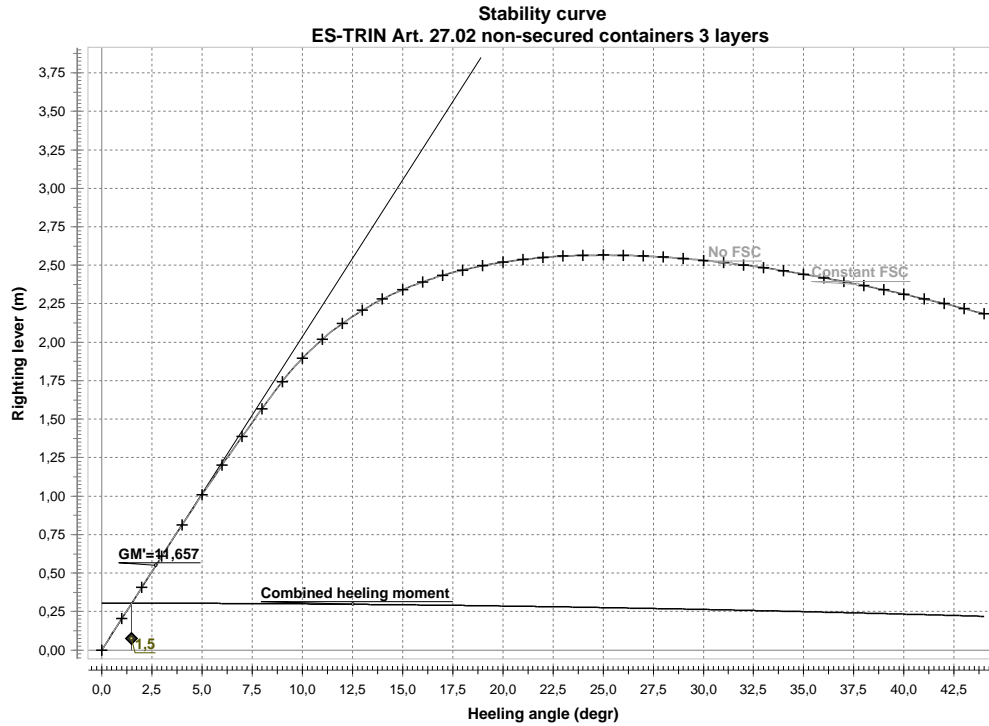
Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,686 m
Draft aft pp	0,796 m	GG'	0,000 m
Mean moulded draft	0,819 m	VCG'	2,686 m
Draft forward pp	0,843 m	Max VCG'	10,810 m
Trim	0,047 m	GM solid	11,657 m
LCF	47,243 m	G'M liquid	11,657 m
LCB	47,397 m	Immersion rate	10,816 tonne/cm
KM	14,342 m	MCT	82,499 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
Containers							
Containers empty			235,200	46,541	0,000 (CL)	3,400	0,000
3rd layer empty			117,600	46,541	0,000 (CL)	7,748	0,000
Totals for Containers			352,800	46,541	0,000 (CL)	4,849	0,000
Lightship			488,527	48,014	0,000 (CL)	1,123	
Deadweight			352,800	46,541	0,000 (CL)	4,849	0,000
Displacement			841,327	47,396	0,000 (CL)	2,686	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	0,819	0,047	841,327	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	0,819	0,047	841,324	0,250	0,047	0,000	0,000	0,203	0,0018
2,0 (PS)	0,819	0,046	841,327	0,501	0,094	0,000	0,000	0,407	0,0071
3,0 (PS)	0,819	0,045	841,319	0,751	0,141	0,000	0,000	0,610	0,0160
4,0 (PS)	0,818	0,044	841,327	1,000	0,187	0,000	0,000	0,812	0,0284
5,0 (PS)	0,816	0,043	841,326	1,243	0,234	0,000	0,000	1,009	0,0443
6,0 (PS)	0,814	0,041	841,327	1,481	0,281	0,000	0,000	1,200	0,0636
7,0 (PS)	0,811	0,039	841,325	1,714	0,327	0,000	0,000	1,387	0,0862
8,0 (PS)	0,806	0,038	841,319	1,942	0,374	0,000	0,000	1,569	0,1120
9,0 (PS)	0,801	0,037	841,324	2,164	0,420	0,000	0,000	1,744	0,1409
10,0 (PS)	0,791	0,037	841,324	2,361	0,466	0,000	0,000	1,894	0,1727
11,0 (PS)	0,777	0,037	841,325	2,531	0,512	0,000	0,000	2,018	0,2069
12,0 (PS)	0,759	0,037	841,321	2,680	0,558	0,000	0,000	2,122	0,2430
13,0 (PS)	0,736	0,037	841,324	2,812	0,604	0,000	0,000	2,208	0,2808
14,0 (PS)	0,711	0,037	841,322	2,930	0,650	0,000	0,000	2,280	0,3200
15,0 (PS)	0,682	0,037	841,320	3,036	0,695	0,000	0,000	2,341	0,3604
16,0 (PS)	0,650	0,037	841,325	3,132	0,740	0,000	0,000	2,392	0,4017
17,0 (PS)	0,615	0,036	841,325	3,219	0,785	0,000	0,000	2,434	0,4438
18,0 (PS)	0,578	0,036	841,325	3,299	0,830	0,000	0,000	2,469	0,4866
19,0 (PS)	0,538	0,036	841,319	3,371	0,874	0,000	0,000	2,497	0,5299
20,0 (PS)	0,495	0,036	841,321	3,438	0,919	0,000	0,000	2,520	0,5737
21,0 (PS)	0,451	0,036	841,323	3,500	0,962	0,000	0,000	2,537	0,6179
22,0 (PS)	0,403	0,035	841,325	3,556	1,006	0,000	0,000	2,550	0,6623
23,0 (PS)	0,354	0,035	841,320	3,608	1,049	0,000	0,000	2,559	0,7069
24,0 (PS)	0,301	0,034	841,323	3,656	1,092	0,000	0,000	2,564	0,7516
25,0 (PS)	0,247	0,034	841,325	3,701	1,135	0,000	0,000	2,566	0,7963
26,0 (PS)	0,190	0,033	841,326	3,742	1,177	0,000	0,000	2,564	0,8411
27,0 (PS)	0,131	0,032	841,321	3,779	1,219	0,000	0,000	2,560	0,8858
28,0 (PS)	0,069	0,032	841,324	3,814	1,261	0,000	0,000	2,553	0,9305
29,0 (PS)	0,004	0,031	841,325	3,845	1,302	0,000	0,000	2,543	0,9749
30,0 (PS)	-0,063	0,030	841,326	3,874	1,343	0,000	0,000	2,531	1,0192
31,0 (PS)	-0,132	0,029	841,322	3,901	1,383	0,000	0,000	2,518	1,0633
32,0 (PS)	-0,205	0,028	841,324	3,925	1,423	0,000	0,000	2,502	1,1071
33,0 (PS)	-0,280	0,027	841,325	3,946	1,463	0,000	0,000	2,483	1,1506
34,0 (PS)	-0,358	0,025	841,326	3,965	1,502	0,000	0,000	2,464	1,1938
35,0 (PS)	-0,439	0,023	841,320	3,982	1,540	0,000	0,000	2,442	1,2366
36,0 (PS)	-0,524	0,022	841,323	3,997	1,579	0,000	0,000	2,419	1,2790
37,0 (PS)	-0,611	0,020	841,325	4,010	1,616	0,000	0,000	2,394	1,3210
38,0 (PS)	-0,703	0,018	841,326	4,021	1,653	0,000	0,000	2,368	1,3626
39,0 (PS)	-0,797	0,016	841,319	4,030	1,690	0,000	0,000	2,340	1,4036
40,0 (PS)	-0,896	0,014	841,324	4,038	1,726	0,000	0,000	2,311	1,4442
41,0 (PS)	-0,998	0,012	841,326	4,044	1,762	0,000	0,000	2,282	1,4843
42,0 (PS)	-1,105	0,010	841,320	4,048	1,797	0,000	0,000	2,251	1,5239
43,0 (PS)	-1,217	0,009	841,327	4,050	1,832	0,000	0,000	2,219	1,5629
44,0 (PS)	-1,332	0,008	841,334	4,050	1,866	0,000	0,000	2,184	1,6013



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	11,657 m	>=	1,000 m	Complies
Combined heeling moment	1,5 degr	<=	5,0 degr	Complies
Calculated heeling moment (upright)	256,100 t*m			
Required freeboard	2,211 m	>=	0,000 m	Complies
Weight	256,100 t			
Trv. location of weight	1,000 m			

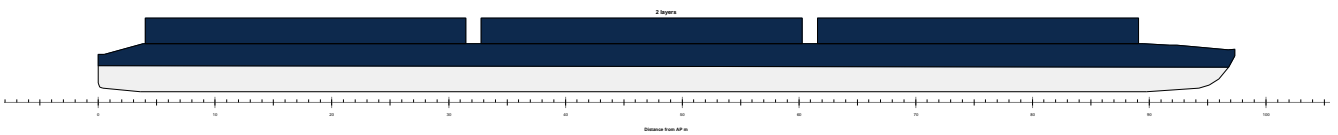
The condition complies with the stability criteria

Containers 70 % full 3 layers

2020.056_007 IW-NET NEWS Evolution long

Designer Bernhard Bieringer
 Created by Bernhard Bieringer
 Comment
 Filename 2020_056_007_IW-NET NEWS Evolution long.fbm

Design length	97,320 m	Midship location	48,660 m
Length over all	97,320 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	2,000 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	4,061 m
Draft aft pp	2,239 m	GG'	0,000 m
Mean moulded draft	2,158 m	VCG'	4,061 m
Draft forward pp	2,077 m	Max VCG'	5,059 m
Trim	-0,162 m	GM solid	2,235 m
LCF	48,163 m	G'M liquid	2,235 m
LCB	46,847 m	Immersion rate	11,028 tonne/cm
KM	6,296 m	MCT	86,922 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers 70 % full			1212,240	46,541	0,000 (CL)	3,400	0,000
3rd layer 70 % full			606,480	46,541	0,000 (CL)	7,748	0,000
Totals for Containers			1818,720	46,541	0,000 (CL)	4,850	0,000

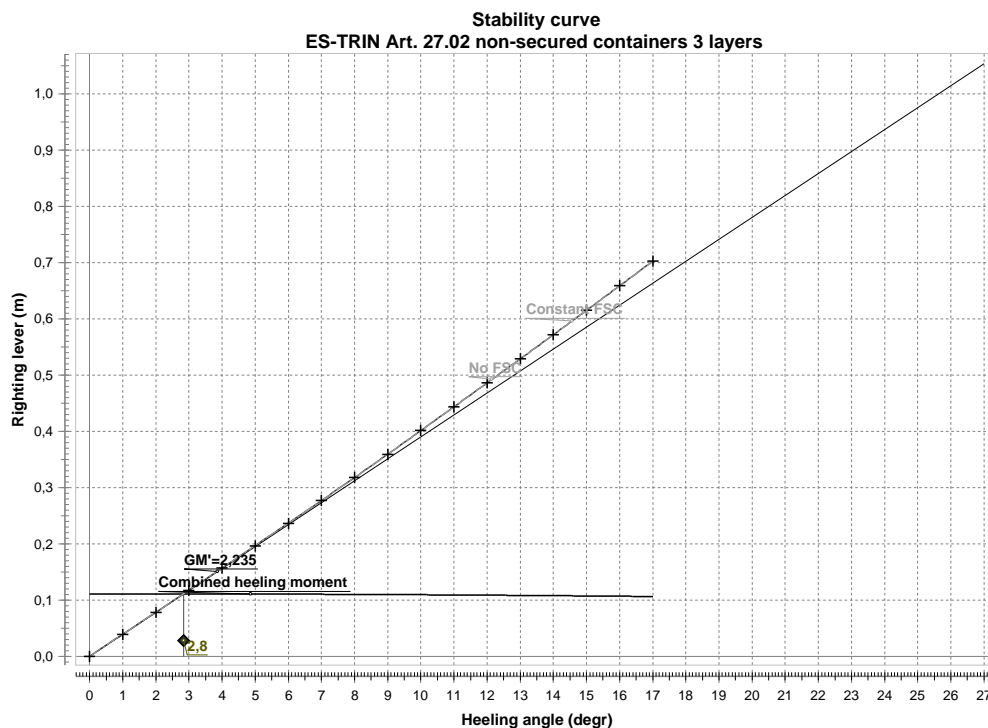
Lightship			488,527	48,014	0,000 (CL)	1,123	
Deadweight			1818,720	46,541	0,000 (CL)	4,850	0,000
Displacement			2307,247	46,853	0,000 (CL)	4,061	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	2,158	-0,162	2307,247	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	2,158	-0,162	2307,246	0,110	0,071	0,000	0,000	0,039	0,0003
2,0 (PS)	2,158	-0,163	2307,244	0,220	0,142	0,000	0,000	0,078	0,0014
3,0 (PS)	2,158	-0,163	2307,242	0,330	0,213	0,000	0,000	0,117	0,0031
4,0 (PS)	2,158	-0,164	2307,240	0,440	0,283	0,000	0,000	0,157	0,0055
5,0 (PS)	2,157	-0,166	2307,239	0,550	0,354	0,000	0,000	0,196	0,0085
6,0 (PS)	2,157	-0,167	2307,238	0,661	0,424	0,000	0,000	0,236	0,0123
7,0 (PS)	2,157	-0,169	2307,239	0,772	0,495	0,000	0,000	0,277	0,0168
8,0 (PS)	2,156	-0,171	2307,240	0,883	0,565	0,000	0,000	0,318	0,0220

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
9,0 (PS)	2,156	-0,173	2307,240	0,994	0,635	0,000	0,000	0,359	0,0279
10,0 (PS)	2,156	-0,176	2307,242	1,106	0,705	0,000	0,000	0,401	0,0345
11,0 (PS)	2,155	-0,180	2307,249	1,218	0,775	0,000	0,000	0,444	0,0419
12,0 (PS)	2,155	-0,185	2307,254	1,330	0,844	0,000	0,000	0,486	0,0500
13,0 (PS)	2,155	-0,191	2307,255	1,442	0,913	0,000	0,000	0,529	0,0589
14,0 (PS)	2,155	-0,197	2307,253	1,554	0,982	0,000	0,000	0,572	0,0685
15,0 (PS)	2,156	-0,204	2307,248	1,666	1,051	0,000	0,000	0,615	0,0788
16,0 (PS)	2,157	-0,210	2307,247	1,778	1,119	0,000	0,000	0,659	0,0899
17,0 (PS)	2,157	-0,217	2307,247	1,889	1,187	0,000	0,000	0,702	0,1018



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	2,235 m	\geq	1,000 m	Complies
Combined heeling moment	2,8 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	256,100 t*m			
Required freeboard	0,677 m	\geq	0,000 m	Complies
Weight	256,100 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers full 3 layers

2020.056_007 IW-NET NEWS Evolution long

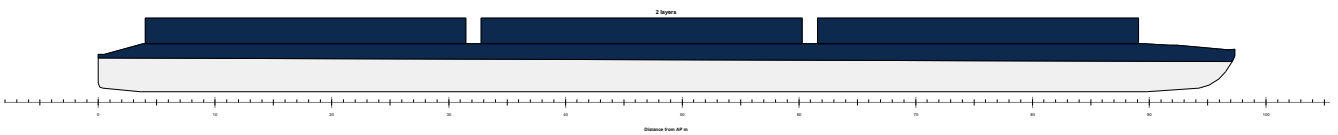
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_007_IW-NET NEWS Evolution long.fbm

Design length	97,320 m	Midship location	48,660 m
Length over all	97,320 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	2,000 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	4,229 m
Draft aft pp	2,871 m	GG'	0,000 m
Mean moulded draft	2,727 m	VCG'	4,229 m
Draft forward pp	2,582 m	Max VCG'	3,990 m
Trim	-0,288 m	GM solid	1,266 m
LCF	48,404 m	G'M liquid	1,266 m
LCB	46,777 m	Immersion rate	11,083 tonne/cm
KM	5,495 m	MCT	88,088 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers full			1632,000	46,541	0,000 (CL)	3,400	0,000
3rd layer full			816,000	46,541	0,000 (CL)	7,748	0,000
Totals for Containers			2448,000	46,541	0,000 (CL)	4,849	0,000

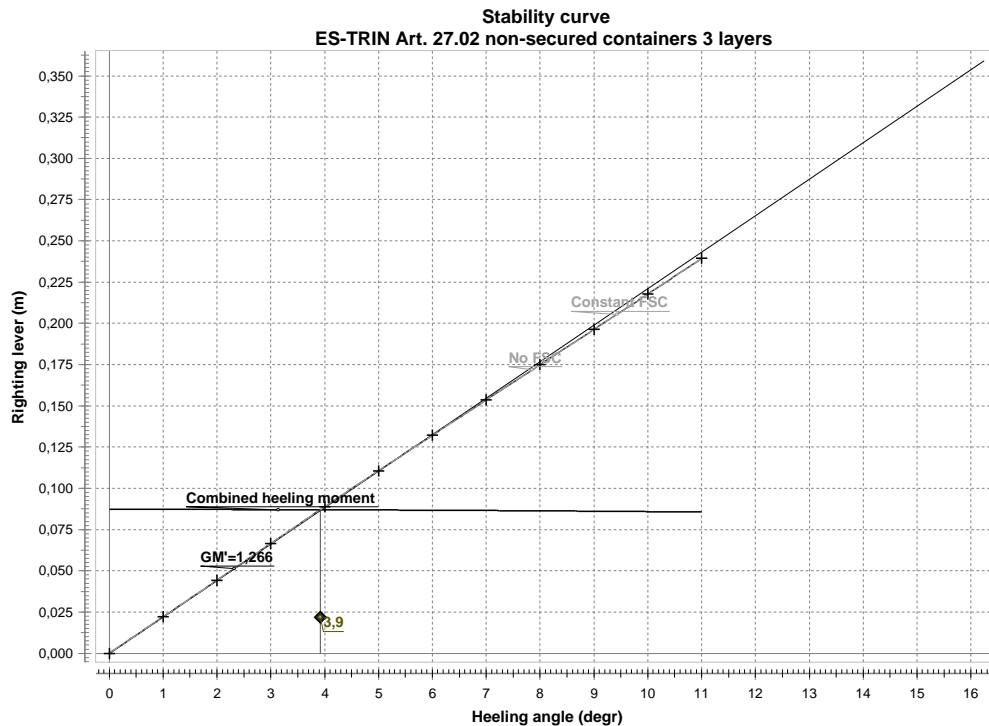
Lightship			488,527	48,014	0,000 (CL)	1,123	
Deadweight			2448,000	46,541	0,000 (CL)	4,849	0,000
Displacement			2936,527	46,786	0,000 (CL)	4,229	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	2,727	-0,288	2936,527	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	2,727	-0,289	2936,527	0,096	0,074	0,000	0,000	0,022	0,0002
2,0 (PS)	2,727	-0,289	2936,526	0,192	0,148	0,000	0,000	0,044	0,0008
3,0 (PS)	2,726	-0,289	2936,525	0,288	0,221	0,000	0,000	0,067	0,0017
4,0 (PS)	2,726	-0,290	2936,537	0,384	0,295	0,000	0,000	0,089	0,0031
5,0 (PS)	2,727	-0,294	2936,541	0,479	0,369	0,000	0,000	0,111	0,0048
6,0 (PS)	2,727	-0,298	2936,540	0,574	0,442	0,000	0,000	0,132	0,0070
7,0 (PS)	2,728	-0,304	2936,538	0,669	0,515	0,000	0,000	0,154	0,0094
8,0 (PS)	2,729	-0,310	2936,534	0,764	0,589	0,000	0,000	0,175	0,0123

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
9,0 (PS)	2,731	-0,316	2936,531	0,858	0,662	0,000	0,000	0,196	0,0156
10,0 (PS)	2,732	-0,321	2936,529	0,952	0,734	0,000	0,000	0,218	0,0192
11,0 (PS)	2,734	-0,325	2936,527	1,046	0,807	0,000	0,000	0,239	0,0232



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	1,266 m	\geq	1,000 m	Complies
Combined heeling moment	3,9 degr	\leq	5,0 degr	Fails
Calculated heeling moment (upright)	256,100 t*m			
Required freeboard	-0,062 m	\geq	0,000 m	Fails
Weight	256,100 t			
Trv. location of weight	1,000 m			

The condition does NOT comply with the stability criteria

Containers empty ALU

2020.056_007 IW-NET NEWS Evolution long

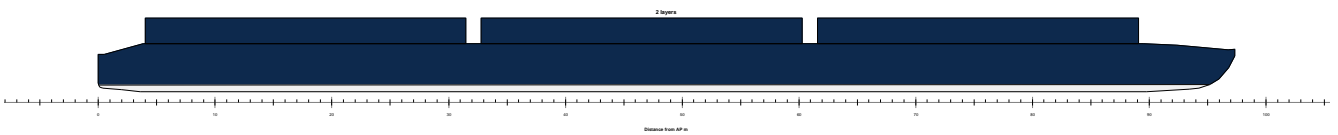
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_007_IW-NET NEWS Evolution long.fbm

Design length	97,320 m	Midship location	48,660 m
Length over all	97,320 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	2,000 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,075 m
Draft aft pp	0,554 m	GG'	0,000 m
Mean moulded draft	0,577 m	VCG'	2,075 m
Draft forward pp	0,601 m	Max VCG'	15,930 m
Trim	0,047 m	GM solid	18,203 m
LCF	47,019 m	G'M liquid	18,203 m
LCB	47,522 m	Immersion rate	10,743 tonne/cm
KM	20,278 m	MCT	80,944 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

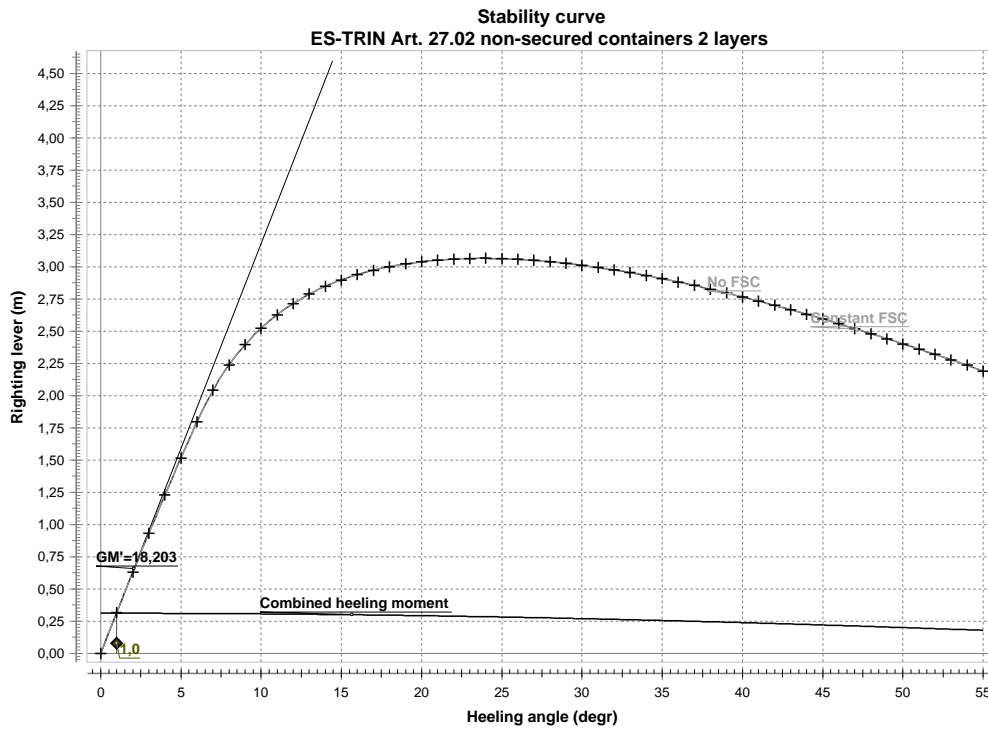
Containers empty			235,200	46,541	0,000 (CL)	3,400	0,000
Lightship			345,474	48,188	0,000 (CL)	1,173	
Deadweight			235,200	46,541	0,000 (CL)	3,400	0,000
Displacement			580,674	47,521	0,000 (CL)	2,075	0,000

Righting levers

Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	0,577	0,047	580,673	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	0,577	0,047	580,674	0,354	0,036	0,000	0,000	0,317	0,0028
2,0 (PS)	0,576	0,047	580,679	0,701	0,072	0,000	0,000	0,629	0,0110
3,0 (PS)	0,575	0,047	580,673	1,041	0,109	0,000	0,000	0,932	0,0247
4,0 (PS)	0,572	0,046	580,674	1,373	0,145	0,000	0,000	1,228	0,0435
5,0 (PS)	0,568	0,046	580,670	1,696	0,181	0,000	0,000	1,515	0,0675
6,0 (PS)	0,563	0,046	580,673	2,011	0,217	0,000	0,000	1,794	0,0964
7,0 (PS)	0,555	0,048	580,670	2,296	0,253	0,000	0,000	2,043	0,1299
8,0 (PS)	0,541	0,051	580,669	2,527	0,289	0,000	0,000	2,238	0,1674
9,0 (PS)	0,520	0,054	580,670	2,719	0,325	0,000	0,000	2,395	0,2079
10,0 (PS)	0,496	0,056	580,671	2,882	0,360	0,000	0,000	2,522	0,2508
11,0 (PS)	0,467	0,058	580,672	3,023	0,396	0,000	0,000	2,627	0,2958
12,0 (PS)	0,434	0,060	580,670	3,145	0,431	0,000	0,000	2,714	0,3424
13,0 (PS)	0,399	0,062	580,672	3,253	0,467	0,000	0,000	2,786	0,3904
14,0 (PS)	0,360	0,064	580,671	3,348	0,502	0,000	0,000	2,846	0,4396
15,0 (PS)	0,318	0,066	580,670	3,434	0,537	0,000	0,000	2,897	0,4897
16,0 (PS)	0,274	0,068	580,670	3,510	0,572	0,000	0,000	2,938	0,5406
17,0 (PS)	0,227	0,070	580,670	3,579	0,607	0,000	0,000	2,972	0,5922
18,0 (PS)	0,178	0,071	580,670	3,641	0,641	0,000	0,000	3,000	0,6444
19,0 (PS)	0,126	0,073	580,671	3,697	0,676	0,000	0,000	3,022	0,6969
20,0 (PS)	0,073	0,074	580,672	3,748	0,710	0,000	0,000	3,039	0,7498
21,0 (PS)	0,016	0,075	580,669	3,794	0,744	0,000	0,000	3,051	0,8030
22,0 (PS)	-0,042	0,076	580,671	3,836	0,777	0,000	0,000	3,059	0,8563
23,0 (PS)	-0,103	0,077	580,672	3,874	0,811	0,000	0,000	3,063	0,9097
24,0 (PS)	-0,166	0,078	580,669	3,908	0,844	0,000	0,000	3,064	0,9632
25,0 (PS)	-0,231	0,079	580,671	3,939	0,877	0,000	0,000	3,062	1,0166
26,0 (PS)	-0,299	0,080	580,672	3,966	0,910	0,000	0,000	3,056	1,0700
27,0 (PS)	-0,369	0,081	580,668	3,990	0,942	0,000	0,000	3,048	1,1233
28,0 (PS)	-0,442	0,082	580,670	4,012	0,974	0,000	0,000	3,038	1,1764
29,0 (PS)	-0,517	0,082	580,671	4,031	1,006	0,000	0,000	3,025	1,2293
30,0 (PS)	-0,594	0,083	580,672	4,048	1,038	0,000	0,000	3,010	1,2820
31,0 (PS)	-0,675	0,083	580,668	4,062	1,069	0,000	0,000	2,993	1,3344
32,0 (PS)	-0,758	0,084	580,670	4,074	1,100	0,000	0,000	2,974	1,3865
33,0 (PS)	-0,844	0,084	580,671	4,083	1,130	0,000	0,000	2,953	1,4382
34,0 (PS)	-0,933	0,085	580,672	4,091	1,160	0,000	0,000	2,931	1,4895
35,0 (PS)	-1,025	0,085	580,673	4,097	1,190	0,000	0,000	2,907	1,5405
36,0 (PS)	-1,121	0,085	580,670	4,101	1,220	0,000	0,000	2,881	1,5910
37,0 (PS)	-1,220	0,086	580,671	4,103	1,249	0,000	0,000	2,854	1,6410
38,0 (PS)	-1,323	0,086	580,672	4,103	1,278	0,000	0,000	2,825	1,6906
39,0 (PS)	-1,430	0,086	580,673	4,101	1,306	0,000	0,000	2,796	1,7397
40,0 (PS)	-1,540	0,086	580,673	4,098	1,334	0,000	0,000	2,765	1,7882
41,0 (PS)	-1,656	0,086	580,670	4,094	1,361	0,000	0,000	2,733	1,8362
42,0 (PS)	-1,775	0,086	580,672	4,088	1,388	0,000	0,000	2,699	1,8836
43,0 (PS)	-1,900	0,086	580,673	4,080	1,415	0,000	0,000	2,665	1,9304
44,0 (PS)	-2,029	0,086	580,673	4,071	1,441	0,000	0,000	2,630	1,9766
45,0 (PS)	-2,164	0,086	580,668	4,061	1,467	0,000	0,000	2,594	2,0222
46,0 (PS)	-2,305	0,085	580,671	4,049	1,493	0,000	0,000	2,557	2,0671
47,0 (PS)	-2,452	0,085	580,672	4,036	1,518	0,000	0,000	2,519	2,1114
48,0 (PS)	-2,606	0,084	580,673	4,022	1,542	0,000	0,000	2,480	2,1550
49,0 (PS)	-2,767	0,083	580,674	4,007	1,566	0,000	0,000	2,441	2,1980
50,0 (PS)	-2,936	0,083	580,670	3,990	1,590	0,000	0,000	2,401	2,2402

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
51,0 (PS)	-3,113	0,082	580,673	3,973	1,613	0,000	0,000	2,360	2,2818
52,0 (PS)	-3,299	0,081	580,674	3,954	1,635	0,000	0,000	2,319	2,3226
53,0 (PS)	-3,494	0,081	580,674	3,935	1,657	0,000	0,000	2,278	2,3627
54,0 (PS)	-3,699	0,081	580,674	3,914	1,679	0,000	0,000	2,235	2,4021
55,0 (PS)	-3,915	0,083	580,678	3,890	1,700	0,000	0,000	2,190	2,4407



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	18,203 m	\geq	1,000 m	Complies
Combined heeling moment	1,0 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	180,420 t*m			
Required freeboard	2,505 m	\geq	0,000 m	Complies
Weight	180,420 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers 70 % full ALU

2020.056_007 IW-NET NEWS Evolution long

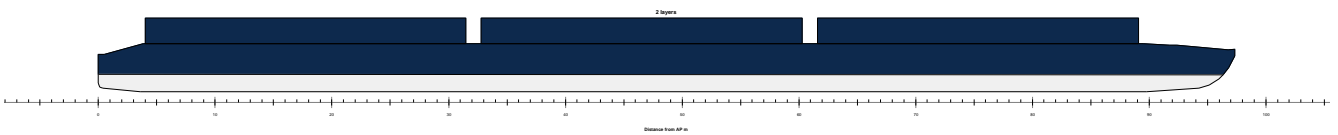
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_007_IW-NET NEWS Evolution long.fbm

Design length	97,320 m	Midship location	48,660 m
Length over all	97,320 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	2,000 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,906 m
Draft aft pp	1,504 m	GG'	0,000 m
Mean moulded draft	1,476 m	VCG'	2,906 m
Draft forward pp	1,449 m	Max VCG'	7,090 m
Trim	-0,054 m	GM solid	5,467 m
LCF	47,766 m	G'M liquid	5,467 m
LCB	46,905 m	Immersion rate	10,937 tonne/cm
KM	8,373 m	MCT	85,131 t*m

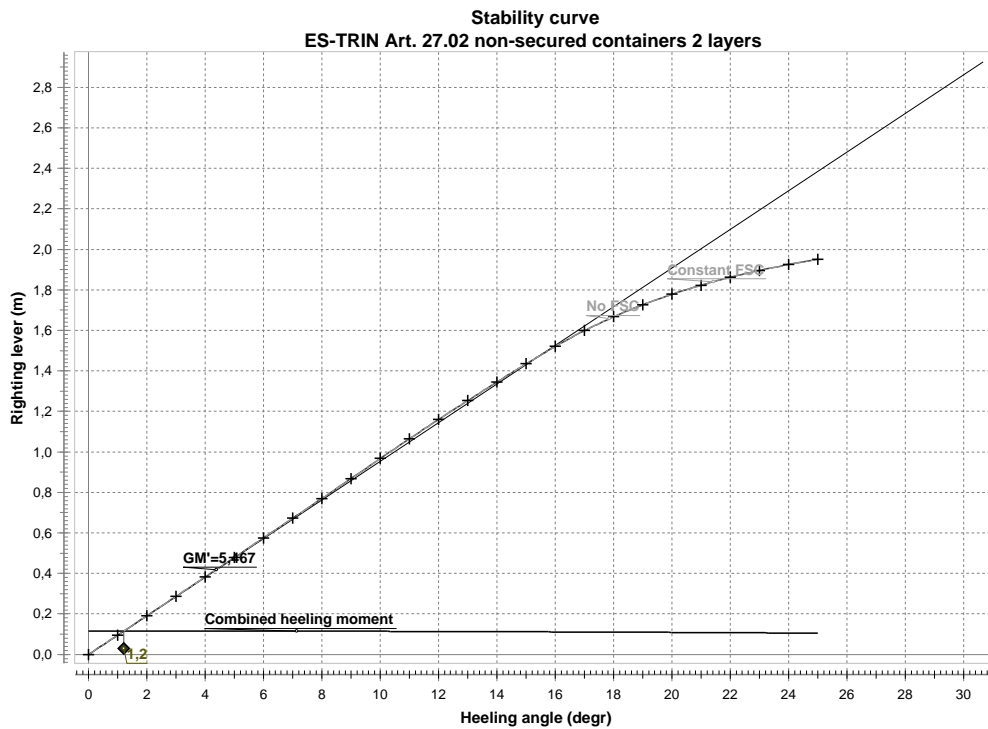
Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers 70 % full			1212,240	46,541	0,000 (CL)	3,400	0,000
Lightship			345,474	48,188	0,000 (CL)	1,173	
Deadweight			1212,240	46,541	0,000 (CL)	3,400	0,000
Displacement			1557,714	46,906	0,000 (CL)	2,906	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,476	-0,054	1557,714	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,476	-0,055	1557,712	0,146	0,051	0,000	0,000	0,095	0,0008
2,0 (PS)	1,476	-0,055	1557,709	0,292	0,101	0,000	0,000	0,191	0,0033
3,0 (PS)	1,476	-0,056	1557,705	0,439	0,152	0,000	0,000	0,287	0,0075
4,0 (PS)	1,476	-0,057	1557,703	0,585	0,203	0,000	0,000	0,383	0,0133
5,0 (PS)	1,476	-0,059	1557,701	0,732	0,253	0,000	0,000	0,479	0,0209
6,0 (PS)	1,475	-0,061	1557,702	0,879	0,304	0,000	0,000	0,576	0,0301
7,0 (PS)	1,475	-0,063	1557,702	1,027	0,354	0,000	0,000	0,673	0,0409
8,0 (PS)	1,474	-0,066	1557,723	1,175	0,404	0,000	0,000	0,771	0,0535
9,0 (PS)	1,474	-0,069	1557,714	1,324	0,455	0,000	0,000	0,869	0,0678
10,0 (PS)	1,473	-0,073	1557,721	1,472	0,505	0,000	0,000	0,968	0,0839
11,0 (PS)	1,472	-0,077	1557,713	1,620	0,555	0,000	0,000	1,065	0,1016
12,0 (PS)	1,469	-0,082	1557,710	1,765	0,604	0,000	0,000	1,161	0,1210
13,0 (PS)	1,466	-0,087	1557,704	1,908	0,654	0,000	0,000	1,254	0,1421
14,0 (PS)	1,462	-0,092	1557,714	2,048	0,703	0,000	0,000	1,345	0,1648
15,0 (PS)	1,457	-0,097	1557,713	2,187	0,752	0,000	0,000	1,435	0,1891
16,0 (PS)	1,451	-0,103	1557,711	2,323	0,801	0,000	0,000	1,522	0,2149
17,0 (PS)	1,442	-0,110	1557,704	2,449	0,850	0,000	0,000	1,599	0,2421
18,0 (PS)	1,430	-0,117	1557,699	2,565	0,898	0,000	0,000	1,667	0,2706
19,0 (PS)	1,415	-0,125	1557,713	2,673	0,946	0,000	0,000	1,727	0,3003
20,0 (PS)	1,397	-0,133	1557,701	2,772	0,994	0,000	0,000	1,778	0,3309
21,0 (PS)	1,377	-0,141	1557,708	2,865	1,041	0,000	0,000	1,823	0,3623
22,0 (PS)	1,354	-0,149	1557,712	2,951	1,089	0,000	0,000	1,863	0,3945
23,0 (PS)	1,329	-0,157	1557,700	3,032	1,135	0,000	0,000	1,896	0,4273
24,0 (PS)	1,302	-0,165	1557,710	3,107	1,182	0,000	0,000	1,925	0,4607
25,0 (PS)	1,272	-0,172	1557,713	3,178	1,228	0,000	0,000	1,950	0,4945



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	5,467 m	\geq	1,000 m	Complies
Combined heeling moment	1,2 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	180,420 t*m			
Required freeboard	1,575 m	\geq	0,000 m	Complies
Weight	180,420 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers full ALU

2020.056_007 IW-NET NEWS Evolution long

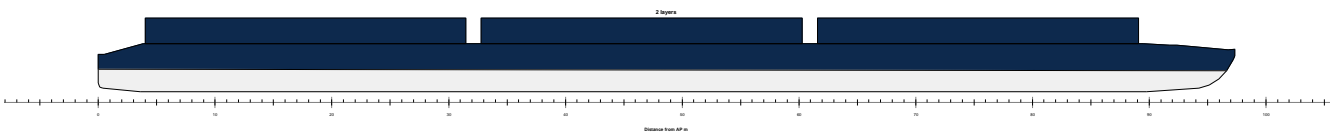
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_007_IW-NET NEWS Evolution long.fbm

Design length	97,320 m	Midship location	48,660 m
Length over all	97,320 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	2,000 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	3,011 m
Draft aft pp	1,919 m	GG'	0,000 m
Mean moulded draft	1,859 m	VCG'	3,011 m
Draft forward pp	1,798 m	Max VCG'	5,975 m
Trim	-0,120 m	GM solid	3,975 m
LCF	48,001 m	G'M liquid	3,975 m
LCB	46,825 m	Immersion rate	10,991 tonne/cm
KM	6,986 m	MCT	86,321 t*m

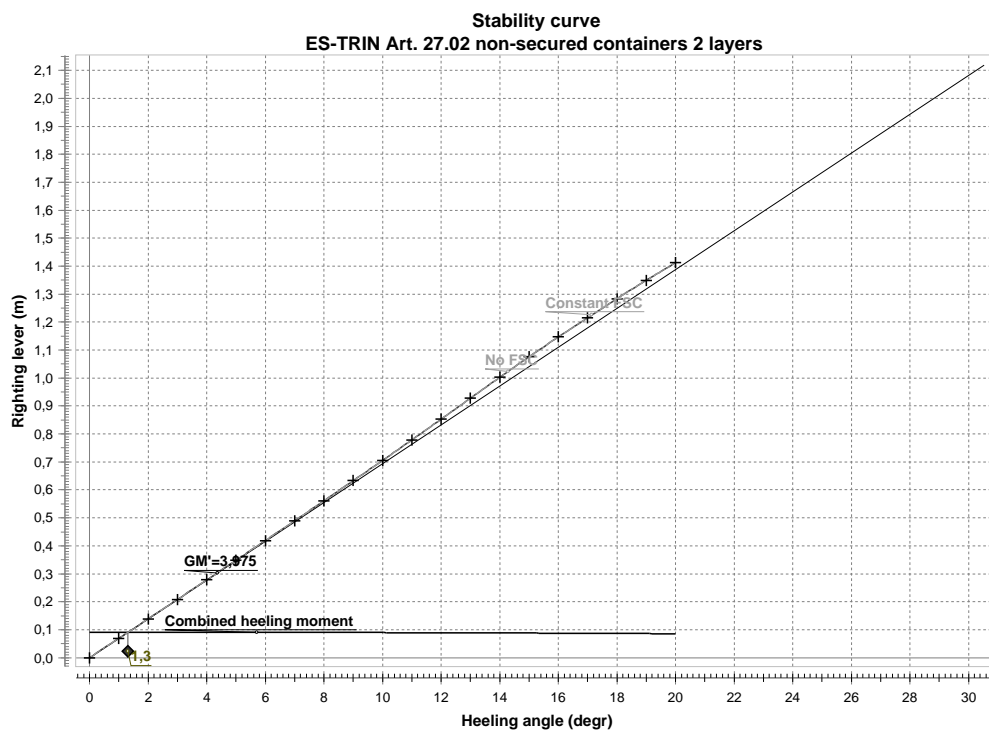
Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
Containers							
Containers full			1632,000	46,541	0,000 (CL)	3,400	0,000
Lightship			345,474	48,188	0,000 (CL)	1,173	
Deadweight			1632,000	46,541	0,000 (CL)	3,400	0,000
Displacement			1977,474	46,829	0,000 (CL)	3,011	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,859	-0,120	1977,484	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	1,859	-0,121	1977,473	0,122	0,053	0,000	0,000	0,069	0,0006
2,0 (PS)	1,859	-0,121	1977,470	0,244	0,105	0,000	0,000	0,139	0,0024
3,0 (PS)	1,858	-0,122	1977,467	0,366	0,158	0,000	0,000	0,208	0,0055
4,0 (PS)	1,858	-0,123	1977,465	0,488	0,210	0,000	0,000	0,278	0,0097
5,0 (PS)	1,858	-0,124	1977,463	0,611	0,262	0,000	0,000	0,348	0,0152
6,0 (PS)	1,858	-0,126	1977,463	0,733	0,315	0,000	0,000	0,419	0,0219
7,0 (PS)	1,857	-0,128	1977,463	0,857	0,367	0,000	0,000	0,490	0,0298
8,0 (PS)	1,857	-0,131	1977,465	0,980	0,419	0,000	0,000	0,561	0,0390
9,0 (PS)	1,856	-0,133	1977,466	1,104	0,471	0,000	0,000	0,633	0,0494
10,0 (PS)	1,856	-0,136	1977,466	1,228	0,523	0,000	0,000	0,705	0,0611

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
11,0 (PS)	1,855	-0,140	1977,464	1,353	0,575	0,000	0,000	0,779	0,0740
12,0 (PS)	1,855	-0,144	1977,470	1,479	0,626	0,000	0,000	0,853	0,0882
13,0 (PS)	1,854	-0,148	1977,487	1,605	0,677	0,000	0,000	0,928	0,1038
14,0 (PS)	1,853	-0,153	1977,491	1,731	0,728	0,000	0,000	1,003	0,1206
15,0 (PS)	1,851	-0,160	1977,471	1,855	0,779	0,000	0,000	1,076	0,1388
16,0 (PS)	1,849	-0,168	1977,474	1,977	0,830	0,000	0,000	1,147	0,1582
17,0 (PS)	1,847	-0,176	1977,474	2,096	0,880	0,000	0,000	1,216	0,1788
18,0 (PS)	1,843	-0,184	1977,474	2,214	0,930	0,000	0,000	1,284	0,2006
19,0 (PS)	1,840	-0,192	1977,456	2,330	0,980	0,000	0,000	1,349	0,2236
20,0 (PS)	1,834	-0,202	1977,455	2,442	1,030	0,000	0,000	1,412	0,2477



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	3,975 m	\geq	1,000 m	Complies
Combined heeling moment	1,3 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	180,420 t*m			
Required freeboard	1,150 m	\geq	0,000 m	Complies
Weight	180,420 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers empty 3 layers ALU

2020.056_007 IW-NET NEWS Evolution long

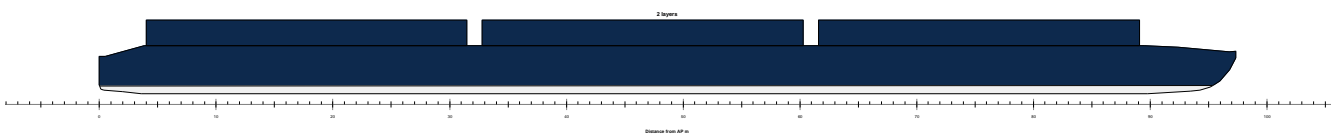
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_007_IW-NET NEWS Evolution long.fbm

Design length	97,320 m	Midship location	48,660 m
Length over all	97,320 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	2,000 m		



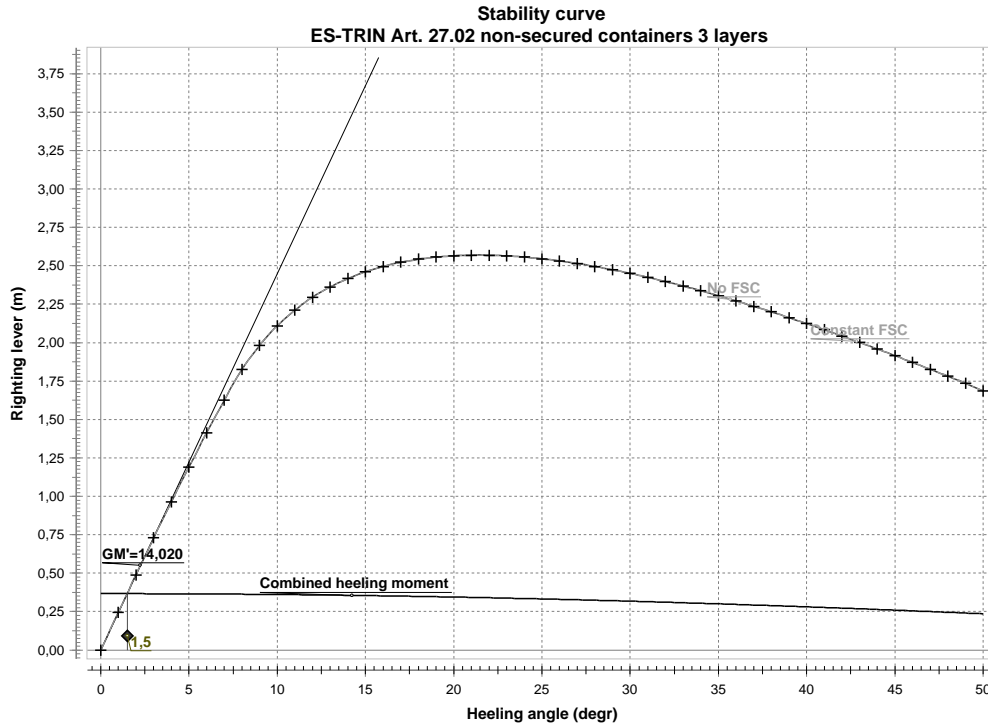
Hydrostatic particulars

List	0,0 (CL) degr	VCG	3,030 m
Draft aft pp	0,667 m	GG'	0,000 m
Mean moulded draft	0,687 m	VCG'	3,030 m
Draft forward pp	0,706 m	Max VCG'	12,531 m
Trim	0,040 m	GM solid	14,020 m
LCF	47,113 m	G'M liquid	14,020 m
LCB	47,357 m	Immersion rate	10,779 tonne/cm
KM	17,050 m	MCT	81,666 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
Containers							
Containers empty			235,200	46,541	0,000 (CL)	3,400	0,000
3rd layer empty			117,600	46,541	0,000 (CL)	7,748	0,000
Totals for Containers			352,800	46,541	0,000 (CL)	4,849	0,000
Lightship			345,474	48,188	0,000 (CL)	1,173	
Deadweight			352,800	46,541	0,000 (CL)	4,849	0,000
Displacement			698,274	47,356	0,000 (CL)	3,030	0,000

Righting levers

Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	0,687	0,040	698,274	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	0,686	0,040	698,270	0,298	0,053	0,000	0,000	0,245	0,0021
2,0 (PS)	0,686	0,039	698,274	0,595	0,106	0,000	0,000	0,489	0,0085
3,0 (PS)	0,685	0,039	698,280	0,888	0,159	0,000	0,000	0,729	0,0192
4,0 (PS)	0,684	0,038	698,273	1,175	0,211	0,000	0,000	0,963	0,0340
5,0 (PS)	0,681	0,036	698,274	1,455	0,264	0,000	0,000	1,191	0,0528
6,0 (PS)	0,677	0,035	698,271	1,728	0,317	0,000	0,000	1,411	0,0755
7,0 (PS)	0,673	0,035	698,273	1,995	0,369	0,000	0,000	1,626	0,1020
8,0 (PS)	0,666	0,035	698,273	2,246	0,422	0,000	0,000	1,824	0,1322
9,0 (PS)	0,653	0,036	698,272	2,456	0,474	0,000	0,000	1,982	0,1654
10,0 (PS)	0,636	0,036	698,273	2,635	0,526	0,000	0,000	2,109	0,2012
11,0 (PS)	0,614	0,037	698,269	2,790	0,578	0,000	0,000	2,212	0,2389
12,0 (PS)	0,588	0,038	698,272	2,925	0,630	0,000	0,000	2,295	0,2783
13,0 (PS)	0,559	0,039	698,270	3,044	0,682	0,000	0,000	2,362	0,3189
14,0 (PS)	0,526	0,039	698,267	3,150	0,733	0,000	0,000	2,417	0,3606
15,0 (PS)	0,490	0,040	698,271	3,245	0,784	0,000	0,000	2,461	0,4032
16,0 (PS)	0,452	0,040	698,271	3,331	0,835	0,000	0,000	2,496	0,4465
17,0 (PS)	0,411	0,041	698,271	3,409	0,886	0,000	0,000	2,523	0,4903
18,0 (PS)	0,368	0,041	698,271	3,479	0,936	0,000	0,000	2,543	0,5345
19,0 (PS)	0,321	0,042	698,272	3,543	0,987	0,000	0,000	2,556	0,5790
20,0 (PS)	0,273	0,042	698,268	3,602	1,036	0,000	0,000	2,565	0,6237
21,0 (PS)	0,222	0,042	698,270	3,655	1,086	0,000	0,000	2,569	0,6685
22,0 (PS)	0,169	0,042	698,271	3,704	1,135	0,000	0,000	2,568	0,7134
23,0 (PS)	0,113	0,042	698,267	3,748	1,184	0,000	0,000	2,564	0,7582
24,0 (PS)	0,056	0,042	698,270	3,789	1,233	0,000	0,000	2,556	0,8028
25,0 (PS)	-0,005	0,042	698,271	3,826	1,281	0,000	0,000	2,545	0,8474
26,0 (PS)	-0,067	0,042	698,272	3,860	1,328	0,000	0,000	2,531	0,8917
27,0 (PS)	-0,132	0,042	698,268	3,890	1,376	0,000	0,000	2,515	0,9357
28,0 (PS)	-0,200	0,041	698,270	3,918	1,423	0,000	0,000	2,495	0,9794
29,0 (PS)	-0,270	0,041	698,272	3,943	1,469	0,000	0,000	2,474	1,0228
30,0 (PS)	-0,342	0,040	698,272	3,965	1,515	0,000	0,000	2,450	1,0658
31,0 (PS)	-0,418	0,040	698,268	3,985	1,561	0,000	0,000	2,425	1,1083
32,0 (PS)	-0,496	0,039	698,270	4,003	1,606	0,000	0,000	2,397	1,1504
33,0 (PS)	-0,577	0,039	698,272	4,019	1,651	0,000	0,000	2,368	1,1920
34,0 (PS)	-0,661	0,038	698,273	4,032	1,695	0,000	0,000	2,337	1,2331
35,0 (PS)	-0,748	0,037	698,273	4,043	1,738	0,000	0,000	2,305	1,2736
36,0 (PS)	-0,839	0,037	698,270	4,053	1,781	0,000	0,000	2,271	1,3135
37,0 (PS)	-0,933	0,036	698,271	4,060	1,824	0,000	0,000	2,236	1,3528
38,0 (PS)	-1,030	0,034	698,272	4,066	1,866	0,000	0,000	2,200	1,3916
39,0 (PS)	-1,131	0,033	698,273	4,069	1,907	0,000	0,000	2,162	1,4296
40,0 (PS)	-1,236	0,032	698,268	4,071	1,948	0,000	0,000	2,123	1,4670
41,0 (PS)	-1,346	0,030	698,270	4,072	1,988	0,000	0,000	2,084	1,5037
42,0 (PS)	-1,459	0,028	698,272	4,071	2,028	0,000	0,000	2,043	1,5398
43,0 (PS)	-1,578	0,027	698,273	4,068	2,067	0,000	0,000	2,001	1,5750
44,0 (PS)	-1,701	0,025	698,274	4,064	2,105	0,000	0,000	1,959	1,6096
45,0 (PS)	-1,830	0,023	698,270	4,058	2,143	0,000	0,000	1,915	1,6434
46,0 (PS)	-1,964	0,021	698,273	4,051	2,180	0,000	0,000	1,871	1,6764
47,0 (PS)	-2,105	0,019	698,274	4,043	2,216	0,000	0,000	1,827	1,7087
48,0 (PS)	-2,252	0,017	698,274	4,034	2,252	0,000	0,000	1,782	1,7402
49,0 (PS)	-2,405	0,016	698,274	4,022	2,287	0,000	0,000	1,735	1,7709
50,0 (PS)	-2,564	0,015	698,276	4,008	2,321	0,000	0,000	1,686	1,8008



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	14,020 m	>=	1,000 m	Complies
Combined heeling moment	1,5 degr	<=	5,0 degr	Complies
Calculated heeling moment (upright)	256,100 t*m			
Required freeboard	2,347 m	>=	0,000 m	Complies
Weight	256,100 t			
Trv. location of weight	1,000 m			

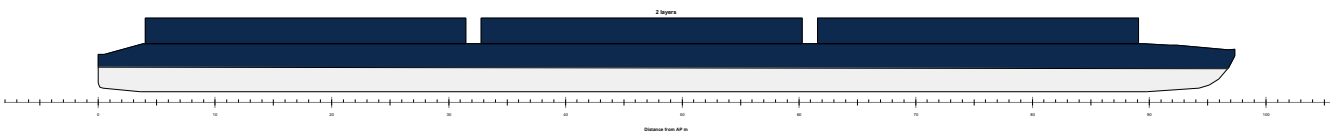
The condition complies with the stability criteria

Containers 70 % full 3 layers ALU

2020.056_007 IW-NET NEWS Evolution long

Designer Bernhard Bieringer
 Created by Bernhard Bieringer
 Comment
 Filename 2020_056_007_IW-NET NEWS Evolution long.fbm

Design length	97,320 m	Midship location	48,660 m
Length over all	97,320 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	2,000 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	4,263 m
Draft aft pp	2,105 m	GG'	0,000 m
Mean moulded draft	2,028 m	VCG'	4,263 m
Draft forward pp	1,951 m	Max VCG'	5,244 m
Trim	-0,153 m	GM solid	2,301 m
LCF	48,093 m	G'M liquid	2,301 m
LCB	46,798 m	Immersion rate	11,012 tonne/cm
KM	6,564 m	MCT	86,521 t*m

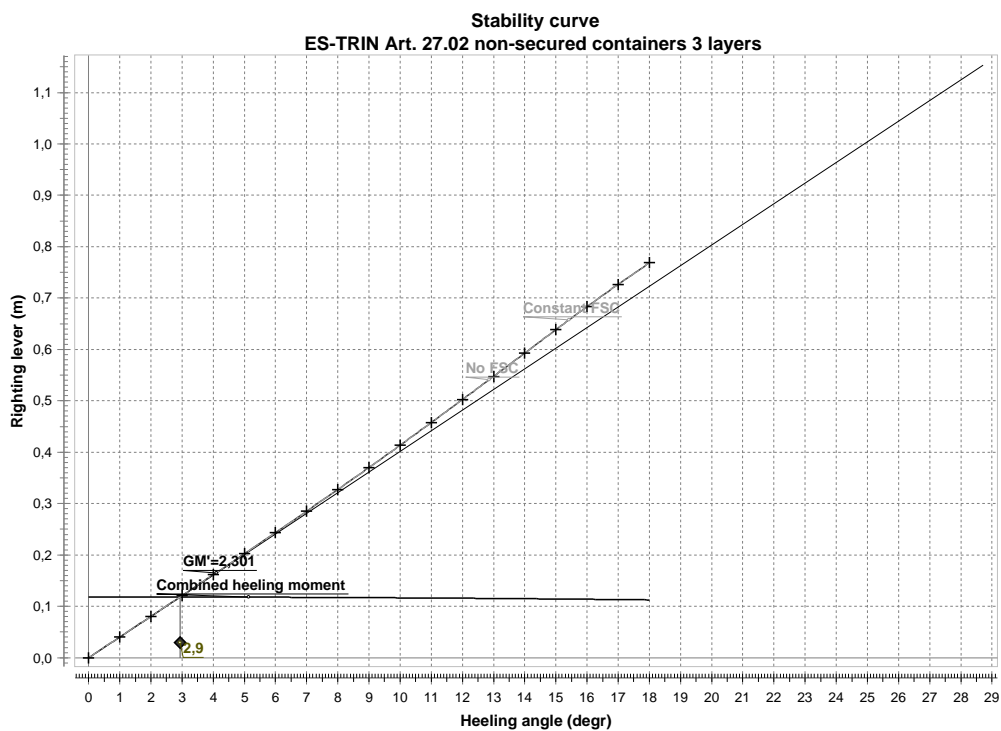
Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
Containers							
Containers 70 % full			1212,240	46,541	0,000 (CL)	3,400	0,000
3rd layer 70 % full			606,480	46,541	0,000 (CL)	7,748	0,000
Totals for Containers			1818,720	46,541	0,000 (CL)	4,850	0,000
Lightship			345,474	48,188	0,000 (CL)	1,173	
Deadweight			1818,720	46,541	0,000 (CL)	4,850	0,000
Displacement			2164,194	46,804	0,000 (CL)	4,263	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(ø) m	VCG sin(ø) m	GG' sin(ø) m	TCG cos(ø) m	GZ m	Area mrad
0,0 (CL)	2,028	-0,153	2164,194	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	2,028	-0,154	2164,193	0,115	0,074	0,000	0,000	0,040	0,0004
2,0 (PS)	2,028	-0,154	2164,191	0,229	0,149	0,000	0,000	0,080	0,0014
3,0 (PS)	2,028	-0,155	2164,188	0,344	0,223	0,000	0,000	0,121	0,0032
4,0 (PS)	2,028	-0,156	2164,186	0,459	0,297	0,000	0,000	0,161	0,0056
5,0 (PS)	2,028	-0,157	2164,185	0,574	0,372	0,000	0,000	0,202	0,0088
6,0 (PS)	2,027	-0,159	2164,184	0,689	0,446	0,000	0,000	0,244	0,0127
7,0 (PS)	2,027	-0,161	2164,185	0,805	0,520	0,000	0,000	0,285	0,0173
8,0 (PS)	2,027	-0,163	2164,186	0,921	0,593	0,000	0,000	0,327	0,0226

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
9,0 (PS)	2,026	-0,166	2164,187	1,037	0,667	0,000	0,000	0,370	0,0287
10,0 (PS)	2,026	-0,168	2164,186	1,154	0,740	0,000	0,000	0,414	0,0356
11,0 (PS)	2,025	-0,171	2164,186	1,271	0,813	0,000	0,000	0,458	0,0432
12,0 (PS)	2,025	-0,175	2164,190	1,389	0,886	0,000	0,000	0,502	0,0515
13,0 (PS)	2,024	-0,181	2164,191	1,506	0,959	0,000	0,000	0,547	0,0607
14,0 (PS)	2,024	-0,187	2164,189	1,624	1,031	0,000	0,000	0,593	0,0707
15,0 (PS)	2,024	-0,194	2164,193	1,742	1,103	0,000	0,000	0,638	0,0814
16,0 (PS)	2,024	-0,202	2164,194	1,858	1,175	0,000	0,000	0,683	0,0929
17,0 (PS)	2,023	-0,210	2164,190	1,973	1,246	0,000	0,000	0,727	0,1052
18,0 (PS)	2,021	-0,218	2164,193	2,086	1,317	0,000	0,000	0,769	0,1183



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	2,301 m	\geq	1,000 m	Complies
Combined heeling moment	2,9 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	256,100 t*m			
Required freeboard	0,801 m	\geq	0,000 m	Complies
Weight	256,100 t			
Trv. location of weight	1,000 m			

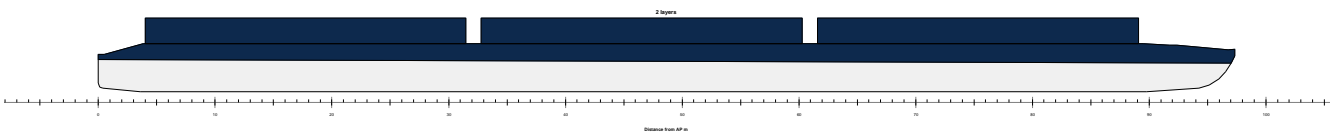
The condition complies with the stability criteria

Containers full 3 layers ALU

2020.056_007 IW-NET NEWS Evolution long

Designer Bernhard Bieringer
 Created by Bernhard Bieringer
 Comment
 Filename 2020_056_007_IW-NET NEWS Evolution long.fbm

Design length	97,320 m	Midship location	48,660 m
Length over all	97,320 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	2,000 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	4,395 m
Draft aft pp	2,735 m	GG'	0,000 m
Mean moulded draft	2,597 m	VCG'	4,395 m
Draft forward pp	2,460 m	Max VCG'	4,520 m
Trim	-0,276 m	GM solid	1,240 m
LCF	48,353 m	G'M liquid	1,240 m
LCB	46,735 m	Immersion rate	11,071 tonne/cm
KM	5,635 m	MCT	87,780 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers full			1632,000	46,541	0,000 (CL)	3,400	0,000
3rd layer full			816,000	46,541	0,000 (CL)	7,748	0,000
Totals for Containers			2448,000	46,541	0,000 (CL)	4,849	0,000

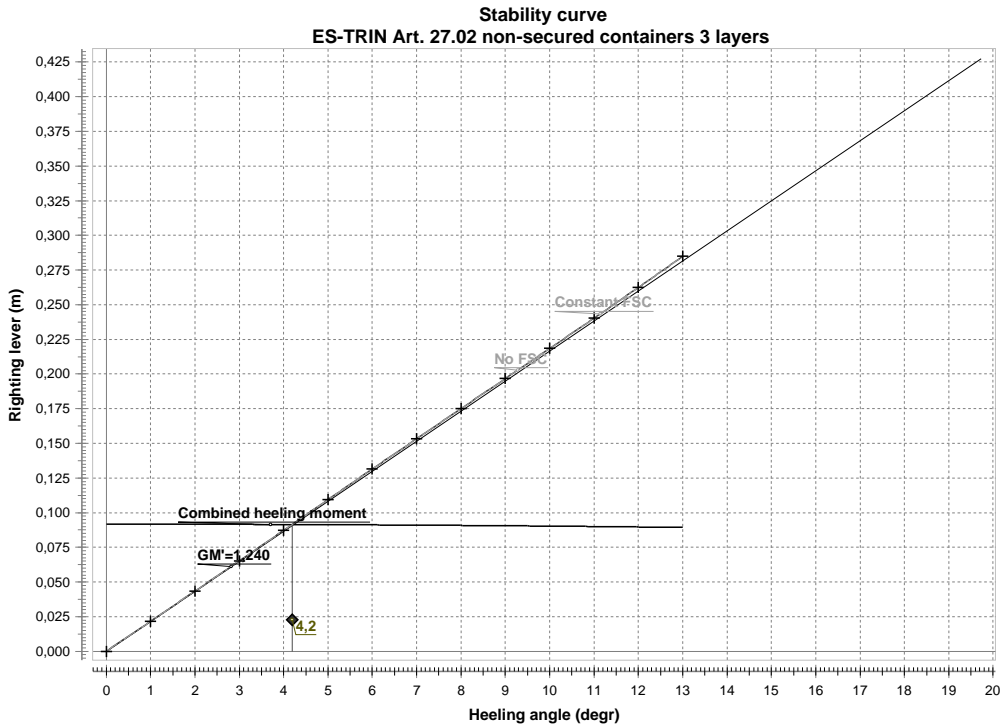
Lightship			345,474	48,188	0,000 (CL)	1,173	
Deadweight			2448,000	46,541	0,000 (CL)	4,849	0,000
Displacement			2793,474	46,745	0,000 (CL)	4,395	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	2,597	-0,276	2793,474	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	2,597	-0,276	2793,474	0,098	0,077	0,000	0,000	0,022	0,0002
2,0 (PS)	2,597	-0,276	2793,473	0,197	0,153	0,000	0,000	0,043	0,0008
3,0 (PS)	2,597	-0,277	2793,472	0,295	0,230	0,000	0,000	0,065	0,0017
4,0 (PS)	2,597	-0,277	2793,471	0,394	0,307	0,000	0,000	0,087	0,0030
5,0 (PS)	2,597	-0,278	2793,475	0,492	0,383	0,000	0,000	0,109	0,0047
6,0 (PS)	2,597	-0,281	2793,486	0,591	0,459	0,000	0,000	0,131	0,0069
7,0 (PS)	2,597	-0,285	2793,486	0,689	0,536	0,000	0,000	0,153	0,0093
8,0 (PS)	2,598	-0,290	2793,484	0,787	0,612	0,000	0,000	0,175	0,0122

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
9,0 (PS)	2,599	-0,296	2793,481	0,884	0,687	0,000	0,000	0,197	0,0154
10,0 (PS)	2,600	-0,302	2793,479	0,982	0,763	0,000	0,000	0,218	0,0191
11,0 (PS)	2,601	-0,308	2793,476	1,079	0,839	0,000	0,000	0,240	0,0231
12,0 (PS)	2,603	-0,312	2793,475	1,176	0,914	0,000	0,000	0,262	0,0275
13,0 (PS)	2,604	-0,317	2793,474	1,273	0,989	0,000	0,000	0,285	0,0322



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	1,240 m	\geq	1,000 m	Complies
Combined heeling moment	4,2 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	256,100 t*m			
Required freeboard	0,046 m	\geq	0,000 m	Complies
Weight	256,100 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Summary of intact stability

Description	Density	Draft	Draft BoK	Trim	List	Displ.	VCG'	Max VCG'	GM'	Complies
		m	m	m	degr	t	m	m	m	
Containers empty	1,0000	0,666	0,666	0,079	0,0 (CL)	656,319	1,691	15,021	15,911	Complies
Containers 70 % full	1,0000	1,360	1,360	0,000	0,0 (CL)	1389,639	2,593	7,991	6,398	Complies
Containers full	1,0000	1,655	1,655	-0,048	0,0 (CL)	1703,919	2,742	6,644	4,903	Complies
Containers empty 3 layers	1,0000	0,750	0,750	0,073	0,0 (CL)	744,519	2,409	12,497	13,243	Complies
Containers 70 % full 3 layers	1,0000	1,786	1,786	-0,072	0,0 (CL)	1844,499	3,864	6,027	3,342	Complies
Containers full 3 layers	1,0000	2,225	2,225	-0,161	0,0 (CL)	2315,919	4,065	5,178	2,113	Complies
Containers empty ALU	1,0000	0,529	0,529	0,058	0,0 (CL)	513,066	1,881	18,298	20,308	Complies
Containers 70 % full ALU	1,0000	1,225	1,225	-0,009	0,0 (CL)	1246,386	2,775	8,746	7,075	Complies
Containers full ALU	1,0000	1,520	1,520	-0,054	0,0 (CL)	1560,666	2,901	7,183	5,282	Complies
Containers empty 3 layers ALU	1,0000	0,613	0,613	0,053	0,0 (CL)	601,266	2,742	14,806	16,362	Complies
Containers 70 % full 3 layers ALU	1,0000	1,652	1,652	-0,076	0,0 (CL)	1701,246	4,104	6,374	3,548	Complies
Containers full 3 layers ALU	1,0000	2,092	2,092	-0,161	0,0 (CL)	2172,666	4,266	5,433	2,167	Complies

Components of deadweight

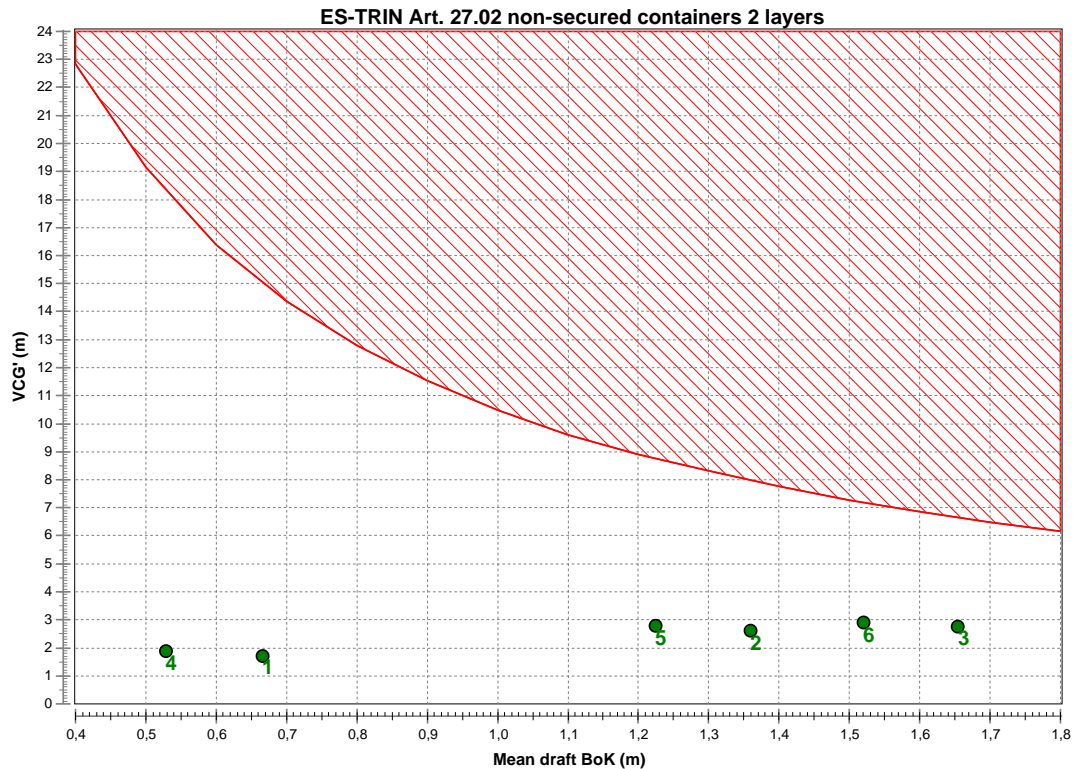
Loading condition	Deadweight	Containers t
Containers empty	176,400	176,400
Containers 70 % full	909,720	909,720
Containers full	1224,000	1224,000
Containers empty 3 layers	264,600	264,600
Containers 70 % full 3 layers	1364,580	1364,580
Containers full 3 layers	1836,000	1836,000
Containers empty ALU	176,400	176,400
Containers 70 % full ALU	909,720	909,720
Containers full ALU	1224,000	1224,000
Containers empty 3 layers ALU	264,600	264,600
Containers 70 % full 3 layers ALU	1364,580	1364,580
Containers full 3 layers ALU	1836,000	1836,000

Maximum VCG' envelope

Criteria : ES-TRIN Art. 27.02 non-secured containers 2 layers

Calculated for average trim : 0,004 m

Wind silhouette : 2 layers



Loading conditions:

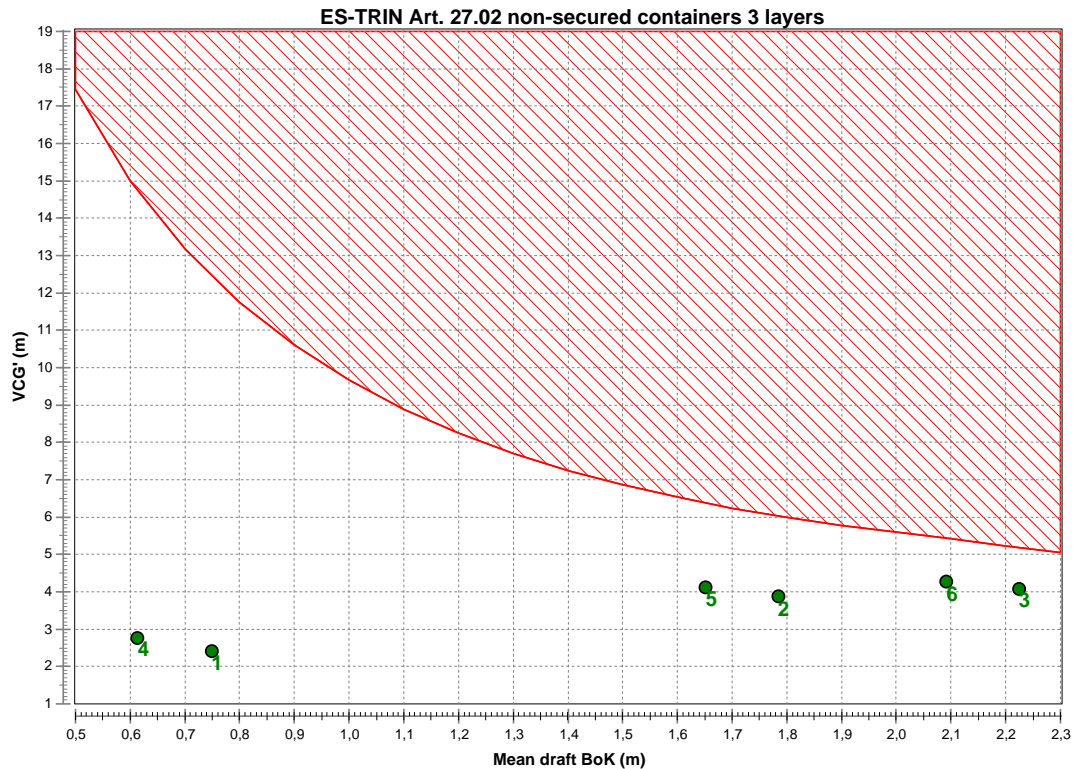
1. Containers empty
2. Containers 70 % full
3. Containers full
4. Containers empty ALU
5. Containers 70 % full ALU
6. Containers full ALU

Maximum VCG' envelope

Criteria : ES-TRIN Art. 27.02 non-secured containers 3 layers

Calculated for average trim : -0,057 m

Wind silhouette : 2 layers



Loading conditions:

1. Containers empty 3 layers
2. Containers 70 % full 3 layers
3. Containers full 3 layers
4. Containers empty 3 layers ALU
5. Containers 70 % full 3 layers ALU
6. Containers full 3 layers ALU

Containers empty

2020.056_008 IW-NET barge 3 abreast long/shallow

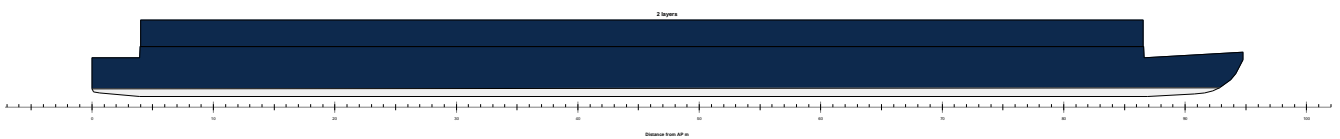
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_008_IW-NET 3 Units abreast long_shallow.fbm

Design length	94,770 m	Midship location	47,385 m
Length over all	94,766 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	2,150 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	1,691 m
Draft aft pp	0,627 m	GG'	0,000 m
Mean moulded draft	0,666 m	VCG'	1,691 m
Draft forward pp	0,706 m	Max VCG'	15,021 m
Trim	0,079 m	GM solid	15,911 m
LCF	45,809 m	G'M liquid	15,911 m
LCB	46,486 m	Immersion rate	10,476 tonne/cm
KM	17,602 m	MCT	77,069 t*m

Description	Density	Filling	Weight	LCG	TCG	VCG	FSM
		%	t	m	m	m	t*m

Containers

Containers empty			176,400	45,273	0,000 (CL)	3,400	0,000
Lightship			479,919	46,930	0,000 (CL)	1,063	
Deadweight			176,400	45,273	0,000 (CL)	3,400	0,000
Displacement			656,319	46,485	0,000 (CL)	1,691	0,000

Righting levers

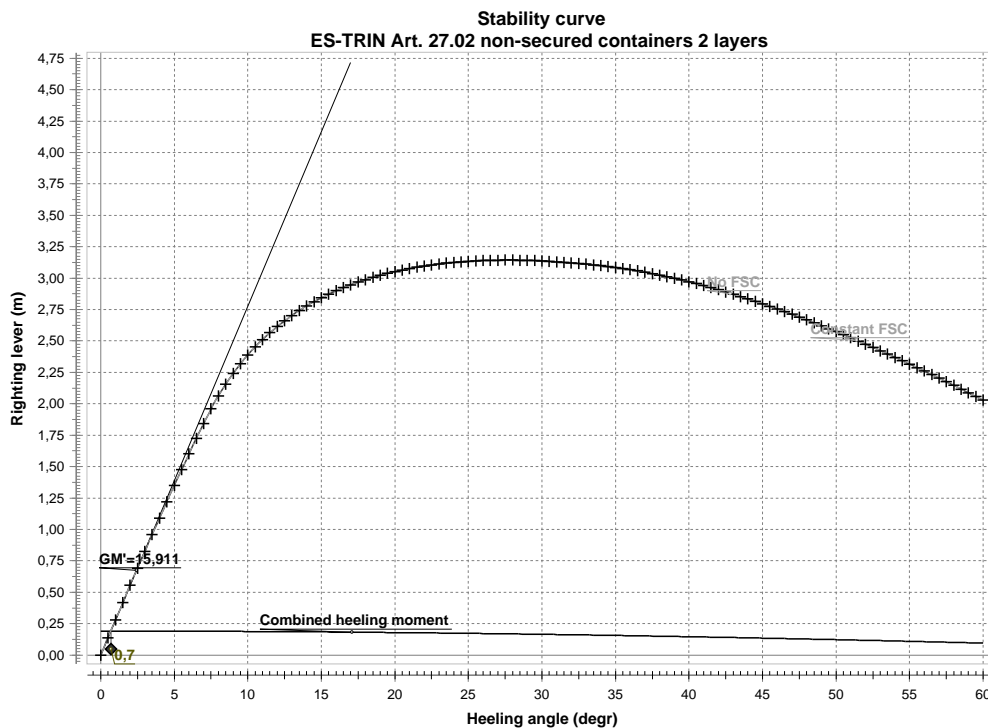
Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	0,666	0,079	656,319	0,000	0,000	0,000	0,000	0,000	0,0000
0,5 (PS)	0,666	0,079	656,315	0,154	0,015	0,000	0,000	0,139	0,0006
1,0 (PS)	0,666	0,079	656,319	0,307	0,030	0,000	0,000	0,278	0,0024
1,5 (PS)	0,666	0,079	656,319	0,461	0,044	0,000	0,000	0,417	0,0055
2,0 (PS)	0,666	0,079	656,319	0,614	0,059	0,000	0,000	0,555	0,0097
2,5 (PS)	0,666	0,079	656,319	0,765	0,074	0,000	0,000	0,691	0,0151
3,0 (PS)	0,665	0,079	656,319	0,915	0,089	0,000	0,000	0,826	0,0218
3,5 (PS)	0,664	0,078	656,319	1,063	0,103	0,000	0,000	0,960	0,0295
4,0 (PS)	0,663	0,078	656,319	1,209	0,118	0,000	0,000	1,091	0,0385
4,5 (PS)	0,662	0,078	656,319	1,354	0,133	0,000	0,000	1,221	0,0486
5,0 (PS)	0,660	0,077	656,319	1,497	0,147	0,000	0,000	1,349	0,0598
5,5 (PS)	0,658	0,077	656,318	1,638	0,162	0,000	0,000	1,476	0,0721
6,0 (PS)	0,656	0,077	656,319	1,777	0,177	0,000	0,000	1,600	0,0856
6,5 (PS)	0,654	0,076	656,317	1,915	0,191	0,000	0,000	1,723	0,1001
7,0 (PS)	0,651	0,076	656,319	2,051	0,206	0,000	0,000	1,844	0,1156
7,5 (PS)	0,648	0,078	656,319	2,180	0,221	0,000	0,000	1,959	0,1322
8,0 (PS)	0,643	0,079	656,316	2,299	0,235	0,000	0,000	2,063	0,1498
8,5 (PS)	0,637	0,081	656,318	2,407	0,250	0,000	0,000	2,157	0,1682
9,0 (PS)	0,629	0,082	656,316	2,506	0,265	0,000	0,000	2,241	0,1874
9,5 (PS)	0,620	0,084	656,318	2,597	0,279	0,000	0,000	2,318	0,2073
10,0 (PS)	0,610	0,086	656,317	2,682	0,294	0,000	0,000	2,388	0,2278
10,5 (PS)	0,599	0,087	656,315	2,760	0,308	0,000	0,000	2,452	0,2490
11,0 (PS)	0,587	0,089	656,318	2,834	0,323	0,000	0,000	2,511	0,2706
11,5 (PS)	0,574	0,090	656,317	2,902	0,337	0,000	0,000	2,565	0,2928
12,0 (PS)	0,560	0,092	656,316	2,966	0,352	0,000	0,000	2,615	0,3154
12,5 (PS)	0,545	0,093	656,314	3,027	0,366	0,000	0,000	2,661	0,3384
13,0 (PS)	0,529	0,094	656,318	3,084	0,380	0,000	0,000	2,703	0,3618
13,5 (PS)	0,513	0,096	656,317	3,137	0,395	0,000	0,000	2,742	0,3856
14,0 (PS)	0,495	0,097	656,316	3,188	0,409	0,000	0,000	2,779	0,4097
14,5 (PS)	0,477	0,098	656,316	3,236	0,423	0,000	0,000	2,812	0,4341
15,0 (PS)	0,459	0,100	656,315	3,281	0,438	0,000	0,000	2,843	0,4587
15,5 (PS)	0,439	0,101	656,315	3,324	0,452	0,000	0,000	2,872	0,4837
16,0 (PS)	0,419	0,102	656,314	3,365	0,466	0,000	0,000	2,899	0,5089
16,5 (PS)	0,399	0,103	656,314	3,404	0,480	0,000	0,000	2,924	0,5343
17,0 (PS)	0,377	0,104	656,314	3,441	0,494	0,000	0,000	2,947	0,5599
17,5 (PS)	0,355	0,105	656,313	3,477	0,509	0,000	0,000	2,968	0,5857
18,0 (PS)	0,332	0,107	656,313	3,510	0,523	0,000	0,000	2,988	0,6117
18,5 (PS)	0,309	0,108	656,314	3,542	0,537	0,000	0,000	3,006	0,6378
19,0 (PS)	0,285	0,109	656,314	3,573	0,551	0,000	0,000	3,022	0,6641
19,5 (PS)	0,261	0,110	656,314	3,602	0,565	0,000	0,000	3,038	0,6906
20,0 (PS)	0,236	0,111	656,315	3,630	0,578	0,000	0,000	3,052	0,7172
20,5 (PS)	0,210	0,112	656,315	3,657	0,592	0,000	0,000	3,064	0,7438
21,0 (PS)	0,184	0,113	656,316	3,682	0,606	0,000	0,000	3,076	0,7706
21,5 (PS)	0,157	0,114	656,316	3,706	0,620	0,000	0,000	3,086	0,7975
22,0 (PS)	0,130	0,115	656,317	3,729	0,634	0,000	0,000	3,096	0,8245
22,5 (PS)	0,102	0,115	656,317	3,752	0,647	0,000	0,000	3,104	0,8516
23,0 (PS)	0,073	0,116	656,312	3,773	0,661	0,000	0,000	3,112	0,8787
23,5 (PS)	0,044	0,117	656,314	3,793	0,674	0,000	0,000	3,119	0,9059
24,0 (PS)	0,014	0,118	656,315	3,812	0,688	0,000	0,000	3,124	0,9331
24,5 (PS)	-0,016	0,119	656,316	3,831	0,701	0,000	0,000	3,129	0,9604
25,0 (PS)	-0,047	0,119	656,317	3,848	0,715	0,000	0,000	3,133	0,9877

Righting levers

Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
25,5 (PS)	-0,078	0,120	656,317	3,865	0,728	0,000	0,000	3,137	1,0151
26,0 (PS)	-0,110	0,121	656,318	3,881	0,741	0,000	0,000	3,139	1,0425
26,5 (PS)	-0,143	0,121	656,314	3,896	0,755	0,000	0,000	3,141	1,0699
27,0 (PS)	-0,176	0,122	656,315	3,910	0,768	0,000	0,000	3,143	1,0973
27,5 (PS)	-0,210	0,123	656,316	3,924	0,781	0,000	0,000	3,143	1,1247
28,0 (PS)	-0,245	0,123	656,317	3,937	0,794	0,000	0,000	3,143	1,1522
28,5 (PS)	-0,280	0,124	656,318	3,949	0,807	0,000	0,000	3,142	1,1796
29,0 (PS)	-0,316	0,125	656,318	3,961	0,820	0,000	0,000	3,141	1,2070
29,5 (PS)	-0,352	0,125	656,314	3,972	0,833	0,000	0,000	3,139	1,2344
30,0 (PS)	-0,389	0,126	656,315	3,982	0,846	0,000	0,000	3,137	1,2618
30,5 (PS)	-0,427	0,126	656,316	3,992	0,858	0,000	0,000	3,134	1,2891
31,0 (PS)	-0,466	0,127	656,317	4,001	0,871	0,000	0,000	3,130	1,3165
31,5 (PS)	-0,505	0,127	656,318	4,010	0,884	0,000	0,000	3,126	1,3438
32,0 (PS)	-0,545	0,128	656,318	4,018	0,896	0,000	0,000	3,122	1,3710
32,5 (PS)	-0,585	0,128	656,314	4,025	0,909	0,000	0,000	3,117	1,3982
33,0 (PS)	-0,627	0,129	656,316	4,032	0,921	0,000	0,000	3,111	1,4254
33,5 (PS)	-0,669	0,129	656,317	4,038	0,933	0,000	0,000	3,105	1,4525
34,0 (PS)	-0,712	0,130	656,318	4,044	0,946	0,000	0,000	3,099	1,4796
34,5 (PS)	-0,756	0,130	656,318	4,050	0,958	0,000	0,000	3,092	1,5066
35,0 (PS)	-0,800	0,131	656,319	4,054	0,970	0,000	0,000	3,084	1,5336
35,5 (PS)	-0,845	0,132	656,314	4,058	0,982	0,000	0,000	3,076	1,5605
36,0 (PS)	-0,891	0,133	656,315	4,062	0,994	0,000	0,000	3,068	1,5873
36,5 (PS)	-0,937	0,135	656,316	4,064	1,006	0,000	0,000	3,058	1,6140
37,0 (PS)	-0,984	0,136	656,316	4,065	1,018	0,000	0,000	3,048	1,6406
37,5 (PS)	-1,032	0,137	656,316	4,066	1,029	0,000	0,000	3,037	1,6672
38,0 (PS)	-1,080	0,138	656,317	4,066	1,041	0,000	0,000	3,025	1,6936
38,5 (PS)	-1,129	0,139	656,317	4,065	1,053	0,000	0,000	3,012	1,7200
39,0 (PS)	-1,178	0,140	656,317	4,063	1,064	0,000	0,000	2,999	1,7462
39,5 (PS)	-1,229	0,141	656,317	4,061	1,076	0,000	0,000	2,985	1,7723
40,0 (PS)	-1,280	0,141	656,318	4,058	1,087	0,000	0,000	2,971	1,7983
40,5 (PS)	-1,332	0,142	656,318	4,054	1,098	0,000	0,000	2,956	1,8242
41,0 (PS)	-1,384	0,143	656,318	4,050	1,109	0,000	0,000	2,940	1,8499
41,5 (PS)	-1,438	0,144	656,318	4,044	1,121	0,000	0,000	2,924	1,8755
42,0 (PS)	-1,492	0,144	656,318	4,039	1,132	0,000	0,000	2,907	1,9009
42,5 (PS)	-1,547	0,145	656,318	4,032	1,143	0,000	0,000	2,890	1,9262
43,0 (PS)	-1,603	0,146	656,318	4,025	1,153	0,000	0,000	2,872	1,9514
43,5 (PS)	-1,660	0,146	656,318	4,018	1,164	0,000	0,000	2,853	1,9763
44,0 (PS)	-1,718	0,147	656,318	4,009	1,175	0,000	0,000	2,835	2,0012
44,5 (PS)	-1,777	0,147	656,319	4,001	1,185	0,000	0,000	2,815	2,0258
45,0 (PS)	-1,837	0,148	656,319	3,991	1,196	0,000	0,000	2,795	2,0503
45,5 (PS)	-1,898	0,149	656,319	3,981	1,206	0,000	0,000	2,775	2,0746
46,0 (PS)	-1,960	0,149	656,319	3,971	1,216	0,000	0,000	2,754	2,0987
46,5 (PS)	-2,023	0,149	656,319	3,960	1,227	0,000	0,000	2,733	2,1227
47,0 (PS)	-2,088	0,150	656,319	3,948	1,237	0,000	0,000	2,712	2,1464
47,5 (PS)	-2,153	0,150	656,319	3,936	1,247	0,000	0,000	2,690	2,1700
48,0 (PS)	-2,220	0,151	656,319	3,924	1,257	0,000	0,000	2,667	2,1934
48,5 (PS)	-2,288	0,151	656,319	3,911	1,267	0,000	0,000	2,644	2,2165
49,0 (PS)	-2,358	0,152	656,319	3,897	1,276	0,000	0,000	2,621	2,2395
49,5 (PS)	-2,429	0,152	656,319	3,883	1,286	0,000	0,000	2,597	2,2623
50,0 (PS)	-2,501	0,153	656,319	3,869	1,295	0,000	0,000	2,574	2,2849
50,5 (PS)	-2,575	0,153	656,319	3,854	1,305	0,000	0,000	2,549	2,3072

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
51,0 (PS)	-2,651	0,154	656,319	3,839	1,314	0,000	0,000	2,525	2,3293
51,5 (PS)	-2,728	0,154	656,319	3,823	1,323	0,000	0,000	2,499	2,3513
52,0 (PS)	-2,807	0,155	656,319	3,807	1,333	0,000	0,000	2,474	2,3730
52,5 (PS)	-2,888	0,155	656,319	3,790	1,342	0,000	0,000	2,448	2,3944
53,0 (PS)	-2,970	0,156	656,313	3,773	1,351	0,000	0,000	2,422	2,4157
53,5 (PS)	-3,055	0,156	656,313	3,755	1,359	0,000	0,000	2,396	2,4367
54,0 (PS)	-3,141	0,157	656,313	3,738	1,368	0,000	0,000	2,369	2,4575
54,5 (PS)	-3,230	0,157	656,313	3,719	1,377	0,000	0,000	2,342	2,4781
55,0 (PS)	-3,321	0,158	656,313	3,701	1,385	0,000	0,000	2,315	2,4984
55,5 (PS)	-3,414	0,158	656,314	3,681	1,394	0,000	0,000	2,288	2,5185
56,0 (PS)	-3,509	0,159	656,314	3,662	1,402	0,000	0,000	2,260	2,5383
56,5 (PS)	-3,607	0,160	656,314	3,642	1,410	0,000	0,000	2,232	2,5579
57,0 (PS)	-3,708	0,160	656,314	3,622	1,418	0,000	0,000	2,203	2,5773
57,5 (PS)	-3,811	0,161	656,314	3,601	1,426	0,000	0,000	2,175	2,5964
58,0 (PS)	-3,917	0,161	656,314	3,580	1,434	0,000	0,000	2,146	2,6152
58,5 (PS)	-4,026	0,162	656,315	3,559	1,442	0,000	0,000	2,117	2,6338
59,0 (PS)	-4,139	0,163	656,315	3,537	1,450	0,000	0,000	2,087	2,6522
59,5 (PS)	-4,255	0,163	656,315	3,515	1,457	0,000	0,000	2,058	2,6703
60,0 (PS)	-4,374	0,164	656,315	3,492	1,465	0,000	0,000	2,028	2,6881



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	15,911 m	\geq	1,000 m	Complies
Combined heeling moment	0,7 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	125,030 t*m			
Required freeboard	2,432 m	\geq	0,000 m	Complies
Weight	125,030 t			

Trv. location of weight 1,000 m

The condition complies with the stability criteria

Containers 70 % full

2020.056_008 IW-NET barge 3 abreast long/shallow

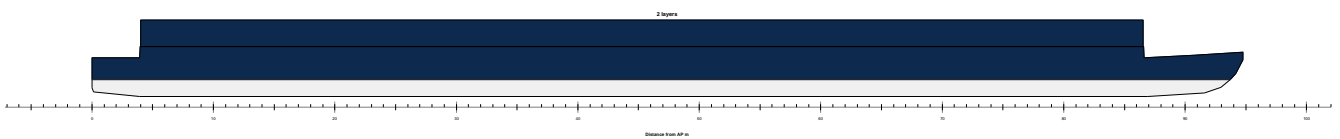
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_008_IW-NET3 Units abreast long_shallow.fbm

Design length	94,770 m	Midship location	47,385 m
Length over all	94,766 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	2,150 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,593 m
Draft aft pp	1,360 m	GG'	0,000 m
Mean moulded draft	1,360 m	VCG'	2,593 m
Draft forward pp	1,360 m	Max VCG'	7,991 m
Trim	0,000 m	GM solid	6,398 m
LCF	46,415 m	G'M liquid	6,398 m
LCB	45,845 m	Immersion rate	10,628 tonne/cm
KM	8,991 m	MCT	80,263 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

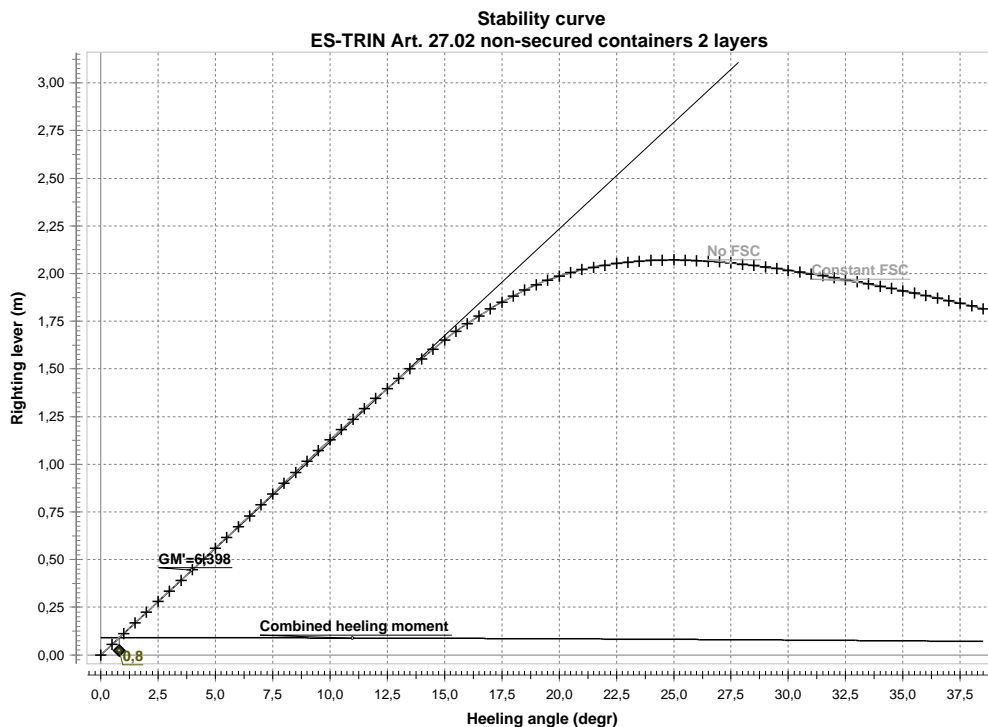
Containers 70 % full			909,720	45,273	0,000 (CL)	3,400	0,000
Lightship			479,919	46,930	0,000 (CL)	1,063	
Deadweight			909,720	45,273	0,000 (CL)	3,400	0,000
Displacement			1389,639	45,845	0,000 (CL)	2,593	0,000

Righting levers

Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	1,360	0,000	1389,637	0,000	0,000	0,000	0,000	0,000	0,0000
0,5 (PS)	1,360	0,000	1389,638	0,078	0,023	0,000	0,000	0,056	0,0002
1,0 (PS)	1,360	0,000	1389,639	0,157	0,045	0,000	0,000	0,112	0,0010
1,5 (PS)	1,360	0,000	1389,638	0,235	0,068	0,000	0,000	0,168	0,0022
2,0 (PS)	1,360	0,000	1389,636	0,314	0,090	0,000	0,000	0,223	0,0039
2,5 (PS)	1,360	-0,001	1389,631	0,392	0,113	0,000	0,000	0,279	0,0061
3,0 (PS)	1,360	-0,001	1389,625	0,471	0,136	0,000	0,000	0,335	0,0088
3,5 (PS)	1,360	-0,002	1389,639	0,550	0,158	0,000	0,000	0,391	0,0119
4,0 (PS)	1,359	-0,003	1389,639	0,628	0,181	0,000	0,000	0,448	0,0156
4,5 (PS)	1,359	-0,004	1389,639	0,707	0,203	0,000	0,000	0,504	0,0198
5,0 (PS)	1,359	-0,005	1389,639	0,786	0,226	0,000	0,000	0,560	0,0244
5,5 (PS)	1,359	-0,006	1389,639	0,865	0,249	0,000	0,000	0,617	0,0295
6,0 (PS)	1,359	-0,007	1389,639	0,944	0,271	0,000	0,000	0,673	0,0352
6,5 (PS)	1,358	-0,008	1389,639	1,023	0,294	0,000	0,000	0,730	0,0413
7,0 (PS)	1,358	-0,009	1389,639	1,103	0,316	0,000	0,000	0,787	0,0479
7,5 (PS)	1,358	-0,011	1389,639	1,182	0,338	0,000	0,000	0,844	0,0550
8,0 (PS)	1,358	-0,012	1389,639	1,261	0,361	0,000	0,000	0,901	0,0626
8,5 (PS)	1,357	-0,014	1389,639	1,341	0,383	0,000	0,000	0,958	0,0707
9,0 (PS)	1,357	-0,016	1389,639	1,420	0,406	0,000	0,000	1,015	0,0793
9,5 (PS)	1,356	-0,018	1389,639	1,499	0,428	0,000	0,000	1,071	0,0884
10,0 (PS)	1,355	-0,019	1389,639	1,577	0,450	0,000	0,000	1,127	0,0980
10,5 (PS)	1,354	-0,021	1389,639	1,655	0,473	0,000	0,000	1,182	0,1081
11,0 (PS)	1,353	-0,023	1389,639	1,732	0,495	0,000	0,000	1,237	0,1187
11,5 (PS)	1,351	-0,025	1389,639	1,808	0,517	0,000	0,000	1,291	0,1297
12,0 (PS)	1,350	-0,028	1389,651	1,883	0,539	0,000	0,000	1,344	0,1412
12,5 (PS)	1,348	-0,030	1389,639	1,958	0,561	0,000	0,000	1,397	0,1532
13,0 (PS)	1,346	-0,032	1389,639	2,033	0,583	0,000	0,000	1,450	0,1656
13,5 (PS)	1,343	-0,034	1389,638	2,107	0,605	0,000	0,000	1,501	0,1785
14,0 (PS)	1,341	-0,037	1389,637	2,180	0,627	0,000	0,000	1,553	0,1918
14,5 (PS)	1,338	-0,039	1389,629	2,252	0,649	0,000	0,000	1,603	0,2056
15,0 (PS)	1,334	-0,042	1389,629	2,322	0,671	0,000	0,000	1,651	0,2198
15,5 (PS)	1,330	-0,044	1389,630	2,389	0,693	0,000	0,000	1,696	0,2344
16,0 (PS)	1,324	-0,047	1389,631	2,453	0,715	0,000	0,000	1,738	0,2493
16,5 (PS)	1,318	-0,050	1389,634	2,514	0,736	0,000	0,000	1,778	0,2647
17,0 (PS)	1,311	-0,052	1389,636	2,573	0,758	0,000	0,000	1,815	0,2804
17,5 (PS)	1,303	-0,055	1389,638	2,630	0,780	0,000	0,000	1,850	0,2964
18,0 (PS)	1,295	-0,057	1389,639	2,684	0,801	0,000	0,000	1,883	0,3126
18,5 (PS)	1,286	-0,060	1389,639	2,736	0,823	0,000	0,000	1,913	0,3292
19,0 (PS)	1,276	-0,064	1389,635	2,785	0,844	0,000	0,000	1,941	0,3460
19,5 (PS)	1,266	-0,067	1389,639	2,831	0,866	0,000	0,000	1,965	0,3631
20,0 (PS)	1,257	-0,071	1389,638	2,873	0,887	0,000	0,000	1,986	0,3803
20,5 (PS)	1,247	-0,075	1389,636	2,913	0,908	0,000	0,000	2,005	0,3977
21,0 (PS)	1,237	-0,079	1389,635	2,949	0,929	0,000	0,000	2,020	0,4153
21,5 (PS)	1,227	-0,084	1389,633	2,984	0,950	0,000	0,000	2,033	0,4330
22,0 (PS)	1,216	-0,089	1389,632	3,016	0,971	0,000	0,000	2,044	0,4508
22,5 (PS)	1,206	-0,093	1389,630	3,045	0,992	0,000	0,000	2,053	0,4687
23,0 (PS)	1,196	-0,098	1389,630	3,073	1,013	0,000	0,000	2,060	0,4866
23,5 (PS)	1,185	-0,103	1389,630	3,099	1,034	0,000	0,000	2,065	0,5046
24,0 (PS)	1,175	-0,108	1389,630	3,123	1,055	0,000	0,000	2,069	0,5227
24,5 (PS)	1,164	-0,113	1389,630	3,146	1,075	0,000	0,000	2,071	0,5407
25,0 (PS)	1,153	-0,119	1389,629	3,167	1,096	0,000	0,000	2,071	0,5588

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
25,5 (PS)	1,143	-0,124	1389,629	3,187	1,116	0,000	0,000	2,070	0,5769
26,0 (PS)	1,132	-0,130	1389,629	3,205	1,137	0,000	0,000	2,068	0,5949
26,5 (PS)	1,121	-0,135	1389,628	3,222	1,157	0,000	0,000	2,065	0,6130
27,0 (PS)	1,110	-0,141	1389,627	3,238	1,177	0,000	0,000	2,061	0,6310
27,5 (PS)	1,098	-0,146	1389,627	3,253	1,197	0,000	0,000	2,055	0,6489
28,0 (PS)	1,087	-0,151	1389,626	3,266	1,217	0,000	0,000	2,049	0,6668
28,5 (PS)	1,076	-0,156	1389,627	3,279	1,237	0,000	0,000	2,042	0,6847
29,0 (PS)	1,064	-0,161	1389,628	3,291	1,257	0,000	0,000	2,034	0,7025
29,5 (PS)	1,052	-0,166	1389,630	3,303	1,277	0,000	0,000	2,026	0,7202
30,0 (PS)	1,039	-0,170	1389,632	3,314	1,296	0,000	0,000	2,017	0,7378
30,5 (PS)	1,026	-0,174	1389,633	3,324	1,316	0,000	0,000	2,008	0,7554
31,0 (PS)	1,013	-0,179	1389,635	3,334	1,335	0,000	0,000	1,999	0,7729
31,5 (PS)	0,999	-0,183	1389,636	3,344	1,355	0,000	0,000	1,989	0,7903
32,0 (PS)	0,984	-0,187	1389,637	3,352	1,374	0,000	0,000	1,978	0,8076
32,5 (PS)	0,970	-0,191	1389,637	3,361	1,393	0,000	0,000	1,968	0,8248
33,0 (PS)	0,955	-0,195	1389,638	3,369	1,412	0,000	0,000	1,957	0,8419
33,5 (PS)	0,939	-0,199	1389,638	3,377	1,431	0,000	0,000	1,945	0,8590
34,0 (PS)	0,923	-0,202	1389,629	3,384	1,450	0,000	0,000	1,934	0,8759
34,5 (PS)	0,906	-0,206	1389,633	3,390	1,469	0,000	0,000	1,922	0,8927
35,0 (PS)	0,889	-0,210	1389,635	3,397	1,487	0,000	0,000	1,910	0,9094
35,5 (PS)	0,872	-0,213	1389,637	3,403	1,506	0,000	0,000	1,897	0,9260
36,0 (PS)	0,854	-0,217	1389,638	3,408	1,524	0,000	0,000	1,884	0,9425
36,5 (PS)	0,835	-0,221	1389,638	3,413	1,542	0,000	0,000	1,871	0,9589
37,0 (PS)	0,816	-0,224	1389,625	3,418	1,560	0,000	0,000	1,858	0,9752
37,5 (PS)	0,796	-0,227	1389,633	3,423	1,578	0,000	0,000	1,844	0,9913
38,0 (PS)	0,776	-0,231	1389,637	3,427	1,596	0,000	0,000	1,830	1,0074
38,5 (PS)	0,755	-0,234	1389,639	3,430	1,614	0,000	0,000	1,816	1,0233



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	6,398 m	>=	1,000 m	Complies
Combined heeling moment	0,8 degr	<=	5,0 degr	Complies
Calculated heeling moment (upright)	125,030 t*m			
Required freeboard	1,759 m	>=	0,000 m	Complies
Weight	125,030 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers full

2020.056_008 IW-NET barge 3 abreast long/shallow

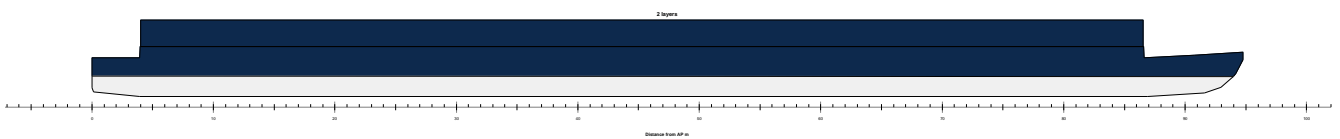
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_008_IW-NET3 Units abreast long_shallow.fbm

Design length	94,770 m	Midship location	47,385 m
Length over all	94,766 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	2,150 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,742 m
Draft aft pp	1,679 m	GG'	0,000 m
Mean moulded draft	1,655 m	VCG'	2,742 m
Draft forward pp	1,631 m	Max VCG'	6,644 m
Trim	-0,048 m	GM solid	4,903 m
LCF	46,613 m	G'M liquid	4,903 m
LCB	45,739 m	Immersion rate	10,673 tonne/cm
KM	7,645 m	MCT	81,232 t*m

Description	Density	Filling	Weight	LCG	TCG	VCG	FSM
		%	t	m	m	m	t*m

Containers

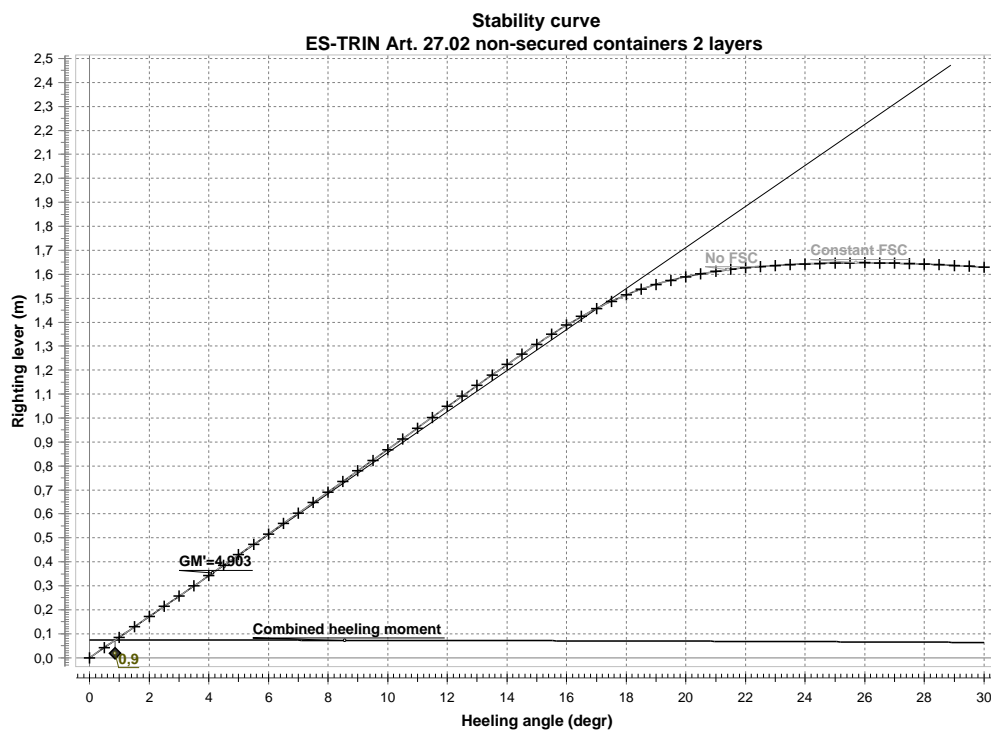
Containers full			1224,000	45,273	0,000 (CL)	3,400	0,000
Lightship			479,919	46,930	0,000 (CL)	1,063	
Deadweight			1224,000	45,273	0,000 (CL)	3,400	0,000
Displacement			1703,919	45,740	0,000 (CL)	2,742	0,000

Righting levers

Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	1,655	-0,048	1703,916	0,000	0,000	0,000	0,000	0,000	0,0000
0,5 (PS)	1,655	-0,048	1703,917	0,067	0,024	0,000	0,000	0,043	0,0002
1,0 (PS)	1,655	-0,048	1703,918	0,133	0,048	0,000	0,000	0,086	0,0007
1,5 (PS)	1,654	-0,048	1703,919	0,200	0,072	0,000	0,000	0,128	0,0017
2,0 (PS)	1,654	-0,049	1703,918	0,267	0,096	0,000	0,000	0,171	0,0030
2,5 (PS)	1,654	-0,049	1703,915	0,334	0,120	0,000	0,000	0,214	0,0047
3,0 (PS)	1,654	-0,050	1703,911	0,401	0,143	0,000	0,000	0,257	0,0067
3,5 (PS)	1,654	-0,050	1703,907	0,467	0,167	0,000	0,000	0,300	0,0092
4,0 (PS)	1,654	-0,051	1703,919	0,534	0,191	0,000	0,000	0,343	0,0120
4,5 (PS)	1,654	-0,052	1703,919	0,601	0,215	0,000	0,000	0,386	0,0151
5,0 (PS)	1,654	-0,052	1703,919	0,668	0,239	0,000	0,000	0,429	0,0187
5,5 (PS)	1,654	-0,053	1703,919	0,736	0,263	0,000	0,000	0,473	0,0226
6,0 (PS)	1,653	-0,054	1703,919	0,803	0,287	0,000	0,000	0,516	0,0270
6,5 (PS)	1,653	-0,055	1703,919	0,870	0,310	0,000	0,000	0,560	0,0316
7,0 (PS)	1,653	-0,057	1703,919	0,937	0,334	0,000	0,000	0,603	0,0367
7,5 (PS)	1,653	-0,058	1703,919	1,005	0,358	0,000	0,000	0,647	0,0422
8,0 (PS)	1,653	-0,059	1703,919	1,073	0,382	0,000	0,000	0,691	0,0480
8,5 (PS)	1,652	-0,061	1703,919	1,140	0,405	0,000	0,000	0,735	0,0542
9,0 (PS)	1,652	-0,063	1703,919	1,208	0,429	0,000	0,000	0,779	0,0608
9,5 (PS)	1,652	-0,064	1703,919	1,276	0,453	0,000	0,000	0,824	0,0678
10,0 (PS)	1,651	-0,066	1703,919	1,344	0,476	0,000	0,000	0,868	0,0752
10,5 (PS)	1,651	-0,068	1703,919	1,413	0,500	0,000	0,000	0,913	0,0830
11,0 (PS)	1,651	-0,070	1703,919	1,481	0,523	0,000	0,000	0,958	0,0912
11,5 (PS)	1,650	-0,072	1703,918	1,550	0,547	0,000	0,000	1,003	0,0997
12,0 (PS)	1,650	-0,074	1703,918	1,618	0,570	0,000	0,000	1,048	0,1087
12,5 (PS)	1,649	-0,077	1703,918	1,686	0,593	0,000	0,000	1,092	0,1180
13,0 (PS)	1,648	-0,079	1703,918	1,753	0,617	0,000	0,000	1,136	0,1277
13,5 (PS)	1,647	-0,082	1703,918	1,820	0,640	0,000	0,000	1,180	0,1378
14,0 (PS)	1,645	-0,084	1703,918	1,886	0,663	0,000	0,000	1,223	0,1483
14,5 (PS)	1,644	-0,087	1703,918	1,952	0,686	0,000	0,000	1,266	0,1592
15,0 (PS)	1,642	-0,089	1703,919	2,018	0,710	0,000	0,000	1,308	0,1704
15,5 (PS)	1,640	-0,093	1703,921	2,082	0,733	0,000	0,000	1,349	0,1820
16,0 (PS)	1,639	-0,097	1703,921	2,144	0,756	0,000	0,000	1,388	0,1940
16,5 (PS)	1,638	-0,103	1703,920	2,202	0,779	0,000	0,000	1,424	0,2062
17,0 (PS)	1,638	-0,108	1703,920	2,258	0,802	0,000	0,000	1,457	0,2188
17,5 (PS)	1,638	-0,113	1703,919	2,311	0,824	0,000	0,000	1,487	0,2317
18,0 (PS)	1,638	-0,120	1703,919	2,361	0,847	0,000	0,000	1,514	0,2447
18,5 (PS)	1,639	-0,127	1703,922	2,407	0,870	0,000	0,000	1,537	0,2581
19,0 (PS)	1,639	-0,134	1703,919	2,450	0,893	0,000	0,000	1,558	0,2716
19,5 (PS)	1,639	-0,142	1703,914	2,490	0,915	0,000	0,000	1,575	0,2852
20,0 (PS)	1,640	-0,149	1703,918	2,527	0,938	0,000	0,000	1,590	0,2990
20,5 (PS)	1,640	-0,156	1703,917	2,562	0,960	0,000	0,000	1,602	0,3130
21,0 (PS)	1,640	-0,164	1703,914	2,594	0,983	0,000	0,000	1,612	0,3270
21,5 (PS)	1,640	-0,171	1703,911	2,625	1,005	0,000	0,000	1,620	0,3411
22,0 (PS)	1,640	-0,178	1703,908	2,654	1,027	0,000	0,000	1,627	0,3553
22,5 (PS)	1,640	-0,184	1703,908	2,681	1,049	0,000	0,000	1,632	0,3695
23,0 (PS)	1,639	-0,190	1703,909	2,708	1,071	0,000	0,000	1,637	0,3838
23,5 (PS)	1,638	-0,196	1703,911	2,734	1,093	0,000	0,000	1,640	0,3981
24,0 (PS)	1,637	-0,202	1703,913	2,758	1,115	0,000	0,000	1,643	0,4124
24,5 (PS)	1,635	-0,207	1703,915	2,782	1,137	0,000	0,000	1,645	0,4267
25,0 (PS)	1,632	-0,212	1703,916	2,806	1,159	0,000	0,000	1,647	0,4411

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
25,5 (PS)	1,630	-0,218	1703,917	2,828	1,180	0,000	0,000	1,648	0,4555
26,0 (PS)	1,627	-0,223	1703,918	2,850	1,202	0,000	0,000	1,648	0,4698
26,5 (PS)	1,623	-0,228	1703,905	2,871	1,223	0,000	0,000	1,647	0,4842
27,0 (PS)	1,619	-0,233	1703,911	2,891	1,245	0,000	0,000	1,646	0,4986
27,5 (PS)	1,614	-0,238	1703,914	2,910	1,266	0,000	0,000	1,644	0,5130
28,0 (PS)	1,610	-0,242	1703,917	2,930	1,287	0,000	0,000	1,642	0,5273
28,5 (PS)	1,604	-0,247	1703,918	2,948	1,308	0,000	0,000	1,640	0,5416
29,0 (PS)	1,599	-0,252	1703,919	2,966	1,329	0,000	0,000	1,637	0,5559
29,5 (PS)	1,593	-0,256	1703,910	2,983	1,350	0,000	0,000	1,633	0,5702
30,0 (PS)	1,586	-0,261	1703,917	3,000	1,371	0,000	0,000	1,629	0,5844



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	4,903 m	\geq	1,000 m	Complies
Combined heeling moment	0,9 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	125,030 t*m			
Required freeboard	1,436 m	\geq	0,000 m	Complies
Weight	125,030 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers empty 3 layers

2020.056_008 IW-NET barge 3 abreast long/shallow

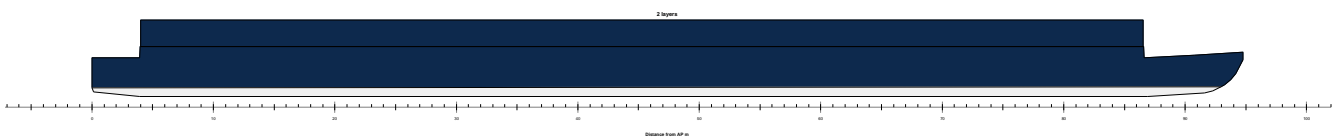
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_008_IW-NET 3 Units abreast long_shallow.fbm

Design length	94,770 m	Midship location	47,385 m
Length over all	94,766 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	2,150 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,409 m
Draft aft pp	0,714 m	GG'	0,000 m
Mean moulded draft	0,750 m	VCG'	2,409 m
Draft forward pp	0,787 m	Max VCG'	12,497 m
Trim	0,073 m	GM solid	13,243 m
LCF	45,885 m	G'M liquid	13,243 m
LCB	46,343 m	Immersion rate	10,501 tonne/cm
KM	15,652 m	MCT	77,563 t*m

Description	Density	Filling	Weight	LCG	TCG	VCG	FSM
		%	t	m	m	m	t*m

Containers

Containers empty			176,400	45,273	0,000 (CL)	3,400	0,000
3rd layer empty			88,200	45,273	0,000 (CL)	7,748	0,000
Totals for Containers			264,600	45,273	0,000 (CL)	4,849	0,000
Lightship			479,919	46,930	0,000 (CL)	1,063	
Deadweight			264,600	45,273	0,000 (CL)	4,849	0,000
Displacement			744,519	46,341	0,000 (CL)	2,409	0,000

Righting levers

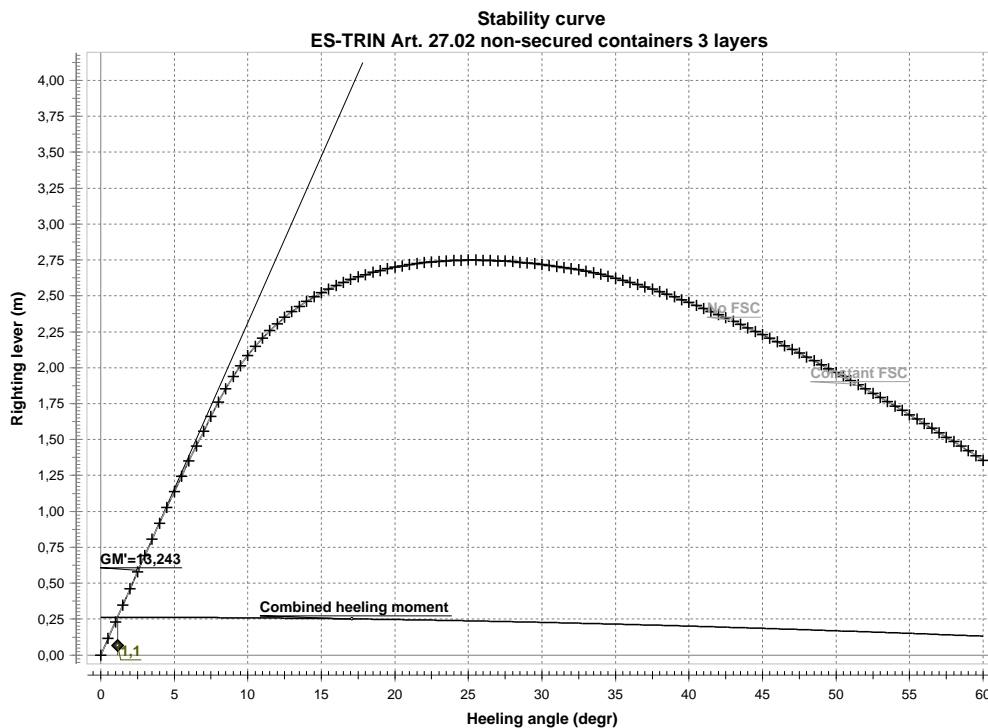
Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	0,750	0,073	744,519	0,000	0,000	0,000	0,000	0,000	0,0000
0,5 (PS)	0,750	0,073	744,516	0,137	0,021	0,000	0,000	0,116	0,0005
1,0 (PS)	0,750	0,073	744,519	0,273	0,042	0,000	0,000	0,231	0,0020
1,5 (PS)	0,750	0,073	744,519	0,410	0,063	0,000	0,000	0,347	0,0045
2,0 (PS)	0,750	0,072	744,519	0,546	0,084	0,000	0,000	0,462	0,0081
2,5 (PS)	0,750	0,072	744,519	0,683	0,105	0,000	0,000	0,578	0,0126
3,0 (PS)	0,750	0,071	744,519	0,818	0,126	0,000	0,000	0,692	0,0181
3,5 (PS)	0,749	0,071	744,519	0,953	0,147	0,000	0,000	0,806	0,0247
4,0 (PS)	0,749	0,071	744,519	1,085	0,168	0,000	0,000	0,917	0,0322
4,5 (PS)	0,748	0,070	744,519	1,217	0,189	0,000	0,000	1,028	0,0407
5,0 (PS)	0,746	0,069	744,519	1,347	0,210	0,000	0,000	1,137	0,0501
5,5 (PS)	0,745	0,069	744,519	1,475	0,231	0,000	0,000	1,244	0,0605
6,0 (PS)	0,743	0,068	744,518	1,602	0,252	0,000	0,000	1,350	0,0718
6,5 (PS)	0,741	0,067	744,518	1,727	0,273	0,000	0,000	1,455	0,0841
7,0 (PS)	0,739	0,067	744,518	1,851	0,294	0,000	0,000	1,558	0,0972
7,5 (PS)	0,737	0,066	744,521	1,974	0,314	0,000	0,000	1,660	0,1113
8,0 (PS)	0,734	0,066	744,519	2,095	0,335	0,000	0,000	1,760	0,1262
8,5 (PS)	0,731	0,067	744,513	2,209	0,356	0,000	0,000	1,853	0,1420
9,0 (PS)	0,726	0,068	744,517	2,315	0,377	0,000	0,000	1,938	0,1585
9,5 (PS)	0,719	0,069	744,512	2,412	0,398	0,000	0,000	2,015	0,1758
10,0 (PS)	0,712	0,069	744,517	2,503	0,418	0,000	0,000	2,084	0,1937
10,5 (PS)	0,703	0,070	744,515	2,586	0,439	0,000	0,000	2,147	0,2121
11,0 (PS)	0,694	0,071	744,518	2,665	0,460	0,000	0,000	2,205	0,2311
11,5 (PS)	0,683	0,072	744,517	2,738	0,480	0,000	0,000	2,258	0,2506
12,0 (PS)	0,671	0,073	744,516	2,806	0,501	0,000	0,000	2,306	0,2705
12,5 (PS)	0,659	0,074	744,514	2,871	0,521	0,000	0,000	2,350	0,2908
13,0 (PS)	0,645	0,074	744,518	2,932	0,542	0,000	0,000	2,390	0,3115
13,5 (PS)	0,631	0,075	744,517	2,989	0,562	0,000	0,000	2,427	0,3325
14,0 (PS)	0,616	0,076	744,516	3,044	0,583	0,000	0,000	2,461	0,3539
14,5 (PS)	0,600	0,077	744,516	3,095	0,603	0,000	0,000	2,492	0,3755
15,0 (PS)	0,584	0,077	744,515	3,144	0,623	0,000	0,000	2,521	0,3974
15,5 (PS)	0,566	0,078	744,514	3,191	0,644	0,000	0,000	2,547	0,4195
16,0 (PS)	0,549	0,079	744,514	3,235	0,664	0,000	0,000	2,571	0,4418
16,5 (PS)	0,530	0,079	744,513	3,277	0,684	0,000	0,000	2,593	0,4643
17,0 (PS)	0,511	0,080	744,513	3,317	0,704	0,000	0,000	2,613	0,4871
17,5 (PS)	0,491	0,081	744,512	3,356	0,724	0,000	0,000	2,631	0,5099
18,0 (PS)	0,470	0,081	744,512	3,392	0,744	0,000	0,000	2,648	0,5330
18,5 (PS)	0,449	0,082	744,512	3,427	0,764	0,000	0,000	2,663	0,5562
19,0 (PS)	0,427	0,082	744,513	3,461	0,784	0,000	0,000	2,676	0,5795
19,5 (PS)	0,404	0,083	744,513	3,493	0,804	0,000	0,000	2,689	0,6029
20,0 (PS)	0,381	0,084	744,514	3,523	0,824	0,000	0,000	2,699	0,6264
20,5 (PS)	0,358	0,084	744,514	3,553	0,844	0,000	0,000	2,709	0,6500
21,0 (PS)	0,333	0,085	744,515	3,581	0,863	0,000	0,000	2,717	0,6737
21,5 (PS)	0,308	0,085	744,516	3,607	0,883	0,000	0,000	2,725	0,6974
22,0 (PS)	0,283	0,086	744,516	3,633	0,902	0,000	0,000	2,731	0,7212
22,5 (PS)	0,257	0,086	744,517	3,658	0,922	0,000	0,000	2,736	0,7451
23,0 (PS)	0,230	0,086	744,517	3,681	0,941	0,000	0,000	2,740	0,7690
23,5 (PS)	0,203	0,087	744,512	3,704	0,960	0,000	0,000	2,744	0,7929
24,0 (PS)	0,175	0,087	744,514	3,726	0,980	0,000	0,000	2,746	0,8168
24,5 (PS)	0,147	0,087	744,515	3,746	0,999	0,000	0,000	2,748	0,8408
25,0 (PS)	0,118	0,088	744,516	3,766	1,018	0,000	0,000	2,748	0,8648

Righting levers

Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
25,5 (PS)	0,088	0,088	744,517	3,785	1,037	0,000	0,000	2,748	0,8888
26,0 (PS)	0,058	0,088	744,518	3,804	1,056	0,000	0,000	2,748	0,9128
26,5 (PS)	0,027	0,089	744,512	3,821	1,075	0,000	0,000	2,746	0,9367
27,0 (PS)	-0,004	0,089	744,514	3,838	1,094	0,000	0,000	2,744	0,9607
27,5 (PS)	-0,037	0,089	744,516	3,853	1,112	0,000	0,000	2,741	0,9846
28,0 (PS)	-0,069	0,089	744,517	3,869	1,131	0,000	0,000	2,738	1,0085
28,5 (PS)	-0,103	0,090	744,518	3,883	1,149	0,000	0,000	2,734	1,0324
29,0 (PS)	-0,137	0,090	744,518	3,897	1,168	0,000	0,000	2,729	1,0562
29,5 (PS)	-0,171	0,090	744,513	3,910	1,186	0,000	0,000	2,724	1,0800
30,0 (PS)	-0,207	0,090	744,515	3,923	1,204	0,000	0,000	2,718	1,1038
30,5 (PS)	-0,243	0,090	744,517	3,934	1,222	0,000	0,000	2,712	1,1275
31,0 (PS)	-0,279	0,090	744,518	3,946	1,241	0,000	0,000	2,705	1,1511
31,5 (PS)	-0,317	0,091	744,518	3,956	1,259	0,000	0,000	2,698	1,1747
32,0 (PS)	-0,354	0,091	744,519	3,966	1,276	0,000	0,000	2,690	1,1982
32,5 (PS)	-0,393	0,092	744,513	3,975	1,294	0,000	0,000	2,681	1,2216
33,0 (PS)	-0,432	0,092	744,514	3,983	1,312	0,000	0,000	2,671	1,2450
33,5 (PS)	-0,471	0,093	744,514	3,990	1,329	0,000	0,000	2,660	1,2682
34,0 (PS)	-0,511	0,093	744,515	3,996	1,347	0,000	0,000	2,649	1,2914
34,5 (PS)	-0,551	0,093	744,515	4,001	1,364	0,000	0,000	2,636	1,3145
35,0 (PS)	-0,592	0,094	744,516	4,005	1,382	0,000	0,000	2,623	1,3374
35,5 (PS)	-0,634	0,094	744,516	4,008	1,399	0,000	0,000	2,609	1,3603
36,0 (PS)	-0,676	0,094	744,516	4,010	1,416	0,000	0,000	2,594	1,3830
36,5 (PS)	-0,718	0,094	744,517	4,012	1,433	0,000	0,000	2,579	1,4055
37,0 (PS)	-0,761	0,094	744,517	4,012	1,450	0,000	0,000	2,563	1,4280
37,5 (PS)	-0,805	0,094	744,517	4,012	1,466	0,000	0,000	2,546	1,4503
38,0 (PS)	-0,849	0,094	744,517	4,012	1,483	0,000	0,000	2,529	1,4724
38,5 (PS)	-0,894	0,094	744,518	4,010	1,499	0,000	0,000	2,511	1,4944
39,0 (PS)	-0,939	0,094	744,518	4,008	1,516	0,000	0,000	2,492	1,5162
39,5 (PS)	-0,985	0,093	744,518	4,005	1,532	0,000	0,000	2,473	1,5379
40,0 (PS)	-1,032	0,093	744,518	4,001	1,548	0,000	0,000	2,453	1,5594
40,5 (PS)	-1,079	0,093	744,518	3,997	1,564	0,000	0,000	2,433	1,5807
41,0 (PS)	-1,127	0,092	744,518	3,992	1,580	0,000	0,000	2,412	1,6018
41,5 (PS)	-1,176	0,092	744,518	3,987	1,596	0,000	0,000	2,391	1,6228
42,0 (PS)	-1,226	0,091	744,518	3,981	1,612	0,000	0,000	2,369	1,6436
42,5 (PS)	-1,276	0,091	744,518	3,974	1,627	0,000	0,000	2,347	1,6642
43,0 (PS)	-1,328	0,090	744,518	3,967	1,643	0,000	0,000	2,324	1,6845
43,5 (PS)	-1,380	0,090	744,518	3,959	1,658	0,000	0,000	2,301	1,7047
44,0 (PS)	-1,433	0,089	744,518	3,951	1,673	0,000	0,000	2,278	1,7247
44,5 (PS)	-1,487	0,089	744,518	3,942	1,688	0,000	0,000	2,254	1,7445
45,0 (PS)	-1,542	0,088	744,518	3,932	1,703	0,000	0,000	2,229	1,7640
45,5 (PS)	-1,597	0,088	744,518	3,922	1,718	0,000	0,000	2,204	1,7834
46,0 (PS)	-1,654	0,087	744,518	3,912	1,733	0,000	0,000	2,179	1,8025
46,5 (PS)	-1,712	0,086	744,518	3,901	1,747	0,000	0,000	2,154	1,8214
47,0 (PS)	-1,771	0,086	744,518	3,889	1,762	0,000	0,000	2,128	1,8401
47,5 (PS)	-1,831	0,085	744,518	3,877	1,776	0,000	0,000	2,102	1,8585
48,0 (PS)	-1,892	0,084	744,518	3,865	1,790	0,000	0,000	2,075	1,8768
48,5 (PS)	-1,955	0,084	744,518	3,852	1,804	0,000	0,000	2,048	1,8948
49,0 (PS)	-2,018	0,083	744,518	3,839	1,818	0,000	0,000	2,021	1,9125
49,5 (PS)	-2,083	0,082	744,518	3,825	1,832	0,000	0,000	1,993	1,9300
50,0 (PS)	-2,149	0,081	744,518	3,811	1,845	0,000	0,000	1,966	1,9473
50,5 (PS)	-2,217	0,081	744,518	3,796	1,859	0,000	0,000	1,937	1,9643

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
51,0 (PS)	-2,286	0,080	744,518	3,781	1,872	0,000	0,000	1,909	1,9811
51,5 (PS)	-2,357	0,079	744,518	3,765	1,885	0,000	0,000	1,880	1,9977
52,0 (PS)	-2,429	0,078	744,518	3,749	1,898	0,000	0,000	1,851	2,0139
52,5 (PS)	-2,503	0,077	744,518	3,733	1,911	0,000	0,000	1,822	2,0300
53,0 (PS)	-2,578	0,076	744,518	3,716	1,924	0,000	0,000	1,793	2,0457
53,5 (PS)	-2,655	0,075	744,518	3,699	1,936	0,000	0,000	1,763	2,0613
54,0 (PS)	-2,735	0,074	744,518	3,682	1,949	0,000	0,000	1,733	2,0765
54,5 (PS)	-2,816	0,073	744,518	3,664	1,961	0,000	0,000	1,703	2,0915
55,0 (PS)	-2,899	0,072	744,518	3,645	1,973	0,000	0,000	1,672	2,1062
55,5 (PS)	-2,984	0,071	744,518	3,627	1,985	0,000	0,000	1,642	2,1207
56,0 (PS)	-3,071	0,070	744,518	3,608	1,997	0,000	0,000	1,611	2,1349
56,5 (PS)	-3,161	0,069	744,518	3,588	2,009	0,000	0,000	1,580	2,1488
57,0 (PS)	-3,253	0,068	744,518	3,568	2,020	0,000	0,000	1,548	2,1624
57,5 (PS)	-3,347	0,067	744,518	3,548	2,031	0,000	0,000	1,517	2,1758
58,0 (PS)	-3,445	0,066	744,518	3,528	2,043	0,000	0,000	1,485	2,1889
58,5 (PS)	-3,544	0,064	744,518	3,507	2,054	0,000	0,000	1,453	2,2017
59,0 (PS)	-3,647	0,063	744,518	3,485	2,065	0,000	0,000	1,421	2,2143
59,5 (PS)	-3,753	0,062	744,518	3,464	2,075	0,000	0,000	1,389	2,2265
60,0 (PS)	-3,862	0,060	744,518	3,442	2,086	0,000	0,000	1,356	2,2385



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	13,243 m	\geq	1,000 m	Complies
Combined heeling moment	1,1 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	195,720 t*m			
Required freeboard	2,305 m	\geq	0,000 m	Complies
Weight	195,720 t			

Trv. location of weight 1,000 m

The condition complies with the stability criteria

Containers 70 % full 3 layers

2020.056_008 IW-NET barge 3 abreast long/shallow

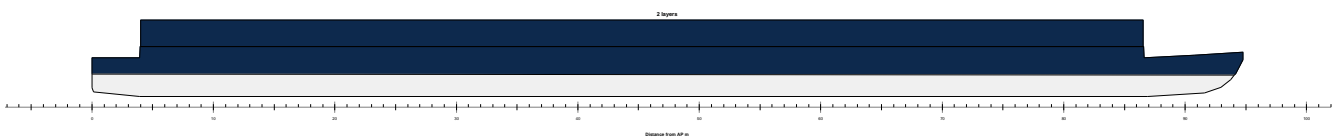
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_008_IW-NET3 Units abreast long_shallow.fbm

Design length	94,770 m	Midship location	47,385 m
Length over all	94,766 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	2,150 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	3,864 m
Draft aft pp	1,822 m	GG'	0,000 m
Mean moulded draft	1,786 m	VCG'	3,864 m
Draft forward pp	1,750 m	Max VCG'	6,027 m
Trim	-0,072 m	GM solid	3,342 m
LCF	46,692 m	G'M liquid	3,342 m
LCB	45,702 m	Immersion rate	10,691 tonne/cm
KM	7,206 m	MCT	81,411 t*m

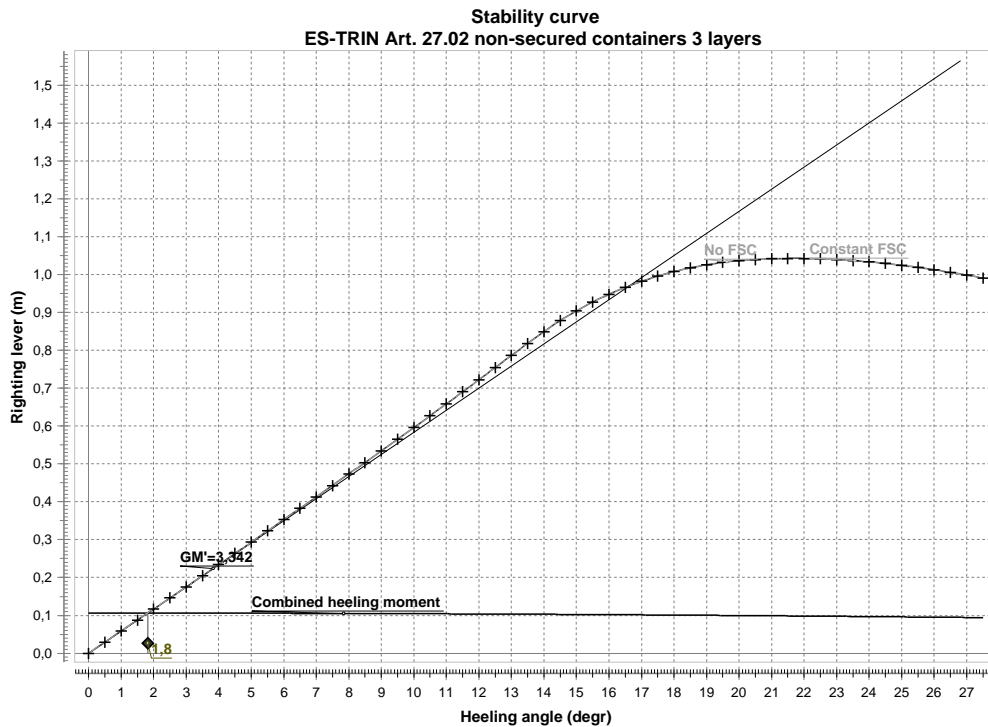
Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
Containers							
Containers 70 % full			909,720	45,273	0,000 (CL)	3,400	0,000
3rd layer 70 % full			454,860	45,273	0,000 (CL)	7,748	0,000
Totals for Containers			1364,580	45,273	0,000 (CL)	4,849	0,000
Lightship			479,919	46,930	0,000 (CL)	1,063	
Deadweight			1364,580	45,273	0,000 (CL)	4,849	0,000
Displacement			1844,499	45,704	0,000 (CL)	3,864	0,000

Righting levers

Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	1,786	-0,072	1844,496	0,000	0,000	0,000	0,000	0,000	0,0000
0,5 (PS)	1,786	-0,072	1844,496	0,063	0,034	0,000	0,000	0,029	0,0001
1,0 (PS)	1,786	-0,072	1844,498	0,126	0,067	0,000	0,000	0,058	0,0005
1,5 (PS)	1,786	-0,072	1844,499	0,189	0,101	0,000	0,000	0,088	0,0011
2,0 (PS)	1,786	-0,073	1844,499	0,252	0,135	0,000	0,000	0,117	0,0020
2,5 (PS)	1,786	-0,073	1844,497	0,315	0,169	0,000	0,000	0,146	0,0032
3,0 (PS)	1,786	-0,074	1844,494	0,378	0,202	0,000	0,000	0,175	0,0046
3,5 (PS)	1,786	-0,074	1844,489	0,441	0,236	0,000	0,000	0,205	0,0062
4,0 (PS)	1,786	-0,075	1844,485	0,504	0,270	0,000	0,000	0,234	0,0082
4,5 (PS)	1,785	-0,075	1844,499	0,567	0,303	0,000	0,000	0,264	0,0103
5,0 (PS)	1,785	-0,076	1844,499	0,630	0,337	0,000	0,000	0,293	0,0128
5,5 (PS)	1,785	-0,077	1844,499	0,693	0,370	0,000	0,000	0,323	0,0154
6,0 (PS)	1,785	-0,078	1844,499	0,757	0,404	0,000	0,000	0,353	0,0184
6,5 (PS)	1,785	-0,079	1844,499	0,820	0,437	0,000	0,000	0,383	0,0216
7,0 (PS)	1,785	-0,080	1844,499	0,884	0,471	0,000	0,000	0,413	0,0251
7,5 (PS)	1,784	-0,082	1844,499	0,947	0,504	0,000	0,000	0,443	0,0288
8,0 (PS)	1,784	-0,083	1844,499	1,011	0,538	0,000	0,000	0,473	0,0328
8,5 (PS)	1,784	-0,084	1844,499	1,075	0,571	0,000	0,000	0,504	0,0371
9,0 (PS)	1,784	-0,086	1844,499	1,139	0,604	0,000	0,000	0,534	0,0416
9,5 (PS)	1,783	-0,087	1844,499	1,203	0,638	0,000	0,000	0,565	0,0464
10,0 (PS)	1,783	-0,089	1844,499	1,267	0,671	0,000	0,000	0,596	0,0515
10,5 (PS)	1,783	-0,091	1844,499	1,332	0,704	0,000	0,000	0,627	0,0568
11,0 (PS)	1,782	-0,093	1844,499	1,396	0,737	0,000	0,000	0,659	0,0624
11,5 (PS)	1,782	-0,095	1844,499	1,461	0,770	0,000	0,000	0,690	0,0683
12,0 (PS)	1,782	-0,097	1844,499	1,526	0,803	0,000	0,000	0,722	0,0745
12,5 (PS)	1,781	-0,099	1844,499	1,591	0,836	0,000	0,000	0,754	0,0809
13,0 (PS)	1,781	-0,101	1844,498	1,656	0,869	0,000	0,000	0,786	0,0876
13,5 (PS)	1,780	-0,104	1844,499	1,720	0,902	0,000	0,000	0,818	0,0946
14,0 (PS)	1,779	-0,107	1844,500	1,784	0,935	0,000	0,000	0,849	0,1019
14,5 (PS)	1,779	-0,111	1844,499	1,845	0,968	0,000	0,000	0,878	0,1094
15,0 (PS)	1,779	-0,116	1844,505	1,904	1,000	0,000	0,000	0,904	0,1172
15,5 (PS)	1,780	-0,122	1844,513	1,960	1,033	0,000	0,000	0,927	0,1252
16,0 (PS)	1,781	-0,128	1844,499	2,013	1,065	0,000	0,000	0,948	0,1334
16,5 (PS)	1,783	-0,134	1844,499	2,063	1,097	0,000	0,000	0,966	0,1417
17,0 (PS)	1,786	-0,141	1844,513	2,112	1,130	0,000	0,000	0,982	0,1502
17,5 (PS)	1,789	-0,147	1844,507	2,158	1,162	0,000	0,000	0,996	0,1589
18,0 (PS)	1,793	-0,154	1844,501	2,202	1,194	0,000	0,000	1,007	0,1676
18,5 (PS)	1,797	-0,161	1844,499	2,244	1,226	0,000	0,000	1,017	0,1764
19,0 (PS)	1,801	-0,169	1844,499	2,284	1,258	0,000	0,000	1,026	0,1854
19,5 (PS)	1,806	-0,176	1844,495	2,322	1,290	0,000	0,000	1,032	0,1943
20,0 (PS)	1,810	-0,183	1844,485	2,358	1,322	0,000	0,000	1,036	0,2034
20,5 (PS)	1,814	-0,190	1844,498	2,393	1,353	0,000	0,000	1,040	0,2124
21,0 (PS)	1,818	-0,197	1844,497	2,426	1,385	0,000	0,000	1,042	0,2215
21,5 (PS)	1,821	-0,203	1844,497	2,459	1,416	0,000	0,000	1,042	0,2306
22,0 (PS)	1,824	-0,209	1844,496	2,490	1,448	0,000	0,000	1,042	0,2397
22,5 (PS)	1,826	-0,216	1844,496	2,520	1,479	0,000	0,000	1,041	0,2488
23,0 (PS)	1,828	-0,222	1844,497	2,549	1,510	0,000	0,000	1,039	0,2579
23,5 (PS)	1,830	-0,227	1844,498	2,578	1,541	0,000	0,000	1,037	0,2669
24,0 (PS)	1,831	-0,233	1844,482	2,605	1,572	0,000	0,000	1,033	0,2760
24,5 (PS)	1,831	-0,239	1844,489	2,631	1,602	0,000	0,000	1,029	0,2850
25,0 (PS)	1,831	-0,244	1844,494	2,657	1,633	0,000	0,000	1,024	0,2939

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
25,5 (PS)	1,831	-0,249	1844,496	2,682	1,664	0,000	0,000	1,019	0,3028
26,0 (PS)	1,830	-0,255	1844,498	2,706	1,694	0,000	0,000	1,012	0,3117
26,5 (PS)	1,829	-0,260	1844,499	2,730	1,724	0,000	0,000	1,006	0,3205
27,0 (PS)	1,827	-0,265	1844,492	2,753	1,754	0,000	0,000	0,998	0,3292
27,5 (PS)	1,826	-0,270	1844,498	2,775	1,784	0,000	0,000	0,991	0,3379



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	3,342 m	\geq	1,000 m	Complies
Combined heeling moment	1,8 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	195,720 t*m			
Required freeboard	1,196 m	\geq	0,000 m	Complies
Weight	195,720 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers full 3 layers

2020.056_008 IW-NET barge 3 abreast long/shallow

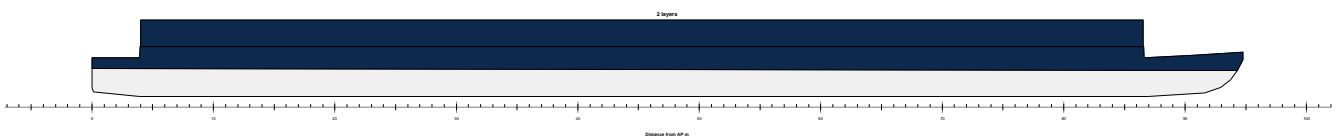
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_008_IW-NET3 Units abreast long_shallow.fbm

Design length	94,770 m	Midship location	47,385 m
Length over all	94,766 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	2,150 m		



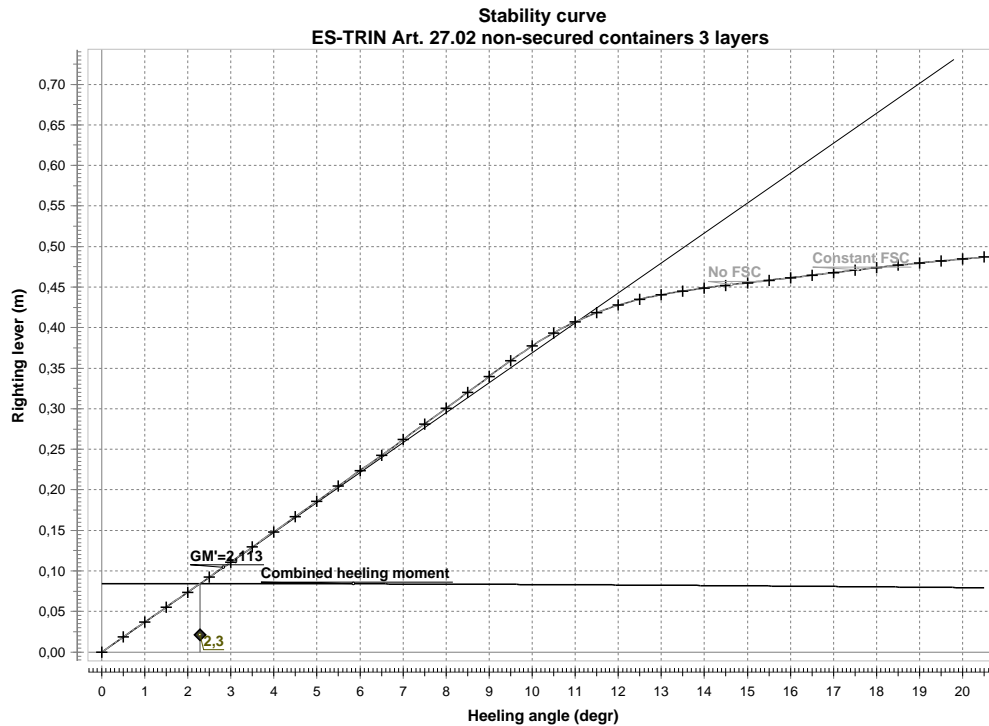
Hydrostatic particulars

List	0,0 (CL) degr	VCG	4,065 m
Draft aft pp	2,306 m	GG'	0,000 m
Mean moulded draft	2,225 m	VCG'	4,065 m
Draft forward pp	2,145 m	Max VCG'	5,178 m
Trim	-0,161 m	GM solid	2,113 m
LCF	46,923 m	G'M liquid	2,113 m
LCB	45,611 m	Immersion rate	10,744 tonne/cm
KM	6,178 m	MCT	82,493 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
Containers							
Containers full			1224,000	45,273	0,000 (CL)	3,400	0,000
3rd layer full			612,000	45,273	0,000 (CL)	7,748	0,000
Totals for Containers			1836,000	45,273	0,000 (CL)	4,849	0,000
Lightship			479,919	46,930	0,000 (CL)	1,063	
Deadweight			1836,000	45,273	0,000 (CL)	4,849	0,000
Displacement			2315,919	45,616	0,000 (CL)	4,065	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	2,225	-0,161	2315,913	0,000	0,000	0,000	0,000	0,000	0,0000
0,5 (PS)	2,225	-0,161	2315,914	0,054	0,035	0,000	0,000	0,018	0,0001
1,0 (PS)	2,225	-0,161	2315,916	0,108	0,071	0,000	0,000	0,037	0,0003
1,5 (PS)	2,225	-0,161	2315,917	0,162	0,106	0,000	0,000	0,055	0,0007
2,0 (PS)	2,225	-0,161	2315,919	0,216	0,142	0,000	0,000	0,074	0,0013
2,5 (PS)	2,225	-0,162	2315,919	0,270	0,177	0,000	0,000	0,092	0,0020
3,0 (PS)	2,225	-0,162	2315,918	0,324	0,213	0,000	0,000	0,111	0,0029
3,5 (PS)	2,225	-0,163	2315,917	0,378	0,248	0,000	0,000	0,130	0,0040
4,0 (PS)	2,225	-0,163	2315,914	0,432	0,284	0,000	0,000	0,148	0,0052
4,5 (PS)	2,225	-0,164	2315,912	0,486	0,319	0,000	0,000	0,167	0,0065
5,0 (PS)	2,225	-0,164	2315,909	0,540	0,354	0,000	0,000	0,186	0,0081
5,5 (PS)	2,225	-0,165	2315,906	0,594	0,390	0,000	0,000	0,205	0,0098
6,0 (PS)	2,224	-0,166	2315,904	0,649	0,425	0,000	0,000	0,224	0,0116
6,5 (PS)	2,224	-0,167	2315,901	0,703	0,460	0,000	0,000	0,243	0,0137
7,0 (PS)	2,224	-0,168	2315,898	0,757	0,495	0,000	0,000	0,262	0,0159
7,5 (PS)	2,224	-0,169	2315,919	0,812	0,531	0,000	0,000	0,281	0,0183
8,0 (PS)	2,224	-0,170	2315,919	0,866	0,566	0,000	0,000	0,301	0,0208
8,5 (PS)	2,224	-0,171	2315,919	0,921	0,601	0,000	0,000	0,320	0,0235
9,0 (PS)	2,223	-0,172	2315,923	0,976	0,636	0,000	0,000	0,340	0,0264
9,5 (PS)	2,223	-0,174	2315,920	1,030	0,671	0,000	0,000	0,359	0,0294
10,0 (PS)	2,224	-0,178	2315,928	1,083	0,706	0,000	0,000	0,377	0,0326
10,5 (PS)	2,225	-0,183	2315,920	1,134	0,741	0,000	0,000	0,394	0,0360
11,0 (PS)	2,227	-0,190	2315,921	1,183	0,776	0,000	0,000	0,407	0,0395
11,5 (PS)	2,231	-0,197	2315,921	1,229	0,810	0,000	0,000	0,418	0,0431
12,0 (PS)	2,235	-0,204	2315,921	1,273	0,845	0,000	0,000	0,428	0,0468
12,5 (PS)	2,241	-0,211	2315,921	1,315	0,880	0,000	0,000	0,435	0,0506
13,0 (PS)	2,247	-0,219	2315,920	1,355	0,914	0,000	0,000	0,441	0,0544
13,5 (PS)	2,254	-0,226	2315,934	1,394	0,949	0,000	0,000	0,445	0,0583
14,0 (PS)	2,261	-0,232	2315,926	1,432	0,983	0,000	0,000	0,449	0,0622
14,5 (PS)	2,269	-0,237	2315,922	1,470	1,018	0,000	0,000	0,452	0,0661
15,0 (PS)	2,277	-0,242	2315,920	1,507	1,052	0,000	0,000	0,455	0,0700
15,5 (PS)	2,285	-0,247	2315,938	1,545	1,086	0,000	0,000	0,458	0,0740
16,0 (PS)	2,293	-0,252	2315,925	1,582	1,120	0,000	0,000	0,462	0,0780
16,5 (PS)	2,301	-0,256	2315,920	1,619	1,154	0,000	0,000	0,465	0,0821
17,0 (PS)	2,309	-0,260	2315,918	1,656	1,188	0,000	0,000	0,468	0,0862
17,5 (PS)	2,318	-0,265	2315,918	1,693	1,222	0,000	0,000	0,471	0,0903
18,0 (PS)	2,326	-0,269	2315,919	1,730	1,256	0,000	0,000	0,474	0,0944
18,5 (PS)	2,334	-0,273	2315,919	1,767	1,290	0,000	0,000	0,477	0,0985
19,0 (PS)	2,343	-0,278	2315,918	1,803	1,323	0,000	0,000	0,480	0,1027
19,5 (PS)	2,351	-0,282	2315,917	1,839	1,357	0,000	0,000	0,482	0,1069
20,0 (PS)	2,359	-0,286	2315,918	1,875	1,390	0,000	0,000	0,485	0,1111
20,5 (PS)	2,368	-0,290	2315,919	1,910	1,423	0,000	0,000	0,487	0,1154



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	2,113 m	\geq	1,000 m	Complies
Combined heeling moment	2,3 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	195,720 t*m			
Required freeboard	0,666 m	\geq	0,000 m	Complies
Weight	195,720 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers empty ALU

2020.056_008 IW-NET barge 3 abreast long/shallow

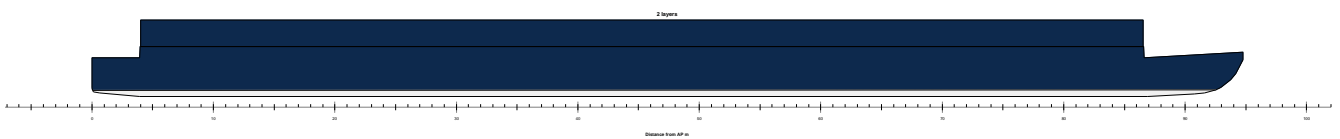
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_008_IW-NET 3 Units abreast long_shallow.fbm

Design length	94,770 m	Midship location	47,385 m
Length over all	94,766 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	2,150 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	1,881 m
Draft aft pp	0,500 m	GG'	0,000 m
Mean moulded draft	0,529 m	VCG'	1,881 m
Draft forward pp	0,558 m	Max VCG'	18,298 m
Trim	0,058 m	GM solid	20,308 m
LCF	45,663 m	G'M liquid	20,308 m
LCB	46,371 m	Immersion rate	10,421 tonne/cm
KM	22,189 m	MCT	75,889 t*m

Description	Density	Filling	Weight	LCG	TCG	VCG	FSM
		%	t	m	m	m	t*m

Containers

Containers empty			176,400	45,273	0,000 (CL)	3,400	0,000
Lightship			336,666	46,946	0,000 (CL)	1,085	
Deadweight			176,400	45,273	0,000 (CL)	3,400	0,000
Displacement			513,066	46,371	0,000 (CL)	1,881	0,000

Righting levers

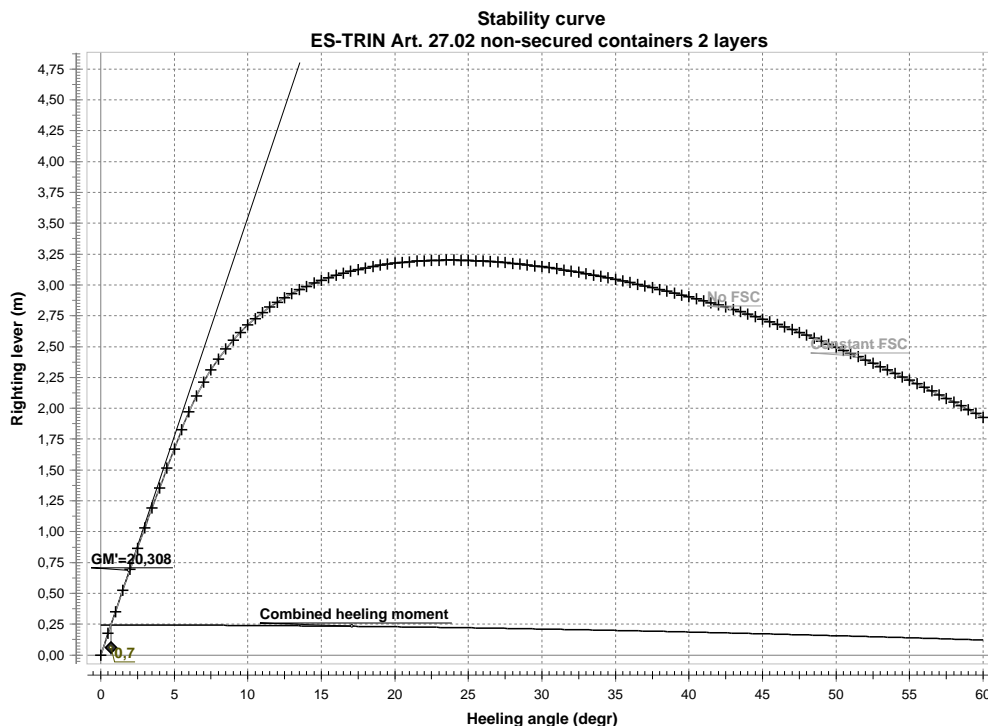
Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	0,529	0,058	513,065	0,000	0,000	0,000	0,000	0,000	0,0000
0,5 (PS)	0,529	0,058	513,066	0,193	0,016	0,000	0,000	0,177	0,0008
1,0 (PS)	0,529	0,058	513,066	0,385	0,033	0,000	0,000	0,352	0,0031
1,5 (PS)	0,528	0,058	513,066	0,574	0,049	0,000	0,000	0,525	0,0069
2,0 (PS)	0,527	0,058	513,066	0,761	0,066	0,000	0,000	0,695	0,0122
2,5 (PS)	0,526	0,058	513,066	0,946	0,082	0,000	0,000	0,864	0,0190
3,0 (PS)	0,525	0,058	513,066	1,128	0,098	0,000	0,000	1,030	0,0273
3,5 (PS)	0,524	0,058	513,066	1,308	0,115	0,000	0,000	1,193	0,0370
4,0 (PS)	0,522	0,058	513,066	1,486	0,131	0,000	0,000	1,355	0,0481
4,5 (PS)	0,520	0,058	513,066	1,661	0,148	0,000	0,000	1,514	0,0606
5,0 (PS)	0,518	0,058	513,062	1,835	0,164	0,000	0,000	1,671	0,0745
5,5 (PS)	0,515	0,058	513,065	2,005	0,180	0,000	0,000	1,825	0,0898
6,0 (PS)	0,512	0,060	513,065	2,167	0,197	0,000	0,000	1,971	0,1064
6,5 (PS)	0,506	0,062	513,065	2,312	0,213	0,000	0,000	2,099	0,1241
7,0 (PS)	0,499	0,064	513,062	2,441	0,229	0,000	0,000	2,212	0,1430
7,5 (PS)	0,491	0,065	513,064	2,557	0,246	0,000	0,000	2,311	0,1627
8,0 (PS)	0,481	0,067	513,061	2,662	0,262	0,000	0,000	2,400	0,1833
8,5 (PS)	0,470	0,069	513,064	2,758	0,278	0,000	0,000	2,480	0,2046
9,0 (PS)	0,457	0,071	513,062	2,846	0,294	0,000	0,000	2,551	0,2265
9,5 (PS)	0,443	0,073	513,065	2,926	0,310	0,000	0,000	2,616	0,2491
10,0 (PS)	0,429	0,074	513,064	3,001	0,327	0,000	0,000	2,674	0,2722
10,5 (PS)	0,413	0,076	513,062	3,070	0,343	0,000	0,000	2,728	0,2957
11,0 (PS)	0,397	0,078	513,064	3,135	0,359	0,000	0,000	2,776	0,3197
11,5 (PS)	0,379	0,079	513,064	3,195	0,375	0,000	0,000	2,820	0,3442
12,0 (PS)	0,361	0,081	513,063	3,251	0,391	0,000	0,000	2,860	0,3690
12,5 (PS)	0,342	0,082	513,062	3,304	0,407	0,000	0,000	2,897	0,3941
13,0 (PS)	0,322	0,084	513,061	3,353	0,423	0,000	0,000	2,930	0,4195
13,5 (PS)	0,302	0,085	513,064	3,400	0,439	0,000	0,000	2,961	0,4452
14,0 (PS)	0,280	0,087	513,064	3,444	0,455	0,000	0,000	2,989	0,4712
14,5 (PS)	0,258	0,088	513,063	3,485	0,471	0,000	0,000	3,015	0,4974
15,0 (PS)	0,236	0,089	513,063	3,525	0,487	0,000	0,000	3,038	0,5238
15,5 (PS)	0,213	0,091	513,063	3,562	0,503	0,000	0,000	3,059	0,5504
16,0 (PS)	0,189	0,092	513,062	3,597	0,518	0,000	0,000	3,078	0,5772
16,5 (PS)	0,164	0,093	513,062	3,630	0,534	0,000	0,000	3,096	0,6041
17,0 (PS)	0,139	0,094	513,062	3,662	0,550	0,000	0,000	3,112	0,6312
17,5 (PS)	0,114	0,095	513,062	3,691	0,566	0,000	0,000	3,126	0,6584
18,0 (PS)	0,087	0,097	513,062	3,720	0,581	0,000	0,000	3,139	0,6857
18,5 (PS)	0,060	0,098	513,062	3,747	0,597	0,000	0,000	3,150	0,7132
19,0 (PS)	0,033	0,099	513,062	3,772	0,612	0,000	0,000	3,160	0,7407
19,5 (PS)	0,005	0,100	513,063	3,797	0,628	0,000	0,000	3,169	0,7683
20,0 (PS)	-0,023	0,101	513,063	3,820	0,643	0,000	0,000	3,176	0,7960
20,5 (PS)	-0,053	0,102	513,063	3,841	0,659	0,000	0,000	3,183	0,8238
21,0 (PS)	-0,082	0,103	513,064	3,862	0,674	0,000	0,000	3,188	0,8516
21,5 (PS)	-0,113	0,104	513,064	3,882	0,689	0,000	0,000	3,193	0,8794
22,0 (PS)	-0,143	0,105	513,064	3,901	0,705	0,000	0,000	3,196	0,9073
22,5 (PS)	-0,175	0,106	513,061	3,918	0,720	0,000	0,000	3,199	0,9352
23,0 (PS)	-0,207	0,106	513,062	3,935	0,735	0,000	0,000	3,200	0,9631
23,5 (PS)	-0,239	0,107	513,063	3,951	0,750	0,000	0,000	3,201	0,9910
24,0 (PS)	-0,272	0,108	513,063	3,966	0,765	0,000	0,000	3,201	1,0190
24,5 (PS)	-0,306	0,109	513,064	3,980	0,780	0,000	0,000	3,200	1,0469
25,0 (PS)	-0,340	0,110	513,064	3,994	0,795	0,000	0,000	3,199	1,0748

Righting levers

Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrاد
25,5 (PS)	-0,375	0,110	513,061	4,006	0,810	0,000	0,000	3,196	1,1027
26,0 (PS)	-0,410	0,111	513,062	4,018	0,825	0,000	0,000	3,193	1,1306
26,5 (PS)	-0,446	0,112	513,063	4,029	0,839	0,000	0,000	3,190	1,1585
27,0 (PS)	-0,483	0,113	513,064	4,039	0,854	0,000	0,000	3,185	1,1863
27,5 (PS)	-0,520	0,113	513,064	4,049	0,869	0,000	0,000	3,181	1,2141
28,0 (PS)	-0,558	0,114	513,064	4,058	0,883	0,000	0,000	3,175	1,2418
28,5 (PS)	-0,596	0,115	513,065	4,067	0,898	0,000	0,000	3,169	1,2695
29,0 (PS)	-0,635	0,115	513,062	4,074	0,912	0,000	0,000	3,162	1,2971
29,5 (PS)	-0,675	0,116	513,063	4,081	0,926	0,000	0,000	3,155	1,3247
30,0 (PS)	-0,716	0,116	513,063	4,088	0,940	0,000	0,000	3,148	1,3522
30,5 (PS)	-0,757	0,117	513,064	4,094	0,955	0,000	0,000	3,139	1,3796
31,0 (PS)	-0,798	0,117	513,064	4,099	0,969	0,000	0,000	3,131	1,4070
31,5 (PS)	-0,841	0,118	513,065	4,104	0,983	0,000	0,000	3,121	1,4342
32,0 (PS)	-0,884	0,118	513,061	4,108	0,997	0,000	0,000	3,112	1,4614
32,5 (PS)	-0,928	0,119	513,062	4,112	1,011	0,000	0,000	3,102	1,4885
33,0 (PS)	-0,973	0,120	513,063	4,115	1,024	0,000	0,000	3,091	1,5156
33,5 (PS)	-1,018	0,120	513,064	4,118	1,038	0,000	0,000	3,080	1,5425
34,0 (PS)	-1,064	0,121	513,064	4,120	1,052	0,000	0,000	3,069	1,5693
34,5 (PS)	-1,111	0,121	513,065	4,122	1,065	0,000	0,000	3,057	1,5960
35,0 (PS)	-1,159	0,121	513,065	4,123	1,079	0,000	0,000	3,045	1,6227
35,5 (PS)	-1,208	0,122	513,062	4,124	1,092	0,000	0,000	3,032	1,6492
36,0 (PS)	-1,257	0,122	513,063	4,125	1,106	0,000	0,000	3,019	1,6756
36,5 (PS)	-1,308	0,123	513,064	4,125	1,119	0,000	0,000	3,006	1,7019
37,0 (PS)	-1,359	0,123	513,064	4,124	1,132	0,000	0,000	2,992	1,7280
37,5 (PS)	-1,411	0,124	513,065	4,123	1,145	0,000	0,000	2,978	1,7541
38,0 (PS)	-1,464	0,124	513,065	4,122	1,158	0,000	0,000	2,964	1,7800
38,5 (PS)	-1,518	0,124	513,061	4,120	1,171	0,000	0,000	2,949	1,8058
39,0 (PS)	-1,573	0,125	513,063	4,118	1,184	0,000	0,000	2,934	1,8315
39,5 (PS)	-1,630	0,125	513,064	4,115	1,196	0,000	0,000	2,919	1,8570
40,0 (PS)	-1,687	0,126	513,065	4,112	1,209	0,000	0,000	2,903	1,8824
40,5 (PS)	-1,745	0,126	513,065	4,109	1,222	0,000	0,000	2,887	1,9077
41,0 (PS)	-1,804	0,127	513,066	4,105	1,234	0,000	0,000	2,871	1,9328
41,5 (PS)	-1,865	0,127	513,061	4,101	1,246	0,000	0,000	2,854	1,9578
42,0 (PS)	-1,927	0,128	513,063	4,096	1,259	0,000	0,000	2,837	1,9826
42,5 (PS)	-1,989	0,129	513,064	4,091	1,271	0,000	0,000	2,820	2,0073
43,0 (PS)	-2,053	0,130	513,064	4,085	1,283	0,000	0,000	2,802	2,0318
43,5 (PS)	-2,118	0,131	513,064	4,078	1,295	0,000	0,000	2,783	2,0562
44,0 (PS)	-2,184	0,132	513,065	4,071	1,307	0,000	0,000	2,764	2,0804
44,5 (PS)	-2,251	0,133	513,065	4,063	1,318	0,000	0,000	2,744	2,1044
45,0 (PS)	-2,319	0,134	513,065	4,054	1,330	0,000	0,000	2,724	2,1283
45,5 (PS)	-2,388	0,135	513,065	4,045	1,342	0,000	0,000	2,703	2,1520
46,0 (PS)	-2,459	0,136	513,065	4,035	1,353	0,000	0,000	2,682	2,1755
46,5 (PS)	-2,531	0,136	513,065	4,025	1,364	0,000	0,000	2,660	2,1988
47,0 (PS)	-2,604	0,137	513,065	4,014	1,376	0,000	0,000	2,638	2,2219
47,5 (PS)	-2,679	0,138	513,065	4,002	1,387	0,000	0,000	2,615	2,2448
48,0 (PS)	-2,755	0,139	513,066	3,990	1,398	0,000	0,000	2,592	2,2676
48,5 (PS)	-2,832	0,139	513,066	3,977	1,409	0,000	0,000	2,569	2,2901
49,0 (PS)	-2,911	0,140	513,066	3,964	1,420	0,000	0,000	2,545	2,3124
49,5 (PS)	-2,992	0,141	513,066	3,950	1,430	0,000	0,000	2,520	2,3345
50,0 (PS)	-3,075	0,141	513,066	3,936	1,441	0,000	0,000	2,495	2,3564
50,5 (PS)	-3,159	0,142	513,066	3,922	1,451	0,000	0,000	2,470	2,3780

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
51,0 (PS)	-3,245	0,142	513,066	3,906	1,462	0,000	0,000	2,445	2,3995
51,5 (PS)	-3,333	0,143	513,066	3,891	1,472	0,000	0,000	2,419	2,4207
52,0 (PS)	-3,423	0,143	513,061	3,874	1,482	0,000	0,000	2,392	2,4417
52,5 (PS)	-3,514	0,143	513,061	3,858	1,492	0,000	0,000	2,366	2,4625
53,0 (PS)	-3,608	0,144	513,062	3,841	1,502	0,000	0,000	2,339	2,4830
53,5 (PS)	-3,705	0,144	513,062	3,823	1,512	0,000	0,000	2,311	2,5033
54,0 (PS)	-3,803	0,144	513,062	3,805	1,522	0,000	0,000	2,283	2,5233
54,5 (PS)	-3,904	0,145	513,062	3,787	1,531	0,000	0,000	2,255	2,5431
55,0 (PS)	-4,007	0,145	513,062	3,768	1,541	0,000	0,000	2,227	2,5627
55,5 (PS)	-4,113	0,145	513,063	3,748	1,550	0,000	0,000	2,198	2,5820
56,0 (PS)	-4,222	0,146	513,063	3,729	1,559	0,000	0,000	2,169	2,6010
56,5 (PS)	-4,334	0,146	513,063	3,709	1,568	0,000	0,000	2,140	2,6199
57,0 (PS)	-4,448	0,146	513,063	3,688	1,577	0,000	0,000	2,111	2,6384
57,5 (PS)	-4,566	0,147	513,063	3,667	1,586	0,000	0,000	2,081	2,6567
58,0 (PS)	-4,687	0,147	513,064	3,646	1,595	0,000	0,000	2,051	2,6747
58,5 (PS)	-4,811	0,147	513,064	3,624	1,604	0,000	0,000	2,020	2,6925
59,0 (PS)	-4,939	0,147	513,064	3,602	1,612	0,000	0,000	1,989	2,7100
59,5 (PS)	-5,071	0,148	513,064	3,579	1,621	0,000	0,000	1,958	2,7272
60,0 (PS)	-5,207	0,148	513,064	3,556	1,629	0,000	0,000	1,927	2,7442



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	20,308 m	\geq	1,000 m	Complies
Combined heeling moment	0,7 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	125,030 t*m			
Required freeboard	2,578 m	\geq	0,000 m	Complies
Weight	125,030 t			

Trv. location of weight 1,000 m

The condition complies with the stability criteria

Containers 70 % full ALU

2020.056_008 IW-NET barge 3 abreast long/shallow

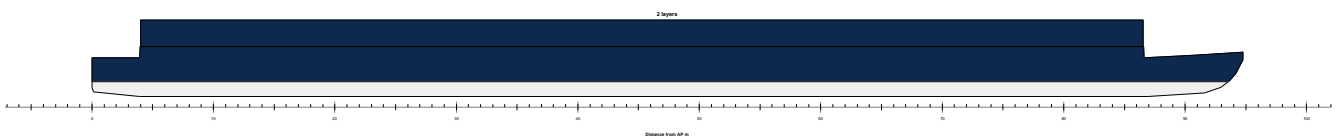
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_008_IW-NET3 Units abreast long_shallow.fbm

Design length	94,770 m	Midship location	47,385 m
Length over all	94,766 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	2,150 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,775 m
Draft aft pp	1,229 m	GG'	0,000 m
Mean moulded draft	1,225 m	VCG'	2,775 m
Draft forward pp	1,220 m	Max VCG'	8,746 m
Trim	-0,009 m	GM solid	7,075 m
LCF	46,301 m	G'M liquid	7,075 m
LCB	45,725 m	Immersion rate	10,601 tonne/cm
KM	9,849 m	MCT	79,666 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

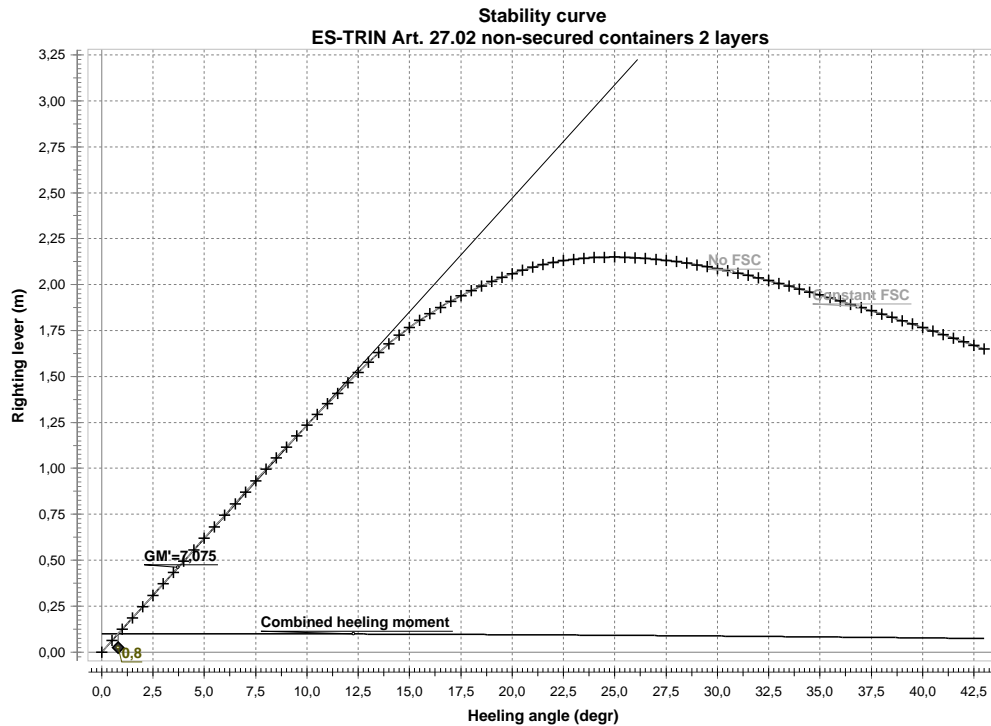
Containers 70 % full			909,720	45,273	0,000 (CL)	3,400	0,000
Lightship			336,666	46,946	0,000 (CL)	1,085	
Deadweight			909,720	45,273	0,000 (CL)	3,400	0,000
Displacement			1246,386	45,725	0,000 (CL)	2,775	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	1,225	-0,009	1246,385	0,000	0,000	0,000	0,000	0,000	0,0000
0,5 (PS)	1,225	-0,009	1246,386	0,086	0,024	0,000	0,000	0,062	0,0003
1,0 (PS)	1,225	-0,009	1246,386	0,172	0,048	0,000	0,000	0,123	0,0011
1,5 (PS)	1,225	-0,010	1246,384	0,258	0,073	0,000	0,000	0,185	0,0024
2,0 (PS)	1,225	-0,010	1246,380	0,344	0,097	0,000	0,000	0,247	0,0043
2,5 (PS)	1,225	-0,010	1246,374	0,430	0,121	0,000	0,000	0,309	0,0067
3,0 (PS)	1,225	-0,011	1246,386	0,516	0,145	0,000	0,000	0,371	0,0097
3,5 (PS)	1,224	-0,012	1246,386	0,602	0,169	0,000	0,000	0,433	0,0132
4,0 (PS)	1,224	-0,013	1246,386	0,688	0,194	0,000	0,000	0,495	0,0173
4,5 (PS)	1,224	-0,013	1246,386	0,775	0,218	0,000	0,000	0,557	0,0218
5,0 (PS)	1,224	-0,014	1246,386	0,861	0,242	0,000	0,000	0,619	0,0270
5,5 (PS)	1,224	-0,016	1246,386	0,948	0,266	0,000	0,000	0,682	0,0327
6,0 (PS)	1,223	-0,017	1246,386	1,034	0,290	0,000	0,000	0,744	0,0389
6,5 (PS)	1,223	-0,018	1246,386	1,121	0,314	0,000	0,000	0,807	0,0456
7,0 (PS)	1,223	-0,020	1246,386	1,208	0,338	0,000	0,000	0,870	0,0530
7,5 (PS)	1,223	-0,021	1246,386	1,294	0,362	0,000	0,000	0,932	0,0608
8,0 (PS)	1,222	-0,023	1246,386	1,380	0,386	0,000	0,000	0,994	0,0692
8,5 (PS)	1,221	-0,024	1246,386	1,466	0,410	0,000	0,000	1,056	0,0782
9,0 (PS)	1,220	-0,026	1246,386	1,550	0,434	0,000	0,000	1,116	0,0876
9,5 (PS)	1,219	-0,028	1246,386	1,634	0,458	0,000	0,000	1,176	0,0977
10,0 (PS)	1,218	-0,030	1246,386	1,717	0,482	0,000	0,000	1,235	0,1082
10,5 (PS)	1,216	-0,032	1246,386	1,799	0,506	0,000	0,000	1,294	0,1192
11,0 (PS)	1,214	-0,034	1246,385	1,881	0,529	0,000	0,000	1,352	0,1307
11,5 (PS)	1,212	-0,036	1246,385	1,962	0,553	0,000	0,000	1,409	0,1428
12,0 (PS)	1,210	-0,038	1246,383	2,042	0,577	0,000	0,000	1,465	0,1553
12,5 (PS)	1,207	-0,040	1246,382	2,122	0,601	0,000	0,000	1,521	0,1684
13,0 (PS)	1,205	-0,042	1246,386	2,201	0,624	0,000	0,000	1,576	0,1819
13,5 (PS)	1,201	-0,045	1246,374	2,277	0,648	0,000	0,000	1,629	0,1959
14,0 (PS)	1,197	-0,048	1246,383	2,349	0,671	0,000	0,000	1,678	0,2103
14,5 (PS)	1,192	-0,050	1246,389	2,418	0,695	0,000	0,000	1,724	0,2252
15,0 (PS)	1,185	-0,053	1246,376	2,484	0,718	0,000	0,000	1,766	0,2404
15,5 (PS)	1,178	-0,055	1246,385	2,547	0,742	0,000	0,000	1,806	0,2560
16,0 (PS)	1,171	-0,058	1246,384	2,607	0,765	0,000	0,000	1,842	0,2719
16,5 (PS)	1,162	-0,060	1246,382	2,665	0,788	0,000	0,000	1,877	0,2881
17,0 (PS)	1,153	-0,063	1246,380	2,720	0,811	0,000	0,000	1,908	0,3046
17,5 (PS)	1,142	-0,065	1246,379	2,773	0,834	0,000	0,000	1,938	0,3214
18,0 (PS)	1,131	-0,068	1246,377	2,823	0,857	0,000	0,000	1,966	0,3385
18,5 (PS)	1,120	-0,070	1246,377	2,872	0,880	0,000	0,000	1,992	0,3557
19,0 (PS)	1,108	-0,073	1246,377	2,919	0,903	0,000	0,000	2,016	0,3732
19,5 (PS)	1,095	-0,075	1246,378	2,964	0,926	0,000	0,000	2,038	0,3909
20,0 (PS)	1,081	-0,077	1246,380	3,008	0,949	0,000	0,000	2,059	0,4088
20,5 (PS)	1,067	-0,080	1246,380	3,050	0,972	0,000	0,000	2,078	0,4268
21,0 (PS)	1,052	-0,083	1246,380	3,089	0,994	0,000	0,000	2,095	0,4450
21,5 (PS)	1,037	-0,087	1246,378	3,126	1,017	0,000	0,000	2,109	0,4634
22,0 (PS)	1,022	-0,091	1246,377	3,160	1,039	0,000	0,000	2,121	0,4819
22,5 (PS)	1,007	-0,095	1246,376	3,192	1,062	0,000	0,000	2,131	0,5004
23,0 (PS)	0,992	-0,099	1246,376	3,222	1,084	0,000	0,000	2,138	0,5190
23,5 (PS)	0,977	-0,103	1246,376	3,250	1,106	0,000	0,000	2,143	0,5377
24,0 (PS)	0,961	-0,108	1246,377	3,276	1,129	0,000	0,000	2,147	0,5564
24,5 (PS)	0,946	-0,113	1246,378	3,300	1,151	0,000	0,000	2,149	0,5752
25,0 (PS)	0,930	-0,117	1246,379	3,322	1,173	0,000	0,000	2,150	0,5939

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
25,5 (PS)	0,914	-0,122	1246,379	3,343	1,195	0,000	0,000	2,149	0,6127
26,0 (PS)	0,898	-0,127	1246,380	3,363	1,216	0,000	0,000	2,146	0,6314
26,5 (PS)	0,882	-0,132	1246,380	3,381	1,238	0,000	0,000	2,143	0,6502
27,0 (PS)	0,866	-0,138	1246,380	3,397	1,260	0,000	0,000	2,138	0,6688
27,5 (PS)	0,849	-0,143	1246,380	3,413	1,281	0,000	0,000	2,132	0,6875
28,0 (PS)	0,833	-0,148	1246,380	3,427	1,303	0,000	0,000	2,125	0,7060
28,5 (PS)	0,816	-0,154	1246,379	3,441	1,324	0,000	0,000	2,117	0,7245
29,0 (PS)	0,799	-0,159	1246,379	3,453	1,345	0,000	0,000	2,108	0,7430
29,5 (PS)	0,782	-0,165	1246,379	3,464	1,366	0,000	0,000	2,098	0,7613
30,0 (PS)	0,765	-0,171	1246,379	3,474	1,387	0,000	0,000	2,087	0,7796
30,5 (PS)	0,747	-0,176	1246,379	3,484	1,408	0,000	0,000	2,075	0,7977
31,0 (PS)	0,730	-0,182	1246,378	3,492	1,429	0,000	0,000	2,063	0,8158
31,5 (PS)	0,712	-0,188	1246,378	3,500	1,450	0,000	0,000	2,050	0,8337
32,0 (PS)	0,694	-0,194	1246,378	3,507	1,470	0,000	0,000	2,036	0,8516
32,5 (PS)	0,676	-0,199	1246,378	3,513	1,491	0,000	0,000	2,022	0,8693
33,0 (PS)	0,657	-0,204	1246,378	3,518	1,511	0,000	0,000	2,007	0,8869
33,5 (PS)	0,638	-0,210	1246,379	3,523	1,531	0,000	0,000	1,992	0,9043
34,0 (PS)	0,619	-0,214	1246,380	3,528	1,552	0,000	0,000	1,976	0,9216
34,5 (PS)	0,599	-0,219	1246,381	3,532	1,572	0,000	0,000	1,960	0,9388
35,0 (PS)	0,579	-0,224	1246,382	3,535	1,591	0,000	0,000	1,944	0,9558
35,5 (PS)	0,558	-0,228	1246,383	3,538	1,611	0,000	0,000	1,927	0,9727
36,0 (PS)	0,537	-0,233	1246,384	3,541	1,631	0,000	0,000	1,910	0,9895
36,5 (PS)	0,515	-0,237	1246,384	3,543	1,650	0,000	0,000	1,893	1,0061
37,0 (PS)	0,493	-0,241	1246,385	3,545	1,670	0,000	0,000	1,876	1,0225
37,5 (PS)	0,470	-0,246	1246,385	3,547	1,689	0,000	0,000	1,858	1,0388
38,0 (PS)	0,446	-0,250	1246,375	3,548	1,708	0,000	0,000	1,840	1,0549
38,5 (PS)	0,422	-0,254	1246,379	3,549	1,727	0,000	0,000	1,822	1,0709
39,0 (PS)	0,398	-0,259	1246,381	3,550	1,746	0,000	0,000	1,803	1,0867
39,5 (PS)	0,372	-0,263	1246,383	3,550	1,765	0,000	0,000	1,785	1,1024
40,0 (PS)	0,347	-0,267	1246,384	3,550	1,784	0,000	0,000	1,766	1,1179
40,5 (PS)	0,320	-0,271	1246,385	3,549	1,802	0,000	0,000	1,747	1,1332
41,0 (PS)	0,293	-0,275	1246,386	3,548	1,820	0,000	0,000	1,728	1,1484
41,5 (PS)	0,265	-0,279	1246,375	3,547	1,839	0,000	0,000	1,709	1,1634
42,0 (PS)	0,237	-0,283	1246,381	3,546	1,857	0,000	0,000	1,689	1,1782
42,5 (PS)	0,207	-0,287	1246,385	3,544	1,875	0,000	0,000	1,669	1,1928
43,0 (PS)	0,178	-0,291	1246,386	3,542	1,892	0,000	0,000	1,649	1,2073



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	7,075 m	\geq	1,000 m	Complies
Combined heeling moment	0,8 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	125,030 t*m			
Required freeboard	1,889 m	\geq	0,000 m	Complies
Weight	125,030 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers full ALU

2020.056_008 IW-NET barge 3 abreast long/shallow

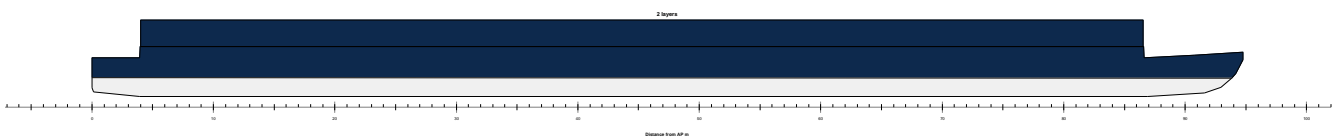
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_008_IW-NET3 Units abreast long_shallow.fbm

Design length	94,770 m	Midship location	47,385 m
Length over all	94,766 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	2,150 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,901 m
Draft aft pp	1,547 m	GG'	0,000 m
Mean moulded draft	1,520 m	VCG'	2,901 m
Draft forward pp	1,493 m	Max VCG'	7,183 m
Trim	-0,054 m	GM solid	5,282 m
LCF	46,517 m	G'M liquid	5,282 m
LCB	45,632 m	Immersion rate	10,651 tonne/cm
KM	8,182 m	MCT	80,720 t*m

Description	Density	Filling	Weight	LCG	TCG	VCG	FSM
		%	t	m	m	m	t*m

Containers

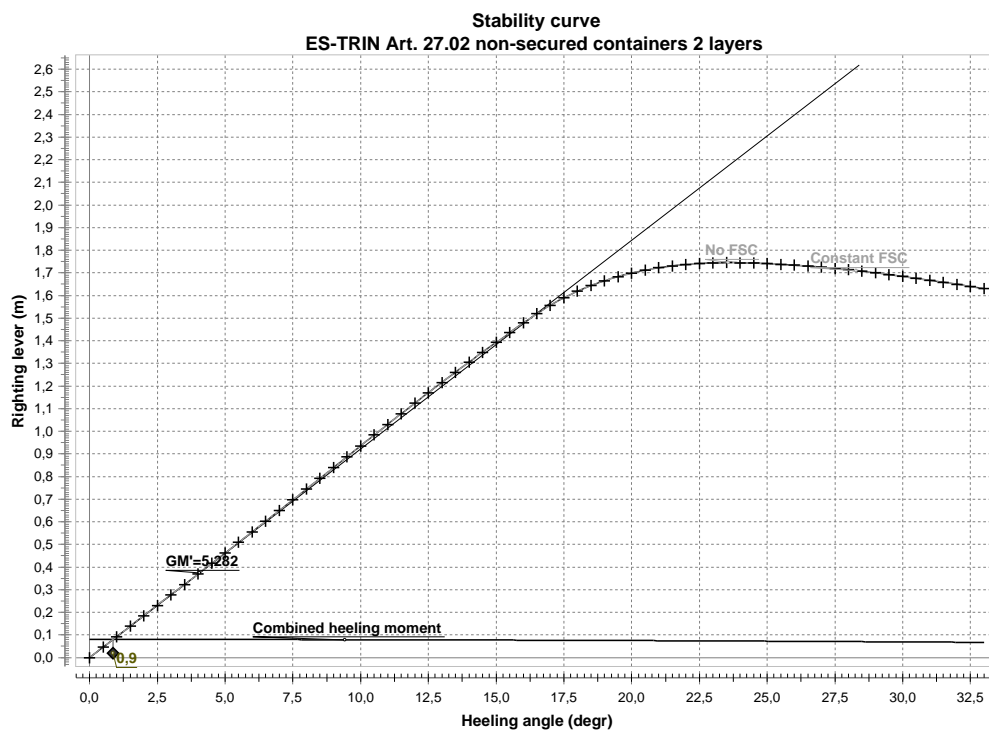
Containers full			1224,000	45,273	0,000 (CL)	3,400	0,000
Lightship			336,666	46,946	0,000 (CL)	1,085	
Deadweight			1224,000	45,273	0,000 (CL)	3,400	0,000
Displacement			1560,666	45,634	0,000 (CL)	2,901	0,000

Righting levers

Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	1,520	-0,054	1560,664	0,000	0,000	0,000	0,000	0,000	0,0000
0,5 (PS)	1,520	-0,054	1560,665	0,071	0,025	0,000	0,000	0,046	0,0002
1,0 (PS)	1,520	-0,054	1560,666	0,143	0,051	0,000	0,000	0,092	0,0008
1,5 (PS)	1,520	-0,054	1560,665	0,214	0,076	0,000	0,000	0,138	0,0018
2,0 (PS)	1,520	-0,055	1560,663	0,286	0,101	0,000	0,000	0,184	0,0032
2,5 (PS)	1,520	-0,055	1560,659	0,357	0,127	0,000	0,000	0,231	0,0050
3,0 (PS)	1,520	-0,056	1560,654	0,429	0,152	0,000	0,000	0,277	0,0072
3,5 (PS)	1,520	-0,056	1560,666	0,500	0,177	0,000	0,000	0,323	0,0099
4,0 (PS)	1,520	-0,057	1560,666	0,572	0,202	0,000	0,000	0,370	0,0129
4,5 (PS)	1,519	-0,058	1560,666	0,644	0,228	0,000	0,000	0,416	0,0163
5,0 (PS)	1,519	-0,059	1560,666	0,715	0,253	0,000	0,000	0,463	0,0201
5,5 (PS)	1,519	-0,060	1560,666	0,787	0,278	0,000	0,000	0,509	0,0244
6,0 (PS)	1,519	-0,061	1560,666	0,859	0,303	0,000	0,000	0,556	0,0290
6,5 (PS)	1,519	-0,062	1560,666	0,931	0,328	0,000	0,000	0,603	0,0341
7,0 (PS)	1,519	-0,063	1560,666	1,003	0,353	0,000	0,000	0,650	0,0396
7,5 (PS)	1,518	-0,064	1560,666	1,076	0,379	0,000	0,000	0,697	0,0454
8,0 (PS)	1,518	-0,066	1560,666	1,148	0,404	0,000	0,000	0,744	0,0517
8,5 (PS)	1,518	-0,068	1560,666	1,221	0,429	0,000	0,000	0,792	0,0584
9,0 (PS)	1,517	-0,069	1560,666	1,293	0,454	0,000	0,000	0,840	0,0656
9,5 (PS)	1,517	-0,071	1560,666	1,366	0,479	0,000	0,000	0,887	0,0731
10,0 (PS)	1,517	-0,073	1560,666	1,439	0,504	0,000	0,000	0,935	0,0810
10,5 (PS)	1,516	-0,075	1560,665	1,512	0,529	0,000	0,000	0,983	0,0894
11,0 (PS)	1,516	-0,077	1560,665	1,584	0,553	0,000	0,000	1,031	0,0982
11,5 (PS)	1,515	-0,080	1560,665	1,656	0,578	0,000	0,000	1,078	0,1074
12,0 (PS)	1,514	-0,082	1560,665	1,727	0,603	0,000	0,000	1,124	0,1170
12,5 (PS)	1,512	-0,084	1560,665	1,798	0,628	0,000	0,000	1,170	0,1270
13,0 (PS)	1,511	-0,087	1560,665	1,868	0,652	0,000	0,000	1,215	0,1374
13,5 (PS)	1,509	-0,089	1560,666	1,938	0,677	0,000	0,000	1,260	0,1482
14,0 (PS)	1,507	-0,092	1560,666	2,007	0,702	0,000	0,000	1,305	0,1594
14,5 (PS)	1,505	-0,095	1560,666	2,075	0,726	0,000	0,000	1,349	0,1710
15,0 (PS)	1,503	-0,097	1560,666	2,144	0,751	0,000	0,000	1,393	0,1830
15,5 (PS)	1,500	-0,100	1560,666	2,211	0,775	0,000	0,000	1,436	0,1953
16,0 (PS)	1,497	-0,103	1560,666	2,278	0,800	0,000	0,000	1,479	0,2080
16,5 (PS)	1,494	-0,107	1560,666	2,343	0,824	0,000	0,000	1,520	0,2211
17,0 (PS)	1,490	-0,112	1560,666	2,405	0,848	0,000	0,000	1,557	0,2345
17,5 (PS)	1,486	-0,118	1560,666	2,462	0,872	0,000	0,000	1,590	0,2483
18,0 (PS)	1,482	-0,124	1560,666	2,515	0,896	0,000	0,000	1,619	0,2623
18,5 (PS)	1,478	-0,130	1560,666	2,564	0,920	0,000	0,000	1,644	0,2765
19,0 (PS)	1,474	-0,136	1560,665	2,609	0,944	0,000	0,000	1,665	0,2909
19,5 (PS)	1,469	-0,143	1560,658	2,652	0,968	0,000	0,000	1,683	0,3056
20,0 (PS)	1,465	-0,150	1560,665	2,691	0,992	0,000	0,000	1,699	0,3203
20,5 (PS)	1,461	-0,157	1560,664	2,728	1,016	0,000	0,000	1,712	0,3352
21,0 (PS)	1,456	-0,164	1560,663	2,762	1,039	0,000	0,000	1,722	0,3502
21,5 (PS)	1,452	-0,172	1560,661	2,794	1,063	0,000	0,000	1,730	0,3653
22,0 (PS)	1,447	-0,179	1560,658	2,823	1,087	0,000	0,000	1,737	0,3804
22,5 (PS)	1,443	-0,186	1560,656	2,851	1,110	0,000	0,000	1,741	0,3956
23,0 (PS)	1,438	-0,194	1560,654	2,877	1,133	0,000	0,000	1,744	0,4108
23,5 (PS)	1,433	-0,202	1560,652	2,901	1,157	0,000	0,000	1,745	0,4260
24,0 (PS)	1,429	-0,209	1560,653	2,924	1,180	0,000	0,000	1,745	0,4412
24,5 (PS)	1,424	-0,216	1560,653	2,946	1,203	0,000	0,000	1,743	0,4564
25,0 (PS)	1,419	-0,223	1560,655	2,967	1,226	0,000	0,000	1,741	0,4716

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
25,5 (PS)	1,413	-0,228	1560,657	2,986	1,249	0,000	0,000	1,738	0,4868
26,0 (PS)	1,407	-0,234	1560,659	3,006	1,272	0,000	0,000	1,734	0,5020
26,5 (PS)	1,401	-0,240	1560,661	3,024	1,294	0,000	0,000	1,730	0,5171
27,0 (PS)	1,394	-0,245	1560,662	3,042	1,317	0,000	0,000	1,725	0,5322
27,5 (PS)	1,387	-0,251	1560,663	3,059	1,339	0,000	0,000	1,719	0,5472
28,0 (PS)	1,380	-0,256	1560,664	3,075	1,362	0,000	0,000	1,713	0,5622
28,5 (PS)	1,372	-0,262	1560,665	3,091	1,384	0,000	0,000	1,707	0,5771
29,0 (PS)	1,363	-0,267	1560,651	3,106	1,406	0,000	0,000	1,700	0,5919
29,5 (PS)	1,355	-0,272	1560,657	3,121	1,428	0,000	0,000	1,692	0,6067
30,0 (PS)	1,345	-0,277	1560,660	3,135	1,450	0,000	0,000	1,685	0,6215
30,5 (PS)	1,336	-0,282	1560,663	3,149	1,472	0,000	0,000	1,676	0,6361
31,0 (PS)	1,326	-0,287	1560,664	3,162	1,494	0,000	0,000	1,668	0,6507
31,5 (PS)	1,315	-0,292	1560,665	3,174	1,516	0,000	0,000	1,659	0,6653
32,0 (PS)	1,304	-0,297	1560,666	3,187	1,537	0,000	0,000	1,649	0,6797
32,5 (PS)	1,293	-0,301	1560,660	3,198	1,558	0,000	0,000	1,640	0,6940
33,0 (PS)	1,281	-0,306	1560,665	3,210	1,580	0,000	0,000	1,630	0,7083



ES-TRIN Art. 27.02 non-secured containers 2 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	5,282 m	\geq	1,000 m	Complies
Combined heeling moment	0,9 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	125,030 t*m			
Required freeboard	1,566 m	\geq	0,000 m	Complies
Weight	125,030 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers empty 3 layers ALU

2020.056_008 IW-NET barge 3 abreast long/shallow

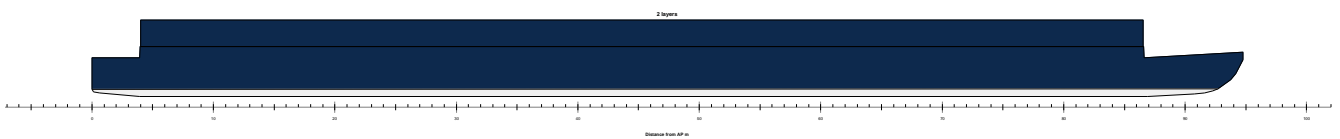
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_008_IW-NET 3 Units abreast long_shallow.fbm

Design length	94,770 m	Midship location	47,385 m
Length over all	94,766 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	2,150 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	2,742 m
Draft aft pp	0,587 m	GG'	0,000 m
Mean moulded draft	0,613 m	VCG'	2,742 m
Draft forward pp	0,640 m	Max VCG'	14,806 m
Trim	0,053 m	GM solid	16,362 m
LCF	45,739 m	G'M liquid	16,362 m
LCB	46,211 m	Immersion rate	10,454 tonne/cm
KM	19,104 m	MCT	76,545 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Containers empty			176,400	45,273	0,000 (CL)	3,400	0,000
3rd layer empty			88,200	45,273	0,000 (CL)	7,748	0,000
Totals for Containers			264,600	45,273	0,000 (CL)	4,849	0,000
Lightship			336,666	46,946	0,000 (CL)	1,085	
Deadweight			264,600	45,273	0,000 (CL)	4,849	0,000
Displacement			601,266	46,210	0,000 (CL)	2,742	0,000

Righting levers

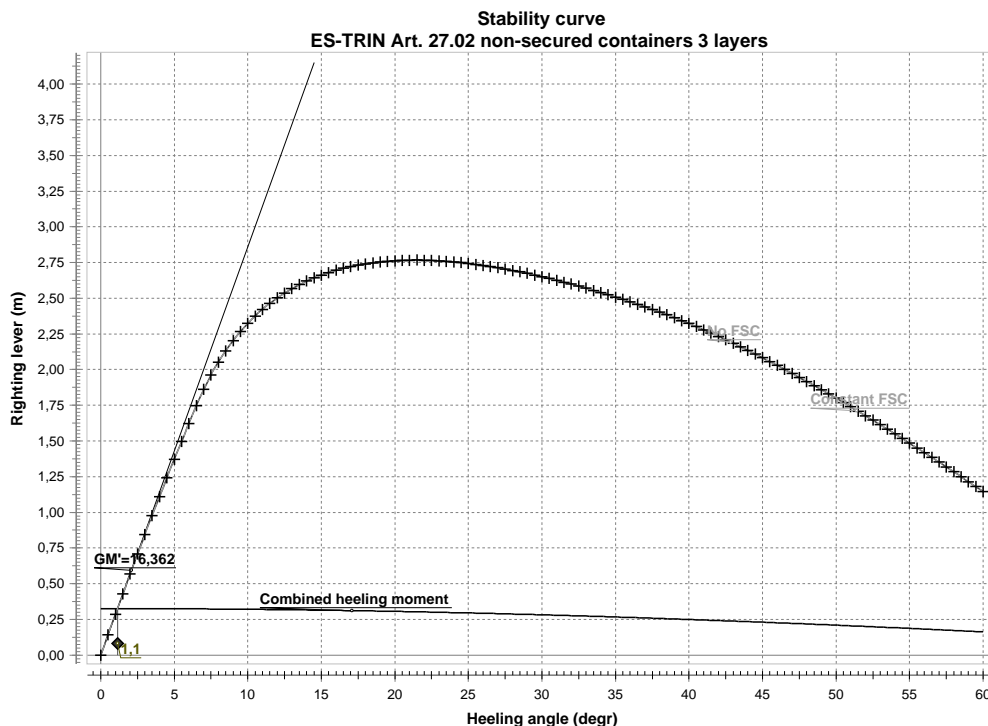
Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	0,613	0,053	601,266	0,000	0,000	0,000	0,000	0,000	0,0000
0,5 (PS)	0,613	0,053	601,262	0,167	0,024	0,000	0,000	0,143	0,0006
1,0 (PS)	0,613	0,053	601,266	0,333	0,048	0,000	0,000	0,286	0,0025
1,5 (PS)	0,613	0,053	601,266	0,499	0,072	0,000	0,000	0,428	0,0056
2,0 (PS)	0,613	0,053	601,266	0,664	0,096	0,000	0,000	0,568	0,0100
2,5 (PS)	0,612	0,052	601,266	0,826	0,120	0,000	0,000	0,706	0,0155
3,0 (PS)	0,611	0,052	601,266	0,987	0,143	0,000	0,000	0,843	0,0223
3,5 (PS)	0,610	0,052	601,266	1,145	0,167	0,000	0,000	0,978	0,0302
4,0 (PS)	0,609	0,051	601,266	1,302	0,191	0,000	0,000	1,110	0,0393
4,5 (PS)	0,607	0,051	601,266	1,456	0,215	0,000	0,000	1,241	0,0496
5,0 (PS)	0,605	0,051	601,265	1,609	0,239	0,000	0,000	1,370	0,0610
5,5 (PS)	0,603	0,050	601,266	1,760	0,263	0,000	0,000	1,497	0,0735
6,0 (PS)	0,601	0,050	601,261	1,909	0,287	0,000	0,000	1,623	0,0871
6,5 (PS)	0,598	0,050	601,265	2,056	0,310	0,000	0,000	1,746	0,1018
7,0 (PS)	0,595	0,051	601,265	2,195	0,334	0,000	0,000	1,861	0,1176
7,5 (PS)	0,590	0,052	601,260	2,320	0,358	0,000	0,000	1,962	0,1343
8,0 (PS)	0,583	0,053	601,264	2,433	0,382	0,000	0,000	2,052	0,1518
8,5 (PS)	0,575	0,054	601,265	2,537	0,405	0,000	0,000	2,132	0,1700
9,0 (PS)	0,565	0,055	601,264	2,632	0,429	0,000	0,000	2,203	0,1890
9,5 (PS)	0,555	0,056	601,262	2,719	0,452	0,000	0,000	2,267	0,2085
10,0 (PS)	0,543	0,057	601,265	2,800	0,476	0,000	0,000	2,324	0,2285
10,5 (PS)	0,530	0,058	601,263	2,875	0,500	0,000	0,000	2,376	0,2490
11,0 (PS)	0,516	0,059	601,262	2,945	0,523	0,000	0,000	2,422	0,2700
11,5 (PS)	0,502	0,060	601,265	3,011	0,547	0,000	0,000	2,464	0,2913
12,0 (PS)	0,486	0,061	601,264	3,072	0,570	0,000	0,000	2,502	0,3130
12,5 (PS)	0,470	0,062	601,263	3,130	0,593	0,000	0,000	2,536	0,3349
13,0 (PS)	0,452	0,063	601,262	3,184	0,617	0,000	0,000	2,567	0,3572
13,5 (PS)	0,434	0,064	601,261	3,235	0,640	0,000	0,000	2,595	0,3797
14,0 (PS)	0,416	0,065	601,264	3,283	0,663	0,000	0,000	2,620	0,4025
14,5 (PS)	0,396	0,066	601,264	3,328	0,686	0,000	0,000	2,642	0,4255
15,0 (PS)	0,376	0,067	601,264	3,372	0,710	0,000	0,000	2,662	0,4486
15,5 (PS)	0,355	0,067	601,263	3,412	0,733	0,000	0,000	2,680	0,4719
16,0 (PS)	0,334	0,068	601,263	3,451	0,756	0,000	0,000	2,696	0,4954
16,5 (PS)	0,312	0,069	601,263	3,488	0,779	0,000	0,000	2,709	0,5190
17,0 (PS)	0,289	0,070	601,263	3,523	0,802	0,000	0,000	2,721	0,5426
17,5 (PS)	0,265	0,070	601,263	3,556	0,824	0,000	0,000	2,732	0,5664
18,0 (PS)	0,241	0,071	601,263	3,588	0,847	0,000	0,000	2,741	0,5903
18,5 (PS)	0,217	0,072	601,263	3,618	0,870	0,000	0,000	2,748	0,6143
19,0 (PS)	0,192	0,072	601,263	3,647	0,893	0,000	0,000	2,754	0,6383
19,5 (PS)	0,166	0,073	601,263	3,674	0,915	0,000	0,000	2,759	0,6623
20,0 (PS)	0,140	0,074	601,263	3,700	0,938	0,000	0,000	2,763	0,6864
20,5 (PS)	0,113	0,074	601,264	3,725	0,960	0,000	0,000	2,765	0,7106
21,0 (PS)	0,085	0,075	601,264	3,749	0,982	0,000	0,000	2,766	0,7347
21,5 (PS)	0,057	0,075	601,264	3,771	1,005	0,000	0,000	2,767	0,7588
22,0 (PS)	0,028	0,076	601,260	3,793	1,027	0,000	0,000	2,766	0,7830
22,5 (PS)	-0,001	0,076	601,261	3,813	1,049	0,000	0,000	2,764	0,8071
23,0 (PS)	-0,031	0,076	601,262	3,833	1,071	0,000	0,000	2,762	0,8312
23,5 (PS)	-0,061	0,077	601,263	3,852	1,093	0,000	0,000	2,758	0,8553
24,0 (PS)	-0,092	0,077	601,264	3,869	1,115	0,000	0,000	2,754	0,8794
24,5 (PS)	-0,123	0,078	601,264	3,886	1,137	0,000	0,000	2,749	0,9034
25,0 (PS)	-0,156	0,078	601,260	3,902	1,159	0,000	0,000	2,743	0,9273

Righting levers

Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
25,5 (PS)	-0,188	0,078	601,261	3,917	1,180	0,000	0,000	2,737	0,9513
26,0 (PS)	-0,222	0,079	601,262	3,932	1,202	0,000	0,000	2,730	0,9751
26,5 (PS)	-0,255	0,079	601,263	3,945	1,223	0,000	0,000	2,722	0,9989
27,0 (PS)	-0,290	0,079	601,264	3,958	1,245	0,000	0,000	2,714	1,0226
27,5 (PS)	-0,325	0,079	601,264	3,970	1,266	0,000	0,000	2,704	1,0463
28,0 (PS)	-0,361	0,080	601,265	3,982	1,287	0,000	0,000	2,695	1,0698
28,5 (PS)	-0,397	0,080	601,261	3,993	1,308	0,000	0,000	2,685	1,0933
29,0 (PS)	-0,434	0,080	601,262	4,003	1,329	0,000	0,000	2,674	1,1167
29,5 (PS)	-0,472	0,080	601,263	4,012	1,350	0,000	0,000	2,662	1,1400
30,0 (PS)	-0,510	0,080	601,264	4,021	1,371	0,000	0,000	2,651	1,1631
30,5 (PS)	-0,549	0,080	601,265	4,030	1,391	0,000	0,000	2,638	1,1862
31,0 (PS)	-0,589	0,081	601,265	4,037	1,412	0,000	0,000	2,625	1,2092
31,5 (PS)	-0,630	0,081	601,261	4,045	1,432	0,000	0,000	2,612	1,2320
32,0 (PS)	-0,671	0,081	601,262	4,051	1,453	0,000	0,000	2,598	1,2548
32,5 (PS)	-0,713	0,081	601,263	4,057	1,473	0,000	0,000	2,584	1,2774
33,0 (PS)	-0,755	0,081	601,264	4,063	1,493	0,000	0,000	2,570	1,2999
33,5 (PS)	-0,798	0,081	601,265	4,068	1,513	0,000	0,000	2,555	1,3222
34,0 (PS)	-0,843	0,081	601,265	4,072	1,533	0,000	0,000	2,539	1,3445
34,5 (PS)	-0,888	0,081	601,260	4,076	1,553	0,000	0,000	2,524	1,3665
35,0 (PS)	-0,933	0,081	601,262	4,080	1,573	0,000	0,000	2,508	1,3885
35,5 (PS)	-0,980	0,081	601,264	4,083	1,592	0,000	0,000	2,491	1,4103
36,0 (PS)	-1,027	0,081	601,265	4,086	1,611	0,000	0,000	2,474	1,4320
36,5 (PS)	-1,075	0,081	601,265	4,088	1,631	0,000	0,000	2,457	1,4535
37,0 (PS)	-1,125	0,081	601,266	4,090	1,650	0,000	0,000	2,440	1,4749
37,5 (PS)	-1,175	0,082	601,260	4,091	1,669	0,000	0,000	2,422	1,4961
38,0 (PS)	-1,225	0,082	601,262	4,091	1,688	0,000	0,000	2,403	1,5171
38,5 (PS)	-1,277	0,082	601,263	4,091	1,707	0,000	0,000	2,384	1,5380
39,0 (PS)	-1,329	0,083	601,263	4,090	1,725	0,000	0,000	2,364	1,5587
39,5 (PS)	-1,382	0,083	601,263	4,088	1,744	0,000	0,000	2,344	1,5793
40,0 (PS)	-1,436	0,083	601,264	4,085	1,762	0,000	0,000	2,323	1,5996
40,5 (PS)	-1,490	0,083	601,264	4,081	1,781	0,000	0,000	2,301	1,6198
41,0 (PS)	-1,546	0,083	601,264	4,077	1,799	0,000	0,000	2,279	1,6398
41,5 (PS)	-1,602	0,083	601,264	4,073	1,817	0,000	0,000	2,256	1,6596
42,0 (PS)	-1,659	0,083	601,265	4,067	1,834	0,000	0,000	2,233	1,6792
42,5 (PS)	-1,717	0,083	601,265	4,061	1,852	0,000	0,000	2,209	1,6985
43,0 (PS)	-1,776	0,083	601,265	4,054	1,870	0,000	0,000	2,184	1,7177
43,5 (PS)	-1,836	0,082	601,265	4,047	1,887	0,000	0,000	2,160	1,7367
44,0 (PS)	-1,897	0,082	601,265	4,039	1,904	0,000	0,000	2,134	1,7554
44,5 (PS)	-1,959	0,082	601,265	4,030	1,922	0,000	0,000	2,109	1,7739
45,0 (PS)	-2,022	0,081	601,265	4,021	1,939	0,000	0,000	2,082	1,7922
45,5 (PS)	-2,086	0,081	601,265	4,011	1,955	0,000	0,000	2,056	1,8103
46,0 (PS)	-2,152	0,080	601,266	4,001	1,972	0,000	0,000	2,029	1,8281
46,5 (PS)	-2,218	0,080	601,266	3,990	1,989	0,000	0,000	2,001	1,8457
47,0 (PS)	-2,286	0,079	601,266	3,979	2,005	0,000	0,000	1,974	1,8630
47,5 (PS)	-2,355	0,078	601,266	3,967	2,021	0,000	0,000	1,945	1,8801
48,0 (PS)	-2,426	0,078	601,266	3,954	2,037	0,000	0,000	1,917	1,8970
48,5 (PS)	-2,498	0,077	601,266	3,941	2,053	0,000	0,000	1,888	1,9136
49,0 (PS)	-2,571	0,076	601,266	3,928	2,069	0,000	0,000	1,859	1,9299
49,5 (PS)	-2,646	0,075	601,266	3,914	2,085	0,000	0,000	1,829	1,9460
50,0 (PS)	-2,722	0,074	601,266	3,899	2,100	0,000	0,000	1,799	1,9618
50,5 (PS)	-2,800	0,073	601,266	3,885	2,115	0,000	0,000	1,769	1,9774

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
51,0 (PS)	-2,879	0,072	601,266	3,869	2,131	0,000	0,000	1,739	1,9927
51,5 (PS)	-2,961	0,071	601,266	3,853	2,146	0,000	0,000	1,708	2,0078
52,0 (PS)	-3,044	0,070	601,266	3,837	2,160	0,000	0,000	1,677	2,0225
52,5 (PS)	-3,129	0,069	601,266	3,820	2,175	0,000	0,000	1,645	2,0370
53,0 (PS)	-3,216	0,068	601,266	3,803	2,190	0,000	0,000	1,614	2,0512
53,5 (PS)	-3,305	0,067	601,266	3,785	2,204	0,000	0,000	1,582	2,0652
54,0 (PS)	-3,396	0,066	601,266	3,767	2,218	0,000	0,000	1,549	2,0788
54,5 (PS)	-3,489	0,065	601,260	3,749	2,232	0,000	0,000	1,517	2,0922
55,0 (PS)	-3,585	0,063	601,260	3,730	2,246	0,000	0,000	1,484	2,1053
55,5 (PS)	-3,683	0,062	601,261	3,711	2,259	0,000	0,000	1,451	2,1181
56,0 (PS)	-3,784	0,061	601,261	3,691	2,273	0,000	0,000	1,418	2,1306
56,5 (PS)	-3,887	0,060	601,261	3,671	2,286	0,000	0,000	1,385	2,1429
57,0 (PS)	-3,993	0,058	601,261	3,651	2,299	0,000	0,000	1,351	2,1548
57,5 (PS)	-4,102	0,057	601,261	3,630	2,312	0,000	0,000	1,317	2,1665
58,0 (PS)	-4,214	0,055	601,261	3,608	2,325	0,000	0,000	1,283	2,1778
58,5 (PS)	-4,329	0,054	601,262	3,587	2,338	0,000	0,000	1,249	2,1889
59,0 (PS)	-4,447	0,052	601,262	3,565	2,350	0,000	0,000	1,215	2,1996
59,5 (PS)	-4,569	0,051	601,262	3,543	2,362	0,000	0,000	1,180	2,2101
60,0 (PS)	-4,694	0,049	601,262	3,520	2,374	0,000	0,000	1,146	2,2202



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	16,362 m	\geq	1,000 m	Complies
Combined heeling moment	1,1 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	195,720 t*m			
Required freeboard	2,450 m	\geq	0,000 m	Complies
Weight	195,720 t			

Trv. location of weight 1,000 m

The condition complies with the stability criteria

Containers 70 % full 3 layers ALU

2020.056_008 IW-NET barge 3 abreast long/shallow

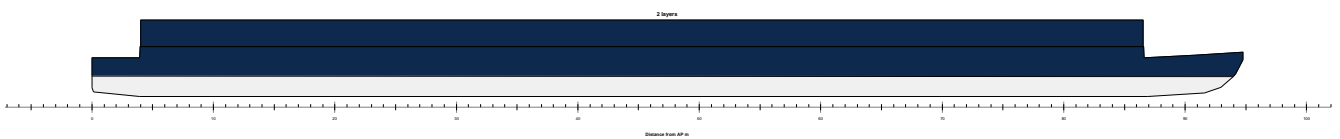
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_008_IW-NET3 Units abreast long_shallow.fbm

Design length	94,770 m	Midship location	47,385 m
Length over all	94,766 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	2,150 m		



Hydrostatic particulars

List	0,0 (CL) degr	VCG	4,104 m
Draft aft pp	1,690 m	GG'	0,000 m
Mean moulded draft	1,652 m	VCG'	4,104 m
Draft forward pp	1,614 m	Max VCG'	6,374 m
Trim	-0,076 m	GM solid	3,548 m
LCF	46,602 m	G'M liquid	3,548 m
LCB	45,601 m	Immersion rate	10,670 tonne/cm
KM	7,652 m	MCT	80,929 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

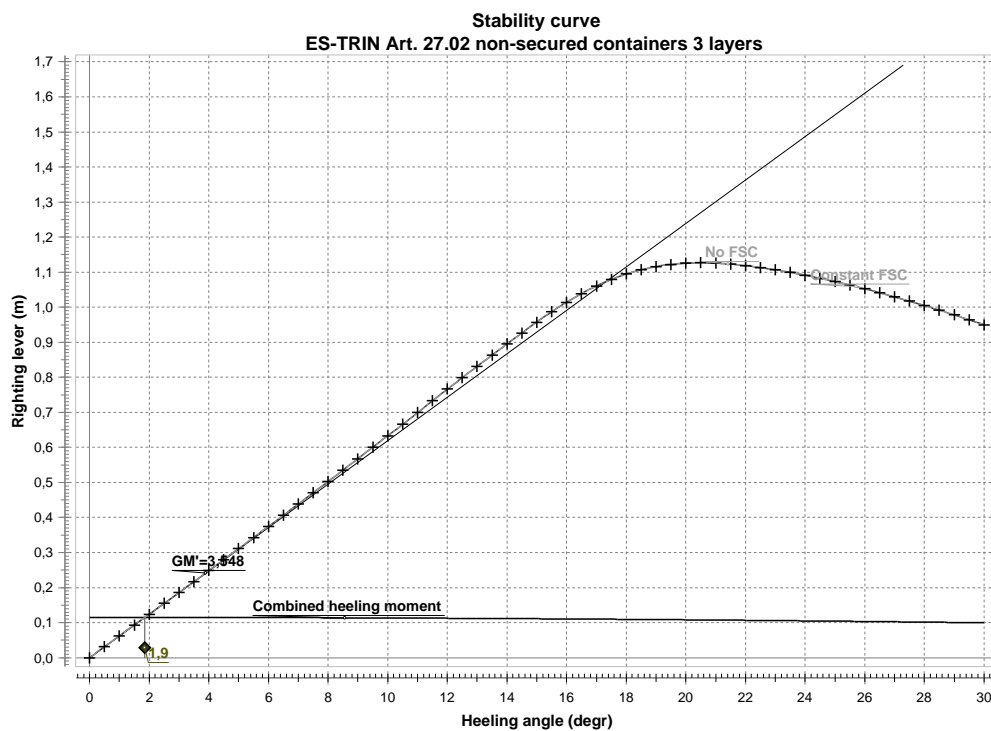
Containers 70 % full			909,720	45,273	0,000 (CL)	3,400	0,000
3rd layer 70 % full			454,860	45,273	0,000 (CL)	7,748	0,000
Totals for Containers			1364,580	45,273	0,000 (CL)	4,849	0,000
Lightship			336,666	46,946	0,000 (CL)	1,085	
Deadweight			1364,580	45,273	0,000 (CL)	4,849	0,000
Displacement			1701,246	45,604	0,000 (CL)	4,104	0,000

Righting levers

Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	1,652	-0,076	1701,243	0,000	0,000	0,000	0,000	0,000	0,0000
0,5 (PS)	1,652	-0,076	1701,244	0,067	0,036	0,000	0,000	0,031	0,0001
1,0 (PS)	1,652	-0,077	1701,246	0,134	0,072	0,000	0,000	0,062	0,0005
1,5 (PS)	1,652	-0,077	1701,246	0,200	0,107	0,000	0,000	0,093	0,0012
2,0 (PS)	1,652	-0,077	1701,244	0,267	0,143	0,000	0,000	0,124	0,0022
2,5 (PS)	1,652	-0,078	1701,241	0,334	0,179	0,000	0,000	0,155	0,0034
3,0 (PS)	1,652	-0,078	1701,237	0,401	0,215	0,000	0,000	0,186	0,0049
3,5 (PS)	1,651	-0,079	1701,232	0,468	0,251	0,000	0,000	0,217	0,0066
4,0 (PS)	1,651	-0,079	1701,246	0,535	0,286	0,000	0,000	0,249	0,0087
4,5 (PS)	1,651	-0,080	1701,246	0,602	0,322	0,000	0,000	0,280	0,0110
5,0 (PS)	1,651	-0,081	1701,246	0,669	0,358	0,000	0,000	0,311	0,0135
5,5 (PS)	1,651	-0,082	1701,246	0,736	0,393	0,000	0,000	0,343	0,0164
6,0 (PS)	1,651	-0,083	1701,246	0,804	0,429	0,000	0,000	0,375	0,0195
6,5 (PS)	1,651	-0,084	1701,246	0,871	0,465	0,000	0,000	0,406	0,0229
7,0 (PS)	1,650	-0,085	1701,246	0,938	0,500	0,000	0,000	0,438	0,0266
7,5 (PS)	1,650	-0,087	1701,246	1,006	0,536	0,000	0,000	0,470	0,0306
8,0 (PS)	1,650	-0,088	1701,246	1,074	0,571	0,000	0,000	0,502	0,0348
8,5 (PS)	1,650	-0,089	1701,246	1,142	0,607	0,000	0,000	0,535	0,0394
9,0 (PS)	1,649	-0,091	1701,246	1,209	0,642	0,000	0,000	0,567	0,0442
9,5 (PS)	1,649	-0,093	1701,246	1,278	0,677	0,000	0,000	0,600	0,0493
10,0 (PS)	1,649	-0,095	1701,246	1,346	0,713	0,000	0,000	0,633	0,0546
10,5 (PS)	1,648	-0,097	1701,246	1,414	0,748	0,000	0,000	0,666	0,0603
11,0 (PS)	1,648	-0,099	1701,246	1,483	0,783	0,000	0,000	0,700	0,0663
11,5 (PS)	1,648	-0,101	1701,245	1,551	0,818	0,000	0,000	0,733	0,0725
12,0 (PS)	1,647	-0,103	1701,245	1,620	0,853	0,000	0,000	0,766	0,0791
12,5 (PS)	1,646	-0,106	1701,245	1,687	0,888	0,000	0,000	0,799	0,0859
13,0 (PS)	1,645	-0,108	1701,245	1,755	0,923	0,000	0,000	0,831	0,0930
13,5 (PS)	1,644	-0,111	1701,245	1,822	0,958	0,000	0,000	0,864	0,1004
14,0 (PS)	1,643	-0,113	1701,245	1,888	0,993	0,000	0,000	0,895	0,1081
14,5 (PS)	1,641	-0,116	1701,245	1,954	1,028	0,000	0,000	0,926	0,1160
15,0 (PS)	1,639	-0,119	1701,246	2,020	1,062	0,000	0,000	0,957	0,1242
15,5 (PS)	1,637	-0,123	1701,248	2,084	1,097	0,000	0,000	0,987	0,1327
16,0 (PS)	1,636	-0,128	1701,248	2,145	1,131	0,000	0,000	1,014	0,1415
16,5 (PS)	1,635	-0,133	1701,247	2,204	1,166	0,000	0,000	1,039	0,1504
17,0 (PS)	1,635	-0,139	1701,246	2,260	1,200	0,000	0,000	1,060	0,1596
17,5 (PS)	1,635	-0,146	1701,246	2,313	1,234	0,000	0,000	1,079	0,1689
18,0 (PS)	1,635	-0,153	1701,246	2,363	1,268	0,000	0,000	1,095	0,1784
18,5 (PS)	1,635	-0,161	1701,252	2,409	1,302	0,000	0,000	1,107	0,1880
19,0 (PS)	1,636	-0,169	1701,246	2,452	1,336	0,000	0,000	1,116	0,1977
19,5 (PS)	1,636	-0,178	1701,241	2,492	1,370	0,000	0,000	1,122	0,2075
20,0 (PS)	1,636	-0,186	1701,245	2,529	1,404	0,000	0,000	1,126	0,2173
20,5 (PS)	1,636	-0,194	1701,244	2,564	1,437	0,000	0,000	1,127	0,2271
21,0 (PS)	1,637	-0,203	1701,241	2,596	1,471	0,000	0,000	1,126	0,2369
21,5 (PS)	1,637	-0,211	1701,239	2,627	1,504	0,000	0,000	1,123	0,2468
22,0 (PS)	1,637	-0,219	1701,236	2,656	1,538	0,000	0,000	1,118	0,2565
22,5 (PS)	1,636	-0,226	1701,236	2,684	1,571	0,000	0,000	1,113	0,2663
23,0 (PS)	1,635	-0,232	1701,237	2,710	1,604	0,000	0,000	1,107	0,2760
23,5 (PS)	1,634	-0,239	1701,239	2,736	1,637	0,000	0,000	1,099	0,2856
24,0 (PS)	1,633	-0,245	1701,241	2,761	1,669	0,000	0,000	1,091	0,2951
24,5 (PS)	1,631	-0,251	1701,242	2,785	1,702	0,000	0,000	1,083	0,3046
25,0 (PS)	1,628	-0,257	1701,244	2,808	1,735	0,000	0,000	1,073	0,3140

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
25,5 (PS)	1,625	-0,263	1701,245	2,830	1,767	0,000	0,000	1,063	0,3234
26,0 (PS)	1,622	-0,269	1701,245	2,852	1,799	0,000	0,000	1,052	0,3326
26,5 (PS)	1,618	-0,275	1701,234	2,873	1,831	0,000	0,000	1,041	0,3417
27,0 (PS)	1,614	-0,281	1701,239	2,893	1,863	0,000	0,000	1,030	0,3508
27,5 (PS)	1,610	-0,286	1701,242	2,913	1,895	0,000	0,000	1,017	0,3597
28,0 (PS)	1,605	-0,292	1701,244	2,932	1,927	0,000	0,000	1,005	0,3685
28,5 (PS)	1,600	-0,297	1701,245	2,950	1,958	0,000	0,000	0,992	0,3772
29,0 (PS)	1,594	-0,302	1701,230	2,968	1,990	0,000	0,000	0,978	0,3858
29,5 (PS)	1,588	-0,307	1701,241	2,985	2,021	0,000	0,000	0,964	0,3943
30,0 (PS)	1,581	-0,312	1701,245	3,002	2,052	0,000	0,000	0,950	0,4026



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	3,548 m	\geq	1,000 m	Complies
Combined heeling moment	1,9 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	195,720 t*m			
Required freeboard	1,324 m	\geq	0,000 m	Complies
Weight	195,720 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

Containers full 3 layers ALU

2020.056_008 IW-NET barge 3 abreast long/shallow

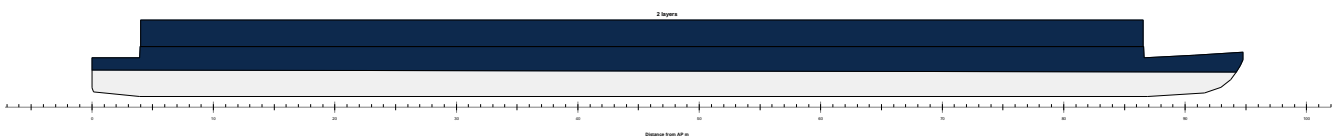
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_008_IW-NET3 Units abreast long_shallow.fbm

Design length	94,770 m	Midship location	47,385 m
Length over all	94,766 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	2,150 m		



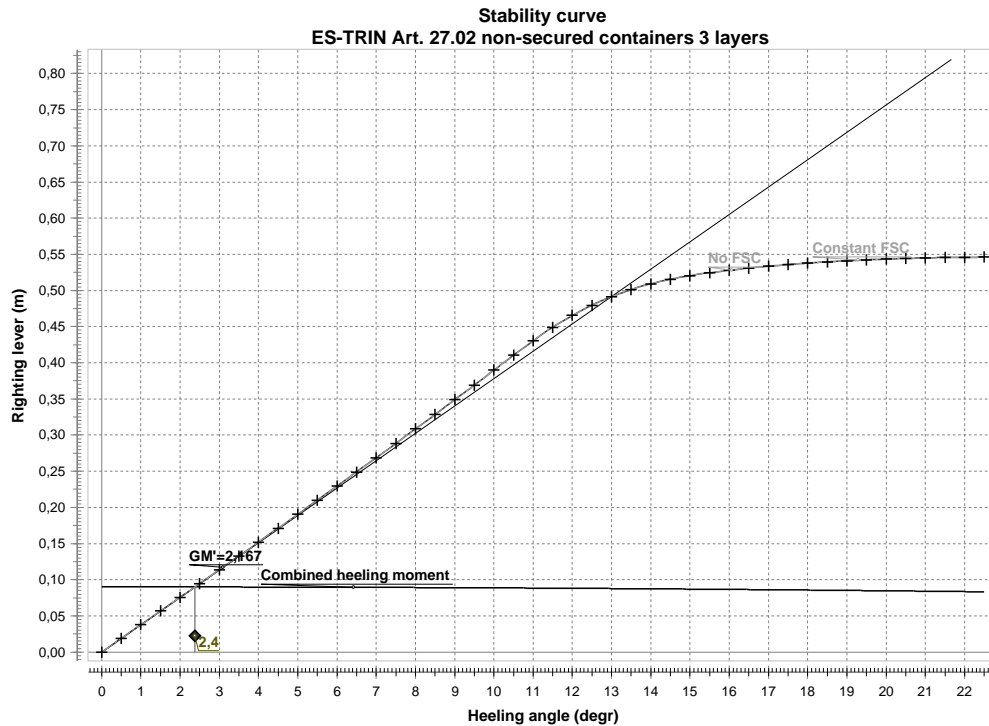
Hydrostatic particulars

List	0,0 (CL) degr	VCG	4,266 m
Draft aft pp	2,172 m	GG'	0,000 m
Mean moulded draft	2,092 m	VCG'	4,266 m
Draft forward pp	2,011 m	Max VCG'	5,433 m
Trim	-0,161 m	GM solid	2,167 m
LCF	46,850 m	G'M liquid	2,167 m
LCB	45,526 m	Immersion rate	10,727 tonne/cm
KM	6,433 m	MCT	82,087 t*m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
Containers							
Containers full			1224,000	45,273	0,000 (CL)	3,400	0,000
3rd layer full			612,000	45,273	0,000 (CL)	7,748	0,000
Totals for Containers			1836,000	45,273	0,000 (CL)	4,849	0,000
Lightship			336,666	46,946	0,000 (CL)	1,085	
Deadweight			1836,000	45,273	0,000 (CL)	4,849	0,000
Displacement			2172,666	45,532	0,000 (CL)	4,266	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	2,092	-0,161	2172,661	0,000	0,000	0,000	0,000	0,000	0,0000
0,5 (PS)	2,092	-0,161	2172,663	0,056	0,037	0,000	0,000	0,019	0,0001
1,0 (PS)	2,092	-0,161	2172,664	0,112	0,074	0,000	0,000	0,038	0,0003
1,5 (PS)	2,092	-0,161	2172,665	0,168	0,112	0,000	0,000	0,057	0,0007
2,0 (PS)	2,092	-0,162	2172,666	0,225	0,149	0,000	0,000	0,076	0,0013
2,5 (PS)	2,092	-0,162	2172,665	0,281	0,186	0,000	0,000	0,095	0,0021
3,0 (PS)	2,092	-0,162	2172,664	0,337	0,223	0,000	0,000	0,114	0,0030
3,5 (PS)	2,092	-0,163	2172,661	0,393	0,260	0,000	0,000	0,133	0,0041
4,0 (PS)	2,091	-0,163	2172,658	0,450	0,298	0,000	0,000	0,152	0,0053
4,5 (PS)	2,091	-0,164	2172,655	0,506	0,335	0,000	0,000	0,171	0,0067
5,0 (PS)	2,091	-0,165	2172,651	0,562	0,372	0,000	0,000	0,191	0,0083
5,5 (PS)	2,091	-0,166	2172,647	0,619	0,409	0,000	0,000	0,210	0,0100
6,0 (PS)	2,091	-0,166	2172,666	0,675	0,446	0,000	0,000	0,229	0,0119
6,5 (PS)	2,091	-0,167	2172,666	0,732	0,483	0,000	0,000	0,249	0,0140
7,0 (PS)	2,091	-0,168	2172,666	0,789	0,520	0,000	0,000	0,269	0,0163
7,5 (PS)	2,090	-0,169	2172,666	0,845	0,557	0,000	0,000	0,289	0,0187
8,0 (PS)	2,090	-0,171	2172,666	0,902	0,594	0,000	0,000	0,308	0,0213
8,5 (PS)	2,090	-0,172	2172,666	0,959	0,631	0,000	0,000	0,329	0,0241
9,0 (PS)	2,090	-0,173	2172,666	1,016	0,667	0,000	0,000	0,349	0,0271
9,5 (PS)	2,090	-0,174	2172,666	1,073	0,704	0,000	0,000	0,369	0,0302
10,0 (PS)	2,089	-0,176	2172,666	1,131	0,741	0,000	0,000	0,390	0,0335
10,5 (PS)	2,089	-0,177	2172,666	1,188	0,777	0,000	0,000	0,410	0,0370
11,0 (PS)	2,089	-0,180	2172,669	1,245	0,814	0,000	0,000	0,431	0,0407
11,5 (PS)	2,090	-0,185	2172,682	1,300	0,851	0,000	0,000	0,449	0,0445
12,0 (PS)	2,091	-0,191	2172,667	1,353	0,887	0,000	0,000	0,466	0,0485
12,5 (PS)	2,094	-0,198	2172,668	1,403	0,923	0,000	0,000	0,480	0,0526
13,0 (PS)	2,097	-0,204	2172,669	1,451	0,960	0,000	0,000	0,491	0,0569
13,5 (PS)	2,101	-0,212	2172,669	1,497	0,996	0,000	0,000	0,501	0,0612
14,0 (PS)	2,106	-0,219	2172,669	1,541	1,032	0,000	0,000	0,509	0,0656
14,5 (PS)	2,112	-0,227	2172,668	1,584	1,068	0,000	0,000	0,516	0,0701
15,0 (PS)	2,119	-0,234	2172,667	1,625	1,104	0,000	0,000	0,521	0,0746
15,5 (PS)	2,126	-0,242	2172,676	1,665	1,140	0,000	0,000	0,525	0,0792
16,0 (PS)	2,134	-0,248	2172,669	1,704	1,176	0,000	0,000	0,528	0,0838
16,5 (PS)	2,141	-0,254	2172,667	1,742	1,212	0,000	0,000	0,531	0,0884
17,0 (PS)	2,149	-0,260	2172,671	1,781	1,247	0,000	0,000	0,533	0,0930
17,5 (PS)	2,157	-0,265	2172,666	1,819	1,283	0,000	0,000	0,536	0,0977
18,0 (PS)	2,164	-0,271	2172,661	1,856	1,318	0,000	0,000	0,538	0,1024
18,5 (PS)	2,172	-0,276	2172,655	1,893	1,354	0,000	0,000	0,540	0,1071
19,0 (PS)	2,179	-0,281	2172,652	1,930	1,389	0,000	0,000	0,541	0,1118
19,5 (PS)	2,187	-0,286	2172,653	1,966	1,424	0,000	0,000	0,542	0,1165
20,0 (PS)	2,194	-0,291	2172,656	2,003	1,459	0,000	0,000	0,543	0,1213
20,5 (PS)	2,202	-0,296	2172,660	2,038	1,494	0,000	0,000	0,544	0,1260
21,0 (PS)	2,209	-0,300	2172,662	2,074	1,529	0,000	0,000	0,545	0,1308
21,5 (PS)	2,216	-0,305	2172,664	2,109	1,564	0,000	0,000	0,546	0,1355
22,0 (PS)	2,223	-0,310	2172,665	2,144	1,598	0,000	0,000	0,546	0,1403
22,5 (PS)	2,230	-0,314	2172,666	2,179	1,633	0,000	0,000	0,546	0,1450

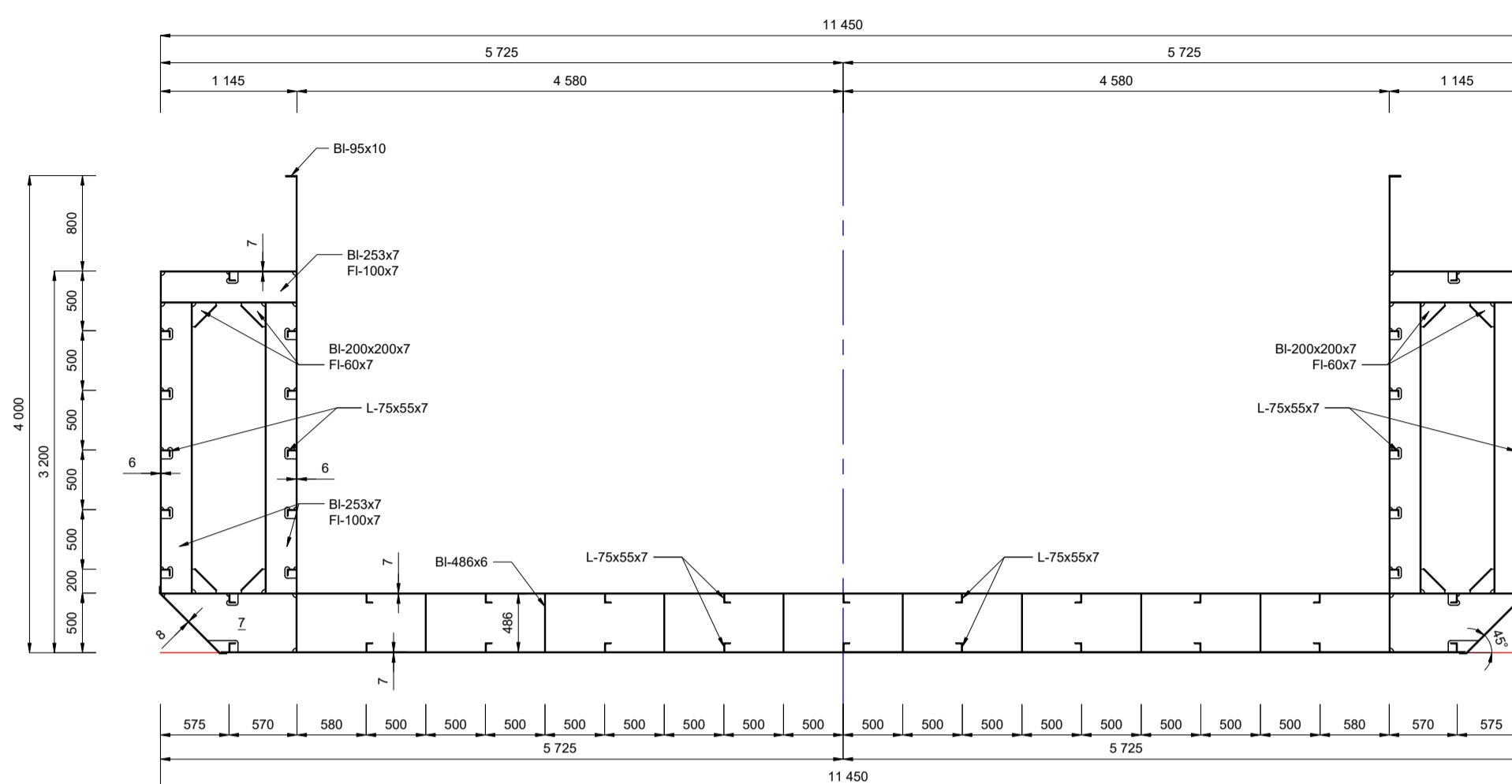


ES-TRIN Art. 27.02 non-secured containers 3 layers

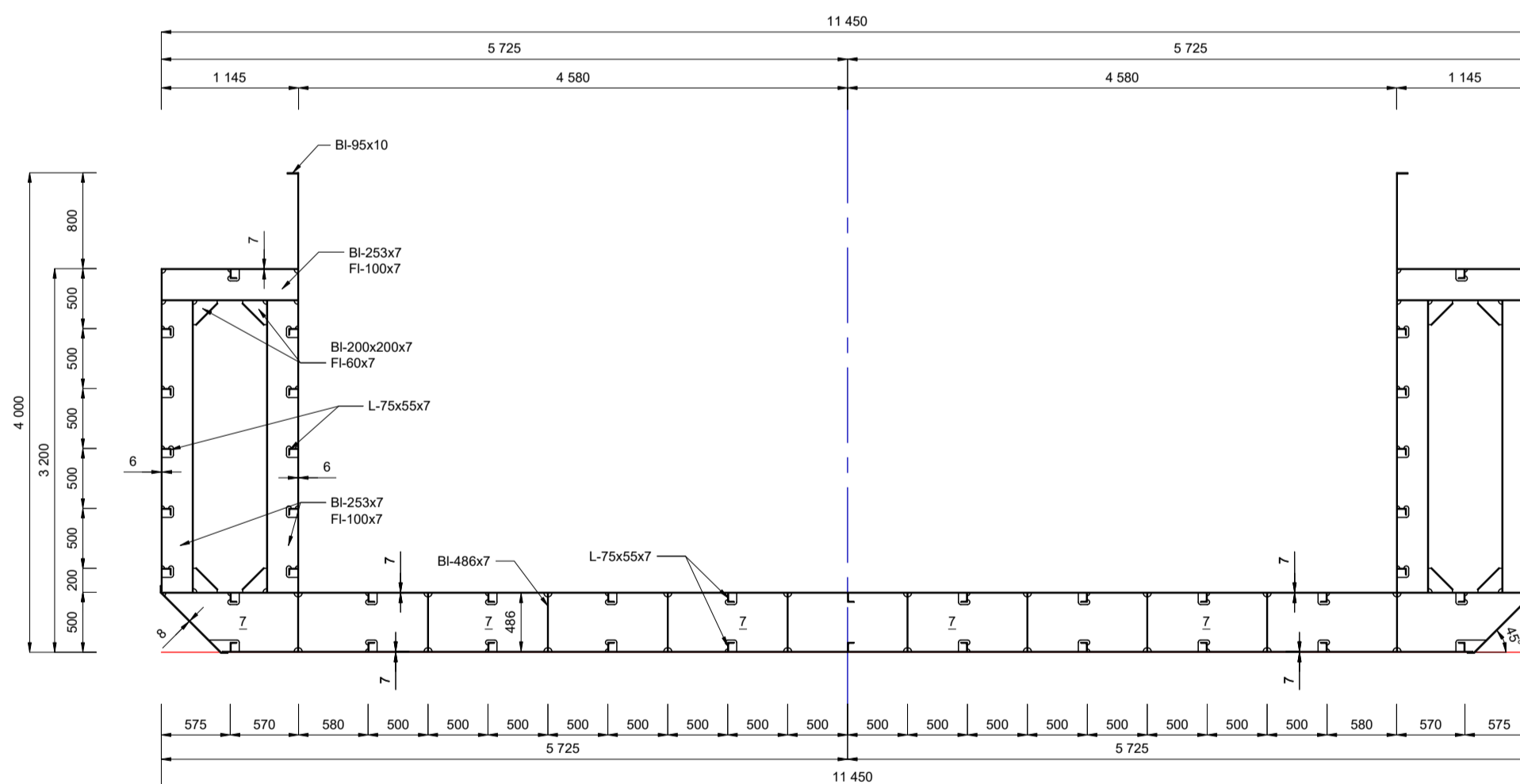
Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	2,167 m	\geq	1,000 m	Complies
Combined heeling moment	2,4 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	195,720 t*m			
Required freeboard	0,790 m	\geq	0,000 m	Complies
Weight	195,720 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria

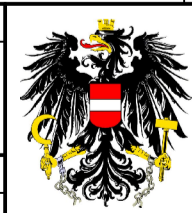
Regular frame - steel distance: 1 m



Web frame - steel distance: 2,5 m



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Version	Description of the Amendment	Date	Created	Verified
Customer				
IW-NET A project co-funded by the Horizon 2020 programme of the European Union				
Vessel				
Europa 2b barge steel version				
Project No.		Drawing No.		Area of Navigation
2020.056		001 c1		EU Binnenwasserstraßen Zone 3
Designation			Scale	Format
Section plan			1:50	A2

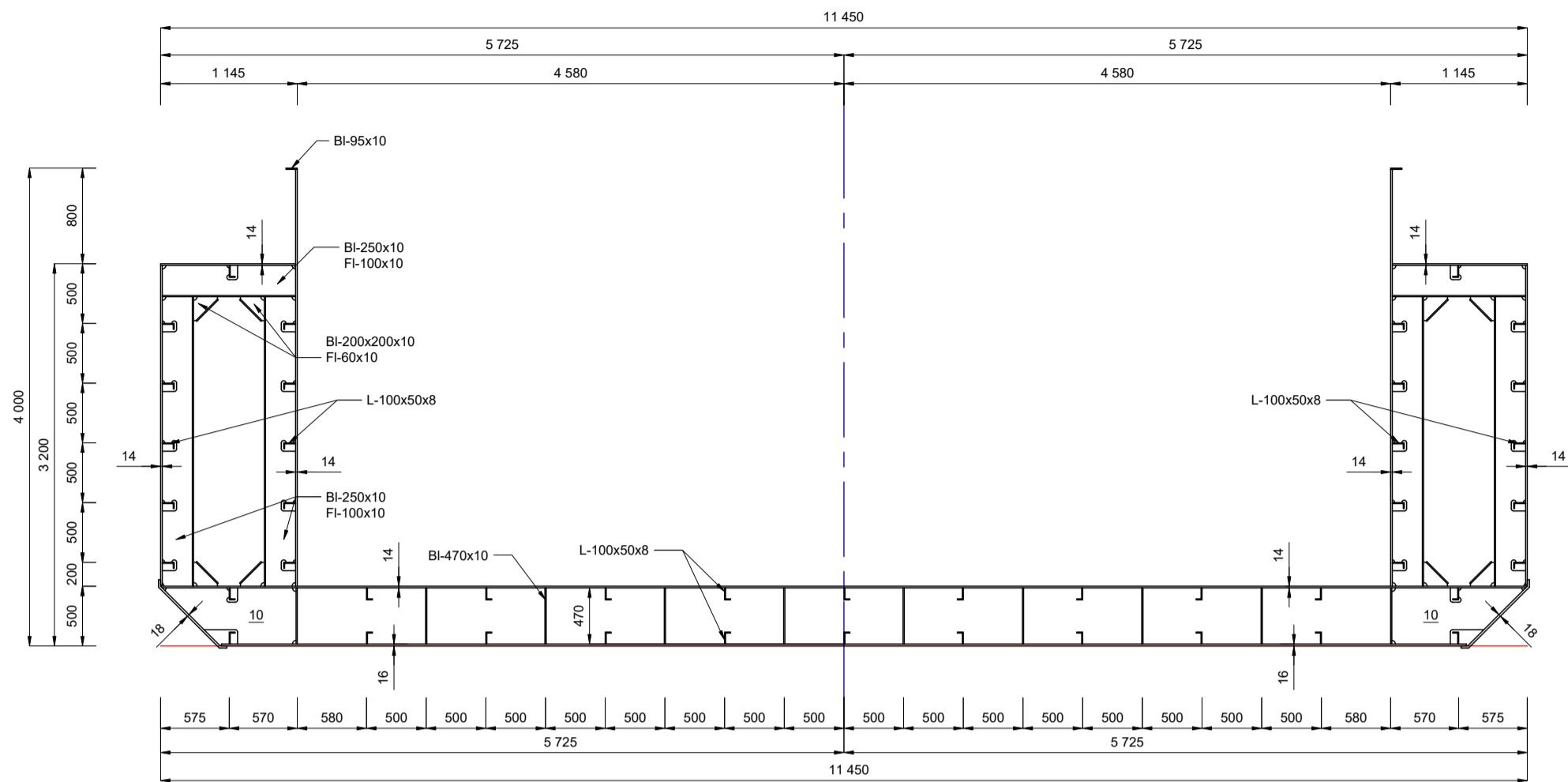


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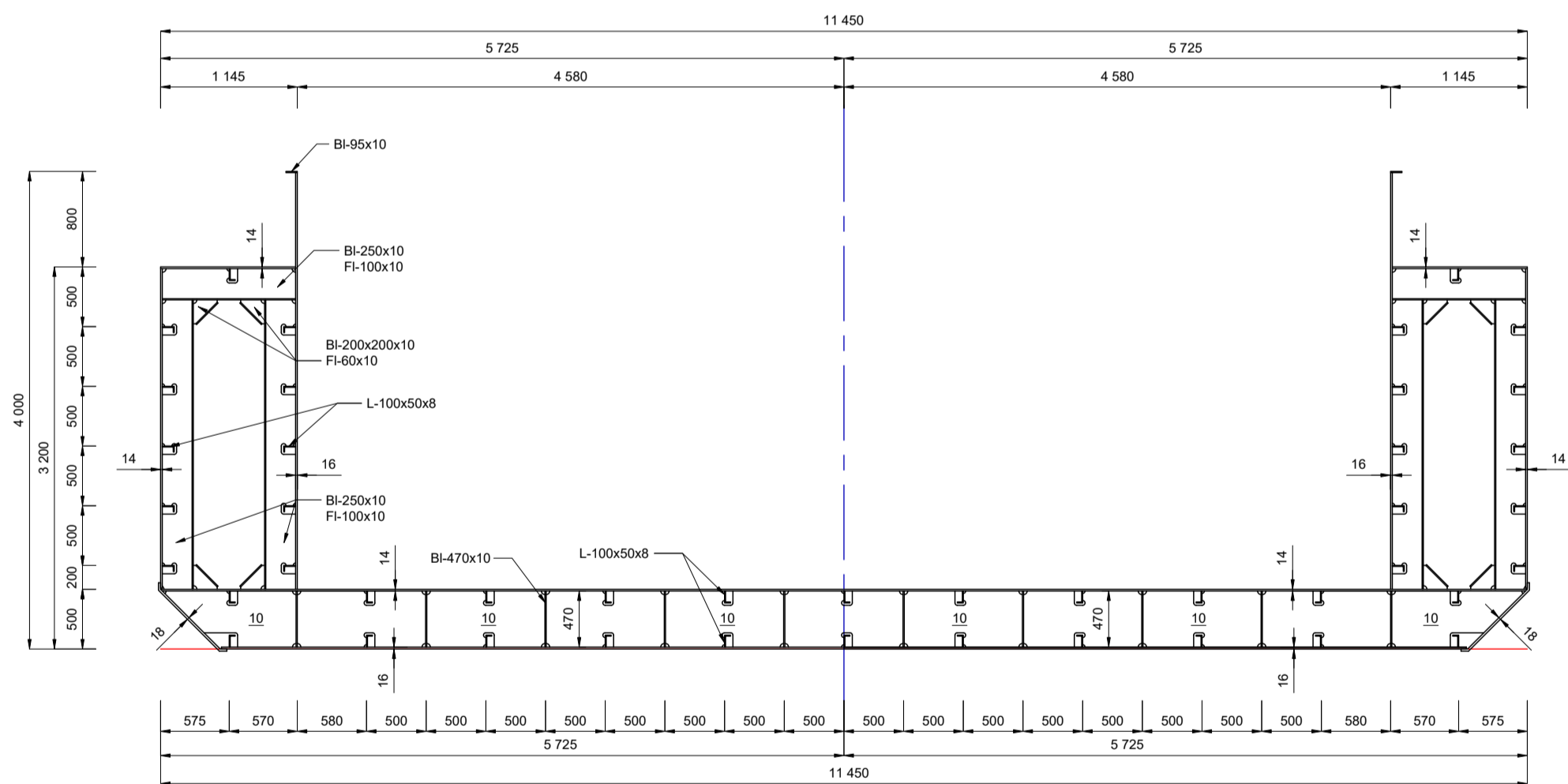
A-1190 Wien
office@anzboeck.com



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Tel.: +43-1-320 88 93

Regular frame - aluminium distance: 1 m



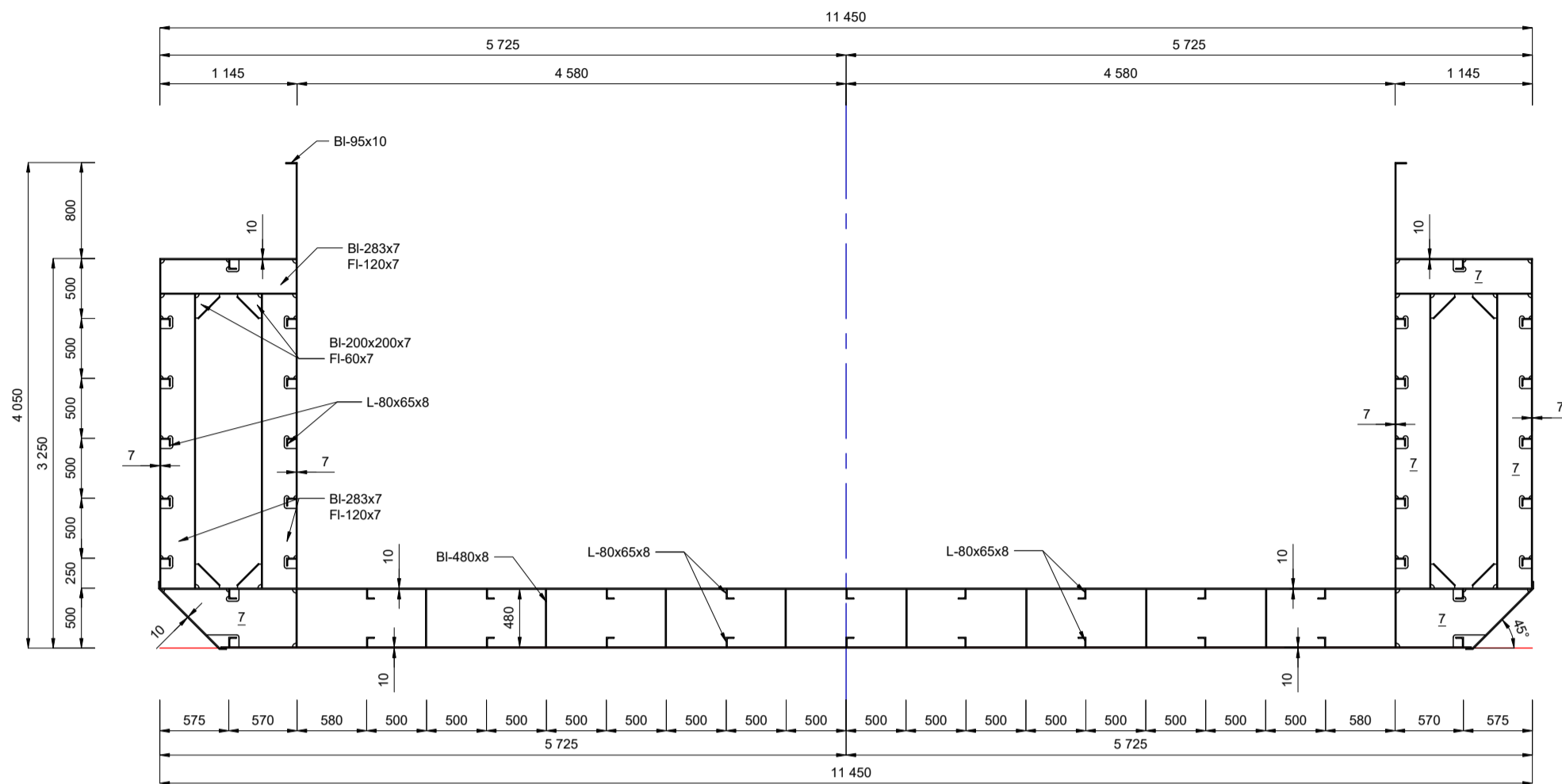
Web frame - aluminium distance: 2,5 m



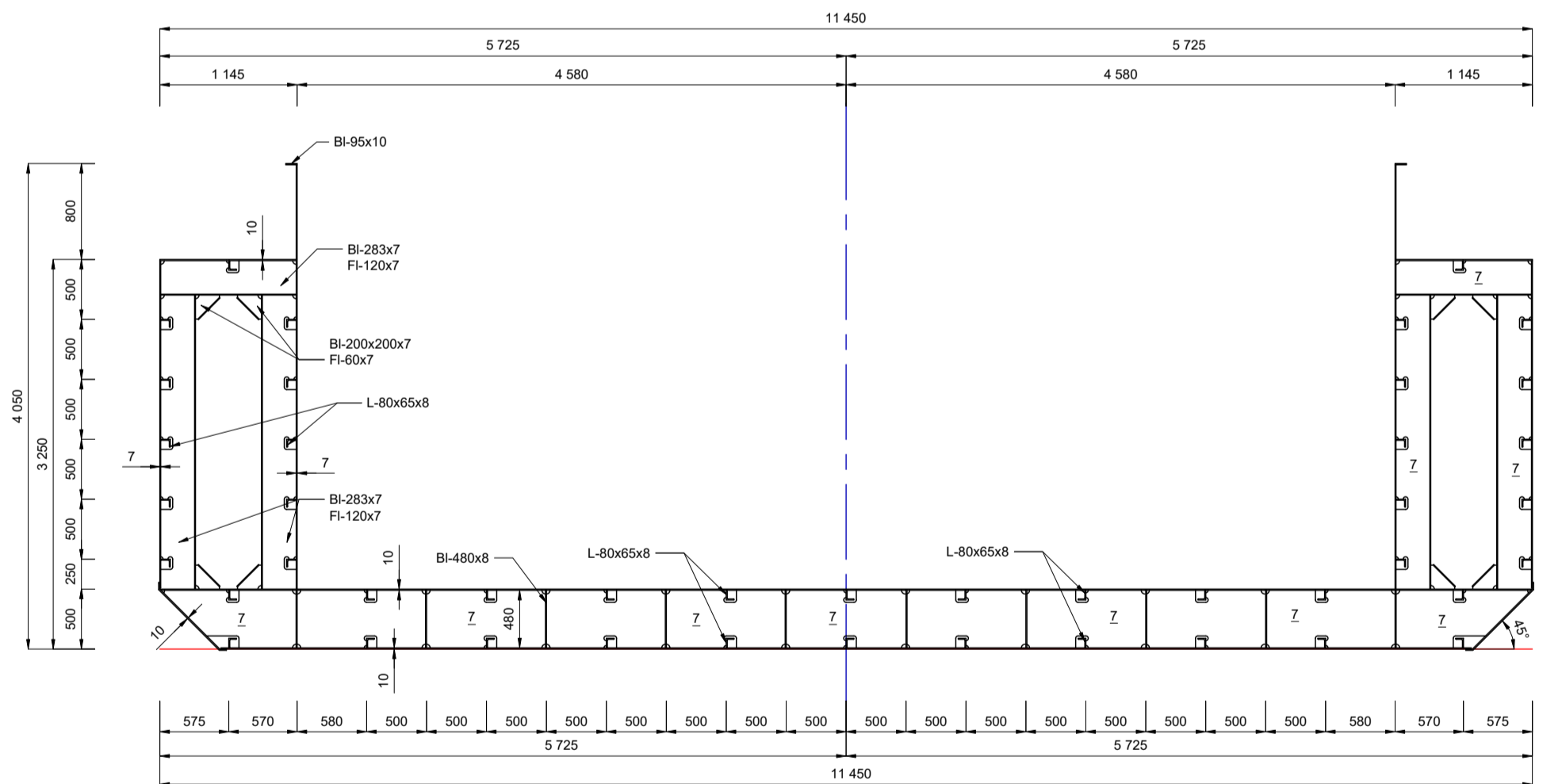
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IW-NET A project co-funded by the Horizon 2020 programme of the European Union				
Vessel				
Europa 2b barge aluminium version				
Project No.	Drawing No.	Area of Navigation		
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Designation		Scale	Format	
Section plan		1:50	A2 	

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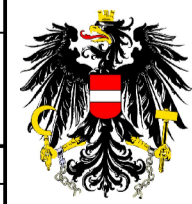
Regular frame - steel distance: 1 m



Web frame - steel distance: 2,5 m



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Project No.		Drawing No.		Area of Navigation
2020.056		002 c1		EU Binnenwasserstraßen Zone 3
Designation			Scale	Format
Section plan			1:50	A2

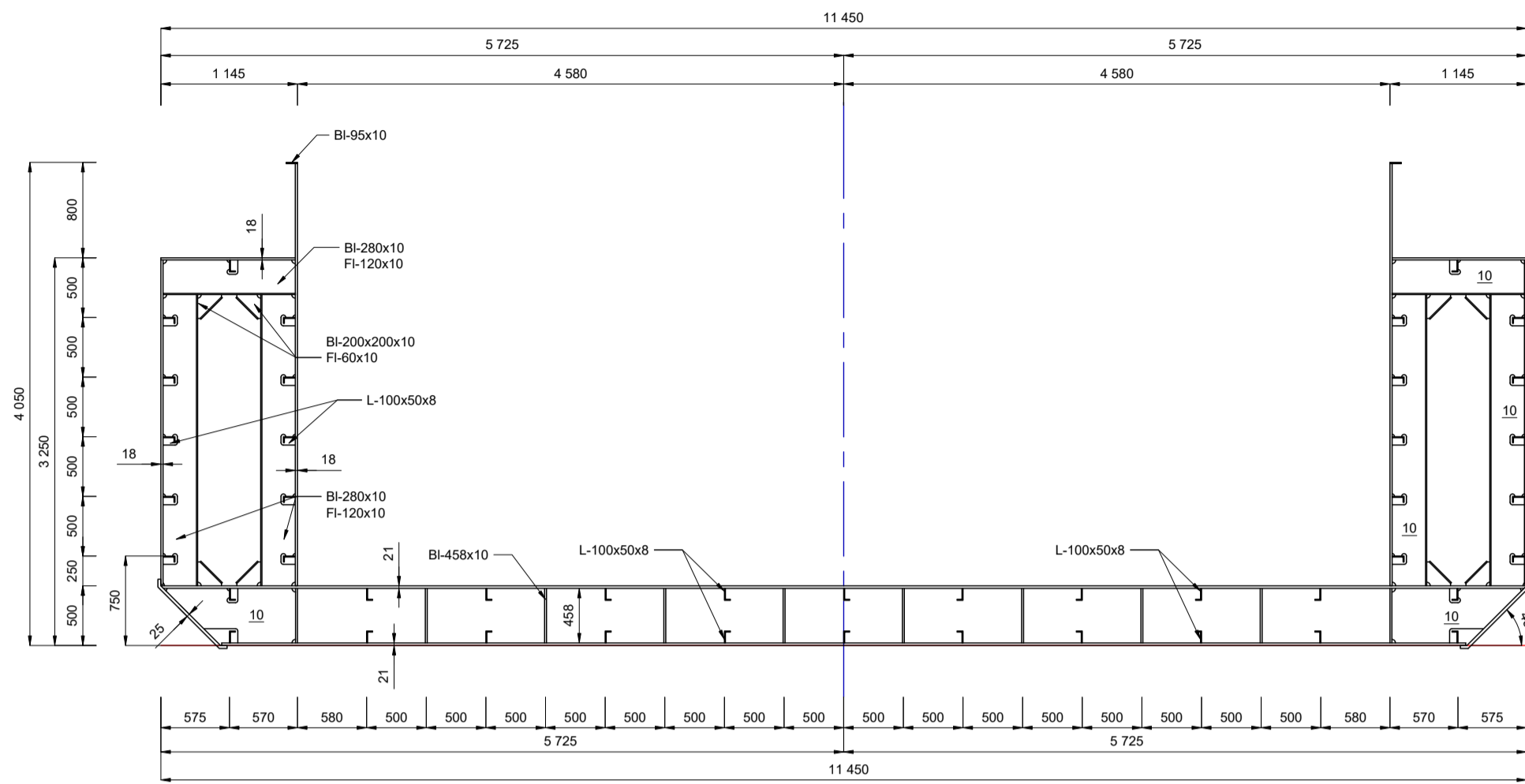


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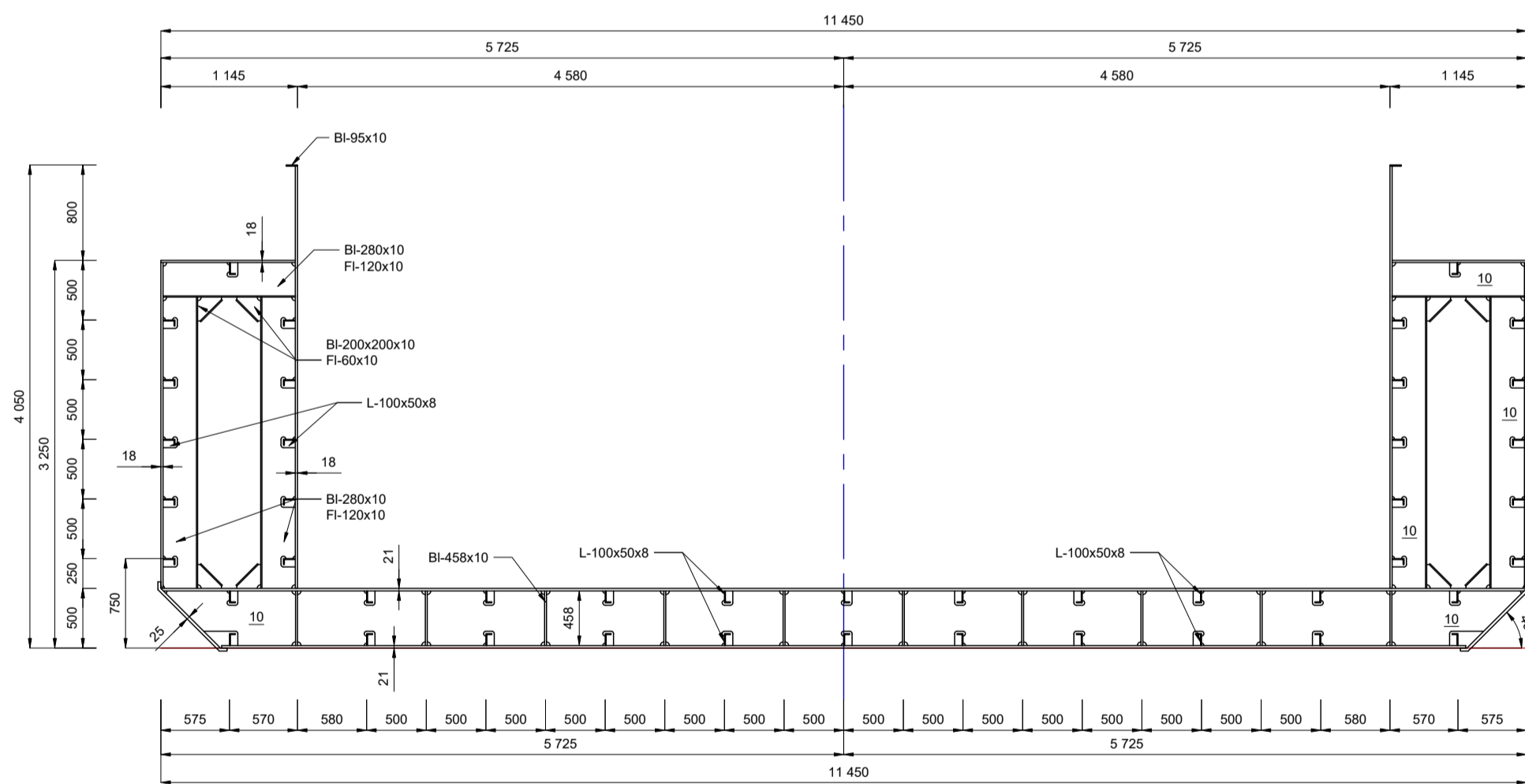
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Tel.: +43-1-320 88 93

Regular frame - aluminium distance: 1 m



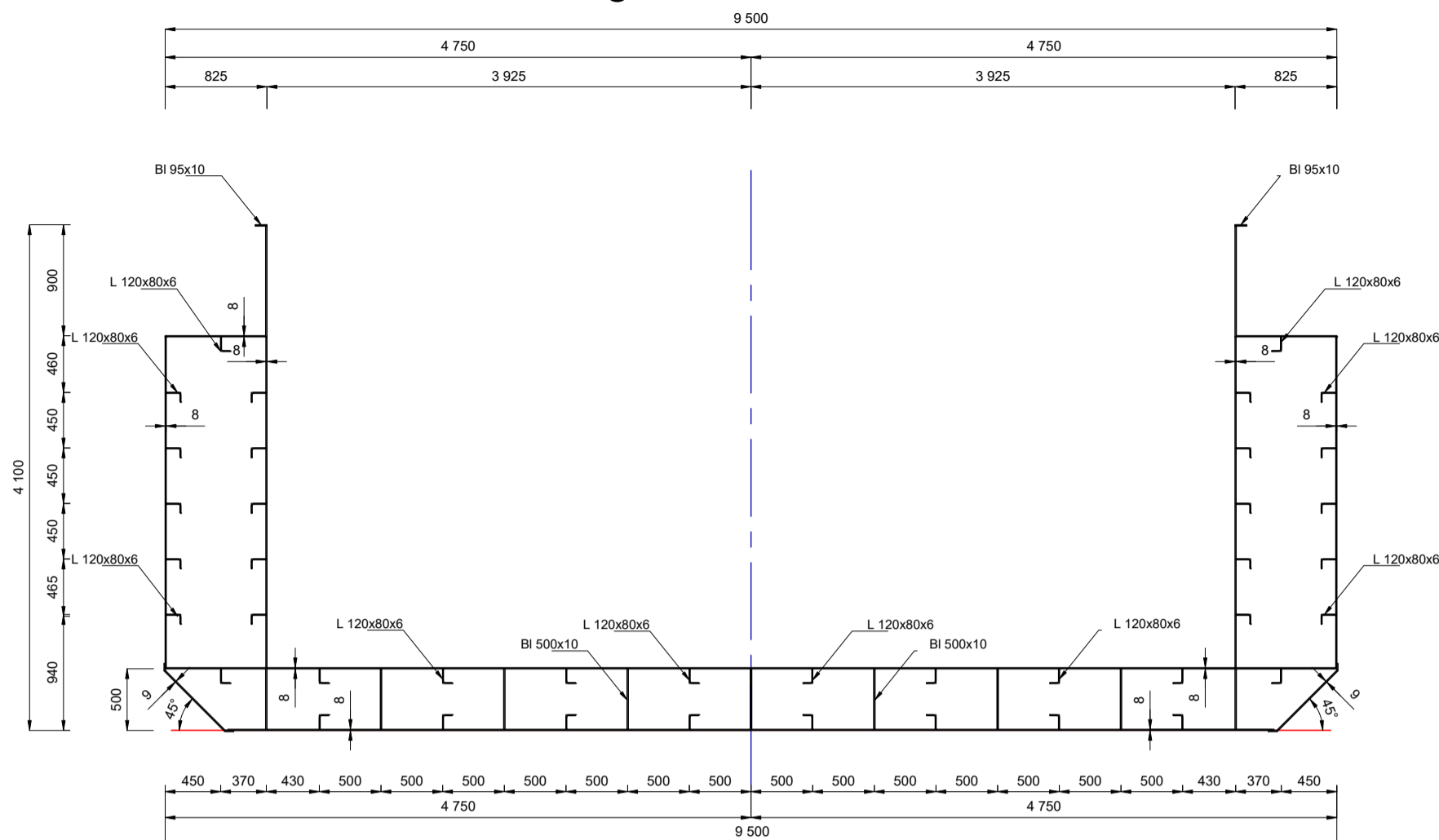
Web frame - aluminium distance: 2,5 m



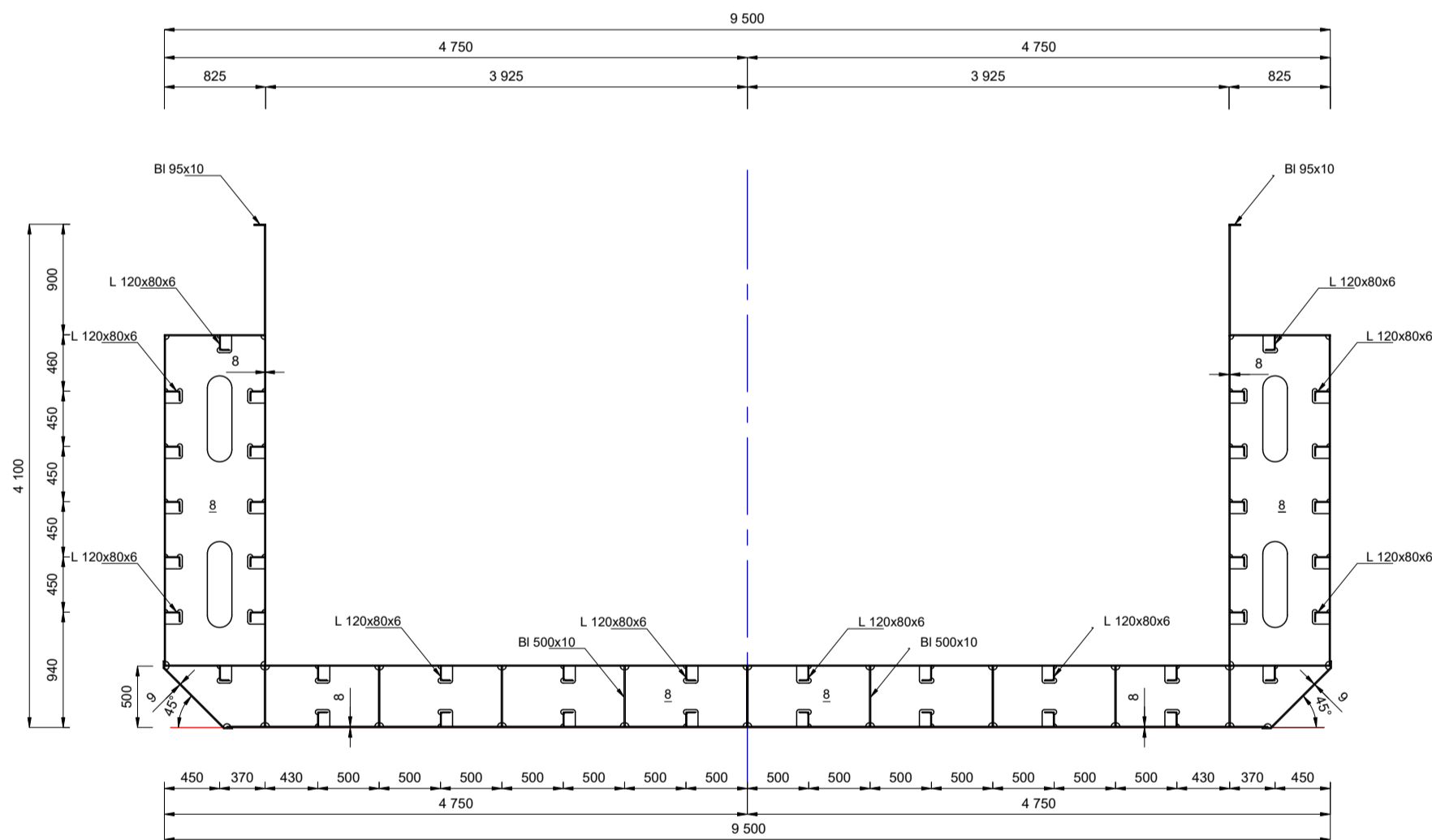
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Europa 3a barge aluminium version				
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Designation		Scale	Format	
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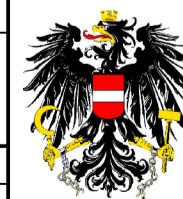
Regular frame - steel



Web frame - steel



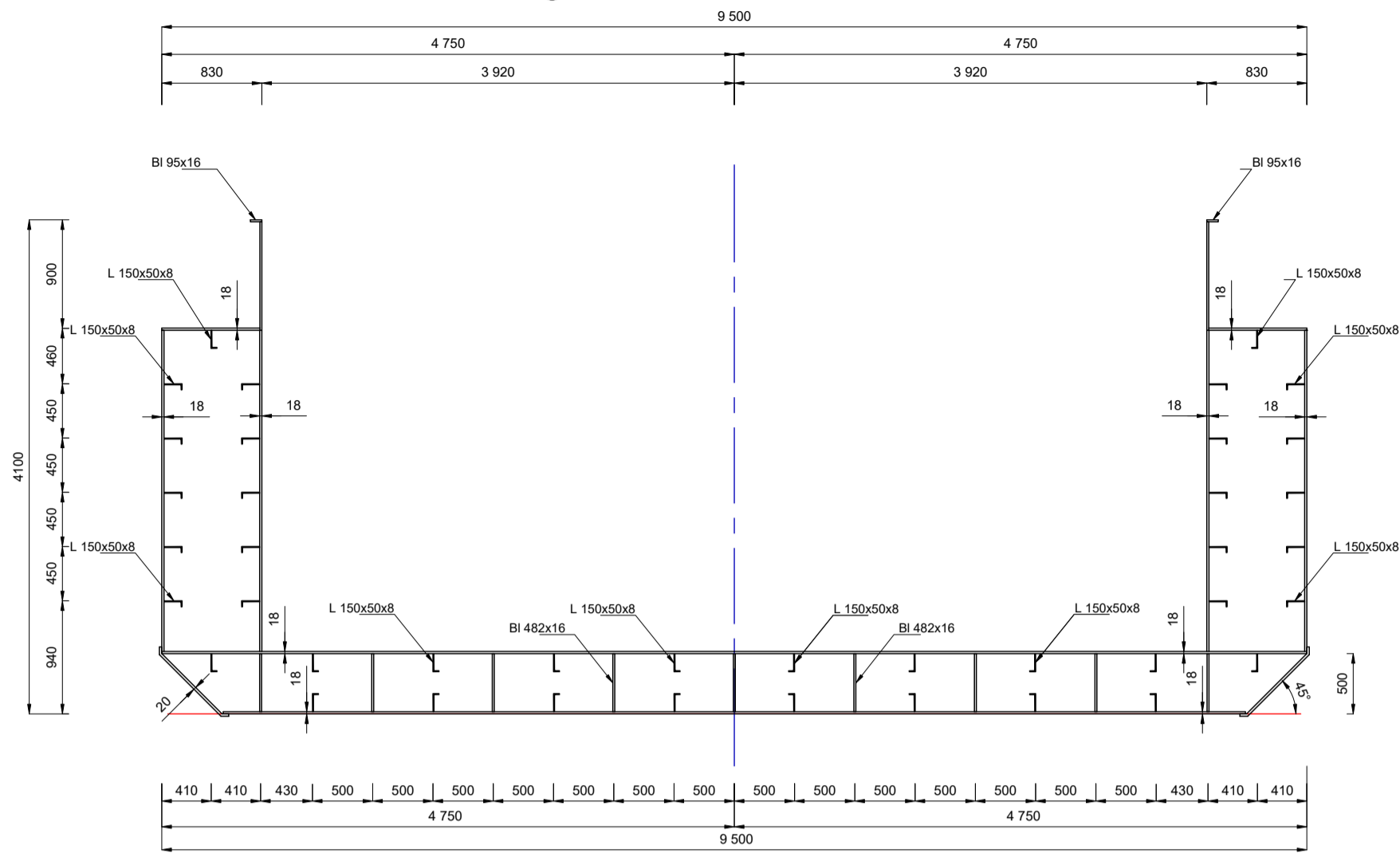
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IW-NET 3 units abreast steel version				
Project No.		Drawing No.		Area of Navigation
2020.056		003 c1		EU Binnenwasserstraßen Zone 3
Designation			Scale	Format
Section plan			1:50	A2



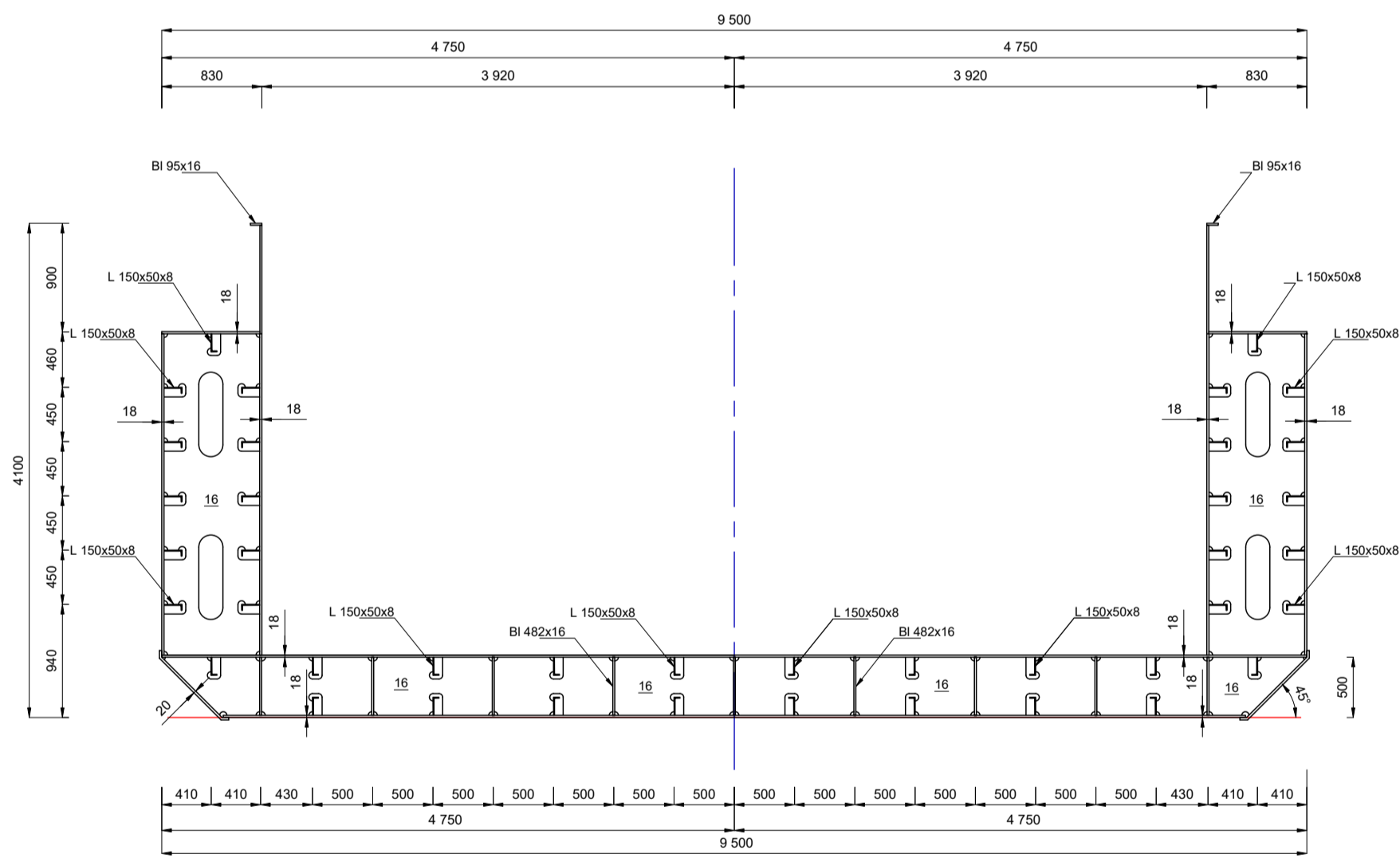
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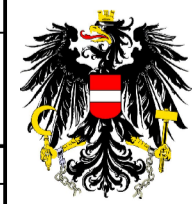
Regular frame - aluminium



Web frame - aluminium



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2020.056		003 c2		EU Binnenwasserstraßen Zone 3
Designation			Scale	Format
Section plan			1:50	A2

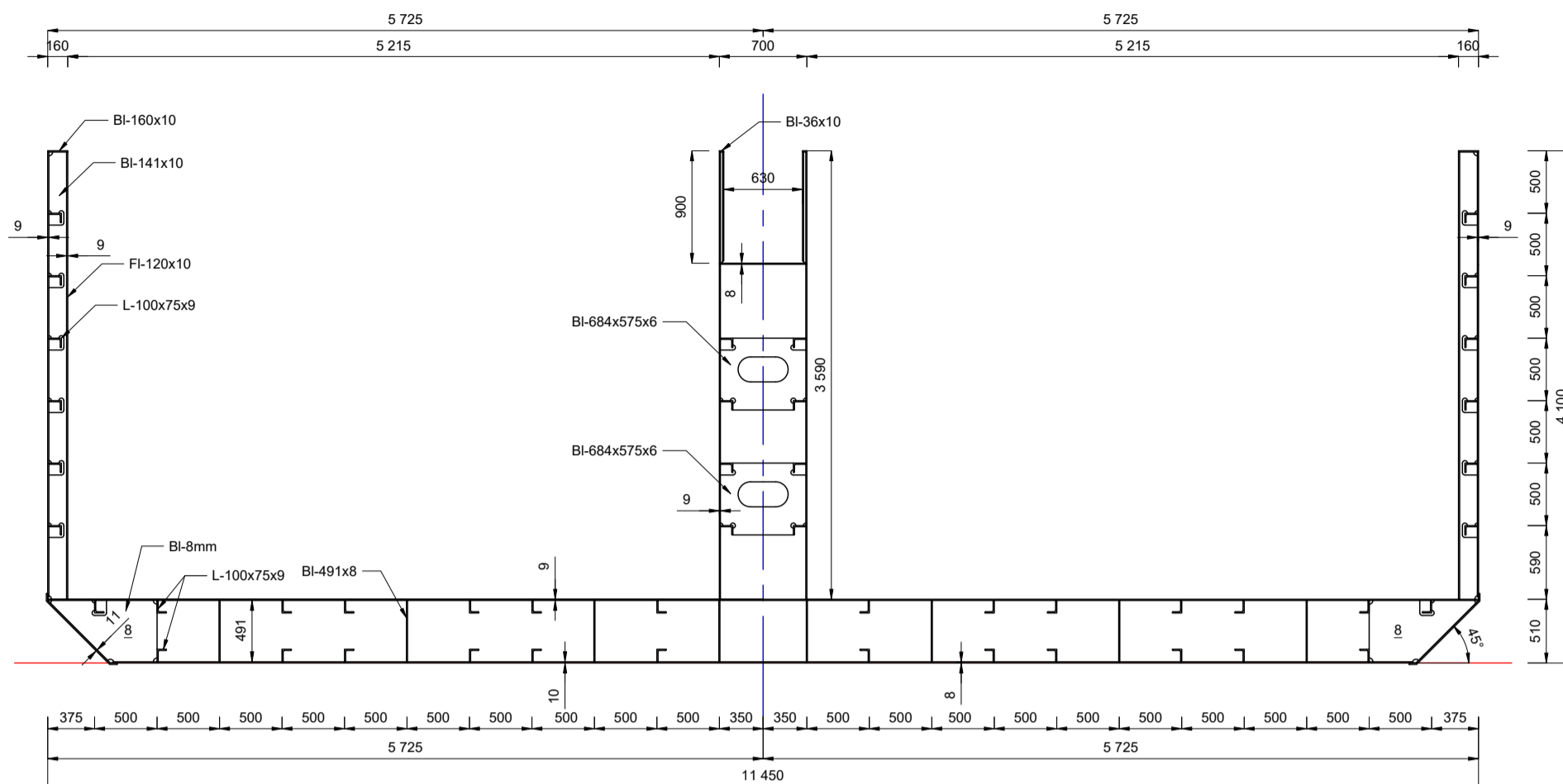


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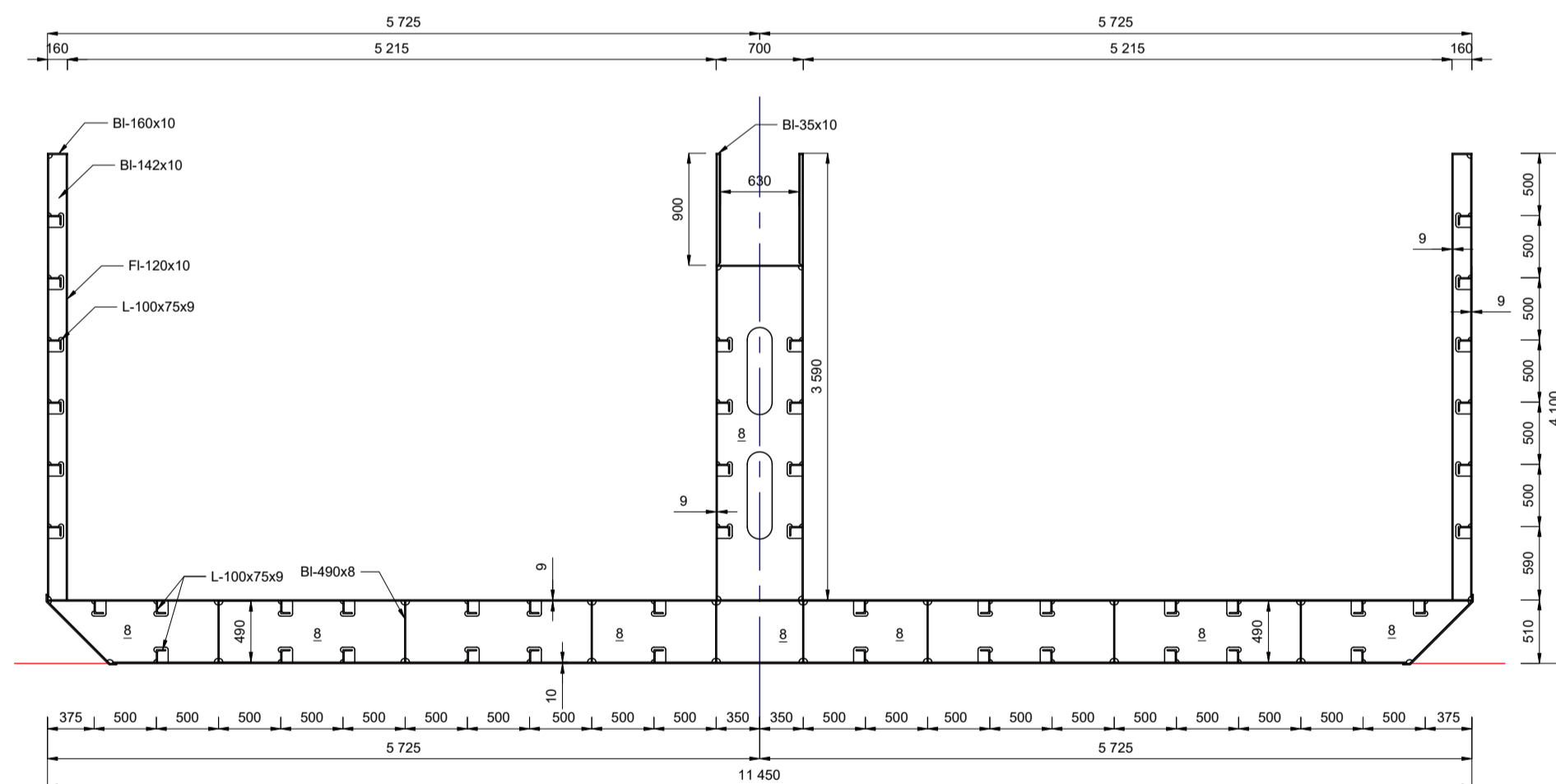
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Regular frame - steel distance: 0,5m



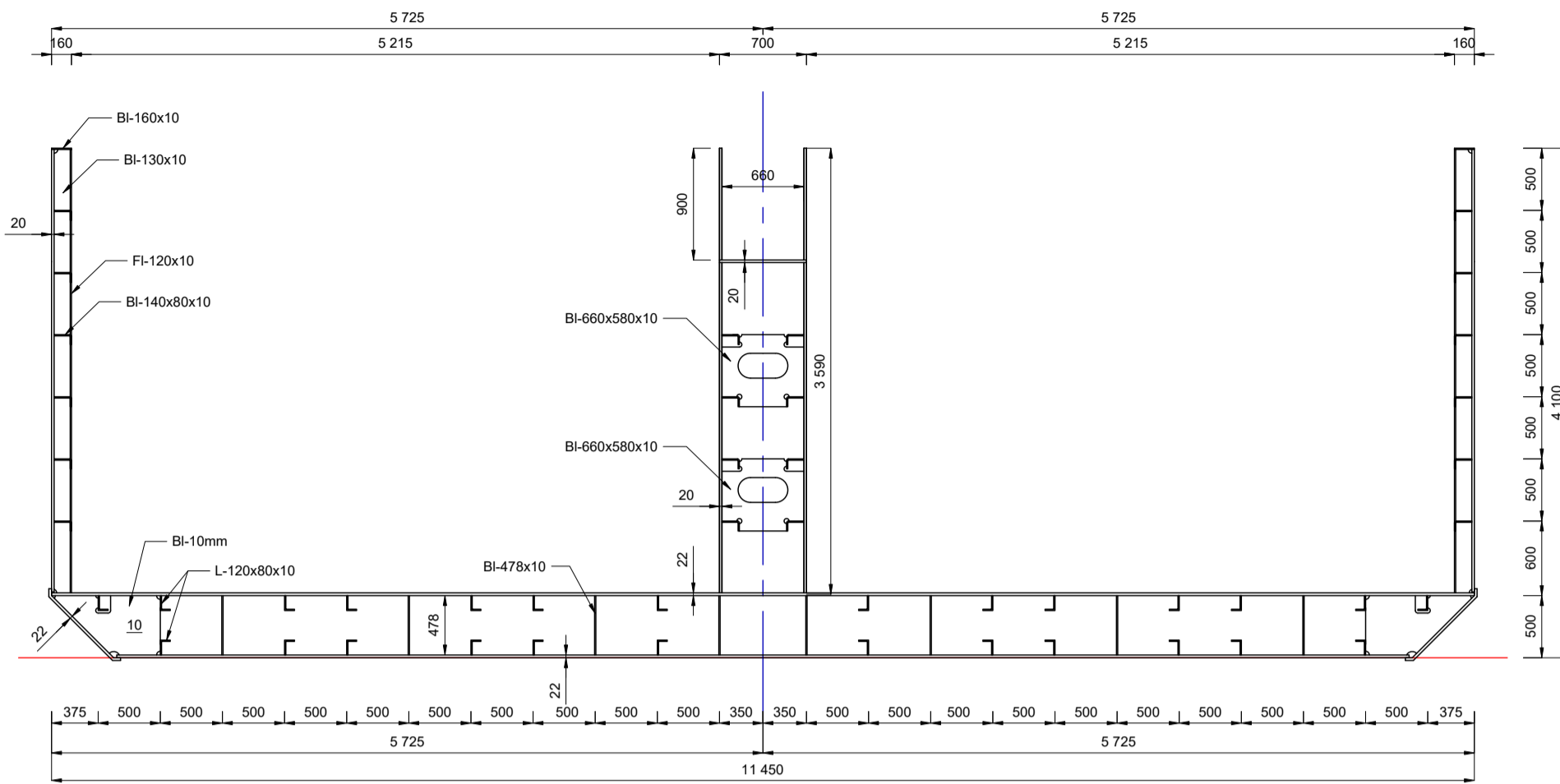
Web frame - steel distance: 2,5 m



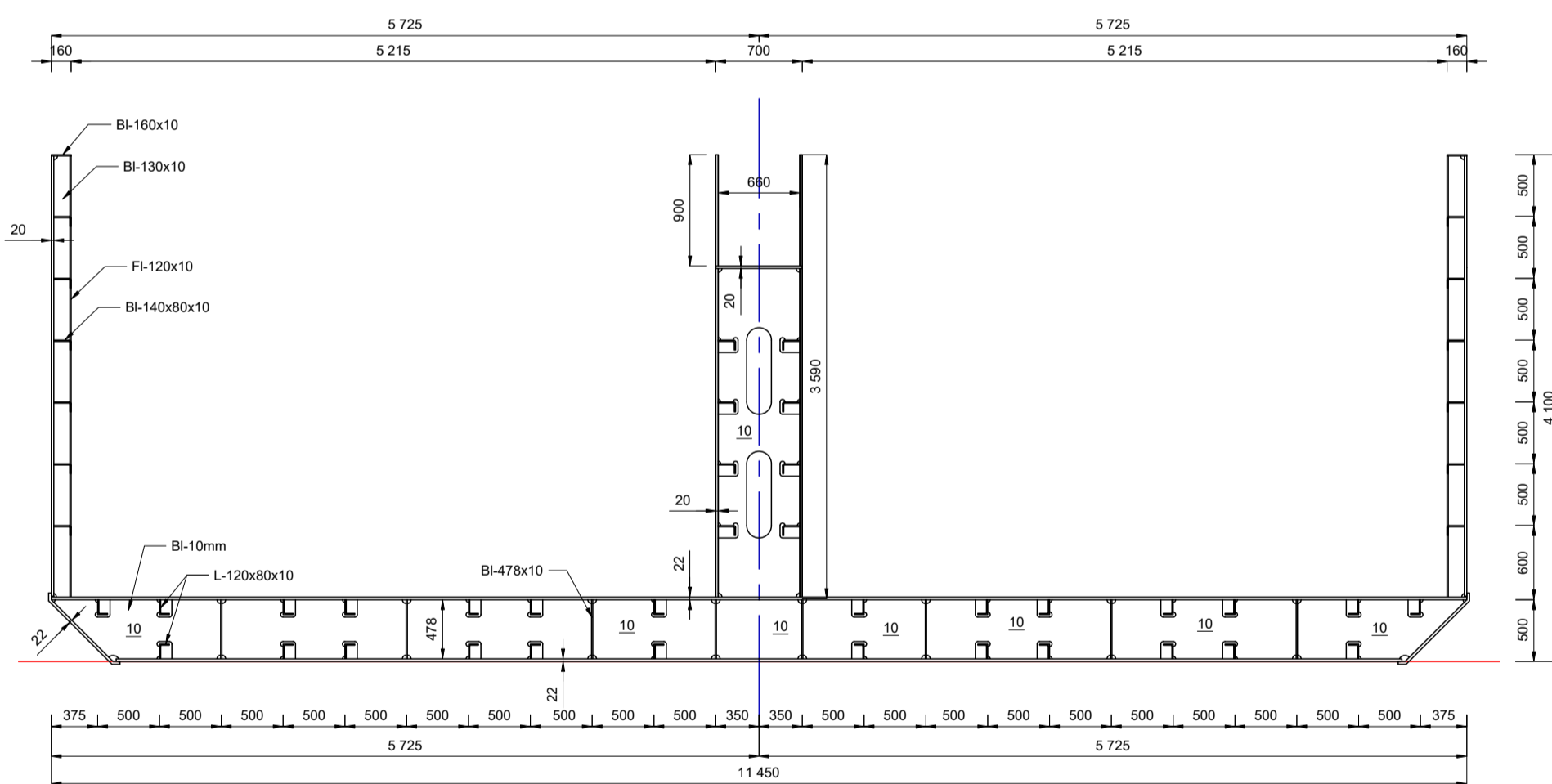
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Vessel IW-NET NEWS Evolution steel version				
Project No.	Drawing No.	Area of Navigation		
2020.056	004 c1	EU Binnenwasserstraßen Zone 3		
Designation		Scale	Format	
Section plan		1:50	A2 	

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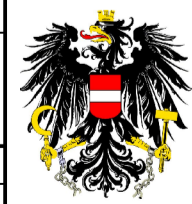
Regular frame - aluminium distance: 0,5m



Web frame - aluminium distance: 2,5m



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Project No.		Drawing No.		Area of Navigation
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Designation			Scale	Format
Section plan			1:50	A2



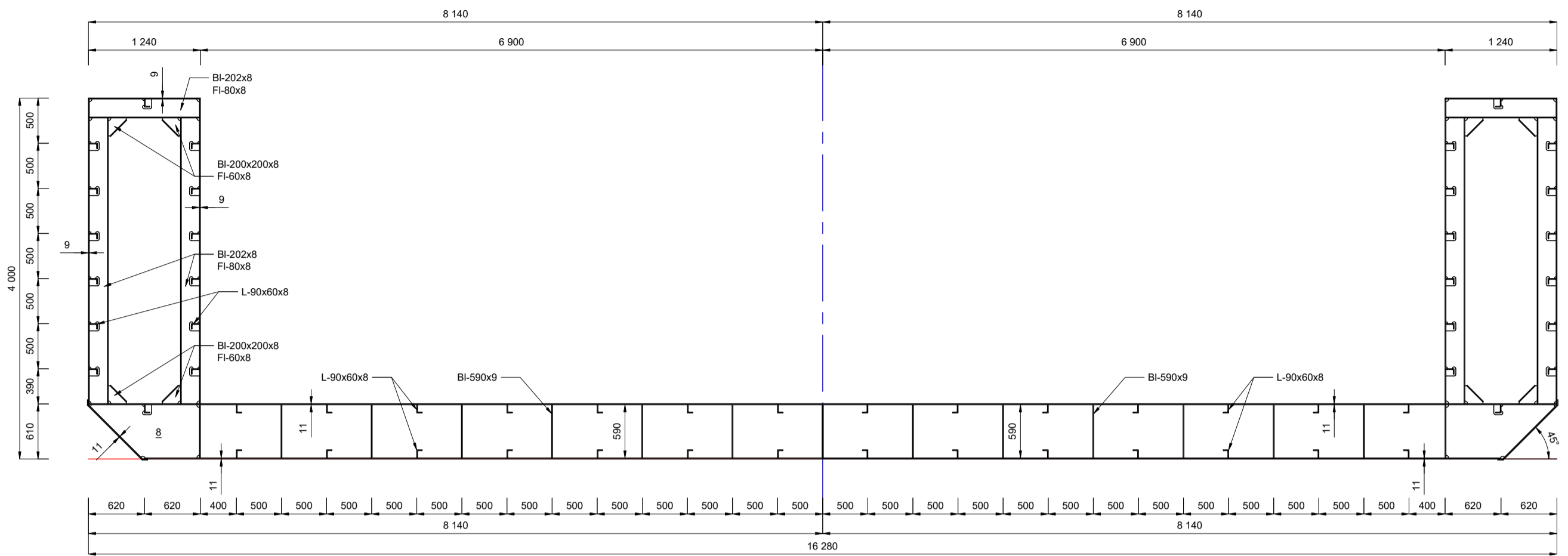
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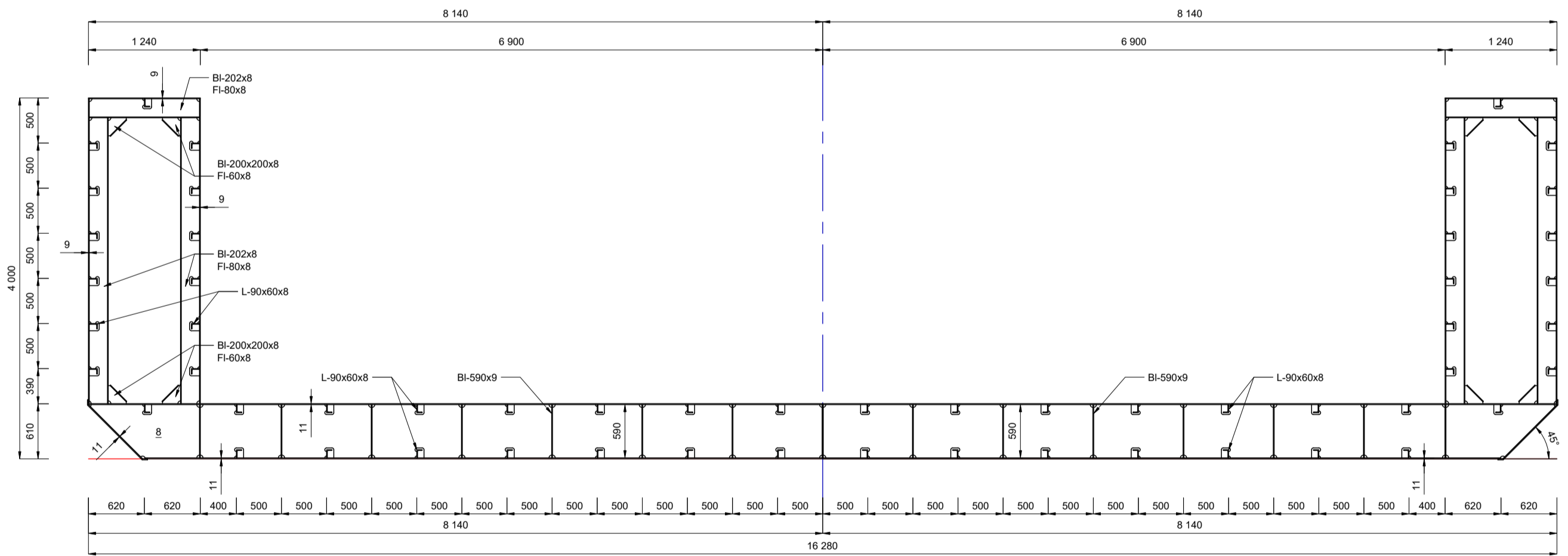
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Regular frame - steel



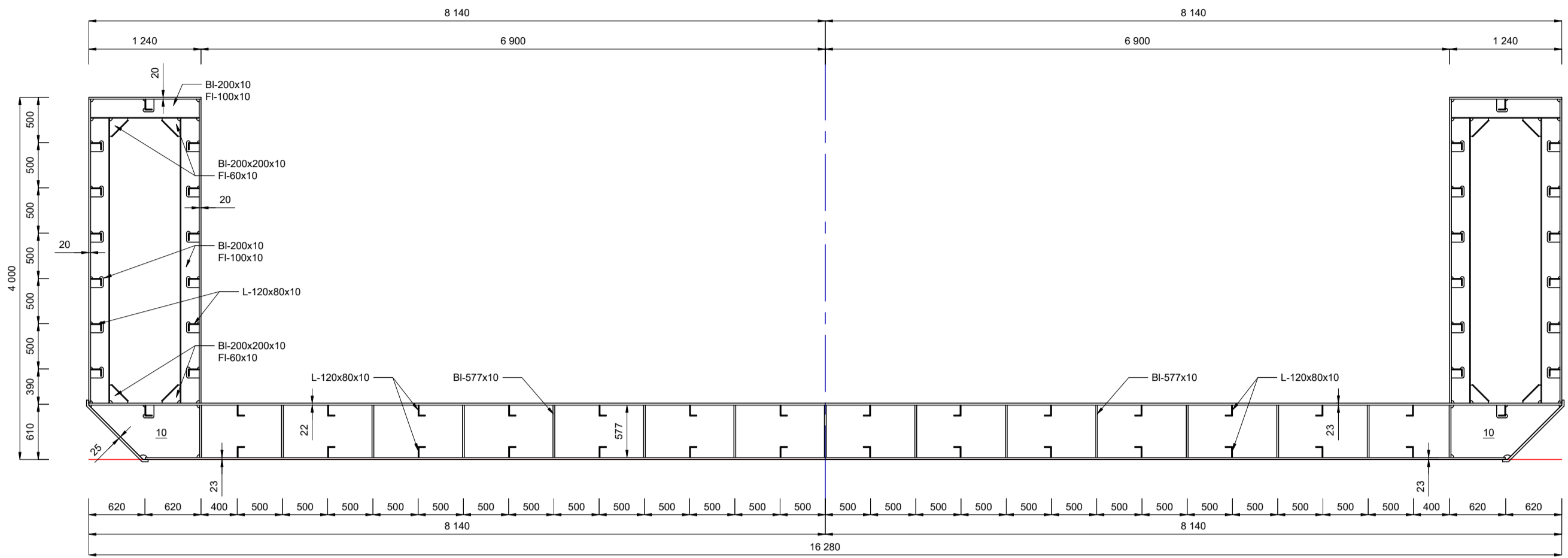
Web frame - steel



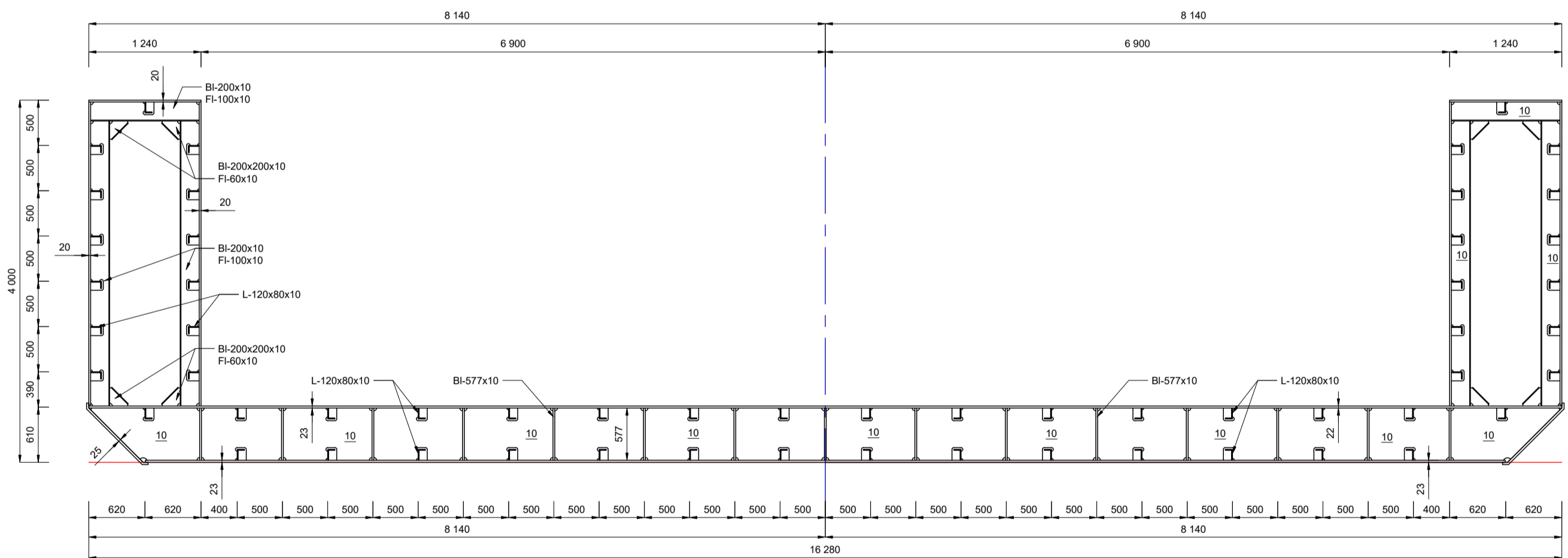
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IW-NET A project co-funded by the Horizon 2020 programme of the European Union				
Vessel				
IW-NET Containers transverse steel version				
Project No.	Drawing No.	Area of Navigation		
2020.056	005 c1	EU Binnenwasserstraßen Zone 3		
Designation		Scale	Format	
Section plan		1:50	A2 	

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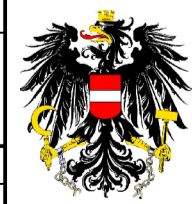
Regular frame - aluminium



Web frame - aluminium



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IW-NET A project co-funded by the Horizon 2020 programme of the European Union				
Vessel				
IW-NET Containers transverse aluminium version				
Project No.		Drawing No.		Area of Navigation
2020.056		005 c2		EU Binnenwasserstraßen Zone 3
Designation			Scale	Format
Section plan			1:50	A2

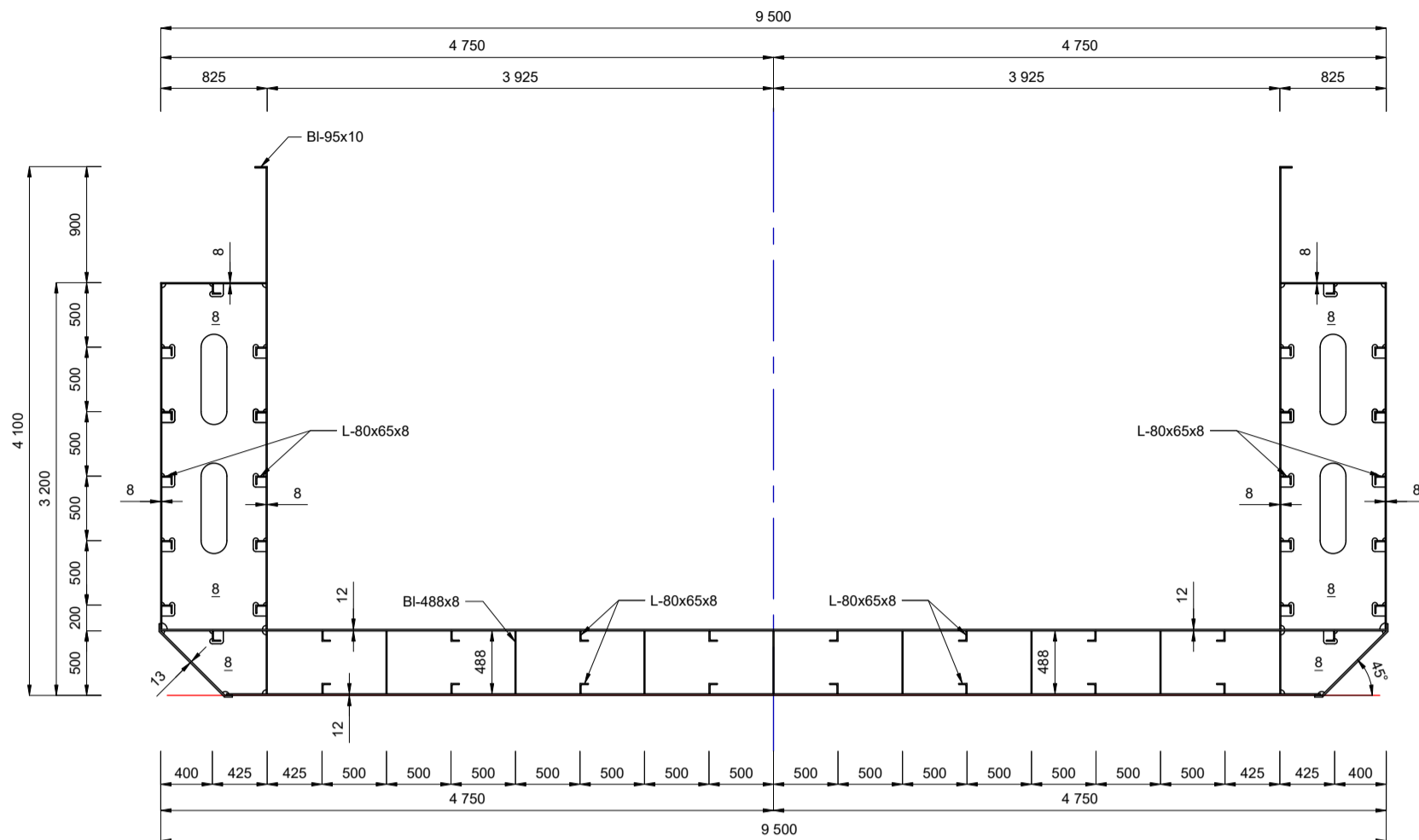


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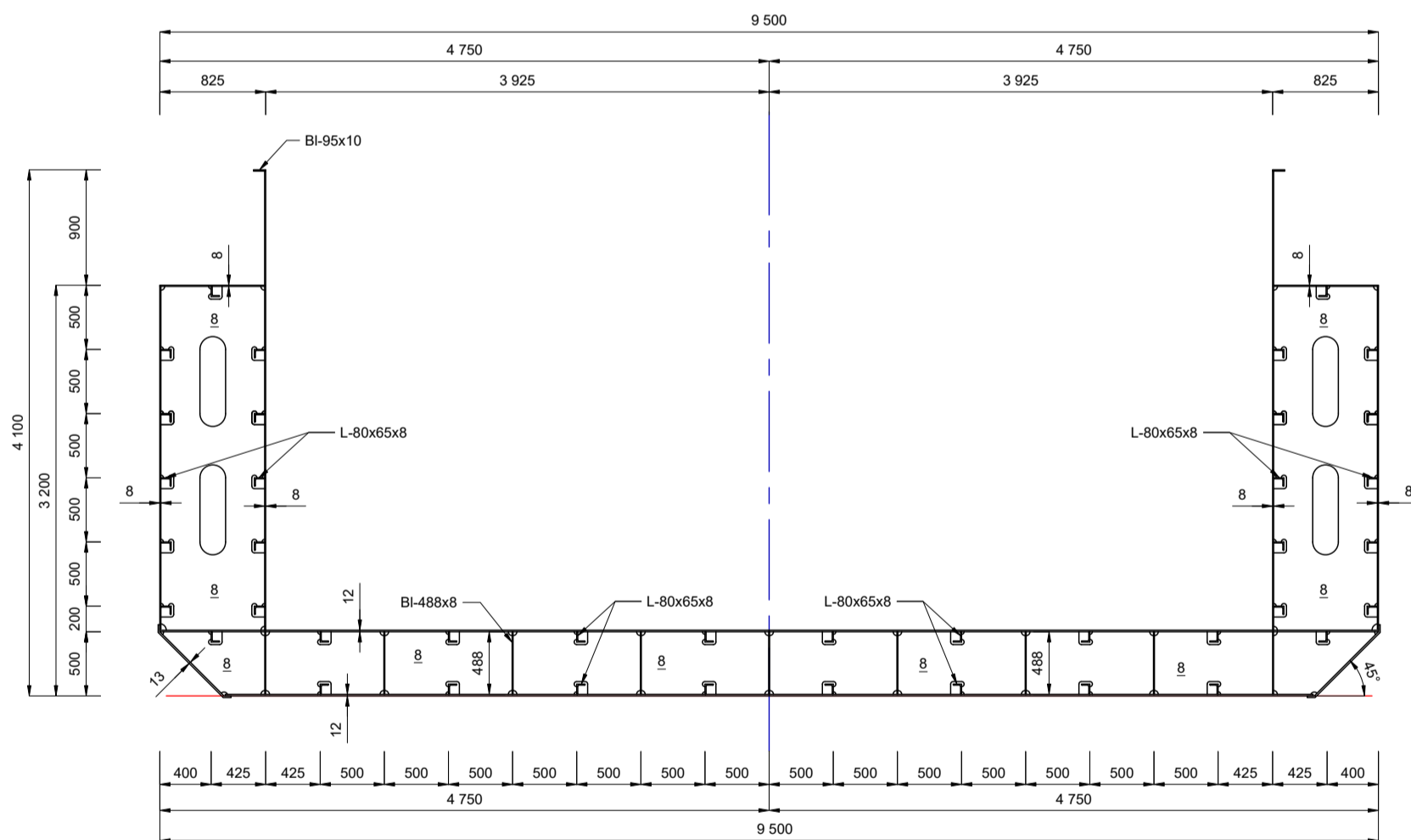
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office@anzboeck.com

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Tel.: +43-1-320 88 93

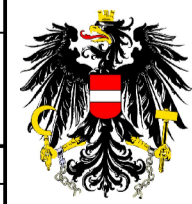
Regular frame - steel distance: 1 m



Web frame - steel distance: 2,5 m



03				
02				
01				
---	Original Version	02.03.2023	Potzmann	Dipl.-Ing. Anzböck
Version	Description of the Amendment	Date	Created	Verified
Customer				
IW-NET A project co-funded by the Horizon 2020 programme of the European Union				
Vessel				
IW-NET 3 units abreast long steel version				
Project No.		Drawing No.		Area of Navigation
2020.056		006 c1		EU Binnenwasserstraßen Zone 3
Designation			Scale	Format
Section plan			1:50	A2

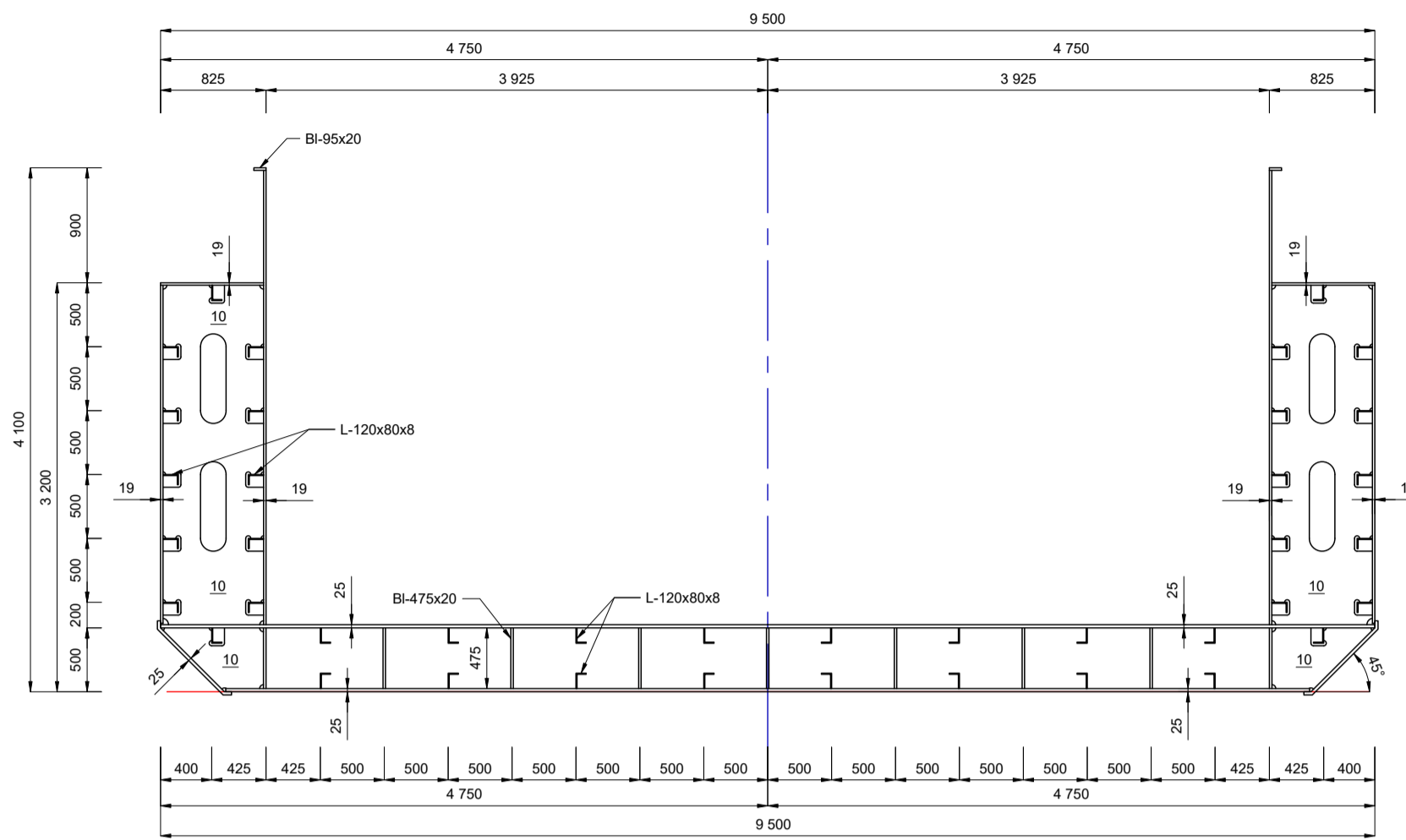


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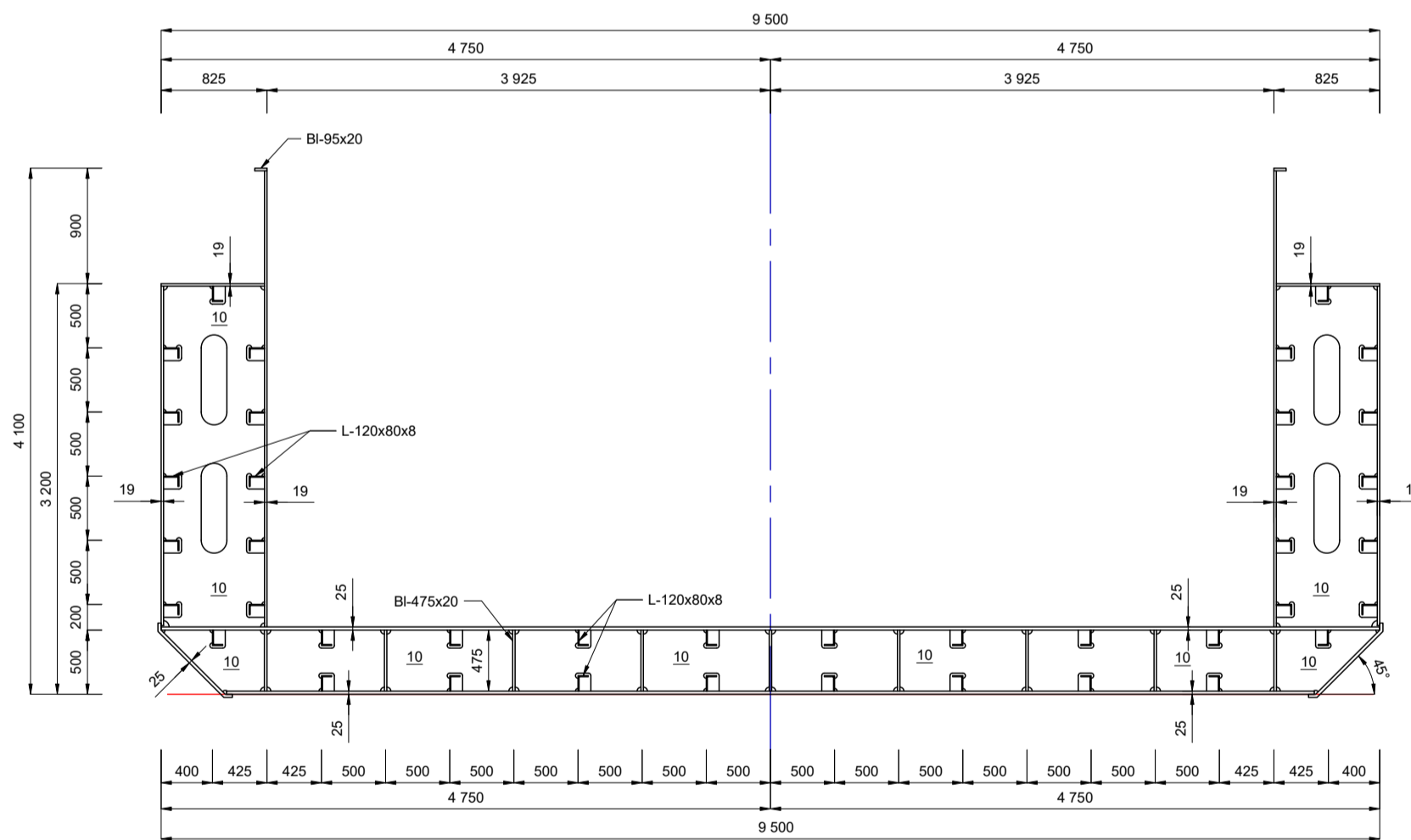
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Regular frame - aluminium
distance: 1 m



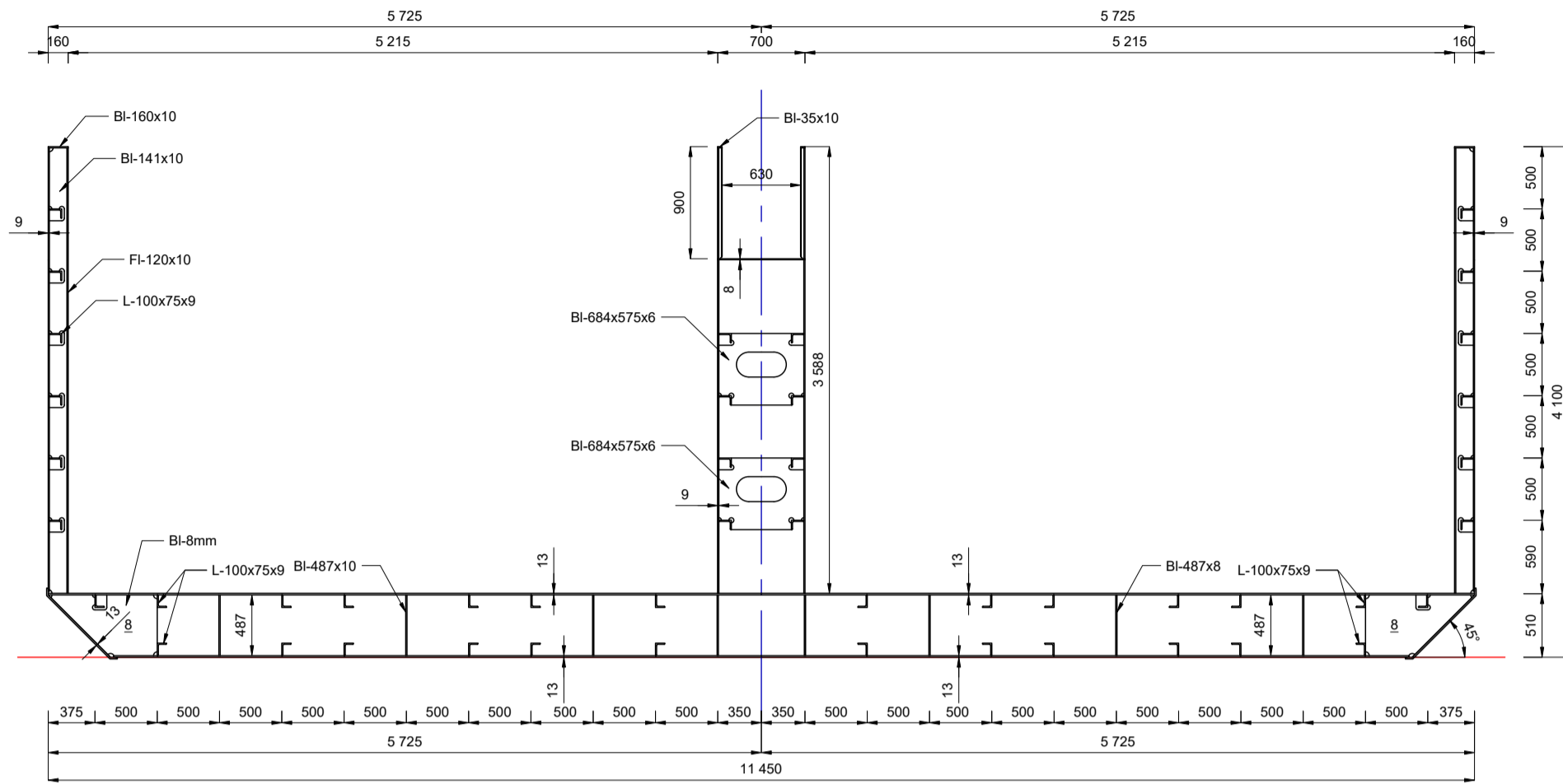
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distance: 2,5 m



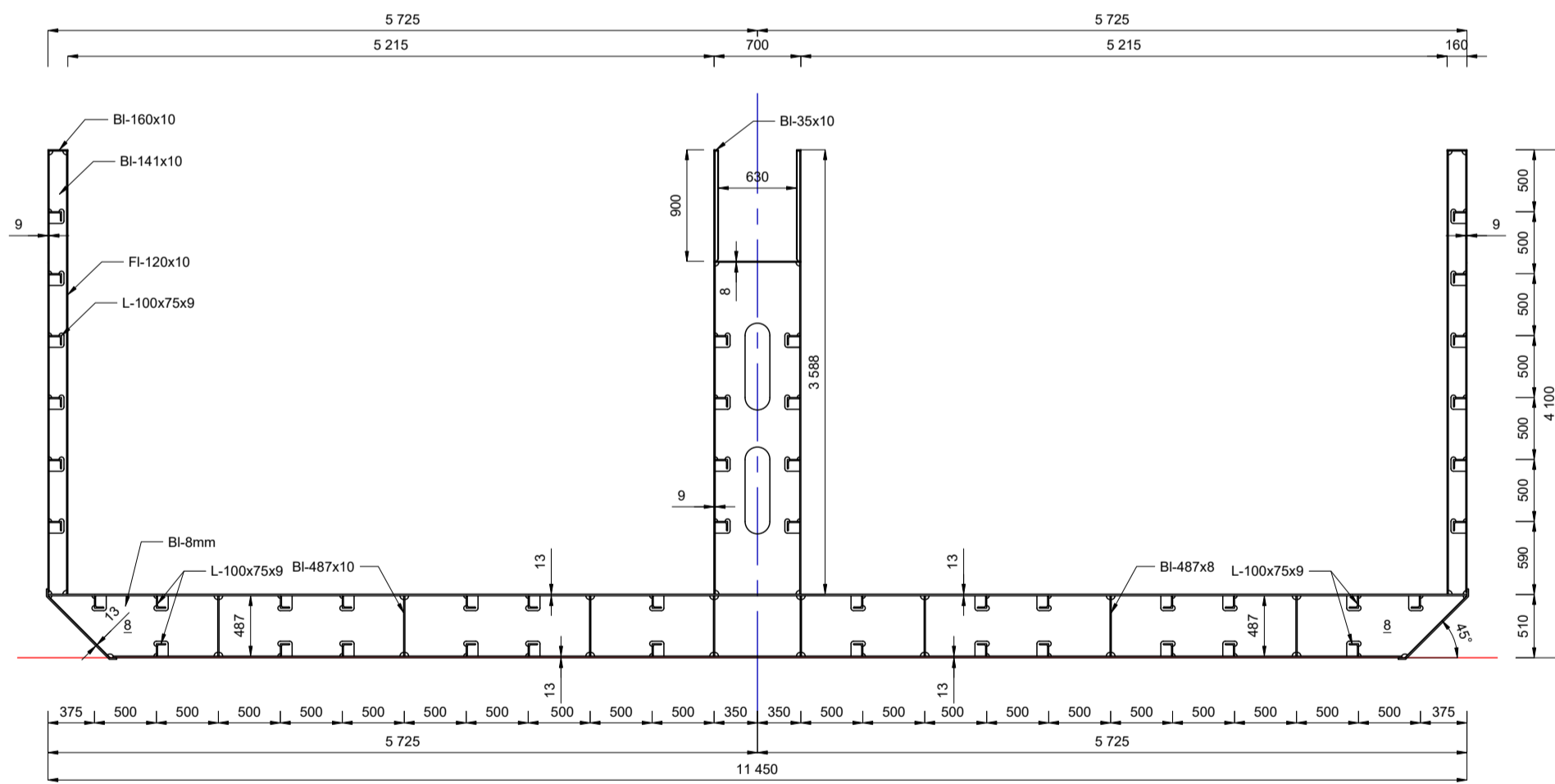
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Section plan			1:50	A2

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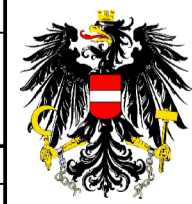
Regular frame - steel distance: 0,5m



Web frame - steel distance: 2,5 m



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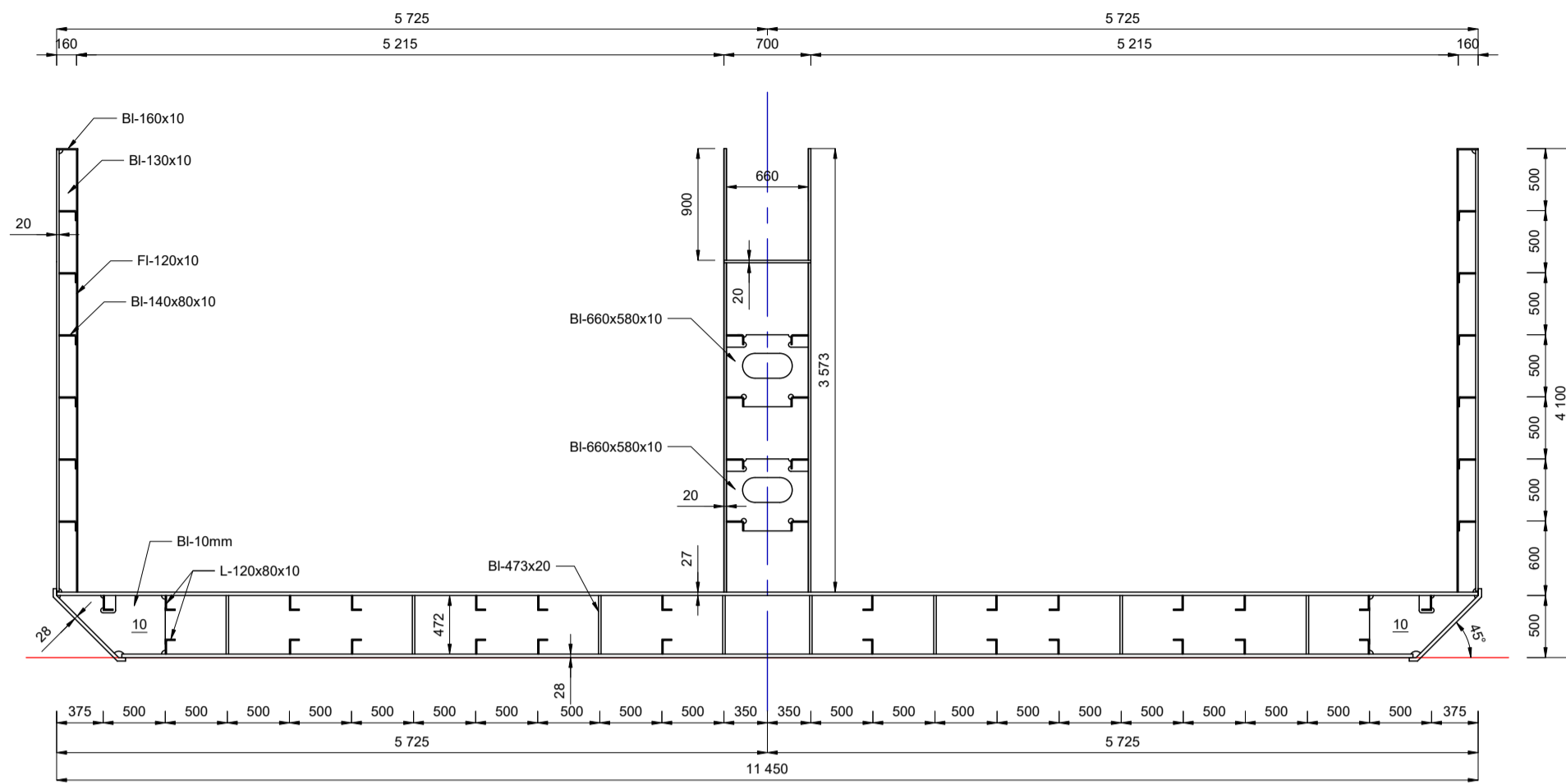
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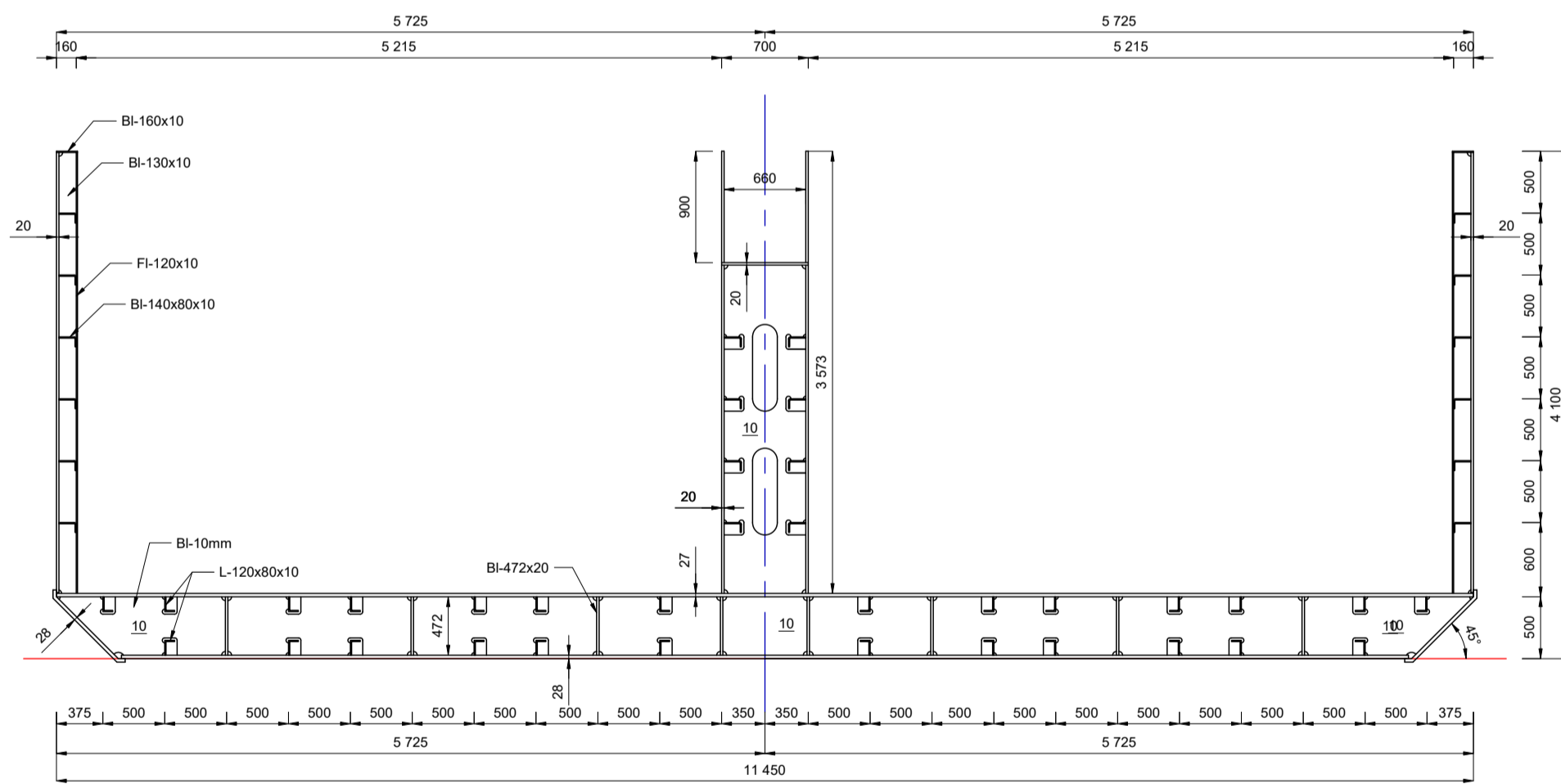
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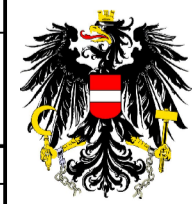
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Web frame - aluminium distance: 2,5m



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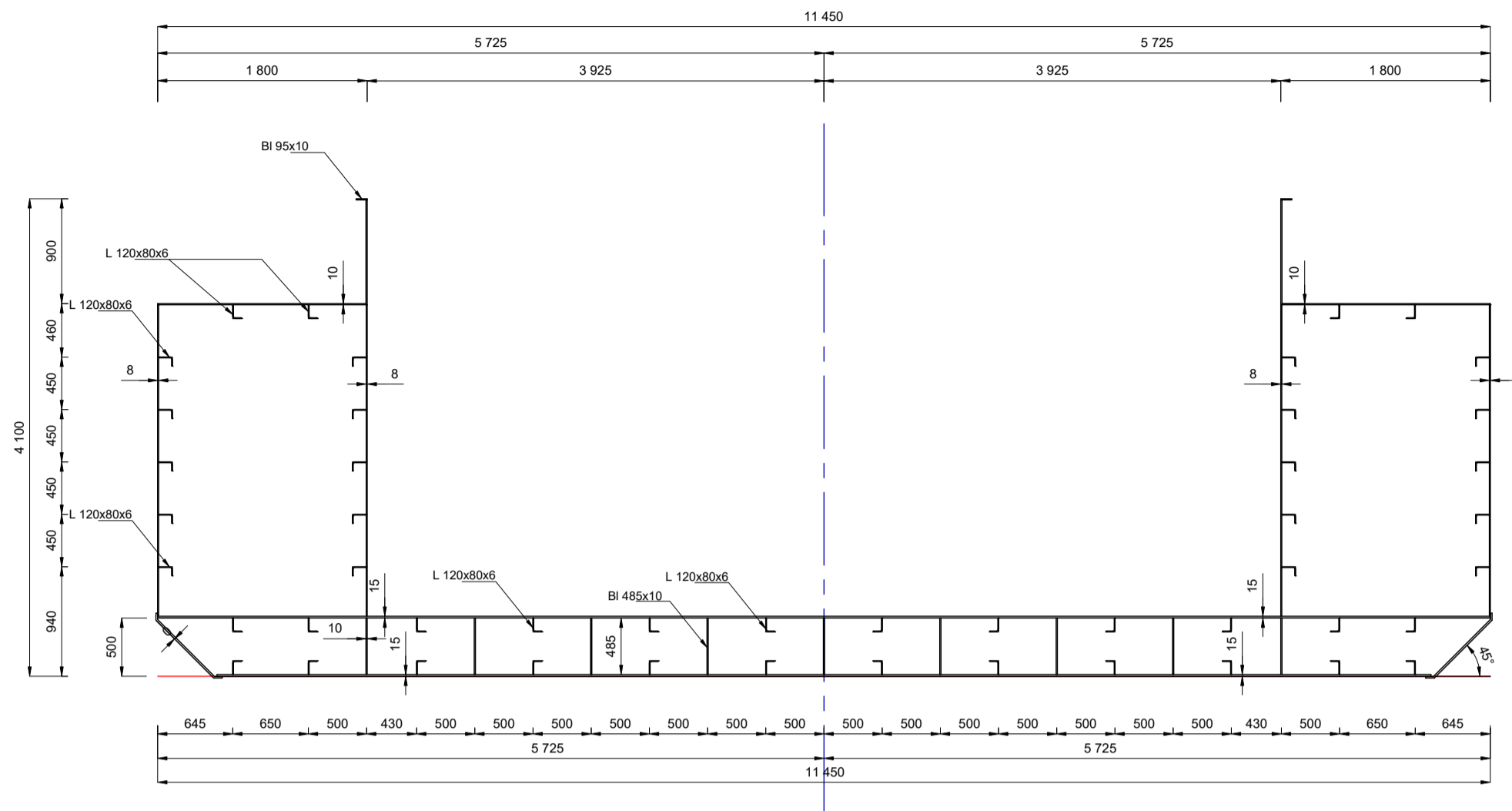
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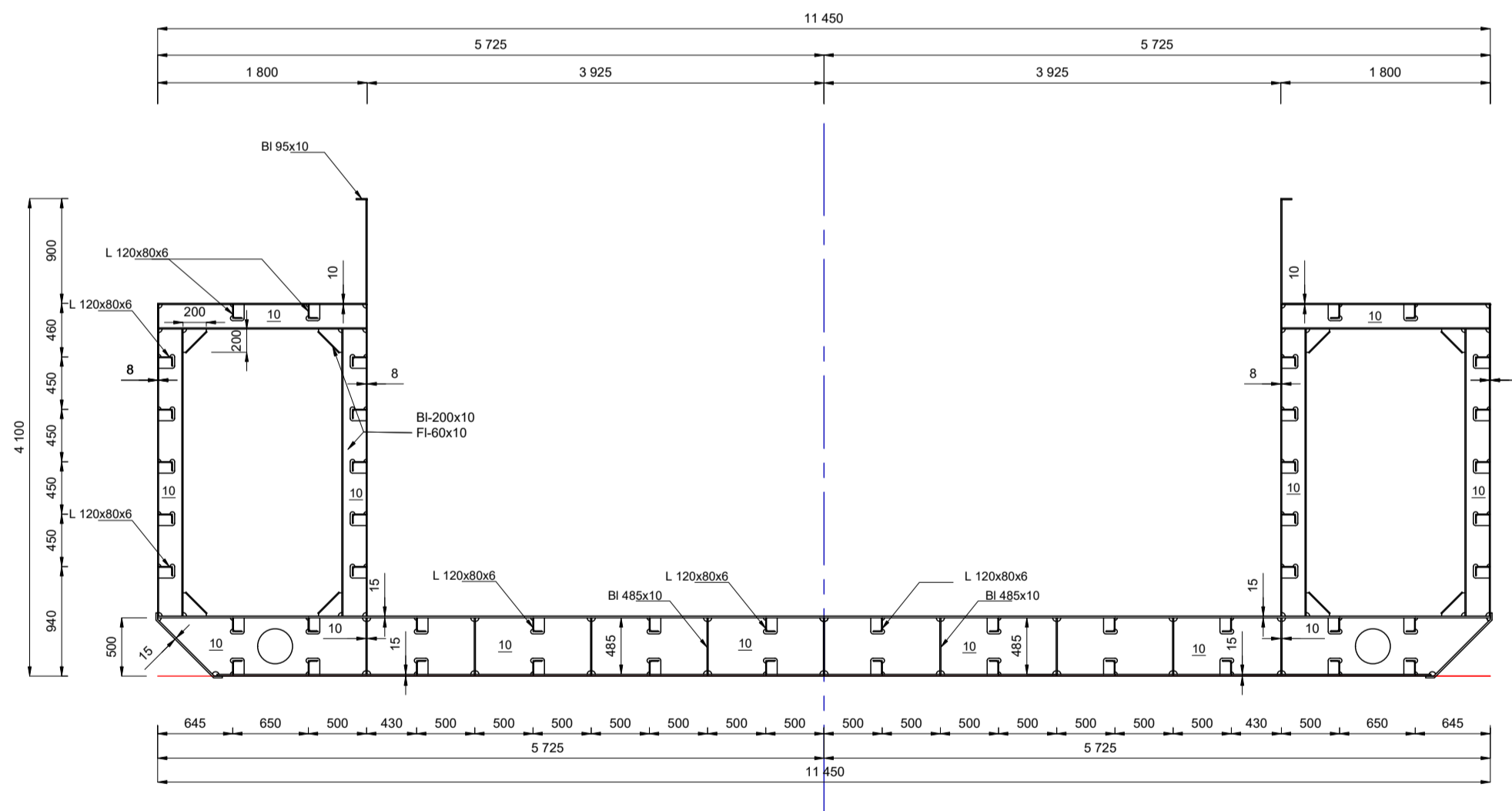
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Regular frame - steel
distance: 0,5m



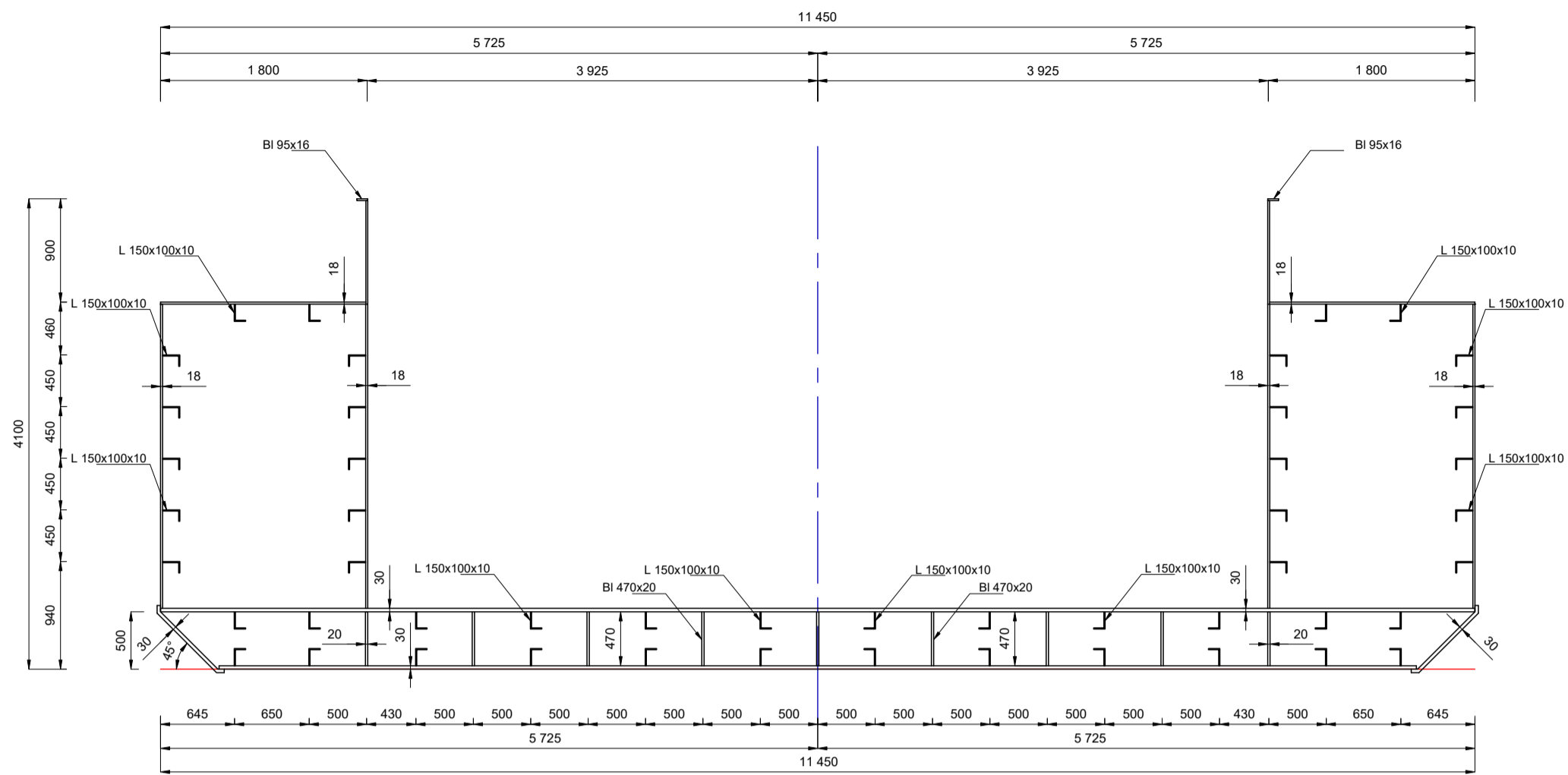
Web frame - steel
distance: 2,5 m



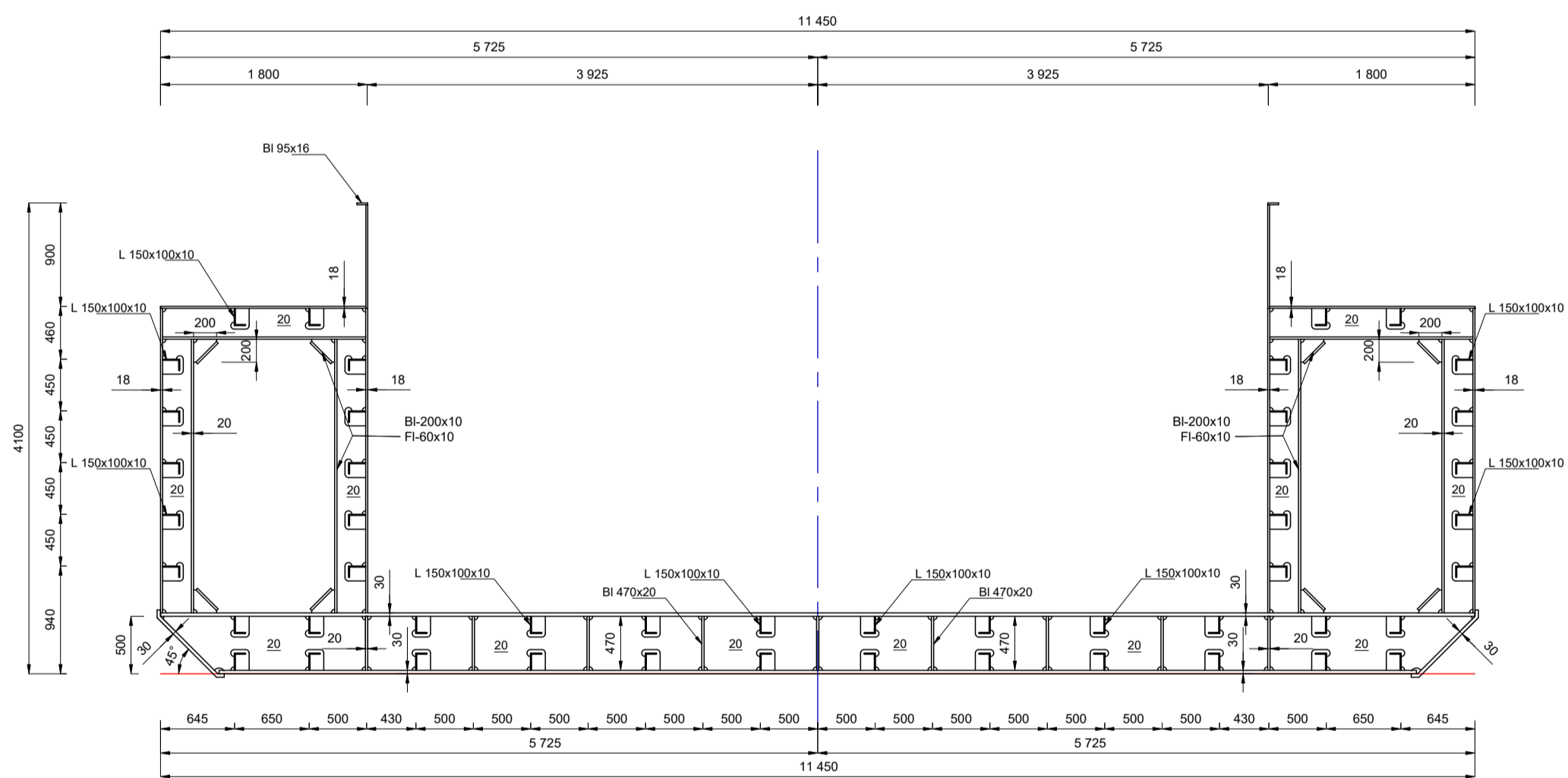
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Designation			Scale	Format
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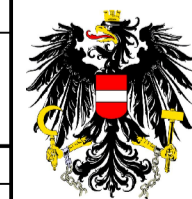
Regular frame - aluminium distance: 0,5m



Web frame - aluminium distance: 2,5m



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2020.056	008 c2	EU Binnenwasserstraßen Zone 3		
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Max. load bending moment

2020.056_001 IW-NET Europa 2b Barge

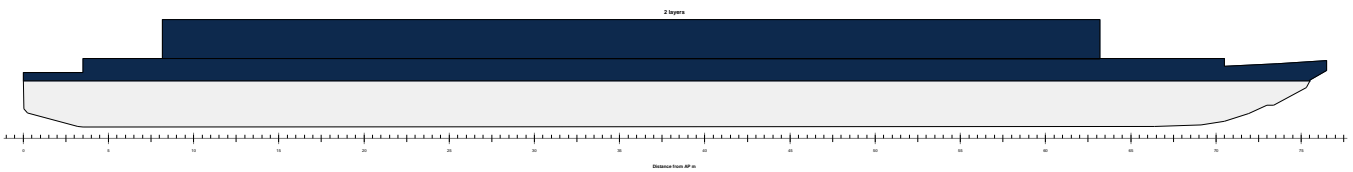
Designer

Created by Bernhard Bieringer

Comment

Filename 2020_056_001_Europa 2b barge.fbm

Design length	76,500 m	Midship location	38,250 m
Length over all	76,500 m	Water density	1,0000
Design beam	11,858 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,500 m		



Hydrostatic particulars

List	0,0 (CL) degr	LCB	36,498 m
Draft aft pp	2,691 m	KM	5,637 m
Mean moulded draft	2,700 m	VCG	4,633 m
Draft forward pp	2,709 m	VCG'	4,633 m
Trim	0,019 m	Max VCG'	4,637 m
LCF	37,616 m	GM solid	1,003 m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

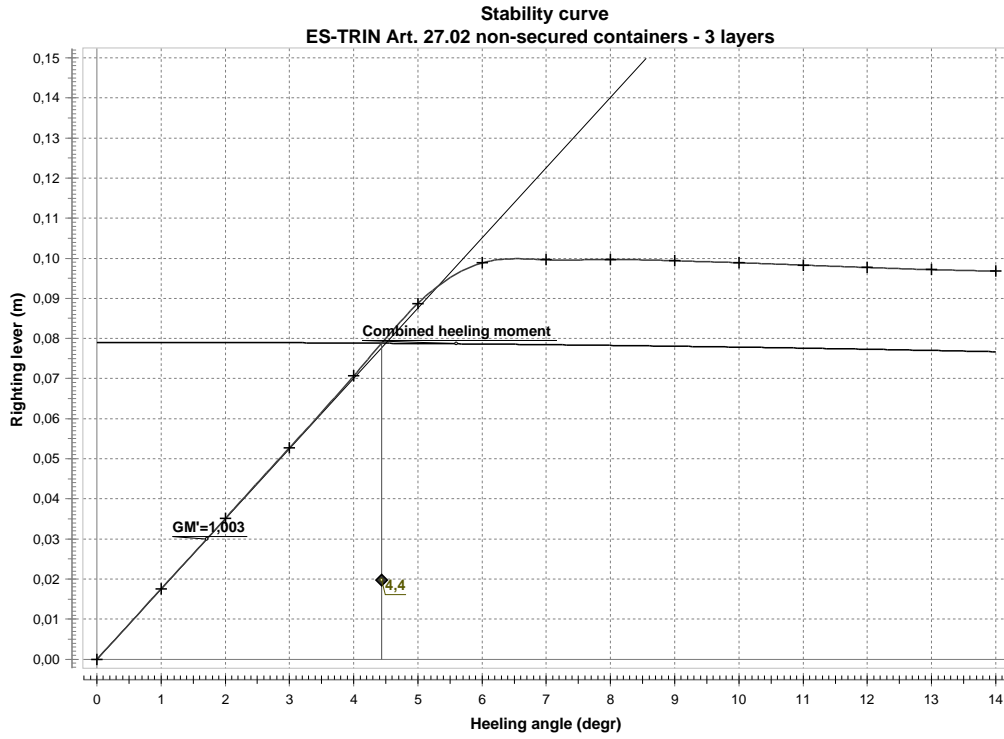
Max. load bending moment			1988,280	36,300	0,000 (CL)	5,000	0,000
Lightship			215,422	38,315	0,000 (CL)	1,248	
Deadweight			1988,280	36,300	0,000 (CL)	5,000	0,000
Displacement			2203,702	36,497	0,000 (CL)	4,633	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	2,700	0,019	2203,698	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	2,700	0,018	2203,700	0,098	0,081	0,000	0,000	0,018	0,0002
2,0 (PS)	2,700	0,018	2203,702	0,197	0,162	0,000	0,000	0,035	0,0006
3,0 (PS)	2,700	0,016	2203,701	0,295	0,242	0,000	0,000	0,053	0,0014
4,0 (PS)	2,699	0,015	2203,699	0,394	0,323	0,000	0,000	0,071	0,0025
5,0 (PS)	2,699	0,013	2203,714	0,493	0,404	0,000	0,000	0,089	0,0038
6,0 (PS)	2,703	0,008	2203,707	0,583	0,484	0,000	0,000	0,099	0,0055
7,0 (PS)	2,711	-0,003	2203,708	0,664	0,565	0,000	0,000	0,100	0,0072
8,0 (PS)	2,720	-0,015	2203,704	0,745	0,645	0,000	0,000	0,100	0,0090
9,0 (PS)	2,729	-0,027	2203,703	0,824	0,725	0,000	0,000	0,099	0,0107
10,0 (PS)	2,738	-0,039	2203,703	0,903	0,805	0,000	0,000	0,099	0,0124
11,0 (PS)	2,748	-0,051	2203,703	0,982	0,884	0,000	0,000	0,098	0,0142
12,0 (PS)	2,758	-0,063	2203,702	1,061	0,963	0,000	0,000	0,098	0,0159
13,0 (PS)	2,769	-0,074	2203,702	1,139	1,042	0,000	0,000	0,097	0,0176

Righting levers

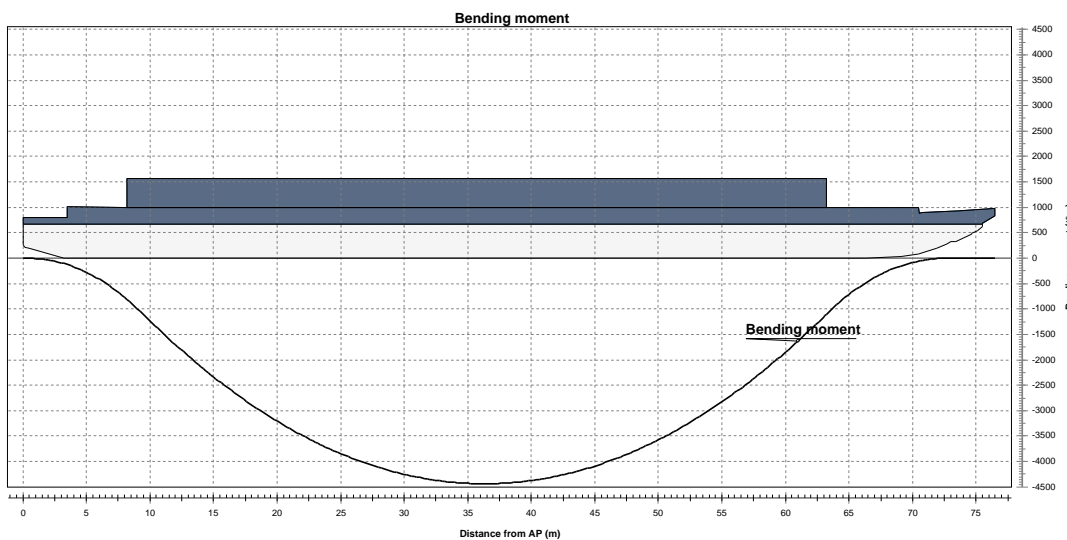
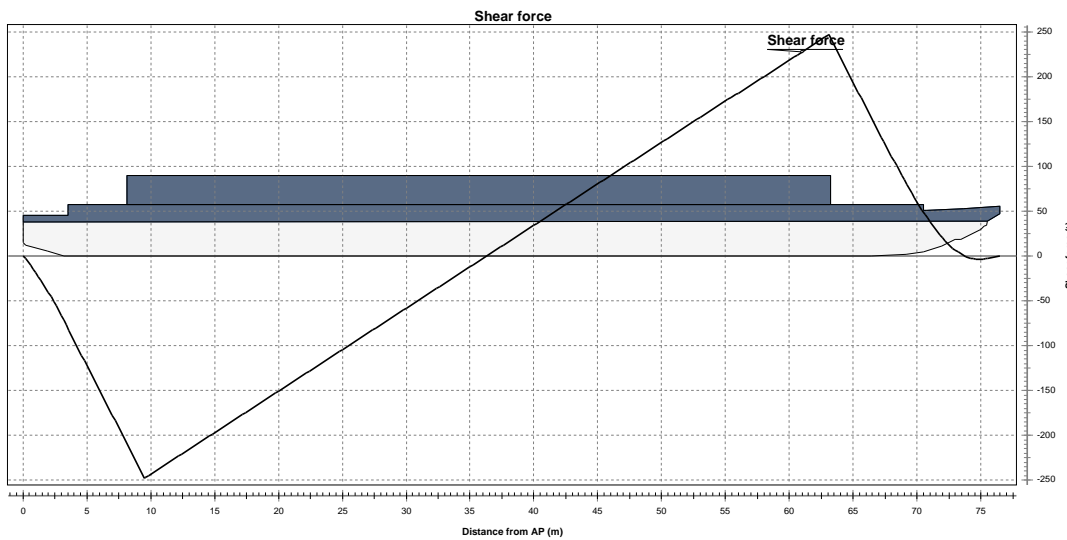
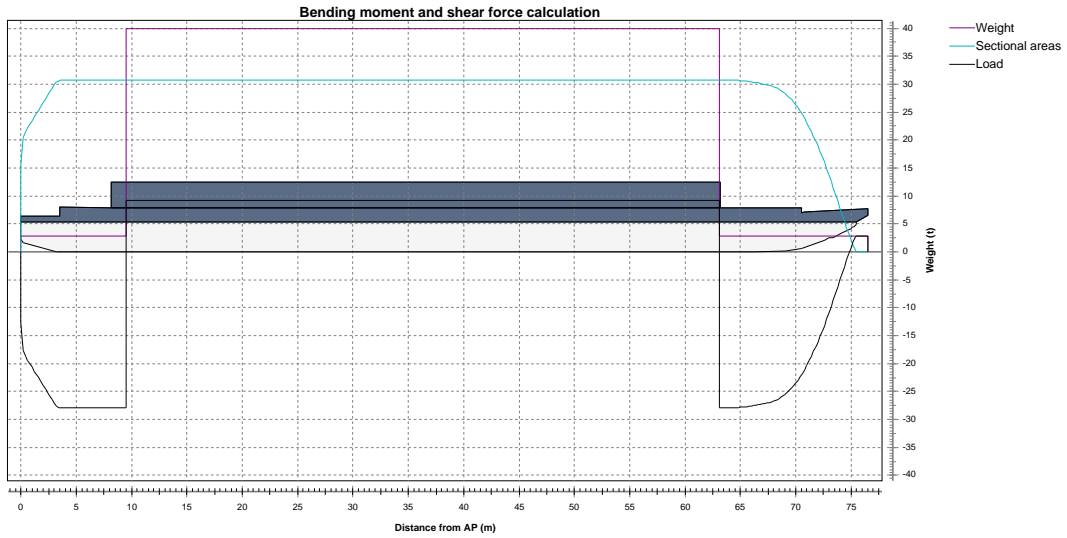
Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
14,0 (PS)	2,779	-0,085	2203,710	1,218	1,121	0,000	0,000	0,097	0,0193



ES-TRIN Art. 27.02 non-secured containers - 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	1,003 m	\geq	1,000 m	Complies
Combined heeling moment	4,4 degr	\leq	5,0 degr	Complies
Calculated heeling moment (upright)	174,190 t*m			
Required freeboard	0,052 m	\geq	0,000 m	Complies
Deck immersion angle	5,0 degr			
Max allowed ratio static angle/deck immersion angle	0,894	\leq	1,000	Complies
Weight	174,190 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria



Summary

Mean moulded draft	2,700 m	Trim	0,019 m
Displacement	2203,702 t	GM	1,003 m
Minimum shear force	-247,843 t	Distance from AP	9,525 m
Maximum shear force	246,919 t	Distance from AP	63,075 m

Summary

Maximum sagging moment	-4437,178 t*m	Distance from AP	36,400 m
Maximum hogging moment	6,844 t*m	Distance from AP	73,800 m

Bending moment and shear force calculation

Distance from AP	Weight	Buoyancy	Load	Shear force	Refer to min/max	Bending moment	Refer to min/max
m	t	m ²	t	t	[%]	t*m	[%]
-0,001	0,000	0,00	0,000	0,000	0,0	0,000	0,0
0,000	0,000	0,00	0,000	0,000	0,0	0,000	0,0
1,000	2,802	23,47	-20,669	-18,477	0,0	-8,881	0,0
2,000	2,802	26,67	-23,864	-40,744	0,0	-38,361	0,0
3,000	2,803	29,86	-27,056	-66,204	0,0	-91,706	0,0
4,000	2,803	30,66	-27,855	-93,931	0,0	-171,853	0,0
5,000	2,803	30,66	-27,855	-121,787	0,0	-279,838	0,0
6,000	2,804	30,66	-27,857	-149,643	0,0	-415,678	0,0
7,000	2,804	30,66	-27,858	-177,500	0,0	-579,374	0,0
8,000	2,805	30,66	-27,859	-205,358	0,0	-770,928	0,0
9,000	2,805	30,66	-27,860	-233,217	0,0	-990,341	0,0
10,000	39,935	30,67	9,268	-243,441	0,0	-1233,425	0,0
11,000	39,935	30,67	9,267	-234,173	0,0	-1472,357	0,0
12,000	39,936	30,67	9,266	-224,906	0,0	-1702,022	0,0
13,000	39,936	30,67	9,265	-215,641	0,0	-1922,421	0,0
14,000	39,936	30,67	9,264	-206,377	0,0	-2133,555	0,0
15,000	39,937	30,67	9,263	-197,113	0,0	-2335,426	0,0
16,000	39,937	30,68	9,262	-187,851	0,0	-2528,033	0,0
17,000	39,937	30,68	9,260	-178,590	0,0	-2711,380	0,0
18,000	39,938	30,68	9,259	-169,330	0,0	-2885,466	0,0
19,000	39,938	30,68	9,258	-160,072	0,0	-3050,292	0,0
20,000	39,939	30,68	9,257	-150,814	0,0	-3205,860	0,0
21,000	39,939	30,68	9,256	-141,557	0,0	-3352,172	0,0
22,000	39,939	30,68	9,255	-132,302	0,0	-3489,227	0,0
23,000	39,940	30,69	9,254	-123,048	0,0	-3617,027	0,0
24,000	39,940	30,69	9,253	-113,794	0,0	-3735,573	0,0
25,000	39,940	30,69	9,252	-104,542	0,0	-3844,867	0,0
26,000	39,941	30,69	9,251	-95,291	0,0	-3944,909	0,0
27,000	39,941	30,69	9,249	-86,041	0,0	-4035,700	0,0
28,000	39,942	30,69	9,248	-76,792	0,0	-4117,242	0,0
29,000	39,942	30,69	9,247	-67,544	0,0	-4189,536	0,0
30,000	39,942	30,70	9,246	-58,298	0,0	-4252,583	0,0
31,000	39,943	30,70	9,245	-49,052	0,0	-4306,383	0,0
32,000	39,943	30,70	9,244	-39,808	0,0	-4350,938	0,0
33,000	39,943	30,70	9,243	-30,564	0,0	-4386,249	0,0
34,000	39,944	30,70	9,242	-21,322	0,0	-4412,318	0,0
35,000	39,944	30,70	9,241	-12,081	0,0	-4429,144	0,0
36,000	39,945	30,70	9,240	-2,840	0,0	-4436,730	0,0
37,000	39,945	30,71	9,238	6,399	0,0	-4435,077	0,0
38,000	39,945	30,71	9,237	15,636	0,0	-4424,185	0,0
39,000	39,946	30,71	9,236	24,873	0,0	-4404,055	0,0
40,000	39,946	30,71	9,235	34,109	0,0	-4374,690	0,0
41,000	39,946	30,71	9,234	43,344	0,0	-4336,089	0,0
42,000	39,947	30,71	9,233	52,577	0,0	-4288,254	0,0
43,000	39,947	30,72	9,232	61,810	0,0	-4231,186	0,0
44,000	39,948	30,72	9,231	71,041	0,0	-4164,886	0,0
45,000	39,948	30,72	9,230	80,271	0,0	-4089,355	0,0
46,000	39,948	30,72	9,229	89,500	0,0	-4004,595	0,0
47,000	39,949	30,72	9,227	98,728	0,0	-3910,606	0,0
48,000	39,949	30,72	9,226	107,955	0,0	-3807,389	0,0
49,000	39,949	30,72	9,225	117,181	0,0	-3694,947	0,0
50,000	39,950	30,73	9,224	126,406	0,0	-3573,278	0,0
51,000	39,950	30,73	9,223	135,630	0,0	-3442,386	0,0

Bending moment and shear force calculation

Distance from AP	Weight	Buoyancy	Load	Shear force	Refer to min/max	Bending moment	Refer to min/max
m	t	m ²	t	t	[%]	t*m	[%]
52,000	39,951	30,73	9,222	144,852	0,0	-3302,271	0,0
53,000	39,951	30,73	9,221	154,074	0,0	-3152,933	0,0
54,000	39,951	30,73	9,220	163,294	0,0	-2994,375	0,0
55,000	39,952	30,73	9,219	172,513	0,0	-2826,597	0,0
56,000	39,952	30,73	9,218	181,731	0,0	-2649,600	0,0
57,000	39,952	30,74	9,217	190,948	0,0	-2463,385	0,0
58,000	39,953	30,74	9,215	200,164	0,0	-2267,954	0,0
59,000	39,953	30,74	9,214	209,379	0,0	-2063,308	0,0
60,000	39,954	30,74	9,213	218,593	0,0	-1849,447	0,0
61,000	39,954	30,74	9,212	227,806	0,0	-1626,373	0,0
62,000	39,954	30,74	9,211	237,017	0,0	-1394,087	0,0
63,000	39,955	30,74	9,210	246,228	0,0	-1152,589	0,0
64,000	2,826	30,74	-27,915	221,093	0,0	-917,767	0,0
65,000	2,826	30,64	-27,817	193,216	0,0	-710,745	0,0
66,000	2,826	30,41	-27,583	165,507	0,0	-531,529	0,0
67,000	2,827	30,06	-27,232	138,090	0,0	-379,884	0,0
68,000	2,827	29,52	-26,696	111,103	0,0	-255,456	0,0
69,000	2,828	28,38	-25,555	84,898	0,0	-157,671	0,0
70,000	2,828	26,34	-23,513	60,305	0,0	-85,358	0,0
71,000	2,828	23,13	-20,304	38,256	0,0	-36,461	0,0
72,000	2,829	18,95	-16,120	20,004	0,0	-7,791	0,0
73,000	2,829	13,82	-10,988	6,355	0,0	4,850	0,0
74,000	2,829	7,88	-5,054	-1,655	0,0	6,601	0,0
75,000	2,830	2,11	0,716	-3,777	0,0	3,295	0,0
76,000	2,830	0,00	2,830	-1,415	0,0	0,770	0,0
76,500	2,830	0,00	2,830	0,000	0,0	0,000	0,0

Max. load bending moment

2020.056_002 IW-NET Europa 3b Barge

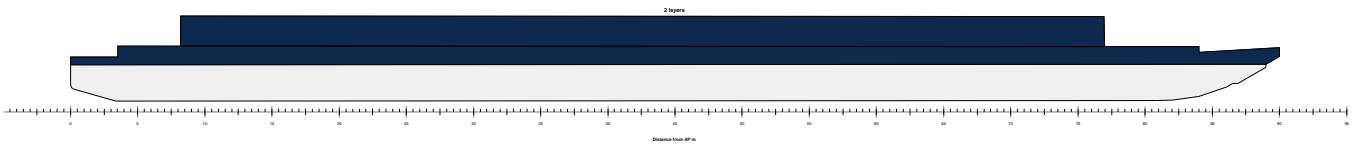
Designer

Created by Bernhard Bieringer

Comment

Filename 2020_056_002_Europa 3a barge.fbm

Design length	90,000 m	Midship location	45,000 m
Length over all	90,000 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,550 m		



Hydrostatic particulars

List	0,0 (CL) degr	LCB	43,300 m
Draft aft pp	2,682 m	KM	5,606 m
Mean moulded draft	2,700 m	VCG	4,513 m
Draft forward pp	2,719 m	VCG'	4,513 m
Trim	0,037 m	Max VCG'	4,606 m
LCF	44,373 m	GM solid	1,093 m

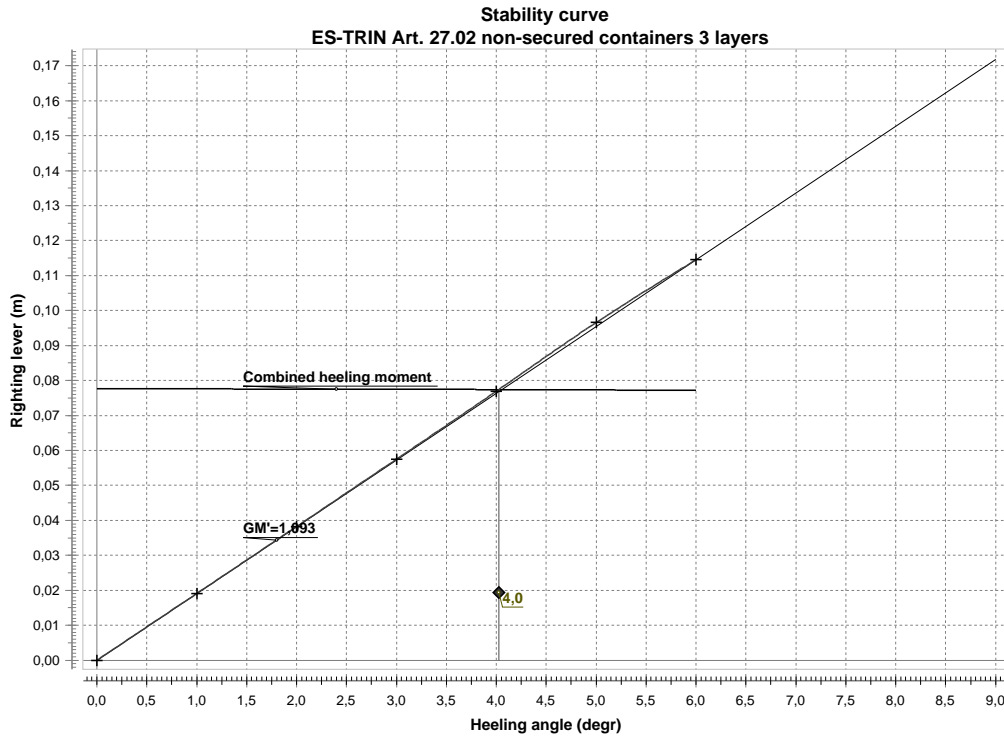
Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Max. load bending moment			2284,790	43,050	0,000 (CL)	5,000	0,000
Lightship			333,001	45,005	0,000 (CL)	1,169	
Deadweight			2284,790	43,050	0,000 (CL)	5,000	0,000
Displacement			2617,791	43,299	0,000 (CL)	4,513	0,000

Righting levers

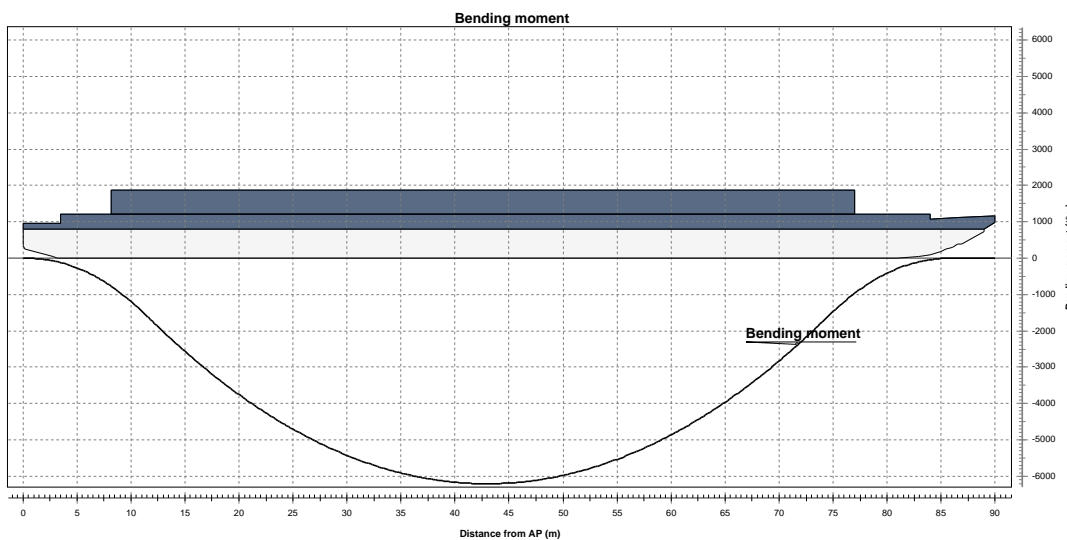
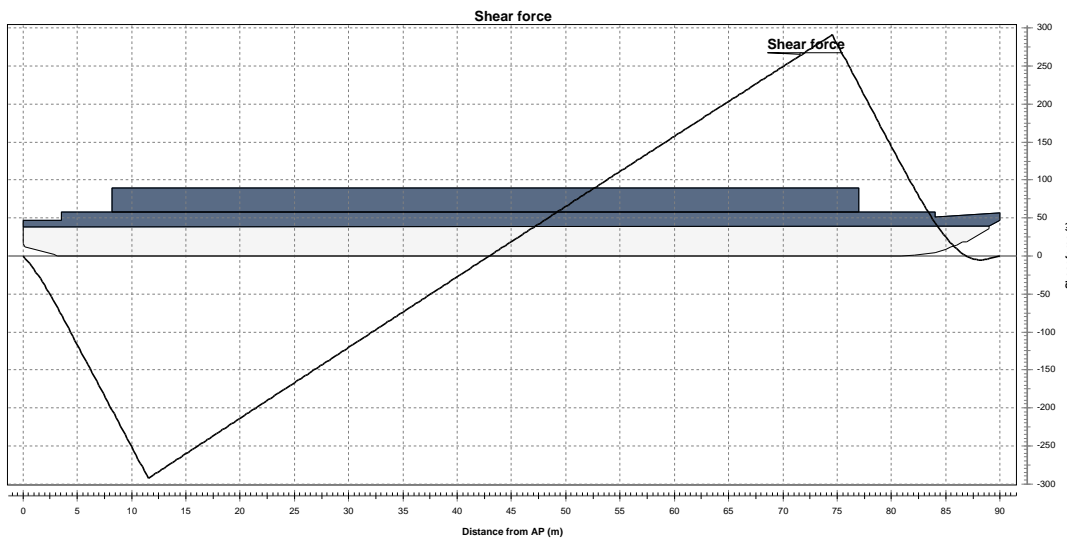
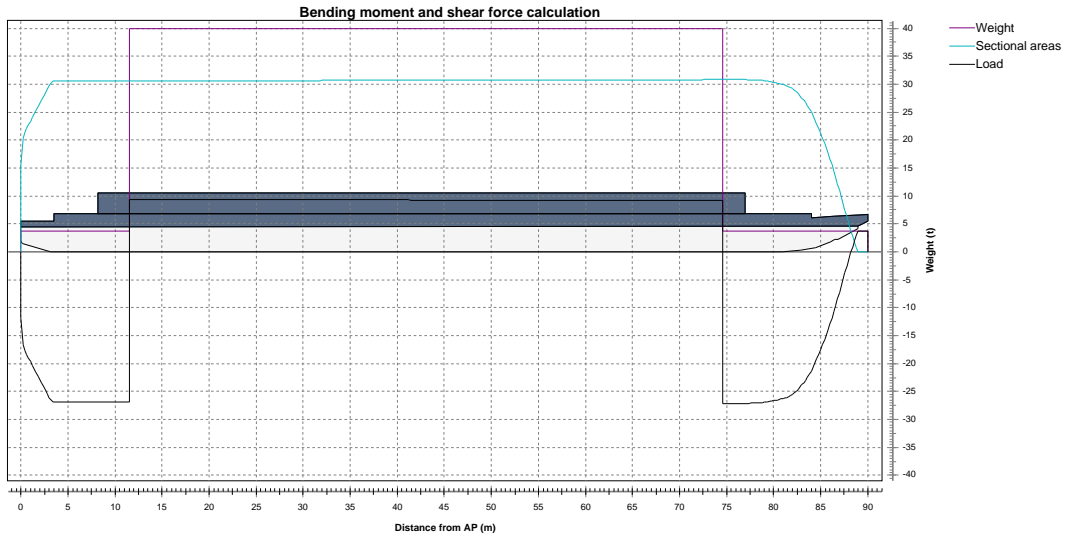
Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	2,700	0,037	2617,791	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	2,700	0,037	2617,770	0,098	0,079	0,000	0,000	0,019	0,0002
2,0 (PS)	2,700	0,036	2617,791	0,196	0,157	0,000	0,000	0,038	0,0007
3,0 (PS)	2,700	0,035	2617,791	0,294	0,236	0,000	0,000	0,057	0,0015
4,0 (PS)	2,700	0,034	2617,791	0,392	0,315	0,000	0,000	0,077	0,0027
5,0 (PS)	2,699	0,032	2617,791	0,490	0,393	0,000	0,000	0,097	0,0042
6,0 (PS)	2,700	0,030	2617,794	0,586	0,472	0,000	0,000	0,115	0,0060



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	1,093 m	>=	1,000 m	Complies
Combined heeling moment	4,0 degr	<=	5,0 degr	Complies
Calculated heeling moment (upright)	203,130 t*m			
Required freeboard	0,135 m	>=	0,000 m	Complies
Weight	203,130 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria



Summary

Mean moulded draft	2,700 m	Trim	0,037 m
Displacement	2617,791 t	GM	1,093 m
Minimum shear force	-292,848 t	Distance from AP	11,550 m
Maximum shear force	291,265 t	Distance from AP	74,550 m

Summary

Maximum sagging moment	-6203,622 t*m	Distance from AP	43,000 m
Maximum hogging moment	10,556 t*m	Distance from AP	86,800 m

Bending moment and shear force calculation

Distance from AP	Weight	Buoyancy	Load	Shear force	Refer to min/max	Bending moment	Refer to min/max
m	t	m ²	t	t	[%]	t*m	[%]
-0,001	0,000	0,00	0,000	0,000	0,0	0,000	0,0
0,000	0,000	0,00	0,000	0,000	0,0	0,000	0,0
1,000	3,699	23,37	-19,670	-17,478	0,0	-8,398	0,0
2,000	3,699	26,57	-22,867	-38,747	0,0	-36,397	0,0
3,000	3,699	29,76	-26,061	-63,212	0,0	-87,263	0,0
4,000	3,699	30,56	-26,862	-89,945	0,0	-163,937	0,0
5,000	3,699	30,56	-26,865	-116,809	0,0	-267,456	0,0
6,000	3,699	30,57	-26,869	-143,676	0,0	-397,840	0,0
7,000	3,699	30,57	-26,872	-170,546	0,0	-555,093	0,0
8,000	3,699	30,57	-26,875	-197,419	0,0	-739,217	0,0
9,000	3,699	30,58	-26,879	-224,296	0,0	-950,217	0,0
10,000	3,699	30,58	-26,882	-251,177	0,0	-1188,096	0,0
11,000	3,699	30,58	-26,886	-278,061	0,0	-1452,856	0,0
12,000	39,966	30,59	9,377	-288,628	0,0	-1740,831	0,0
13,000	39,966	30,59	9,374	-279,252	0,0	-2024,913	0,0
14,000	39,966	30,60	9,371	-269,880	0,0	-2299,621	0,0
15,000	39,966	30,60	9,367	-260,511	0,0	-2564,958	0,0
16,000	39,966	30,60	9,364	-251,146	0,0	-2820,928	0,0
17,000	39,966	30,61	9,360	-241,783	0,0	-3067,535	0,0
18,000	39,966	30,61	9,357	-232,425	0,0	-3304,781	0,0
19,000	39,966	30,61	9,354	-223,069	0,0	-3532,670	0,0
20,000	39,966	30,62	9,350	-213,717	0,0	-3751,205	0,0
21,000	39,966	30,62	9,347	-204,369	0,0	-3960,389	0,0
22,000	39,966	30,62	9,344	-195,023	0,0	-4160,227	0,0
23,000	39,966	30,63	9,340	-185,681	0,0	-4350,721	0,0
24,000	39,966	30,63	9,337	-176,343	0,0	-4531,875	0,0
25,000	39,966	30,63	9,334	-167,007	0,0	-4703,692	0,0
26,000	39,966	30,64	9,330	-157,676	0,0	-4866,175	0,0
27,000	39,966	30,64	9,327	-148,347	0,0	-5019,328	0,0
28,000	39,966	30,64	9,323	-139,022	0,0	-5163,155	0,0
29,000	39,966	30,65	9,320	-129,700	0,0	-5297,658	0,0
30,000	39,966	30,65	9,317	-120,382	0,0	-5422,840	0,0
31,000	39,966	30,65	9,313	-111,067	0,0	-5538,707	0,0
32,000	39,966	30,66	9,310	-101,755	0,0	-5645,259	0,0
33,000	39,966	30,66	9,307	-92,447	0,0	-5742,502	0,0
34,000	39,966	30,66	9,303	-83,142	0,0	-5830,438	0,0
35,000	39,966	30,67	9,300	-73,840	0,0	-5909,071	0,0
36,000	39,966	30,67	9,297	-64,542	0,0	-5978,404	0,0
37,000	39,966	30,67	9,293	-55,247	0,0	-6038,441	0,0
38,000	39,966	30,68	9,290	-45,956	0,0	-6089,184	0,0
39,000	39,966	30,68	9,286	-36,668	0,0	-6130,638	0,0
40,000	39,966	30,68	9,283	-27,383	0,0	-6162,805	0,0
41,000	39,966	30,69	9,280	-18,102	0,0	-6185,689	0,0
42,000	39,966	30,69	9,276	-8,824	0,0	-6199,294	0,0
43,000	39,966	30,69	9,273	0,451	0,0	-6203,622	0,0
44,000	39,966	30,70	9,270	9,722	0,0	-6198,677	0,0
45,000	39,967	30,70	9,266	18,990	0,0	-6184,463	0,0
46,000	39,967	30,70	9,263	28,255	0,0	-6160,982	0,0
47,000	39,967	30,71	9,259	37,516	0,0	-6128,239	0,0
48,000	39,967	30,71	9,256	46,774	0,0	-6086,236	0,0
49,000	39,967	30,71	9,253	56,028	0,0	-6034,977	0,0
50,000	39,967	30,72	9,249	65,279	0,0	-5974,466	0,0
51,000	39,967	30,72	9,246	74,527	0,0	-5904,705	0,0

Bending moment and shear force calculation

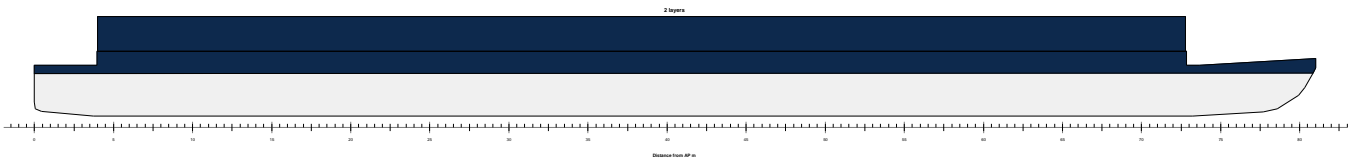
Distance from AP	Weight	Buoyancy	Load	Shear force	Refer to min/max	Bending moment	Refer to min/max
m	t	m ²	t	t	[%]	t*m	[%]
52,000	39,967	30,72	9,243	83,771	0,0	-5825,698	0,0
53,000	39,967	30,73	9,239	93,012	0,0	-5737,448	0,0
54,000	39,967	30,73	9,236	102,249	0,0	-5639,959	0,0
55,000	39,967	30,73	9,233	111,484	0,0	-5533,235	0,0
56,000	39,967	30,74	9,229	120,715	0,0	-5417,277	0,0
57,000	39,967	30,74	9,226	129,942	0,0	-5292,091	0,0
58,000	39,967	30,74	9,222	139,166	0,0	-5157,679	0,0
59,000	39,967	30,75	9,219	148,387	0,0	-5014,044	0,0
60,000	39,967	30,75	9,216	157,604	0,0	-4861,191	0,0
61,000	39,967	30,75	9,212	166,818	0,0	-4699,121	0,0
62,000	39,967	30,76	9,209	176,029	0,0	-4527,839	0,0
63,000	39,967	30,76	9,206	185,236	0,0	-4347,349	0,0
64,000	39,967	30,77	9,202	194,440	0,0	-4157,653	0,0
65,000	39,967	30,77	9,197	203,639	0,0	-3958,755	0,0
66,000	39,967	30,77	9,193	212,834	0,0	-3750,660	0,0
67,000	39,967	30,78	9,188	222,024	0,0	-3533,372	0,0
68,000	39,967	30,78	9,184	231,210	0,0	-3306,897	0,0
69,000	39,967	30,79	9,179	240,391	0,0	-3071,238	0,0
70,000	39,967	30,79	9,174	249,568	0,0	-2826,400	0,0
71,000	39,967	30,80	9,170	258,740	0,0	-2572,387	0,0
72,000	39,967	30,80	9,165	267,908	0,0	-2309,205	0,0
73,000	39,967	30,81	9,161	277,071	0,0	-2036,857	0,0
74,000	39,967	30,81	9,156	286,230	0,0	-1755,348	0,0
75,000	3,701	30,81	-27,113	279,064	0,0	-1468,355	0,0
76,000	3,701	30,81	-27,113	251,951	0,0	-1202,990	0,0
77,000	3,701	30,81	-27,104	224,841	0,0	-964,736	0,0
78,000	3,701	30,78	-27,077	197,748	0,0	-753,586	0,0
79,000	3,701	30,63	-26,932	170,722	0,0	-569,504	0,0
80,000	3,701	30,34	-26,642	143,929	0,0	-412,344	0,0
81,000	3,701	29,96	-26,260	117,469	0,0	-281,818	0,0
82,000	3,701	29,18	-25,483	91,527	0,0	-177,523	0,0
83,000	3,701	27,53	-23,827	66,794	0,0	-98,637	0,0
84,000	3,701	25,09	-21,390	44,118	0,0	-43,517	0,0
85,000	3,701	21,20	-17,496	24,623	0,0	-9,601	0,0
86,000	3,701	16,64	-12,935	9,325	0,0	6,868	0,0
87,000	3,701	10,93	-7,227	-0,821	0,0	10,519	0,0
88,000	3,701	5,03	-1,327	-5,099	0,0	6,945	0,0
89,000	3,701	0,00	3,701	-3,701	0,0	1,993	0,0
90,000	3,701	0,00	3,701	0,000	0,0	0,000	0,0

Max. load bending moment

2020.056_003 IW-NET barge 3 units abreast

Designer Bernhard Bieringer
 Created by Bernhard Bieringer
 Comment
 Filename 2020_056_003_IW-NET 3 Units abreast.fbm

Design length	81,000 m	Midship location	40,500 m
Length over all	81,000 m	Water density	1,0000
Design beam	9,500 m	Mean shell thickness	0,0000 m
Maximum beam	9,500 m	Appendage coefficient	1,0000
Design draft	1,830 m		



Hydrostatic particulars

List	0,0 (CL) degr	LCB	39,512 m
Draft aft pp	2,689 m	KM	4,253 m
Mean moulded draft	2,700 m	VCG	4,491 m
Draft forward pp	2,711 m	VCG'	4,491 m
Trim	0,023 m	Max VCG'	3,253 m
LCF	40,270 m	GM solid	-0,238 m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

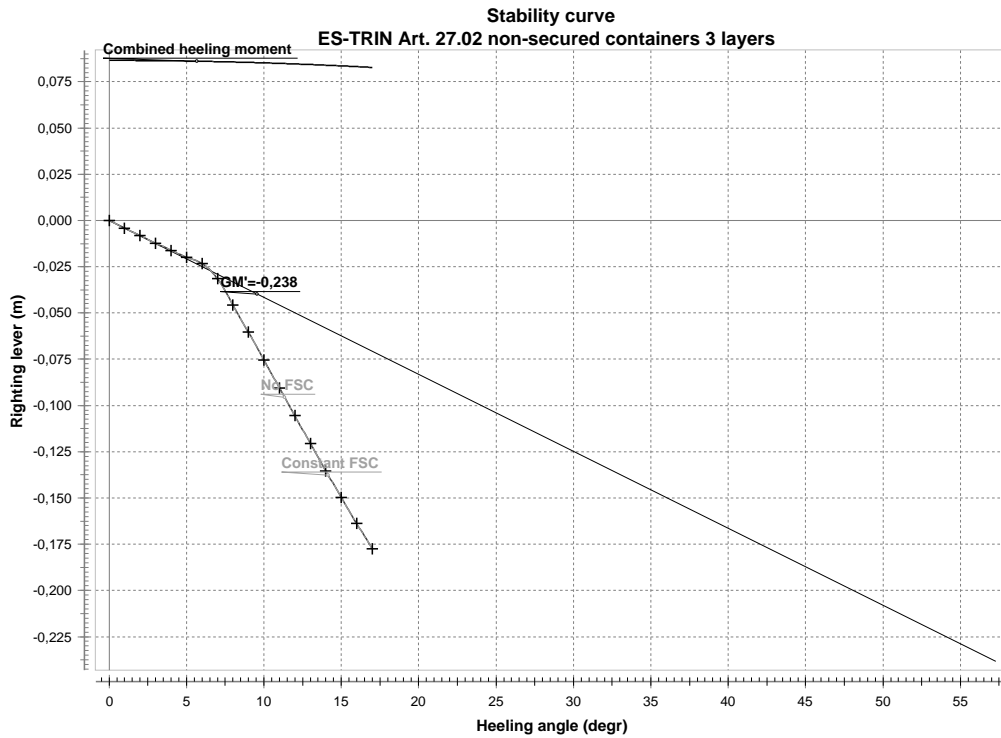
Max. load bending moment			1716,080	39,450	0,000 (CL)	5,000	0,000
Lightship			274,925	39,892	0,000 (CL)	1,313	
Deadweight			1716,080	39,450	0,000 (CL)	5,000	0,000
Displacement			1991,005	39,511	0,000 (CL)	4,491	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	2,700	0,023	1991,003	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	2,700	0,023	1991,003	0,074	0,078	0,000	0,000	-0,004	0,0000
2,0 (PS)	2,700	0,023	1991,003	0,148	0,157	0,000	0,000	-0,008	0,0000
3,0 (PS)	2,700	0,022	1991,004	0,223	0,235	0,000	0,000	-0,012	0,0000
4,0 (PS)	2,700	0,022	1991,005	0,297	0,313	0,000	0,000	-0,016	0,0000
5,0 (PS)	2,700	0,021	1991,005	0,372	0,391	0,000	0,000	-0,020	0,0000
6,0 (PS)	2,700	0,020	1991,014	0,446	0,469	0,000	0,000	-0,023	0,0000
7,0 (PS)	2,702	0,019	1991,007	0,516	0,547	0,000	0,000	-0,031	0,0000
8,0 (PS)	2,709	0,015	1991,013	0,579	0,625	0,000	0,000	-0,046	0,0000
9,0 (PS)	2,716	0,010	1991,011	0,642	0,703	0,000	0,000	-0,060	0,0000
10,0 (PS)	2,724	0,006	1991,011	0,704	0,780	0,000	0,000	-0,075	0,0000
11,0 (PS)	2,731	0,003	1991,011	0,766	0,857	0,000	0,000	-0,090	0,0000
12,0 (PS)	2,740	0,000	1991,010	0,828	0,934	0,000	0,000	-0,106	0,0000
13,0 (PS)	2,748	-0,003	1991,008	0,890	1,010	0,000	0,000	-0,121	0,0000

Righting levers

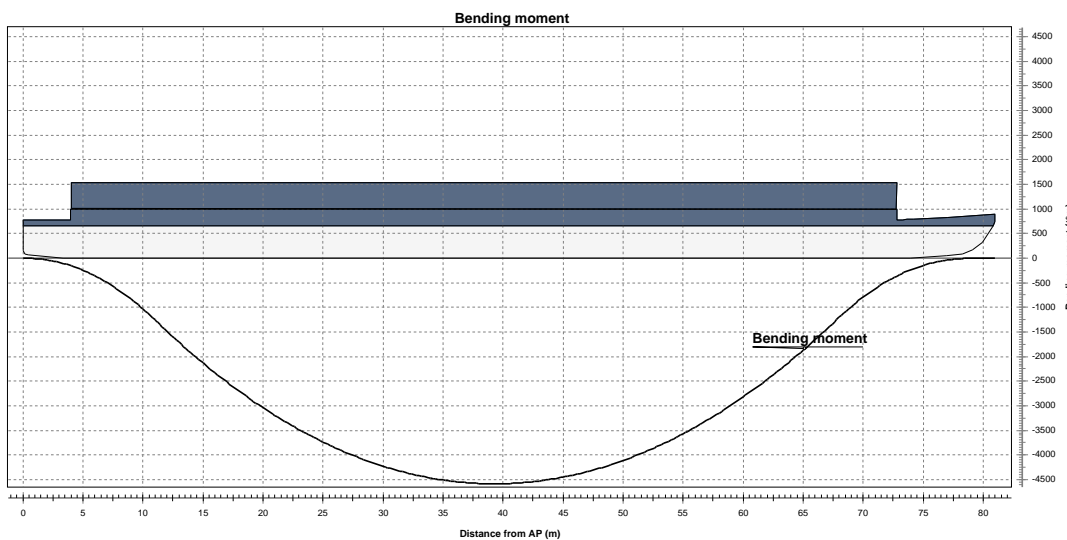
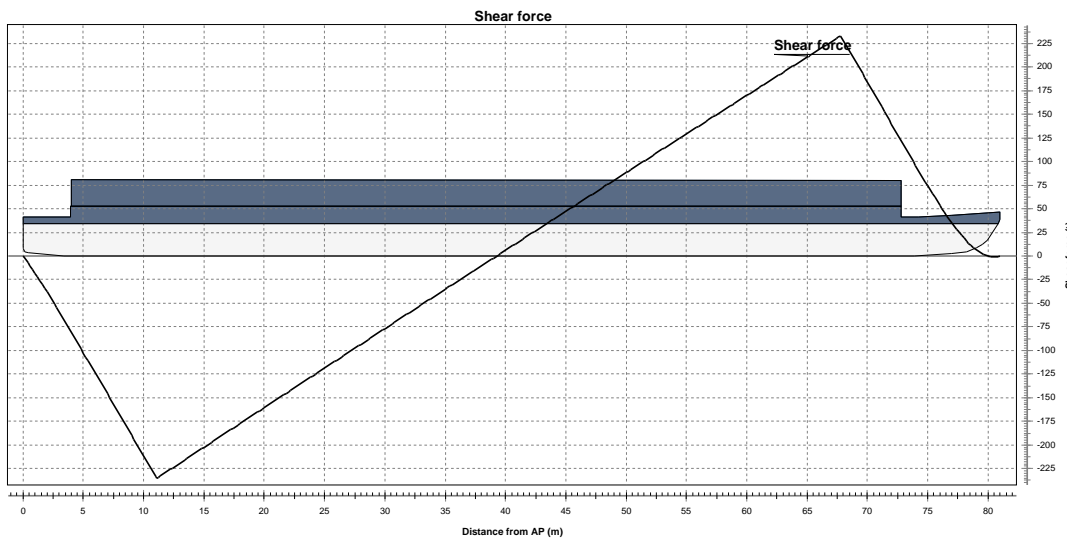
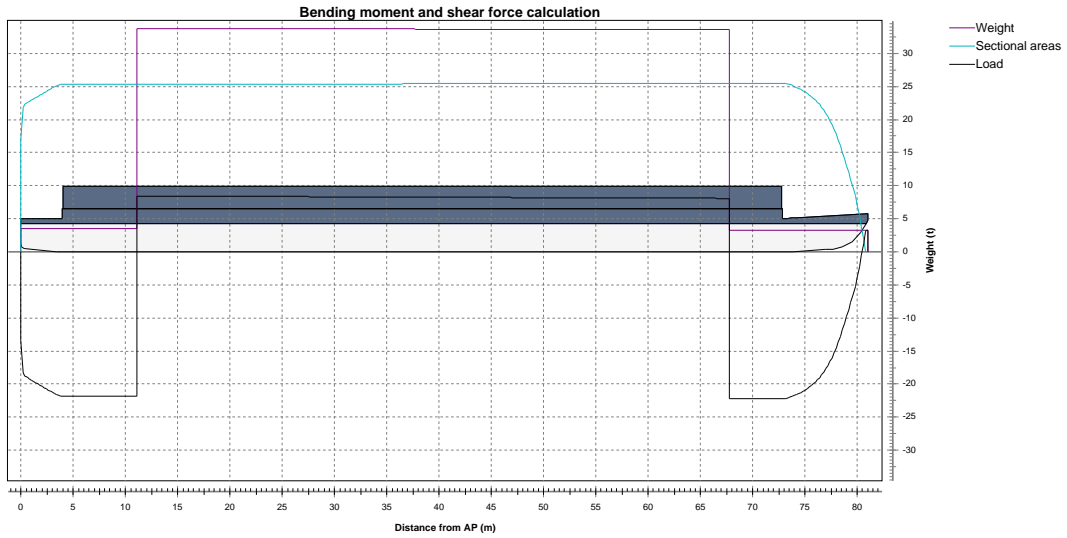
Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
14,0 (PS)	2,757	-0,004	1991,007	0,951	1,086	0,000	0,000	-0,135	0,0000
15,0 (PS)	2,766	-0,005	1991,006	1,013	1,162	0,000	0,000	-0,150	0,0000
16,0 (PS)	2,776	-0,006	1991,005	1,074	1,238	0,000	0,000	-0,164	0,0000
17,0 (PS)	2,785	-0,006	1991,005	1,136	1,313	0,000	0,000	-0,177	0,0000



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	-0,238 m	\geq	1,000 m	FAILS
Combined heeling moment	180,0 degr	\leq	5,0 degr	FAILS
Calculated heeling moment (upright)	172,250 t*m			
Required freeboard	-100,000 m	\geq	0,000 m	FAILS
Weight	172,250 t			
Trv. location of weight	1,000 m			

The condition does NOT comply with the stability criteria



Summary

Mean moulded draft	2,700 m	Trim	0,023 m
Displacement	1991,005 t	GM	-0,238 m
Minimum shear force	-235,332 t	Distance from AP	11,100 m
Maximum shear force	233,137 t	Distance from AP	67,800 m

Summary

Maximum sagging moment	-4585,231 t*m	Distance from AP	39,200 m
Maximum hogging moment	0,935 t*m	Distance from AP	80,000 m

Bending moment and shear force calculation

Distance from AP	Weight	Buoyancy	Load	Shear force	Refer to min/max	Bending moment	Refer to min/max
m	t	m ²	t	t	[%]	t*m	[%]
-0,001	0,000	0,00	0,000	0,000	0,0	0,000	0,0
0,000	0,000	0,00	0,000	0,000	0,0	0,000	0,0
1,000	3,543	22,92	-19,377	-18,321	0,0	-9,018	0,0
2,000	3,539	23,87	-20,328	-38,173	0,0	-37,347	0,0
3,000	3,536	24,79	-21,255	-58,971	0,0	-86,003	0,0
4,000	3,532	25,31	-21,775	-80,567	0,0	-155,887	0,0
5,000	3,528	25,31	-21,782	-102,345	0,0	-247,501	0,0
6,000	3,524	25,31	-21,788	-124,130	0,0	-360,896	0,0
7,000	3,521	25,32	-21,794	-145,921	0,0	-496,079	0,0
8,000	3,517	25,32	-21,801	-167,719	0,0	-653,057	0,0
9,000	3,513	25,32	-21,807	-189,523	0,0	-831,836	0,0
10,000	3,509	25,32	-21,814	-211,333	0,0	-1032,422	0,0
11,000	3,505	25,33	-21,820	-233,150	0,0	-1254,821	0,0
12,000	33,768	25,33	8,439	-227,734	0,0	-1486,784	0,0
13,000	33,764	25,33	8,433	-219,298	0,0	-1710,458	0,0
14,000	33,760	25,33	8,426	-210,869	0,0	-1925,699	0,0
15,000	33,756	25,34	8,420	-202,445	0,0	-2132,514	0,0
16,000	33,753	25,34	8,414	-194,029	0,0	-2330,909	0,0
17,000	33,749	25,34	8,407	-185,618	0,0	-2520,891	0,0
18,000	33,745	25,34	8,401	-177,215	0,0	-2702,465	0,0
19,000	33,741	25,35	8,394	-168,817	0,0	-2875,639	0,0
20,000	33,737	25,35	8,388	-160,426	0,0	-3040,419	0,0
21,000	33,734	25,35	8,381	-152,042	0,0	-3196,810	0,0
22,000	33,730	25,36	8,375	-143,664	0,0	-3344,821	0,0
23,000	33,726	25,36	8,368	-135,292	0,0	-3484,457	0,0
24,000	33,722	25,36	8,362	-126,927	0,0	-3615,725	0,0
25,000	33,719	25,36	8,355	-118,568	0,0	-3738,630	0,0
26,000	33,715	25,37	8,349	-110,216	0,0	-3853,180	0,0
27,000	33,711	25,37	8,343	-101,870	0,0	-3959,382	0,0
28,000	33,707	25,37	8,336	-93,531	0,0	-4057,240	0,0
29,000	33,704	25,37	8,330	-85,198	0,0	-4146,763	0,0
30,000	33,700	25,38	8,323	-76,872	0,0	-4227,955	0,0
31,000	33,696	25,38	8,317	-68,552	0,0	-4300,825	0,0
32,000	33,692	25,38	8,310	-60,238	0,0	-4365,378	0,0
33,000	33,688	25,38	8,304	-51,931	0,0	-4421,620	0,0
34,000	33,685	25,39	8,297	-43,630	0,0	-4469,559	0,0
35,000	33,681	25,39	8,291	-35,336	0,0	-4509,200	0,0
36,000	33,677	25,39	8,285	-27,048	0,0	-4540,551	0,0
37,000	33,673	25,40	8,278	-18,767	0,0	-4563,616	0,0
38,000	33,670	25,40	8,272	-10,492	0,0	-4578,404	0,0
39,000	33,666	25,40	8,265	-2,224	0,0	-4584,920	0,0
40,000	33,662	25,40	8,259	6,038	0,0	-4583,171	0,0
41,000	33,658	25,41	8,252	14,293	0,0	-4573,164	0,0
42,000	33,654	25,41	8,246	22,543	0,0	-4554,903	0,0
43,000	33,651	25,41	8,239	30,785	0,0	-4528,398	0,0
44,000	33,647	25,41	8,233	39,021	0,0	-4493,652	0,0
45,000	33,643	25,42	8,226	47,251	0,0	-4450,674	0,0
46,000	33,639	25,42	8,220	55,474	0,0	-4399,470	0,0
47,000	33,636	25,42	8,214	63,691	0,0	-4340,045	0,0
48,000	33,632	25,42	8,207	71,901	0,0	-4272,407	0,0
49,000	33,628	25,43	8,201	80,105	0,0	-4196,562	0,0
50,000	33,624	25,43	8,194	88,302	0,0	-4112,516	0,0
51,000	33,620	25,43	8,188	96,493	0,0	-4020,276	0,0

Bending moment and shear force calculation

Distance from AP	Weight	Buoyancy	Load	Shear force	Refer to min/max	Bending moment	Refer to min/max
m	t	m ²	t	t	[%]	t*m	[%]
52,000	33,617	25,44	8,181	104,678	0,0	-3919,849	0,0
53,000	33,613	25,44	8,175	112,856	0,0	-3811,240	0,0
54,000	33,609	25,44	8,168	121,028	0,0	-3694,456	0,0
55,000	33,605	25,44	8,162	129,193	0,0	-3569,503	0,0
56,000	33,602	25,45	8,155	137,352	0,0	-3436,389	0,0
57,000	33,598	25,45	8,149	145,504	0,0	-3295,120	0,0
58,000	33,594	25,45	8,143	153,650	0,0	-3145,701	0,0
59,000	33,590	25,45	8,136	161,789	0,0	-2988,140	0,0
60,000	33,586	25,46	8,130	169,922	0,0	-2822,442	0,0
61,000	33,583	25,46	8,123	178,048	0,0	-2648,615	0,0
62,000	33,579	25,46	8,117	186,168	0,0	-2466,665	0,0
63,000	33,575	25,46	8,110	194,282	0,0	-2276,598	0,0
64,000	33,571	25,47	8,104	202,389	0,0	-2078,420	0,0
65,000	33,568	25,47	8,097	210,490	0,0	-1872,139	0,0
66,000	33,564	25,47	8,091	218,584	0,0	-1657,760	0,0
67,000	33,560	25,48	8,085	226,672	0,0	-1435,290	0,0
68,000	3,290	25,48	-22,188	228,700	0,0	-1205,341	0,0
69,000	3,287	25,48	-22,194	206,509	0,0	-987,894	0,0
70,000	3,283	25,48	-22,201	184,311	0,0	-792,642	0,0
71,000	3,279	25,49	-22,207	162,107	0,0	-619,591	0,0
72,000	3,275	25,49	-22,214	139,897	0,0	-468,747	0,0
73,000	3,271	25,49	-22,215	117,680	0,0	-340,117	0,0
74,000	3,268	25,01	-21,744	95,650	0,0	-233,648	0,0
75,000	3,264	24,15	-20,888	74,313	0,0	-148,894	0,0
76,000	3,260	22,95	-19,685	53,987	0,0	-84,997	0,0
77,000	3,256	20,91	-17,656	35,227	0,0	-40,711	0,0
78,000	3,253	17,79	-14,540	18,999	0,0	-14,004	0,0
79,000	3,249	13,06	-9,808	6,741	0,0	-1,672	0,0
80,000	3,245	7,08	-3,830	-0,263	0,0	0,935	0,0
81,000	3,241	0,00	3,241	0,000	0,0	0,000	0,0

Max. load bending moment

2020.056_004_v2 IW-NET NEWS Evolution

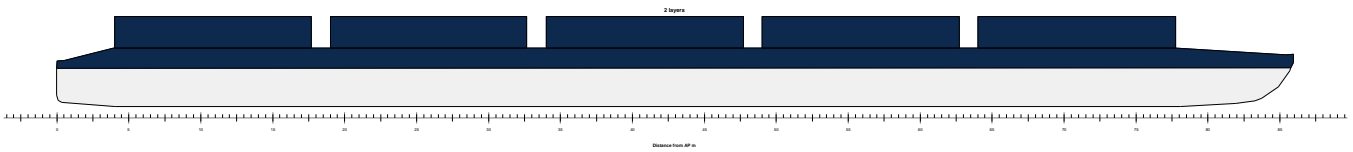
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_004_v2_IW-NET NEWS Evolution v2.fbm

Design length	85,920 m	Midship location	42,960 m
Length over all	85,920 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	1,600 m		



Hydrostatic particulars

List	0,0 (CL) degr	LCB	42,085 m
Draft aft pp	2,675 m	KM	5,540 m
Mean moulded draft	2,700 m	VCG	4,426 m
Draft forward pp	2,726 m	VCG'	4,426 m
Trim	0,051 m	Max VCG'	4,517 m
LCF	42,758 m	GM solid	1,114 m

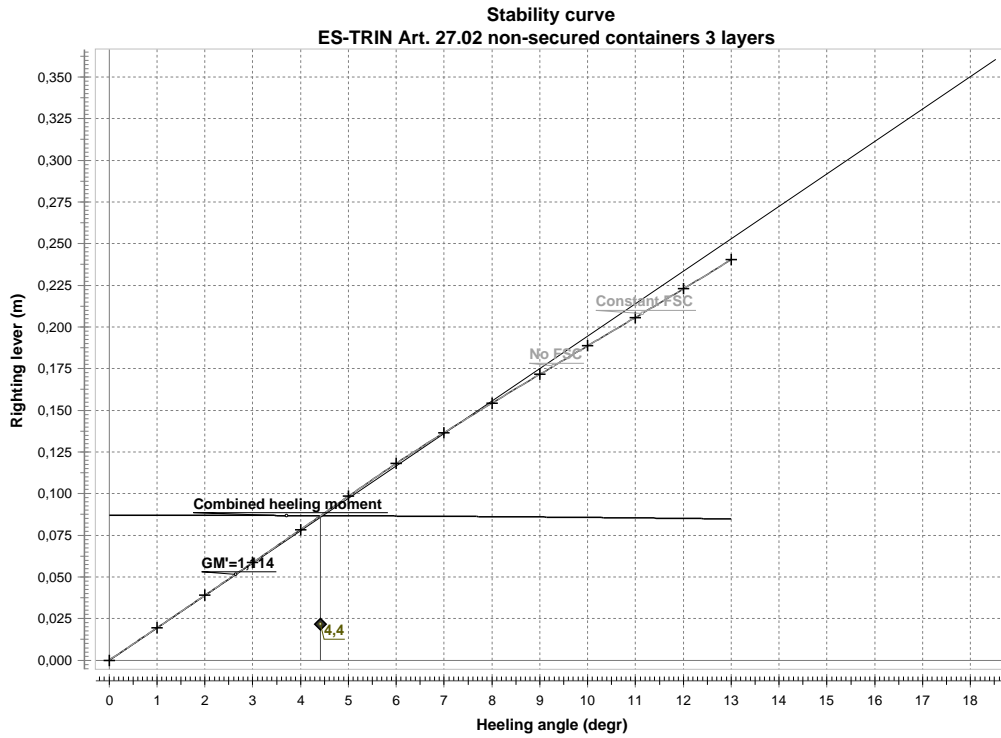
Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Max. load bending moment			2155,130	42,050	0,000 (CL)	5,000	0,000
Lightship			401,565	42,259	0,000 (CL)	1,345	
Deadweight			2155,130	42,050	0,000 (CL)	5,000	0,000
Displacement			2556,695	42,083	0,000 (CL)	4,426	0,000

Righting levers

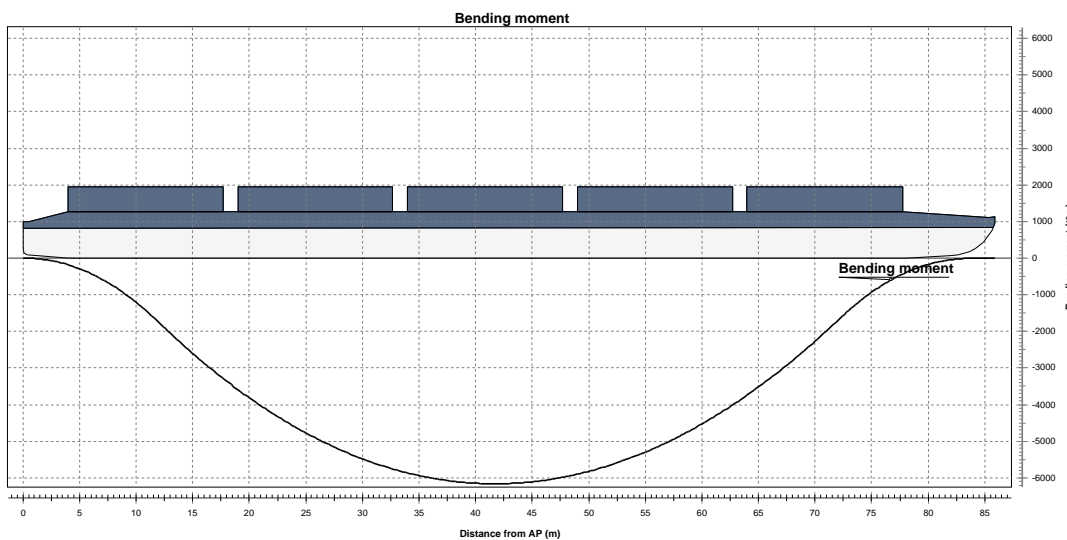
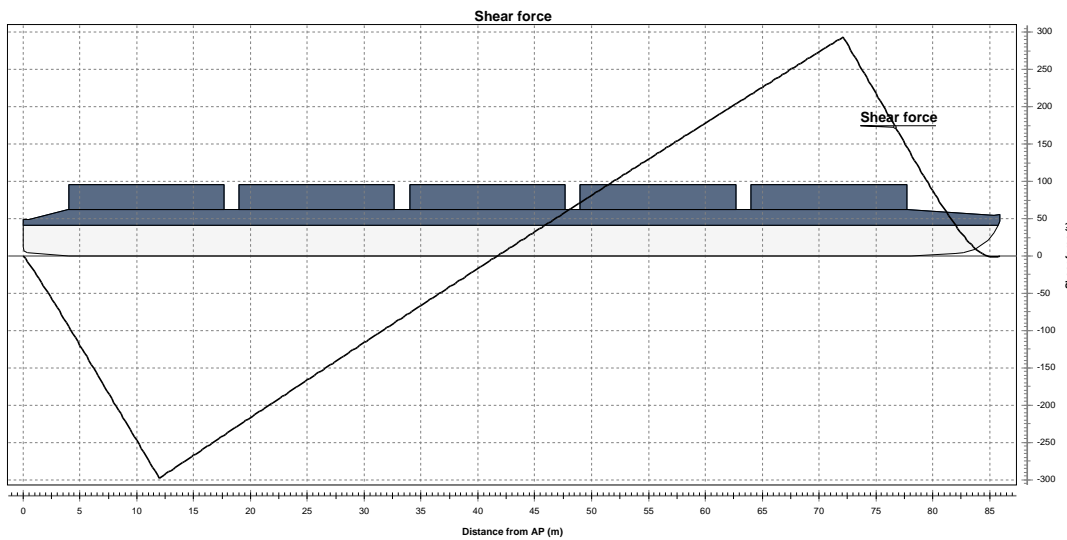
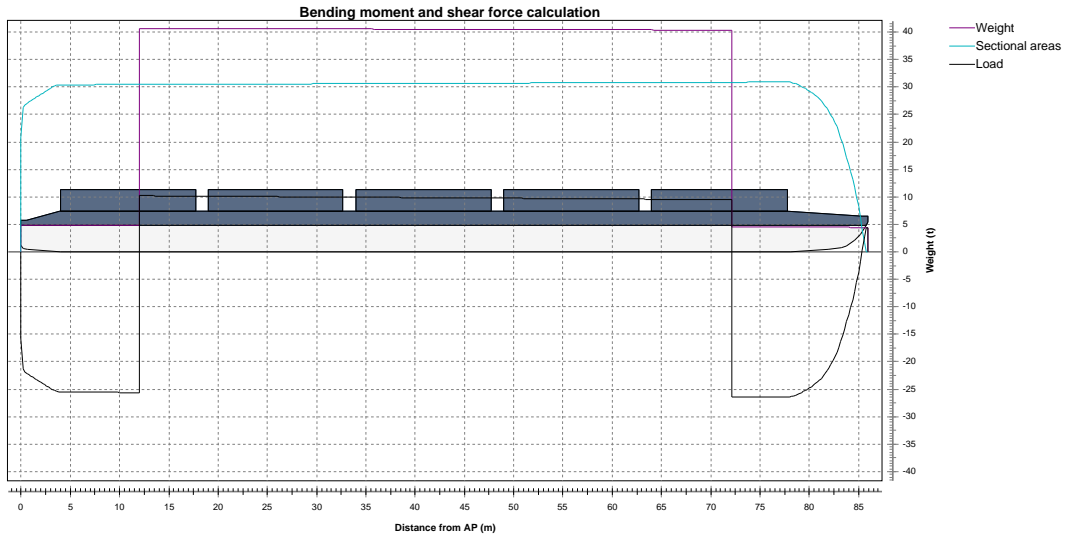
Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	2,700	0,051	2556,693	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	2,700	0,051	2556,694	0,097	0,077	0,000	0,000	0,019	0,0002
2,0 (PS)	2,700	0,051	2556,695	0,193	0,154	0,000	0,000	0,039	0,0007
3,0 (PS)	2,700	0,050	2556,695	0,290	0,232	0,000	0,000	0,059	0,0015
4,0 (PS)	2,700	0,050	2556,694	0,387	0,309	0,000	0,000	0,078	0,0027
5,0 (PS)	2,700	0,049	2556,694	0,484	0,386	0,000	0,000	0,098	0,0043
6,0 (PS)	2,700	0,048	2556,695	0,581	0,463	0,000	0,000	0,118	0,0062
7,0 (PS)	2,701	0,046	2556,695	0,676	0,539	0,000	0,000	0,137	0,0084
8,0 (PS)	2,702	0,043	2556,720	0,770	0,616	0,000	0,000	0,154	0,0109
9,0 (PS)	2,704	0,041	2556,712	0,864	0,692	0,000	0,000	0,172	0,0138
10,0 (PS)	2,707	0,039	2556,705	0,957	0,769	0,000	0,000	0,189	0,0169
11,0 (PS)	2,710	0,039	2556,700	1,050	0,845	0,000	0,000	0,206	0,0204
12,0 (PS)	2,713	0,039	2556,696	1,143	0,920	0,000	0,000	0,223	0,0241
13,0 (PS)	2,717	0,039	2556,695	1,236	0,996	0,000	0,000	0,240	0,0281



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	1,114 m	>=	1,000 m	Complies
Combined heeling moment	4,4 degr	<=	5,0 degr	Complies
Calculated heeling moment (upright)	222,500 t*m			
Required freeboard	0,038 m	>=	0,000 m	Complies
Deck immersion angle	4,8 degr			
Max allowed ratio static angle/deck immersion angle	0,921	<=	1,000	Complies
Weight	222,500 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria



Summary

Mean moulded draft	2,700 m	Trim	0,051 m
Displacement	2556,695 t	GM	1,114 m
Minimum shear force	-298,225 t	Distance from AP	11,978 m
Maximum shear force	294,009 t	Distance from AP	72,122 m

Summary

Maximum sagging moment	-6161,693 t*m	Distance from AP	41,800 m
Maximum hogging moment	1,350 t*m	Distance from AP	84,800 m

Bending moment and shear force calculation

Distance from AP	Weight	Buoyancy	Load	Shear force	Refer to min/max	Bending moment	Refer to min/max
m	t	m ²	t	t	[%]	t*m	[%]
-0,001	0,000	0,00	0,000	0,000	0,0	0,000	0,0
0,000	0,000	0,00	0,000	0,000	0,0	0,000	0,0
1,000	4,897	27,52	-22,620	-21,376	0,0	-10,558	0,0
2,000	4,892	28,66	-23,771	-44,572	0,0	-43,660	0,0
3,000	4,887	29,78	-24,892	-68,910	0,0	-100,532	0,0
4,000	4,881	30,40	-25,523	-94,212	0,0	-182,261	0,0
5,000	4,876	30,41	-25,536	-119,742	0,0	-289,458	0,0
6,000	4,871	30,42	-25,548	-145,283	0,0	-422,191	0,0
7,000	4,865	30,43	-25,560	-170,837	0,0	-580,471	0,0
8,000	4,860	30,43	-25,572	-196,403	0,0	-764,312	0,0
9,000	4,855	30,44	-25,584	-221,981	0,0	-973,724	0,0
10,000	4,849	30,45	-25,596	-247,571	0,0	-1208,720	0,0
11,000	4,844	30,45	-25,608	-273,174	0,0	-1469,313	0,0
12,000	40,671	30,46	10,212	-298,000	0,0	-1755,505	0,0
13,000	40,666	30,47	10,200	-287,794	0,0	-2048,622	0,0
14,000	40,661	30,47	10,188	-277,600	0,0	-2331,539	0,0
15,000	40,655	30,48	10,176	-267,418	0,0	-2604,269	0,0
16,000	40,650	30,49	10,164	-257,249	0,0	-2866,822	0,0
17,000	40,645	30,49	10,151	-247,091	0,0	-3119,212	0,0
18,000	40,639	30,50	10,139	-236,946	0,0	-3361,450	0,0
19,000	40,634	30,51	10,127	-226,813	0,0	-3593,549	0,0
20,000	40,629	30,51	10,115	-216,692	0,0	-3815,521	0,0
21,000	40,623	30,52	10,103	-206,583	0,0	-4027,379	0,0
22,000	40,618	30,53	10,091	-196,486	0,0	-4229,133	0,0
23,000	40,613	30,53	10,078	-186,402	0,0	-4420,797	0,0
24,000	40,608	30,54	10,066	-176,329	0,0	-4602,382	0,0
25,000	40,602	30,55	10,054	-166,269	0,0	-4773,901	0,0
26,000	40,597	30,55	10,042	-156,221	0,0	-4935,366	0,0
27,000	40,592	30,56	10,030	-146,185	0,0	-5086,789	0,0
28,000	40,586	30,57	10,018	-136,161	0,0	-5228,182	0,0
29,000	40,581	30,58	10,006	-126,150	0,0	-5359,557	0,0
30,000	40,576	30,58	9,993	-116,150	0,0	-5480,927	0,0
31,000	40,570	30,59	9,981	-106,163	0,0	-5592,304	0,0
32,000	40,565	30,60	9,969	-96,188	0,0	-5693,699	0,0
33,000	40,560	30,60	9,957	-86,225	0,0	-5785,125	0,0
34,000	40,554	30,61	9,945	-76,274	0,0	-5866,594	0,0
35,000	40,549	30,62	9,933	-66,335	0,0	-5938,118	0,0
36,000	40,544	30,62	9,920	-56,408	0,0	-5999,710	0,0
37,000	40,538	30,63	9,908	-46,494	0,0	-6051,381	0,0
38,000	40,533	30,64	9,896	-36,592	0,0	-6093,144	0,0
39,000	40,528	30,64	9,884	-26,702	0,0	-6125,011	0,0
40,000	40,522	30,65	9,872	-16,824	0,0	-6146,993	0,0
41,000	40,517	30,66	9,860	-6,958	0,0	-6159,104	0,0
42,000	40,512	30,66	9,848	2,896	0,0	-6161,355	0,0
43,000	40,506	30,67	9,835	12,737	0,0	-6153,759	0,0
44,000	40,501	30,68	9,823	22,566	0,0	-6136,327	0,0
45,000	40,496	30,68	9,811	32,384	0,0	-6109,072	0,0
46,000	40,490	30,69	9,799	42,189	0,0	-6072,006	0,0
47,000	40,485	30,70	9,787	51,981	0,0	-6025,141	0,0
48,000	40,480	30,71	9,775	61,762	0,0	-5968,489	0,0
49,000	40,474	30,71	9,762	71,531	0,0	-5902,063	0,0
50,000	40,469	30,72	9,750	81,287	0,0	-5825,874	0,0
51,000	40,464	30,73	9,738	91,031	0,0	-5739,935	0,0

Bending moment and shear force calculation

Distance from AP	Weight	Buoyancy	Load	Shear force	Refer to min/max	Bending moment	Refer to min/max
m	t	m ²	t	t	[%]	t*m	[%]
52,000	40,458	30,73	9,726	100,763	0,0	-5644,258	0,0
53,000	40,453	30,74	9,714	110,483	0,0	-5538,854	0,0
54,000	40,448	30,75	9,702	120,191	0,0	-5423,737	0,0
55,000	40,442	30,75	9,689	129,887	0,0	-5298,918	0,0
56,000	40,437	30,76	9,677	139,570	0,0	-5164,410	0,0
57,000	40,432	30,77	9,665	149,241	0,0	-5020,224	0,0
58,000	40,426	30,77	9,653	158,900	0,0	-4866,374	0,0
59,000	40,421	30,78	9,641	168,547	0,0	-4702,870	0,0
60,000	40,416	30,79	9,629	178,182	0,0	-4529,725	0,0
61,000	40,410	30,79	9,617	187,805	0,0	-4346,952	0,0
62,000	40,405	30,80	9,605	197,415	0,0	-4154,562	0,0
63,000	40,400	30,81	9,592	207,014	0,0	-3952,567	0,0
64,000	40,394	30,81	9,580	216,600	0,0	-3740,981	0,0
65,000	40,389	30,82	9,568	226,174	0,0	-3519,814	0,0
66,000	40,384	30,83	9,556	235,736	0,0	-3289,079	0,0
67,000	40,379	30,83	9,544	245,285	0,0	-3048,789	0,0
68,000	40,373	30,84	9,531	254,823	0,0	-2798,954	0,0
69,000	40,368	30,85	9,519	264,348	0,0	-2539,589	0,0
70,000	40,363	30,86	9,507	273,862	0,0	-2270,704	0,0
71,000	40,357	30,86	9,495	283,363	0,0	-1992,311	0,0
72,000	40,352	30,87	9,483	292,852	0,0	-1704,424	0,0
73,000	4,514	30,88	-26,362	270,867	0,0	-1420,866	0,0
74,000	4,508	30,88	-26,374	244,499	0,0	-1163,402	0,0
75,000	4,503	30,89	-26,386	218,119	0,0	-932,313	0,0
76,000	4,498	30,90	-26,399	191,726	0,0	-727,611	0,0
77,000	4,492	30,90	-26,411	165,322	0,0	-549,307	0,0
78,000	4,487	30,89	-26,402	138,907	0,0	-397,414	0,0
79,000	4,482	30,29	-25,806	112,753	0,0	-271,853	0,0
80,000	4,476	29,28	-24,808	87,423	0,0	-172,066	0,0
81,000	4,471	27,87	-23,403	63,270	0,0	-97,052	0,0
82,000	4,466	25,53	-21,067	40,938	0,0	-45,355	0,0
83,000	4,460	21,80	-17,343	21,550	0,0	-14,627	0,0
84,000	4,455	15,92	-11,468	7,029	0,0	-1,030	0,0
85,000	4,450	8,29	-3,838	-0,858	0,0	1,229	0,0
85,920	4,445	0,00	4,445	0,000	0,0	0,000	0,0

Max. load bending moment

2020.056_005_v2 IW-NET barge Containers transverse v2

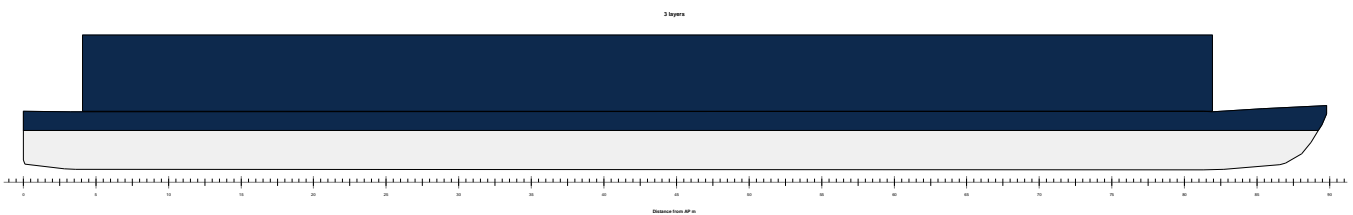
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_005_v2_IW-NET Containers transverse v2.fbm

Design length	89,800 m	Midship location	44,900 m
Length over all	89,800 m	Water density	1,0000
Design beam	16,280 m	Mean shell thickness	0,0000 m
Maximum beam	16,280 m	Appendage coefficient	1,0000
Design draft	2,630 m		



Hydrostatic particulars

List	0,0 (CL) degr	LCB	43,767 m
Draft aft pp	2,690 m	KM	9,779 m
Mean moulded draft	2,700 m	VCG	4,469 m
Draft forward pp	2,710 m	VCG'	4,469 m
Trim	0,020 m	Max VCG'	8,316 m
LCF	44,464 m	GM solid	5,310 m

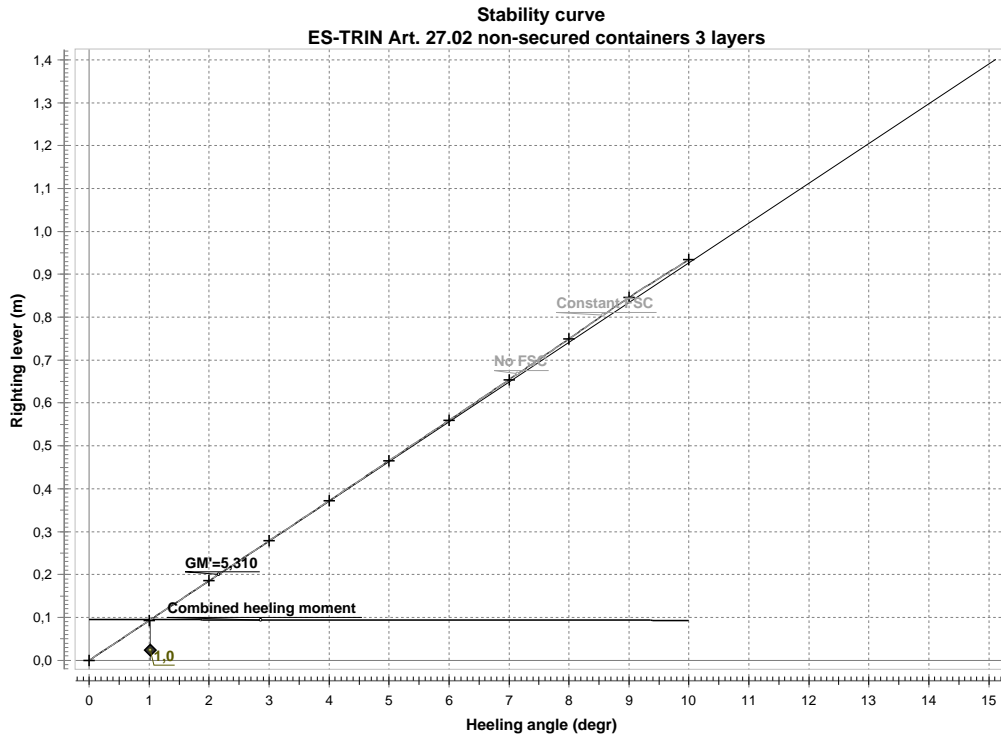
Description	Density	Filling	Weight	LCG	TCG	VCG	FSM
		%	t	m	m	m	t*m

Containers

Max. load bending moment			3248,650	43,650	0,000 (CL)	5,000	0,000
Lightship			540,180	44,465	0,000 (CL)	1,276	
Deadweight			3248,650	43,650	0,000 (CL)	5,000	0,000
Displacement			3788,830	43,766	0,000 (CL)	4,469	0,000

Righting levers

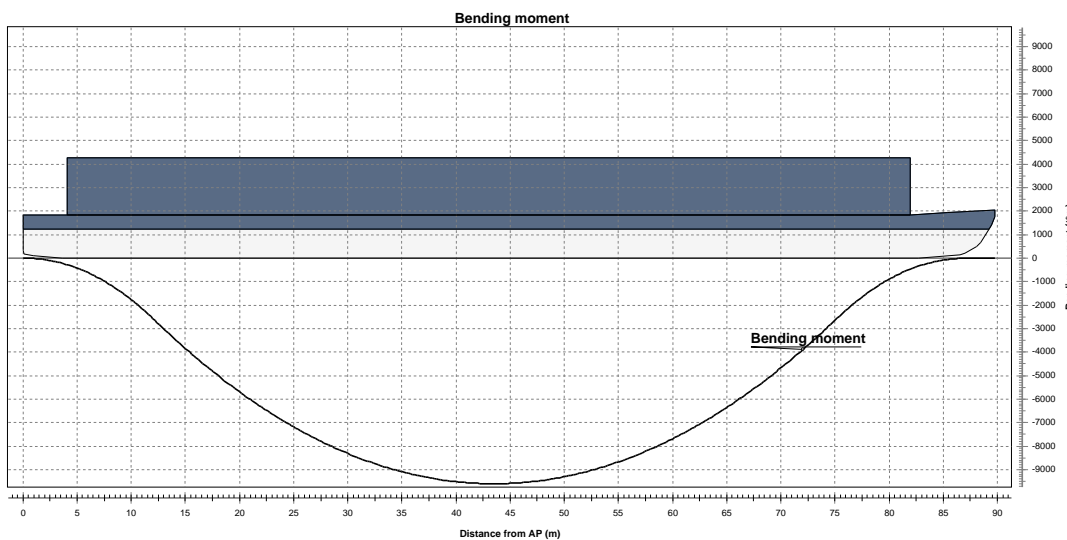
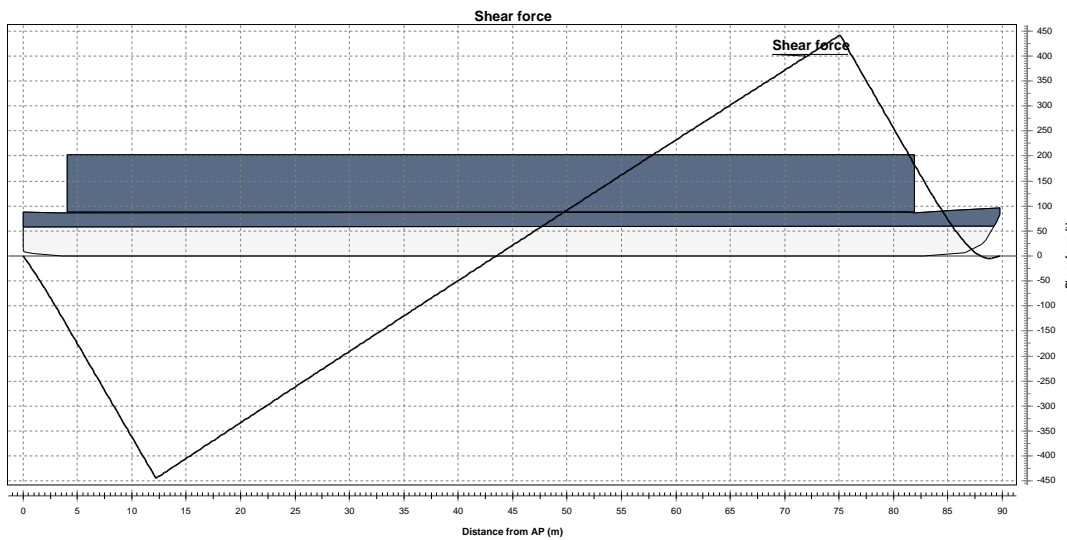
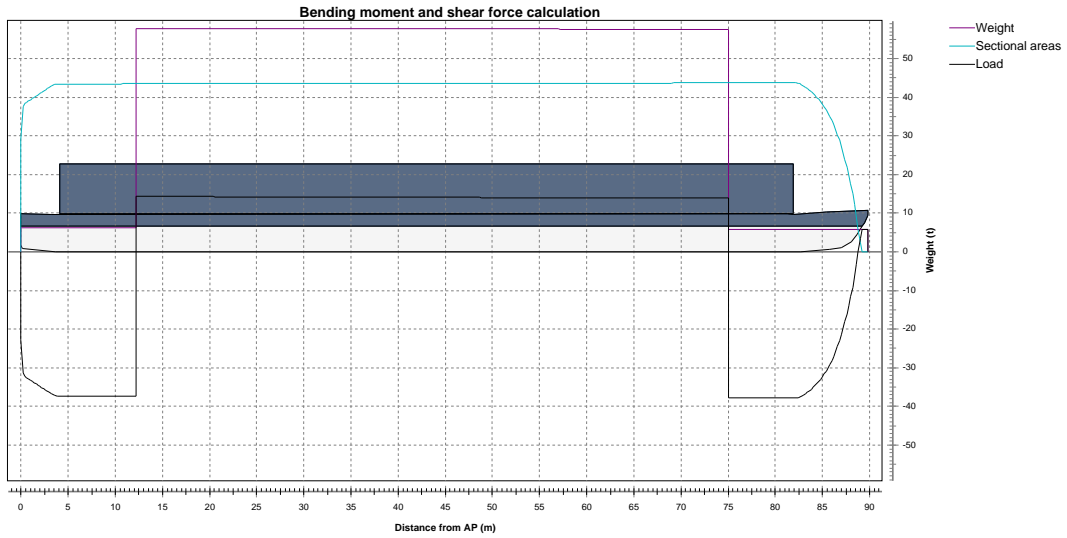
Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	2,700	0,020	3788,829	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	2,700	0,020	3788,828	0,171	0,078	0,000	0,000	0,093	0,0008
2,0 (PS)	2,700	0,019	3788,829	0,341	0,156	0,000	0,000	0,185	0,0032
3,0 (PS)	2,700	0,018	3788,829	0,512	0,234	0,000	0,000	0,278	0,0073
4,0 (PS)	2,700	0,017	3788,830	0,683	0,312	0,000	0,000	0,372	0,0130
5,0 (PS)	2,699	0,015	3788,830	0,855	0,390	0,000	0,000	0,465	0,0203
6,0 (PS)	2,699	0,013	3788,829	1,027	0,467	0,000	0,000	0,559	0,0292
7,0 (PS)	2,698	0,010	3788,829	1,199	0,545	0,000	0,000	0,654	0,0398
8,0 (PS)	2,698	0,007	3788,829	1,372	0,622	0,000	0,000	0,750	0,0520
9,0 (PS)	2,697	0,003	3788,829	1,545	0,699	0,000	0,000	0,846	0,0660
10,0 (PS)	2,700	-0,002	3788,835	1,710	0,776	0,000	0,000	0,934	0,0815



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	5,310 m	>=	1,000 m	Complies
Combined heeling moment	1,0 degr	<=	5,0 degr	Complies
Calculated heeling moment (upright)	358,160 t*m			
Required freeboard	0,354 m	>=	0,000 m	Complies
Deck immersion angle	3,7 degr			
Max allowed ratio static angle/deck immersion angle	0,279	<=	1,000	Complies
Weight	358,160 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria



Summary

Mean moulded draft	2,700 m	Trim	0,020 m
Displacement	3788,830 t	GM	5,310 m
Minimum shear force	-444,593 t	Distance from AP	12,220 m
Maximum shear force	441,862 t	Distance from AP	75,080 m

Summary

Maximum sagging moment	-9602,066 t*m	Distance from AP	43,600 m
Maximum hogging moment	5,758 t*m	Distance from AP	88,000 m

Bending moment and shear force calculation

Distance from AP	Weight	Buoyancy	Load	Shear force	Refer to min/max	Bending moment	Refer to min/max
m	t	m ²	t	t	[%]	t*m	[%]
-0,001	0,000	0,00	0,000	0,000	0,0	0,000	0,0
0,000	0,000	0,00	0,000	0,000	0,0	0,000	0,0
1,000	6,186	39,37	-33,180	-31,344	0,0	-15,435	0,0
2,000	6,182	40,99	-34,806	-65,337	0,0	-63,934	0,0
3,000	6,179	42,57	-36,387	-100,944	0,0	-147,236	0,0
4,000	6,175	43,45	-37,279	-137,908	0,0	-266,877	0,0
5,000	6,171	43,46	-37,286	-175,190	0,0	-423,715	0,0
6,000	6,167	43,46	-37,294	-212,480	0,0	-617,839	0,0
7,000	6,163	43,46	-37,301	-249,778	0,0	-849,256	0,0
8,000	6,159	43,47	-37,309	-287,083	0,0	-1117,975	0,0
9,000	6,155	43,47	-37,316	-324,395	0,0	-1424,002	0,0
10,000	6,151	43,48	-37,324	-361,715	0,0	-1767,346	0,0
11,000	6,147	43,48	-37,332	-399,043	0,0	-2148,014	0,0
12,000	6,143	43,48	-37,339	-436,379	0,0	-2566,013	0,0
13,000	57,820	43,49	14,334	-433,410	0,0	-3005,630	0,0
14,000	57,816	43,49	14,327	-419,080	0,0	-3432,164	0,0
15,000	57,813	43,49	14,319	-404,757	0,0	-3844,371	0,0
16,000	57,809	43,50	14,311	-390,442	0,0	-4242,260	0,0
17,000	57,805	43,50	14,304	-376,135	0,0	-4625,837	0,0
18,000	57,801	43,50	14,296	-361,835	0,0	-4995,110	0,0
19,000	57,797	43,51	14,289	-347,542	0,0	-5350,087	0,0
20,000	57,793	43,51	14,281	-333,258	0,0	-5690,776	0,0
21,000	57,789	43,52	14,273	-318,980	0,0	-6017,183	0,0
22,000	57,785	43,52	14,266	-304,711	0,0	-6329,317	0,0
23,000	57,781	43,52	14,258	-290,448	0,0	-6627,185	0,0
24,000	57,777	43,53	14,251	-276,194	0,0	-6910,794	0,0
25,000	57,774	43,53	14,243	-261,947	0,0	-7180,153	0,0
26,000	57,770	43,53	14,236	-247,707	0,0	-7435,269	0,0
27,000	57,766	43,54	14,228	-233,475	0,0	-7676,148	0,0
28,000	57,762	43,54	14,220	-219,251	0,0	-7902,800	0,0
29,000	57,758	43,55	14,213	-205,034	0,0	-8115,232	0,0
30,000	57,754	43,55	14,205	-190,825	0,0	-8313,450	0,0
31,000	57,750	43,55	14,198	-176,624	0,0	-8497,463	0,0
32,000	57,746	43,56	14,190	-162,430	0,0	-8667,278	0,0
33,000	57,742	43,56	14,183	-148,243	0,0	-8822,903	0,0
34,000	57,739	43,56	14,175	-134,064	0,0	-8964,345	0,0
35,000	57,735	43,57	14,168	-119,893	0,0	-9091,612	0,0
36,000	57,731	43,57	14,160	-105,729	0,0	-9204,712	0,0
37,000	57,727	43,57	14,152	-91,573	0,0	-9303,652	0,0
38,000	57,723	43,58	14,145	-77,425	0,0	-9388,439	0,0
39,000	57,719	43,58	14,137	-63,284	0,0	-9459,082	0,0
40,000	57,715	43,59	14,130	-49,150	0,0	-9515,587	0,0
41,000	57,711	43,59	14,122	-35,024	0,0	-9557,962	0,0
42,000	57,707	43,59	14,115	-20,906	0,0	-9586,216	0,0
43,000	57,703	43,60	14,107	-6,795	0,0	-9600,355	0,0
44,000	57,700	43,60	14,099	7,308	0,0	-9600,387	0,0
45,000	57,696	43,60	14,092	21,404	0,0	-9586,320	0,0
46,000	57,692	43,61	14,084	35,492	0,0	-9558,160	0,0
47,000	57,688	43,61	14,077	49,572	0,0	-9515,917	0,0
48,000	57,684	43,61	14,069	63,645	0,0	-9459,597	0,0
49,000	57,680	43,62	14,062	77,710	0,0	-9389,207	0,0
50,000	57,676	43,62	14,054	91,768	0,0	-9304,756	0,0
51,000	57,672	43,63	14,046	105,818	0,0	-9206,252	0,0

Bending moment and shear force calculation

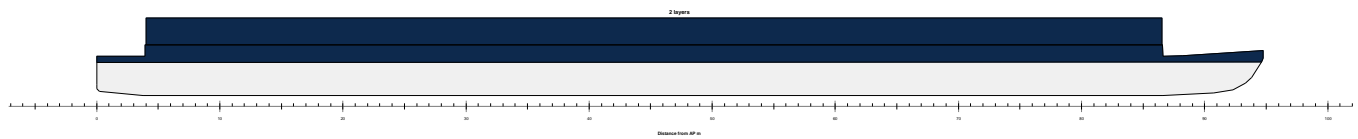
Distance from AP	Weight	Buoyancy	Load	Shear force	Refer to min/max	Bending moment	Refer to min/max
m	t	m ²	t	t	[%]	t*m	[%]
52,000	57,668	43,63	14,039	119,861	0,0	-9093,700	0,0
53,000	57,665	43,63	14,031	133,896	0,0	-8967,110	0,0
54,000	57,661	43,64	14,024	147,924	0,0	-8826,489	0,0
55,000	57,657	43,64	14,016	161,944	0,0	-8671,844	0,0
56,000	57,653	43,64	14,009	175,956	0,0	-8503,183	0,0
57,000	57,649	43,65	14,001	189,961	0,0	-8320,513	0,0
58,000	57,645	43,65	13,993	203,958	0,0	-8123,842	0,0
59,000	57,641	43,66	13,986	217,948	0,0	-7913,178	0,0
60,000	57,637	43,66	13,978	231,930	0,0	-7688,528	0,0
61,000	57,633	43,66	13,971	245,904	0,0	-7449,899	0,0
62,000	57,630	43,67	13,963	259,871	0,0	-7197,300	0,0
63,000	57,626	43,67	13,956	273,830	0,0	-6930,738	0,0
64,000	57,622	43,67	13,948	287,782	0,0	-6650,220	0,0
65,000	57,618	43,68	13,940	301,727	0,0	-6355,754	0,0
66,000	57,614	43,68	13,933	315,663	0,0	-6047,348	0,0
67,000	57,610	43,68	13,925	329,592	0,0	-5725,008	0,0
68,000	57,606	43,69	13,918	343,514	0,0	-5388,744	0,0
69,000	57,602	43,69	13,910	357,428	0,0	-5038,561	0,0
70,000	57,598	43,70	13,903	371,334	0,0	-4674,469	0,0
71,000	57,594	43,70	13,895	385,233	0,0	-4296,474	0,0
72,000	57,591	43,70	13,888	399,124	0,0	-3904,583	0,0
73,000	57,587	43,71	13,880	413,008	0,0	-3498,806	0,0
74,000	57,583	43,71	13,872	426,884	0,0	-3079,148	0,0
75,000	57,579	43,71	13,865	440,753	0,0	-2645,618	0,0
76,000	5,894	43,72	-37,824	407,067	0,0	-2220,095	0,0
77,000	5,890	43,72	-37,831	369,240	0,0	-1832,230	0,0
78,000	5,886	43,73	-37,839	331,405	0,0	-1482,195	0,0
79,000	5,883	43,73	-37,846	293,563	0,0	-1170,000	0,0
80,000	5,879	43,73	-37,854	255,713	0,0	-895,651	0,0
81,000	5,875	43,74	-37,861	217,855	0,0	-659,155	0,0
82,000	5,871	43,74	-37,869	179,990	0,0	-460,521	0,0
83,000	5,867	42,95	-37,079	142,373	0,0	-299,693	0,0
84,000	5,863	40,97	-35,103	106,224	0,0	-175,841	0,0
85,000	5,859	38,19	-32,331	72,432	0,0	-87,024	0,0
86,000	5,855	33,97	-28,111	42,026	0,0	-30,423	0,0
87,000	5,851	27,33	-21,474	17,004	0,0	-1,728	0,0
88,000	5,848	17,54	-11,688	0,101	0,0	5,758	0,0
89,000	5,844	2,31	3,532	-4,439	0,0	2,077	0,0
89,800	5,841	0,00	5,841	0,000	0,0	0,000	0,0

Max. load bending moment

2020.056_006 IW-NET barge 3 abreast long

Designer Bernhard Bieringer
 Created by Bernhard Bieringer
 Comment
 Filename 2020_056_006_IW-NET 3 Units abreast long.fbm

Design length	94,770 m	Midship location	47,385 m
Length over all	94,766 m	Water density	1,0000
Design beam	9,500 m	Mean shell thickness	0,0000 m
Maximum beam	9,500 m	Appendage coefficient	1,0000
Design draft	1,850 m		



Hydrostatic particulars

List	0,0 (CL) degr	LCB	46,468 m
Draft aft pp	2,678 m	KM	4,241 m
Mean moulded draft	2,700 m	VCG	4,388 m
Draft forward pp	2,723 m	VCG'	4,388 m
Trim	0,045 m	Max VCG'	3,242 m
LCF	47,157 m	GM solid	-0,147 m

Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

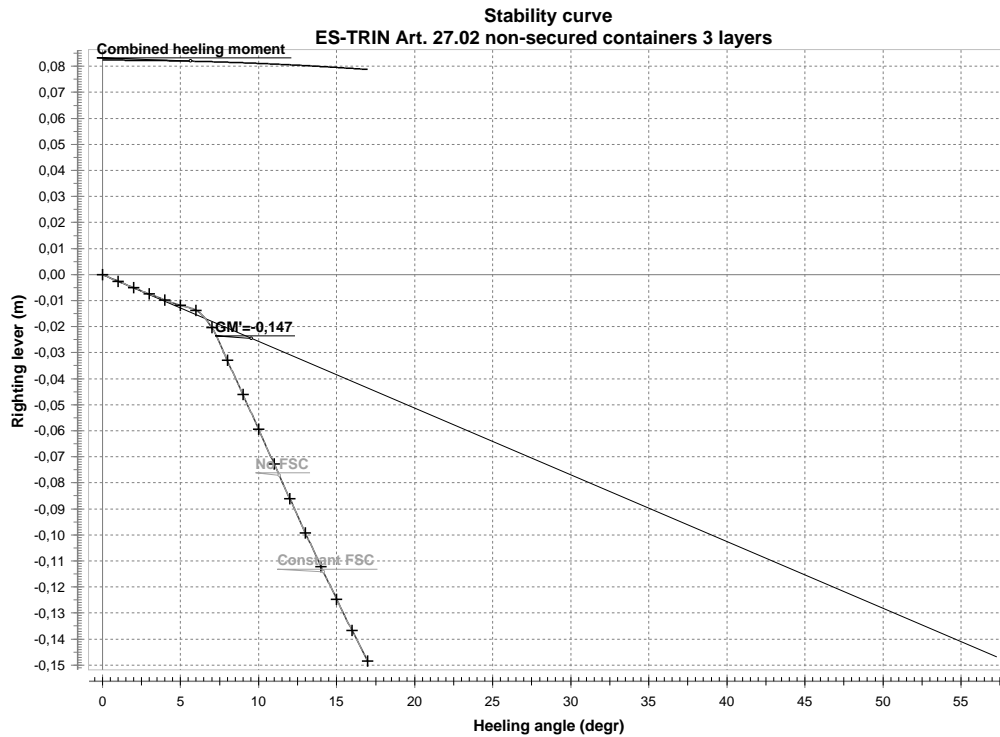
Max. load bending moment			1977,310	46,400	0,000 (CL)	5,000	0,000
Lightship			363,354	46,830	0,000 (CL)	1,058	
Deadweight			1977,310	46,400	0,000 (CL)	5,000	0,000
Displacement			2340,664	46,467	0,000 (CL)	4,388	0,000

Righting levers

Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	2,700	0,045	2340,662	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	2,700	0,045	2340,662	0,074	0,077	0,000	0,000	-0,003	0,0000
2,0 (PS)	2,700	0,045	2340,663	0,148	0,153	0,000	0,000	-0,005	0,0000
3,0 (PS)	2,700	0,044	2340,664	0,222	0,230	0,000	0,000	-0,007	0,0000
4,0 (PS)	2,700	0,044	2340,664	0,296	0,306	0,000	0,000	-0,010	0,0000
5,0 (PS)	2,700	0,043	2340,664	0,371	0,382	0,000	0,000	-0,012	0,0000
6,0 (PS)	2,700	0,043	2340,685	0,445	0,459	0,000	0,000	-0,014	0,0000
7,0 (PS)	2,703	0,043	2340,667	0,514	0,535	0,000	0,000	-0,020	0,0000
8,0 (PS)	2,709	0,040	2340,674	0,578	0,611	0,000	0,000	-0,033	0,0000
9,0 (PS)	2,716	0,037	2340,670	0,640	0,686	0,000	0,000	-0,046	0,0000
10,0 (PS)	2,724	0,034	2340,670	0,703	0,762	0,000	0,000	-0,059	0,0000
11,0 (PS)	2,732	0,031	2340,669	0,765	0,837	0,000	0,000	-0,073	0,0000
12,0 (PS)	2,740	0,029	2340,668	0,826	0,912	0,000	0,000	-0,086	0,0000
13,0 (PS)	2,748	0,027	2340,667	0,888	0,987	0,000	0,000	-0,099	0,0000
14,0 (PS)	2,757	0,027	2340,665	0,949	1,062	0,000	0,000	-0,112	0,0000

Righting levers

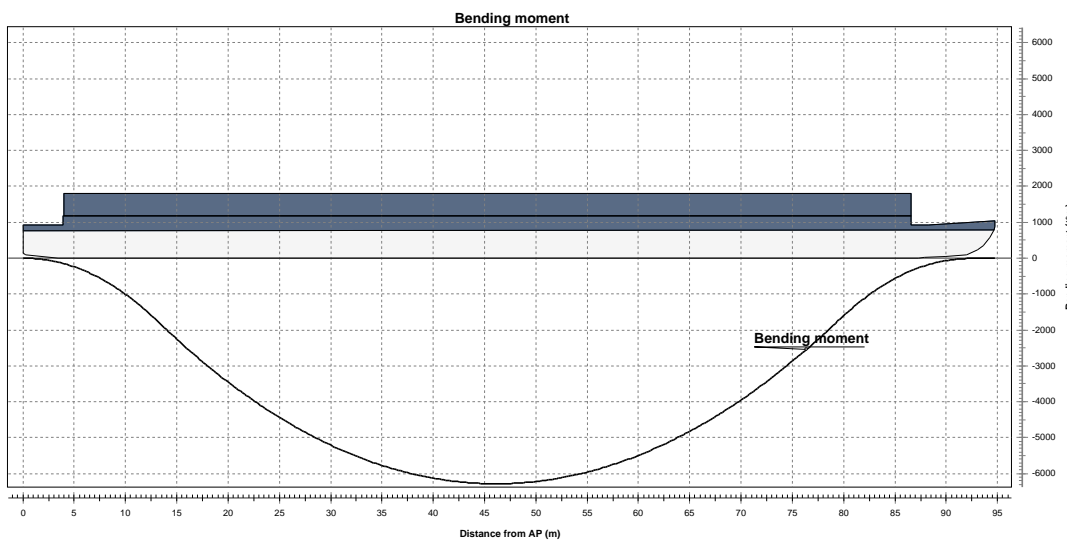
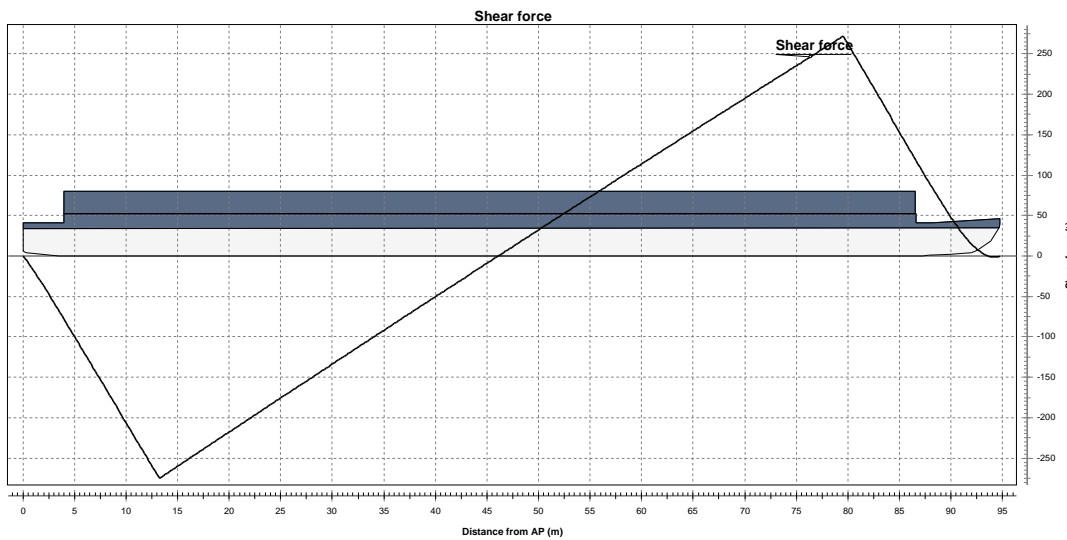
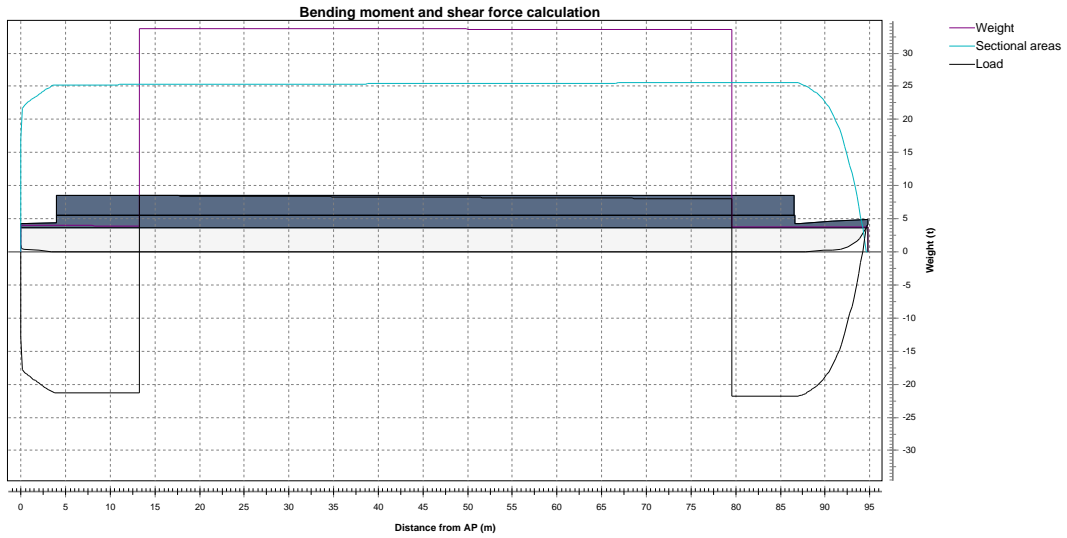
Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
15,0 (PS)	2,766	0,026	2340,665	1,011	1,136	0,000	0,000	-0,125	0,0000
16,0 (PS)	2,775	0,026	2340,664	1,073	1,210	0,000	0,000	-0,137	0,0000
17,0 (PS)	2,785	0,026	2340,664	1,135	1,283	0,000	0,000	-0,148	0,0000



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	-0,147 m	\geq	1,000 m	FAILS
Combined heeling moment	180,0 degr	\leq	5,0 degr	FAILS
Calculated heeling moment (upright)	192,770 t*m			
Required freeboard	-100,000 m	\geq	0,000 m	FAILS
Weight	192,770 t			
Trv. location of weight	1,000 m			

The condition does NOT comply with the stability criteria



Summary

Mean moulded draft	2,700 m	Trim	0,045 m
Displacement	2340,664 t	GM	-0,147 m
Minimum shear force	-274,957 t	Distance from AP	13,231 m
Maximum shear force	271,878 t	Distance from AP	79,570 m

Summary

Maximum sagging moment	-6286,079 t*m	Distance from AP	46,200 m
Maximum hogging moment	1,245 t*m	Distance from AP	93,600 m

Bending moment and shear force calculation

Distance from AP	Weight	Buoyancy	Load	Shear force	Refer to min/max	Bending moment	Refer to min/max
m	t	m ²	t	t	[%]	t*m	[%]
-0,001	0,000	0,00	0,000	0,000	0,0	0,000	0,0
0,000	0,000	0,00	0,000	0,000	0,0	0,000	0,0
1,000	3,966	22,82	-18,851	-17,795	0,0	-8,772	0,0
2,000	3,963	23,77	-19,803	-37,123	0,0	-36,330	0,0
3,000	3,960	24,69	-20,731	-57,396	0,0	-83,691	0,0
4,000	3,957	25,21	-21,252	-78,468	0,0	-151,754	0,0
5,000	3,955	25,21	-21,259	-99,724	0,0	-241,025	0,0
6,000	3,952	25,22	-21,267	-120,986	0,0	-351,554	0,0
7,000	3,949	25,22	-21,274	-142,257	0,0	-483,351	0,0
8,000	3,946	25,23	-21,281	-163,534	0,0	-636,421	0,0
9,000	3,943	25,23	-21,289	-184,819	0,0	-810,772	0,0
10,000	3,940	25,24	-21,296	-206,111	0,0	-1006,412	0,0
11,000	3,938	25,24	-21,303	-227,411	0,0	-1223,348	0,0
12,000	3,935	25,25	-21,311	-248,718	0,0	-1461,588	0,0
13,000	3,932	25,25	-21,318	-270,032	0,0	-1721,137	0,0
14,000	33,736	25,25	8,482	-268,432	0,0	-1993,192	0,0
15,000	33,734	25,26	8,475	-259,953	0,0	-2257,559	0,0
16,000	33,731	25,26	8,467	-251,482	0,0	-2513,452	0,0
17,000	33,728	25,27	8,460	-243,019	0,0	-2760,877	0,0
18,000	33,725	25,27	8,453	-234,562	0,0	-2999,842	0,0
19,000	33,722	25,28	8,445	-226,113	0,0	-3230,354	0,0
20,000	33,719	25,28	8,438	-217,672	0,0	-3452,421	0,0
21,000	33,716	25,29	8,431	-209,237	0,0	-3666,051	0,0
22,000	33,713	25,29	8,423	-200,811	0,0	-3871,249	0,0
23,000	33,710	25,29	8,416	-192,391	0,0	-4068,025	0,0
24,000	33,708	25,30	8,408	-183,979	0,0	-4256,385	0,0
25,000	33,705	25,30	8,401	-175,574	0,0	-4436,336	0,0
26,000	33,702	25,31	8,394	-167,177	0,0	-4607,887	0,0
27,000	33,699	25,31	8,386	-158,787	0,0	-4771,044	0,0
28,000	33,696	25,32	8,379	-150,405	0,0	-4925,814	0,0
29,000	33,693	25,32	8,371	-142,029	0,0	-5072,206	0,0
30,000	33,690	25,33	8,364	-133,662	0,0	-5210,226	0,0
31,000	33,687	25,33	8,357	-125,301	0,0	-5339,882	0,0
32,000	33,685	25,34	8,349	-116,948	0,0	-5461,182	0,0
33,000	33,682	25,34	8,342	-108,603	0,0	-5574,132	0,0
34,000	33,679	25,34	8,335	-100,264	0,0	-5678,740	0,0
35,000	33,676	25,35	8,327	-91,933	0,0	-5775,014	0,0
36,000	33,673	25,35	8,320	-83,610	0,0	-5862,960	0,0
37,000	33,670	25,36	8,312	-75,294	0,0	-5942,587	0,0
38,000	33,667	25,36	8,305	-66,985	0,0	-6013,901	0,0
39,000	33,664	25,37	8,298	-58,684	0,0	-6076,910	0,0
40,000	33,661	25,37	8,290	-50,390	0,0	-6131,622	0,0
41,000	33,659	25,38	8,283	-42,103	0,0	-6178,043	0,0
42,000	33,656	25,38	8,276	-33,824	0,0	-6216,181	0,0
43,000	33,653	25,38	8,268	-25,552	0,0	-6246,044	0,0
44,000	33,650	25,39	8,261	-17,288	0,0	-6267,638	0,0
45,000	33,647	25,39	8,253	-9,031	0,0	-6280,972	0,0
46,000	33,644	25,40	8,246	-0,781	0,0	-6286,053	0,0
47,000	33,641	25,40	8,239	7,461	0,0	-6282,887	0,0
48,000	33,638	25,41	8,231	15,696	0,0	-6271,483	0,0
49,000	33,636	25,41	8,224	23,924	0,0	-6251,848	0,0
50,000	33,633	25,42	8,216	32,144	0,0	-6223,989	0,0
51,000	33,630	25,42	8,209	40,357	0,0	-6187,913	0,0

Bending moment and shear force calculation

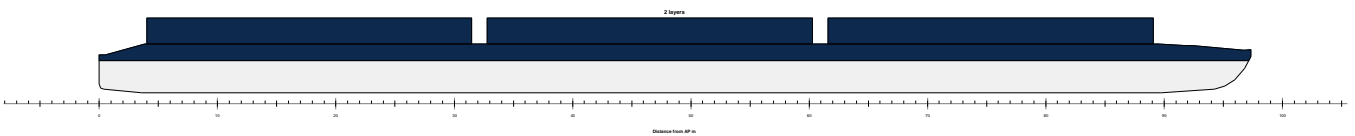
Distance from AP	Weight	Buoyancy	Load	Shear force	Refer to min/max	Bending moment	Refer to min/max
m	t	m ²	t	t	[%]	t*m	[%]
52,000	33,627	25,43	8,202	48,562	0,0	-6143,628	0,0
53,000	33,624	25,43	8,194	56,760	0,0	-6091,142	0,0
54,000	33,621	25,43	8,187	64,951	0,0	-6030,461	0,0
55,000	33,618	25,44	8,180	73,134	0,0	-5961,593	0,0
56,000	33,615	25,44	8,172	81,310	0,0	-5884,546	0,0
57,000	33,612	25,45	8,165	89,479	0,0	-5799,326	0,0
58,000	33,610	25,45	8,157	97,640	0,0	-5705,942	0,0
59,000	33,607	25,46	8,150	105,793	0,0	-5604,400	0,0
60,000	33,604	25,46	8,143	113,940	0,0	-5494,708	0,0
61,000	33,601	25,47	8,135	122,079	0,0	-5376,874	0,0
62,000	33,598	25,47	8,128	130,210	0,0	-5250,904	0,0
63,000	33,595	25,47	8,121	138,335	0,0	-5116,806	0,0
64,000	33,592	25,48	8,113	146,451	0,0	-4974,588	0,0
65,000	33,589	25,48	8,106	154,561	0,0	-4824,256	0,0
66,000	33,586	25,49	8,098	162,663	0,0	-4665,819	0,0
67,000	33,584	25,49	8,091	170,758	0,0	-4499,284	0,0
68,000	33,581	25,50	8,084	178,845	0,0	-4324,657	0,0
69,000	33,578	25,50	8,076	186,925	0,0	-4141,947	0,0
70,000	33,575	25,51	8,069	194,997	0,0	-3951,161	0,0
71,000	33,572	25,51	8,061	203,062	0,0	-3752,306	0,0
72,000	33,569	25,52	8,054	211,120	0,0	-3545,389	0,0
73,000	33,566	25,52	8,047	219,171	0,0	-3330,419	0,0
74,000	33,563	25,52	8,039	227,214	0,0	-3107,401	0,0
75,000	33,561	25,53	8,032	235,249	0,0	-2876,345	0,0
76,000	33,558	25,53	8,025	243,277	0,0	-2637,256	0,0
77,000	33,555	25,54	8,017	251,298	0,0	-2390,143	0,0
78,000	33,552	25,54	8,010	259,312	0,0	-2135,013	0,0
79,000	33,549	25,55	8,002	267,318	0,0	-1871,873	0,0
80,000	3,741	25,55	-21,810	262,500	0,0	-1603,486	0,0
81,000	3,738	25,56	-21,817	240,687	0,0	-1352,067	0,0
82,000	3,736	25,56	-21,824	218,866	0,0	-1122,465	0,0
83,000	3,733	25,56	-21,832	197,038	0,0	-914,688	0,0
84,000	3,730	25,57	-21,839	175,203	0,0	-728,742	0,0
85,000	3,727	25,57	-21,846	153,360	0,0	-564,636	0,0
86,000	3,724	25,58	-21,854	131,510	0,0	-422,376	0,0
87,000	3,721	25,53	-21,808	109,659	0,0	-301,969	0,0
88,000	3,719	24,93	-21,208	88,115	0,0	-203,306	0,0
89,000	3,716	24,00	-20,288	67,345	0,0	-125,824	0,0
90,000	3,713	22,66	-18,950	47,674	0,0	-68,596	0,0
91,000	3,710	20,41	-16,696	29,773	0,0	-30,230	0,0
92,000	3,707	16,89	-13,180	14,680	0,0	-8,459	0,0
93,000	3,704	11,93	-8,224	3,916	0,0	0,266	0,0
94,000	3,702	5,32	-1,620	-1,255	0,0	0,896	0,0
94,770	3,699	0,00	3,699	0,000	0,0	0,000	0,0

Max. load bending moment

2020.056_007 IW-NET NEWS Evolution long

Designer Bernhard Bieringer
 Created by Bernhard Bieringer
 Comment
 Filename 2020_056_007_IW-NET NEWS Evolution long.fbm

Design length	97,320 m	Midship location	48,660 m
Length over all	97,320 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	2,000 m		



Hydrostatic particulars

List	0,0 (CL) degr	LCB	47,670 m
Draft aft pp	2,696 m	KM	5,527 m
Mean moulded draft	2,700 m	VCG	4,348 m
Draft forward pp	2,705 m	VCG'	4,348 m
Trim	0,008 m	Max VCG'	4,527 m
LCF	48,450 m	GM solid	1,179 m

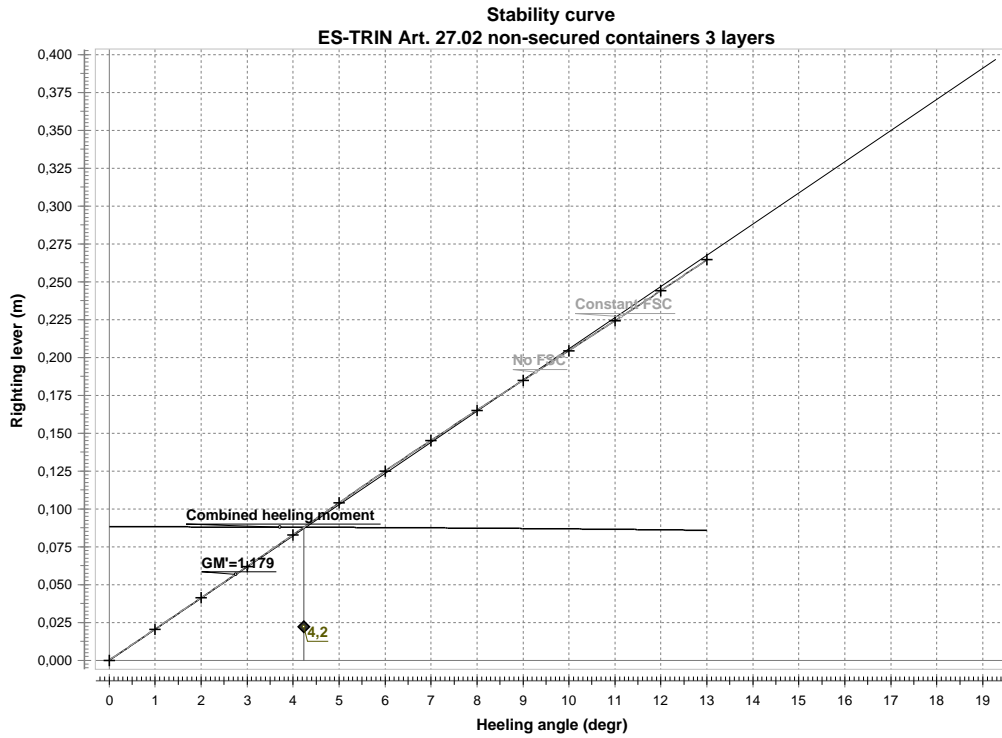
Description	Density	Filling %	Weight t	LCG m	TCG m	VCG m	FSM t*m
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Containers

Max. load bending moment			2418,190	47,600	0,000 (CL)	5,000	0,000
Lightship			488,527	48,014	0,000 (CL)	1,123	
Deadweight			2418,190	47,600	0,000 (CL)	5,000	0,000
Displacement			2906,717	47,670	0,000 (CL)	4,348	0,000

Righting levers

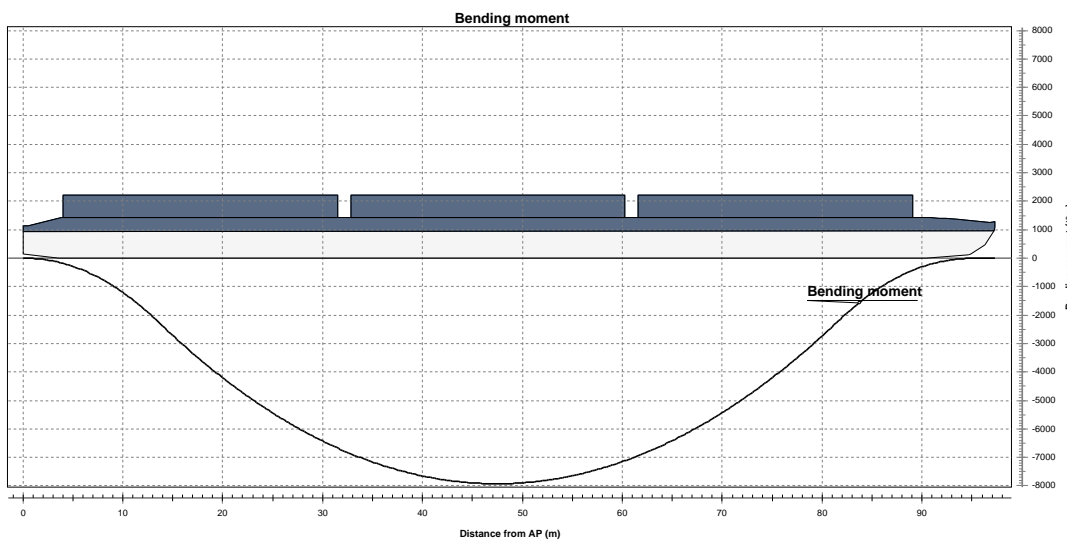
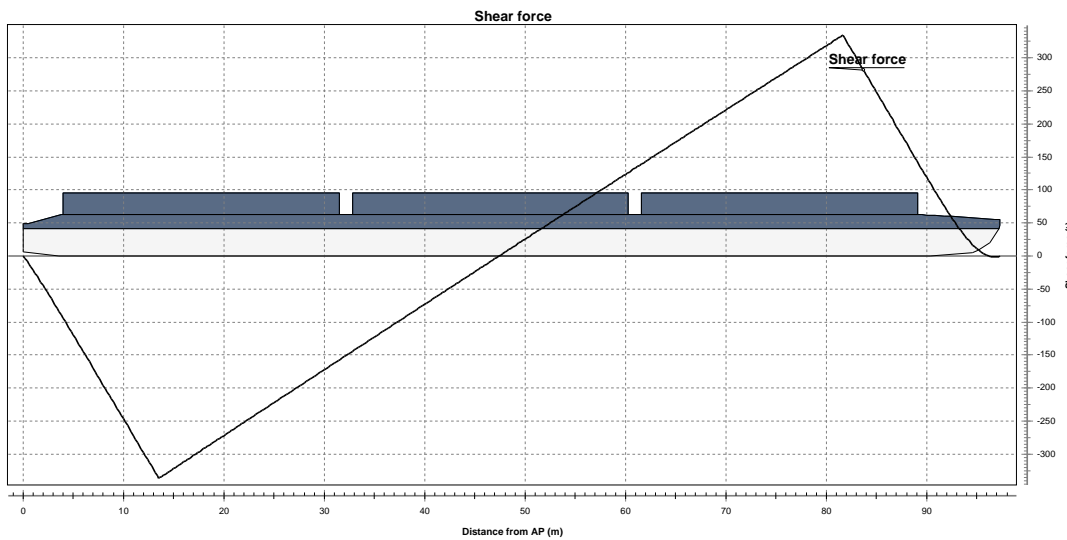
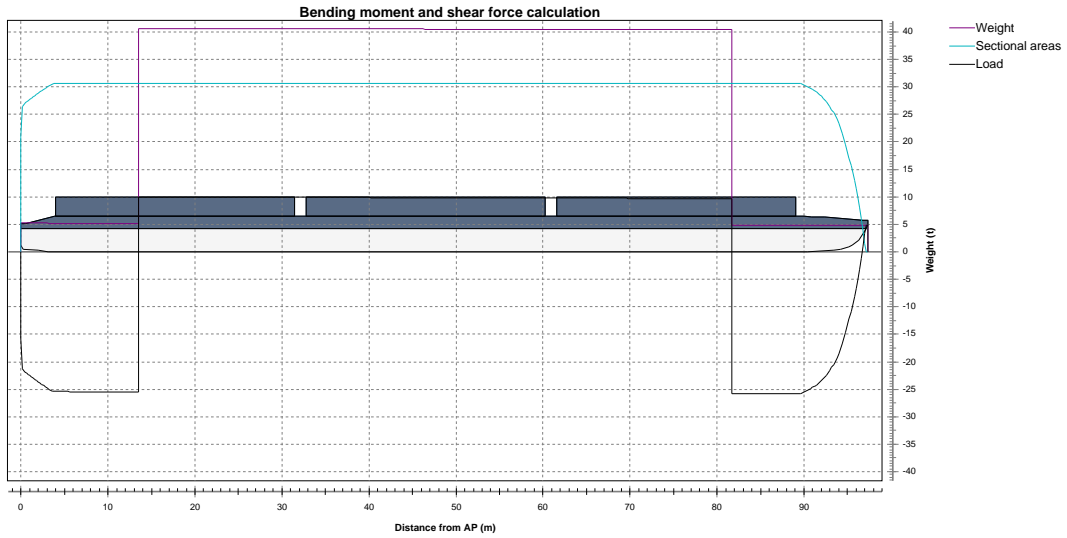
Heeling angle	Draft	Trim	Displacement	KN sin(θ)	VCG sin(θ)	GG' sin(θ)	TCG cos(θ)	GZ	Area
degr	m	m	t	m	m	m	m	m	mrad
0,0 (CL)	2,700	0,008	2906,716	0,000	0,000	0,000	0,000	0,000	0,0000
1,0 (PS)	2,700	0,008	2906,717	0,096	0,076	0,000	0,000	0,021	0,0002
2,0 (PS)	2,700	0,008	2906,717	0,193	0,152	0,000	0,000	0,041	0,0007
3,0 (PS)	2,700	0,008	2906,717	0,290	0,228	0,000	0,000	0,062	0,0016
4,0 (PS)	2,700	0,007	2906,716	0,386	0,303	0,000	0,000	0,083	0,0029
5,0 (PS)	2,700	0,006	2906,715	0,483	0,379	0,000	0,000	0,104	0,0045
6,0 (PS)	2,700	0,005	2906,737	0,580	0,455	0,000	0,000	0,125	0,0065
7,0 (PS)	2,701	0,002	2906,739	0,675	0,530	0,000	0,000	0,145	0,0089
8,0 (PS)	2,702	0,000	2906,735	0,770	0,605	0,000	0,000	0,165	0,0116
9,0 (PS)	2,703	-0,002	2906,729	0,865	0,680	0,000	0,000	0,185	0,0146
10,0 (PS)	2,705	-0,004	2906,724	0,960	0,755	0,000	0,000	0,204	0,0180
11,0 (PS)	2,707	-0,005	2906,721	1,054	0,830	0,000	0,000	0,224	0,0218
12,0 (PS)	2,709	-0,006	2906,718	1,148	0,904	0,000	0,000	0,244	0,0259
13,0 (PS)	2,712	-0,005	2906,717	1,243	0,978	0,000	0,000	0,264	0,0303



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	1,179 m	>=	1,000 m	Complies
Combined heeling moment	4,2 degr	<=	5,0 degr	Complies
Calculated heeling moment (upright)	256,100 t*m			
Required freeboard	0,073 m	>=	0,000 m	Complies
Weight	256,100 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria



Summary

Mean moulded draft	2,700 m	Trim	0,008 m
Displacement	2906,717 t	GM	1,179 m
Minimum shear force	-336,617 t	Distance from AP	13,538 m
Maximum shear force	334,306 t	Distance from AP	81,662 m

Summary

Maximum sagging moment	-7927,126 t*m	Distance from AP	47,400 m
Maximum hogging moment	1,645 t*m	Distance from AP	96,000 m

Bending moment and shear force calculation

Distance from AP	Weight	Buoyancy	Load	Shear force	Refer to min/max	Bending moment	Refer to min/max
m	t	m ²	t	t	[%]	t*m	[%]
-0,001	0,000	0,00	0,000	0,000	0,0	0,000	0,0
0,000	0,000	0,00	0,000	0,000	0,0	0,000	0,0
1,000	5,216	27,76	-22,544	-21,301	0,0	-10,473	0,0
2,000	5,212	28,90	-23,687	-44,416	0,0	-43,415	0,0
3,000	5,207	30,01	-24,801	-68,668	0,0	-100,042	0,0
4,000	5,203	30,63	-25,426	-93,875	0,0	-181,436	0,0
5,000	5,199	30,63	-25,431	-119,304	0,0	-288,200	0,0
6,000	5,195	30,63	-25,436	-144,737	0,0	-420,394	0,0
7,000	5,191	30,63	-25,441	-170,175	0,0	-578,024	0,0
8,000	5,187	30,63	-25,446	-195,619	0,0	-761,095	0,0
9,000	5,183	30,63	-25,451	-221,067	0,0	-969,612	0,0
10,000	5,179	30,63	-25,456	-246,521	0,0	-1203,581	0,0
11,000	5,175	30,64	-25,461	-271,980	0,0	-1463,005	0,0
12,000	5,170	30,64	-25,466	-297,444	0,0	-1747,891	0,0
13,000	5,166	30,64	-25,472	-322,913	0,0	-2058,243	0,0
14,000	40,659	30,64	10,020	-331,987	0,0	-2390,279	0,0
15,000	40,655	30,64	10,015	-321,969	0,0	-2717,431	0,0
16,000	40,651	30,64	10,010	-311,957	0,0	-3034,569	0,0
17,000	40,647	30,64	10,005	-301,949	0,0	-3341,696	0,0
18,000	40,643	30,64	10,000	-291,947	0,0	-3638,818	0,0
19,000	40,639	30,64	9,995	-281,950	0,0	-3925,941	0,0
20,000	40,634	30,64	9,990	-271,958	0,0	-4203,069	0,0
21,000	40,630	30,65	9,984	-261,971	0,0	-4470,208	0,0
22,000	40,626	30,65	9,979	-251,989	0,0	-4727,361	0,0
23,000	40,622	30,65	9,974	-242,012	0,0	-4974,536	0,0
24,000	40,618	30,65	9,969	-232,040	0,0	-5211,736	0,0
25,000	40,614	30,65	9,964	-222,074	0,0	-5438,968	0,0
26,000	40,610	30,65	9,959	-212,112	0,0	-5656,235	0,0
27,000	40,606	30,65	9,954	-202,156	0,0	-5863,543	0,0
28,000	40,602	30,65	9,949	-192,205	0,0	-6060,898	0,0
29,000	40,597	30,65	9,944	-182,258	0,0	-6248,303	0,0
30,000	40,593	30,65	9,938	-172,317	0,0	-6425,766	0,0
31,000	40,589	30,66	9,933	-162,382	0,0	-6593,289	0,0
32,000	40,585	30,66	9,928	-152,451	0,0	-6750,880	0,0
33,000	40,581	30,66	9,923	-142,525	0,0	-6898,542	0,0
34,000	40,577	30,66	9,918	-132,604	0,0	-7036,280	0,0
35,000	40,573	30,66	9,913	-122,689	0,0	-7164,101	0,0
36,000	40,569	30,66	9,908	-112,778	0,0	-7282,009	0,0
37,000	40,565	30,66	9,903	-102,873	0,0	-7390,009	0,0
38,000	40,560	30,66	9,898	-92,973	0,0	-7488,106	0,0
39,000	40,556	30,66	9,892	-83,078	0,0	-7576,306	0,0
40,000	40,552	30,66	9,887	-73,188	0,0	-7654,613	0,0
41,000	40,548	30,67	9,882	-63,303	0,0	-7723,033	0,0
42,000	40,544	30,67	9,877	-53,424	0,0	-7781,571	0,0
43,000	40,540	30,67	9,872	-43,549	0,0	-7830,231	0,0
44,000	40,536	30,67	9,867	-33,679	0,0	-7869,020	0,0
45,000	40,532	30,67	9,862	-23,815	0,0	-7897,941	0,0
46,000	40,528	30,67	9,857	-13,956	0,0	-7917,001	0,0
47,000	40,524	30,67	9,852	-4,102	0,0	-7926,204	0,0
48,000	40,519	30,67	9,846	5,747	0,0	-7925,555	0,0
49,000	40,515	30,67	9,841	15,591	0,0	-7915,060	0,0
50,000	40,511	30,67	9,836	25,430	0,0	-7894,724	0,0
51,000	40,507	30,68	9,831	35,264	0,0	-7864,551	0,0

Bending moment and shear force calculation

Distance from AP	Weight	Buoyancy	Load	Shear force	Refer to min/max	Bending moment	Refer to min/max
m	t	m ²	t	t	[%]	t*m	[%]
52,000	40,503	30,68	9,826	45,092	0,0	-7824,547	0,0
53,000	40,499	30,68	9,821	54,916	0,0	-7774,717	0,0
54,000	40,495	30,68	9,816	64,734	0,0	-7715,066	0,0
55,000	40,491	30,68	9,811	74,548	0,0	-7645,600	0,0
56,000	40,487	30,68	9,806	84,356	0,0	-7566,322	0,0
57,000	40,482	30,68	9,800	94,159	0,0	-7477,239	0,0
58,000	40,478	30,68	9,796	103,957	0,0	-7378,355	0,0
59,000	40,474	30,68	9,790	113,750	0,0	-7269,676	0,0
60,000	40,470	30,68	9,785	123,537	0,0	-7151,207	0,0
61,000	40,466	30,69	9,780	133,320	0,0	-7022,952	0,0
62,000	40,462	30,69	9,775	143,098	0,0	-6884,917	0,0
63,000	40,458	30,69	9,770	152,870	0,0	-6737,108	0,0
64,000	40,454	30,69	9,765	162,637	0,0	-6579,528	0,0
65,000	40,450	30,69	9,760	172,400	0,0	-6412,184	0,0
66,000	40,445	30,69	9,755	182,157	0,0	-6235,080	0,0
67,000	40,441	30,69	9,749	191,909	0,0	-6048,221	0,0
68,000	40,437	30,69	9,744	201,656	0,0	-5851,613	0,0
69,000	40,433	30,69	9,739	211,397	0,0	-5645,261	0,0
70,000	40,429	30,69	9,734	221,134	0,0	-5429,169	0,0
71,000	40,425	30,70	9,729	230,866	0,0	-5203,344	0,0
72,000	40,421	30,70	9,724	240,592	0,0	-4967,789	0,0
73,000	40,417	30,70	9,719	250,313	0,0	-4722,510	0,0
74,000	40,413	30,70	9,714	260,030	0,0	-4467,513	0,0
75,000	40,408	30,70	9,709	269,741	0,0	-4202,802	0,0
76,000	40,404	30,70	9,703	279,447	0,0	-3928,382	0,0
77,000	40,400	30,70	9,698	289,148	0,0	-3644,259	0,0
78,000	40,396	30,70	9,693	298,844	0,0	-3350,438	0,0
79,000	40,392	30,70	9,688	308,534	0,0	-3046,923	0,0
80,000	40,388	30,70	9,683	318,220	0,0	-2733,720	0,0
81,000	40,384	30,71	9,678	327,900	0,0	-2410,835	0,0
82,000	4,883	30,71	-25,824	325,578	0,0	-2080,298	0,0
83,000	4,879	30,71	-25,829	299,751	0,0	-1767,808	0,0
84,000	4,875	30,71	-25,834	273,919	0,0	-1481,147	0,0
85,000	4,870	30,71	-25,839	248,083	0,0	-1220,321	0,0
86,000	4,866	30,71	-25,845	222,241	0,0	-985,333	0,0
87,000	4,862	30,71	-25,850	196,394	0,0	-776,190	0,0
88,000	4,858	30,71	-25,855	170,541	0,0	-592,897	0,0
89,000	4,854	30,71	-25,860	144,684	0,0	-435,458	0,0
90,000	4,850	30,40	-25,550	118,912	0,0	-303,860	0,0
91,000	4,846	29,52	-24,670	93,776	0,0	-197,761	0,0
92,000	4,842	28,30	-23,459	69,679	0,0	-116,305	0,0
93,000	4,838	26,40	-21,563	47,086	0,0	-58,248	0,0
94,000	4,834	23,37	-18,534	26,941	0,0	-21,650	0,0
95,000	4,829	18,22	-13,393	10,800	0,0	-3,368	0,0
96,000	4,825	11,49	-6,665	0,646	0,0	1,645	0,0
97,000	4,821	1,52	3,302	-1,410	0,0	0,291	0,0
97,320	4,820	0,00	4,820	0,000	0,0	0,000	0,0

Max. load bending moment

2020.056_008 IW-NET barge 3 abreast long/shallow

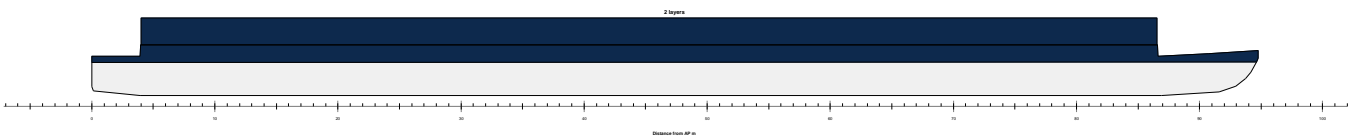
Designer Bernhard Bieringer

Created by Bernhard Bieringer

Comment

Filename 2020_056_008_IW-NET 3 Units abreast long_shallow.fbm

Design length	94,770 m	Midship location	47,385 m
Length over all	94,766 m	Water density	1,0000
Design beam	11,450 m	Mean shell thickness	0,0000 m
Maximum beam	11,450 m	Appendage coefficient	1,0000
Design draft	2,150 m		



Hydrostatic particulars

List	0,0 (CL) degr	LCB	46,491 m
Draft aft pp	2,676 m	KM	5,533 m
Mean moulded draft	2,700 m	VCG	4,332 m
Draft forward pp	2,724 m	VCG'	4,332 m
Trim	0,047 m	Max VCG'	4,533 m
LCF	47,180 m	GM solid	1,201 m

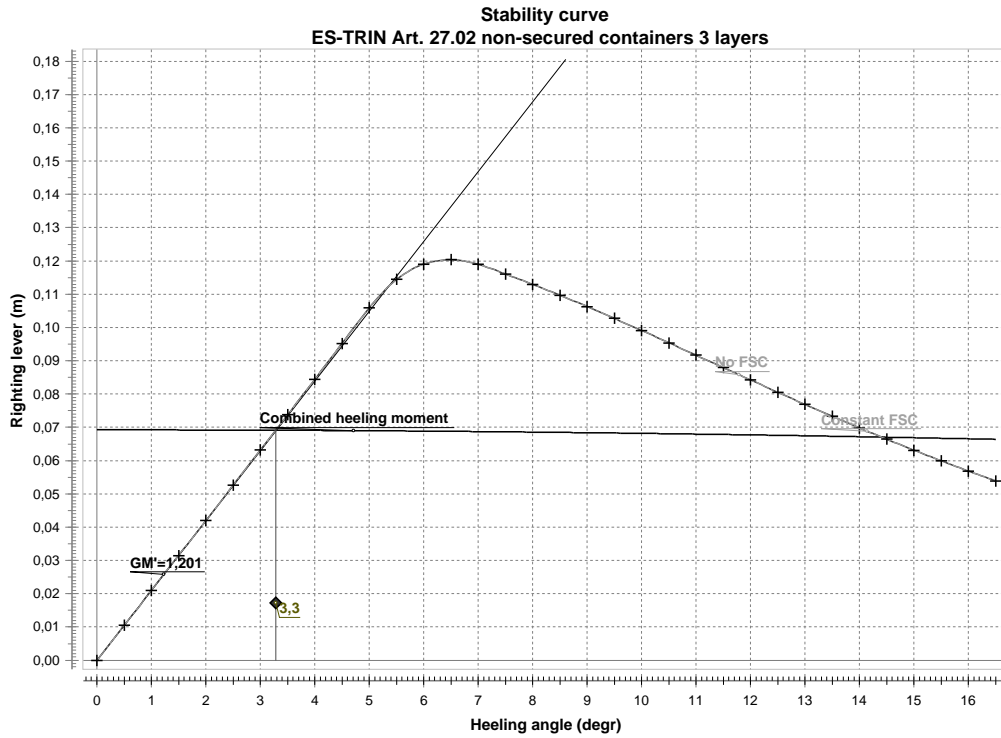
Description	Density	Filling	Weight	LCG	TCG	VCG	FSM
		%	t	m	m	m	t*m

Containers

Max. load bending moment			2346,890	46,400	0,000 (CL)	5,000	0,000
Lightship			479,919	46,930	0,000 (CL)	1,063	
Deadweight			2346,890	46,400	0,000 (CL)	5,000	0,000
Displacement			2826,809	46,490	0,000 (CL)	4,332	0,000

Righting levers

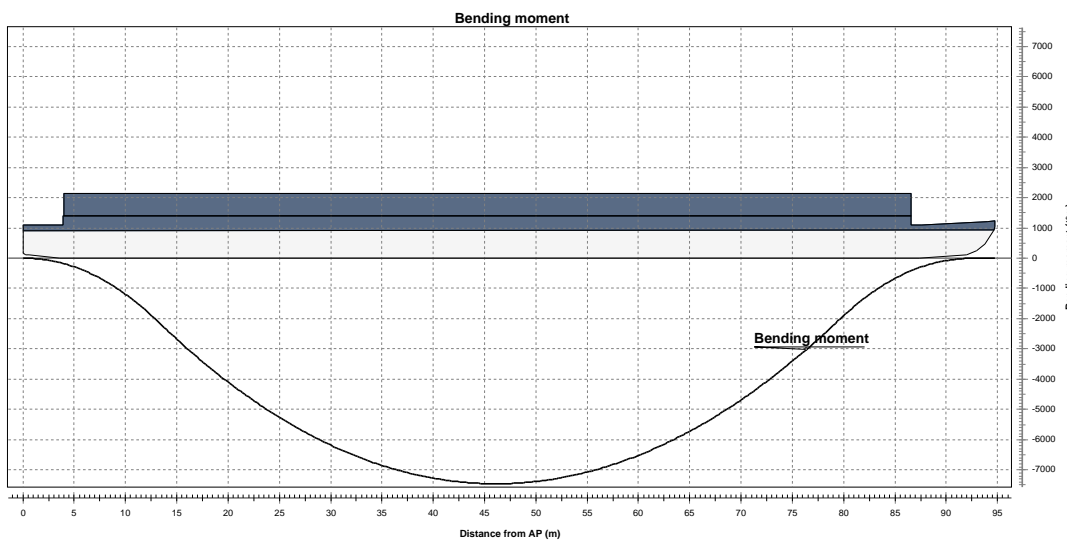
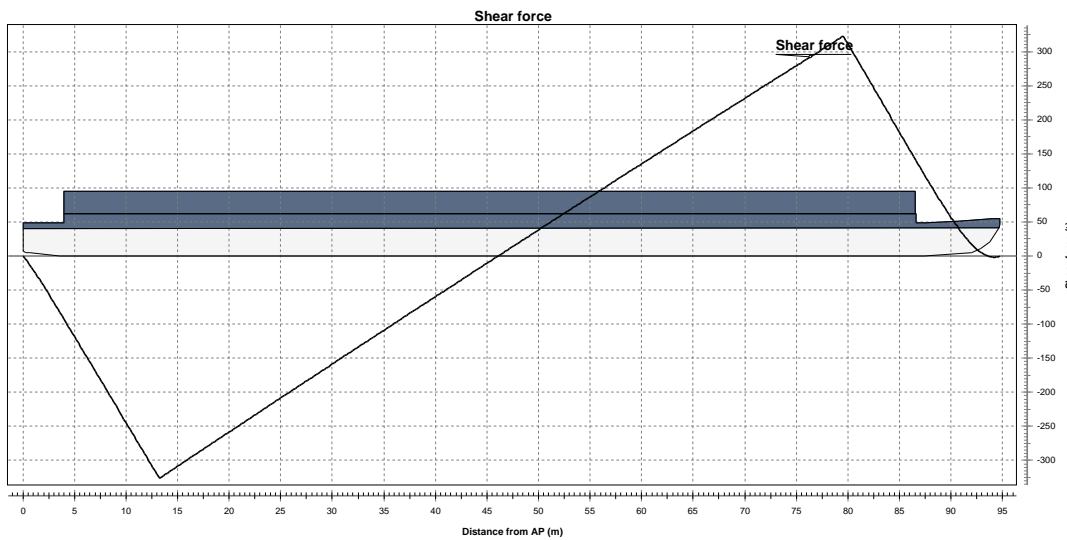
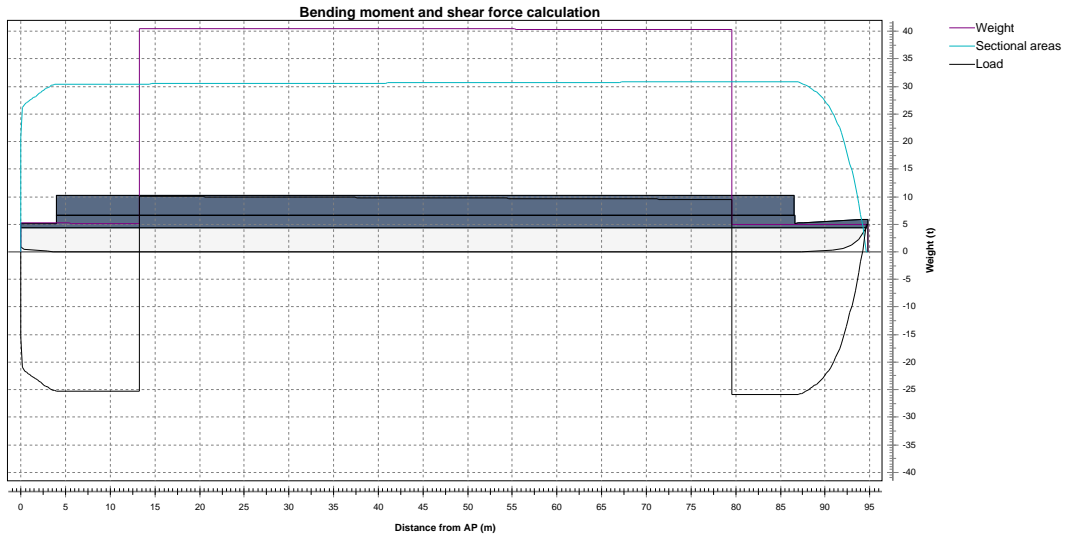
Heeling angle degr	Draft m	Trim m	Displacement t	KN sin(θ) m	VCG sin(θ) m	GG' sin(θ) m	TCG cos(θ) m	GZ m	Area mrad
0,0 (CL)	2,700	0,047	2826,803	0,000	0,000	0,000	0,000	0,000	0,0000
0,5 (PS)	2,700	0,047	2826,802	0,048	0,038	0,000	0,000	0,010	0,0000
1,0 (PS)	2,700	0,047	2826,801	0,097	0,076	0,000	0,000	0,021	0,0002
1,5 (PS)	2,700	0,047	2826,801	0,145	0,113	0,000	0,000	0,031	0,0004
2,0 (PS)	2,700	0,047	2826,802	0,193	0,151	0,000	0,000	0,042	0,0007
2,5 (PS)	2,700	0,047	2826,803	0,241	0,189	0,000	0,000	0,053	0,0011
3,0 (PS)	2,700	0,047	2826,805	0,290	0,227	0,000	0,000	0,063	0,0016
3,5 (PS)	2,700	0,046	2826,806	0,338	0,264	0,000	0,000	0,074	0,0022
4,0 (PS)	2,700	0,046	2826,807	0,387	0,302	0,000	0,000	0,084	0,0029
4,5 (PS)	2,700	0,046	2826,808	0,435	0,340	0,000	0,000	0,095	0,0037
5,0 (PS)	2,700	0,046	2826,820	0,483	0,378	0,000	0,000	0,106	0,0046
5,5 (PS)	2,701	0,046	2826,810	0,530	0,415	0,000	0,000	0,114	0,0056
6,0 (PS)	2,704	0,046	2826,823	0,572	0,453	0,000	0,000	0,119	0,0066
6,5 (PS)	2,709	0,045	2826,833	0,611	0,490	0,000	0,000	0,120	0,0076
7,0 (PS)	2,715	0,043	2826,832	0,647	0,528	0,000	0,000	0,119	0,0087
7,5 (PS)	2,723	0,040	2826,813	0,681	0,565	0,000	0,000	0,116	0,0097
8,0 (PS)	2,730	0,037	2826,812	0,716	0,603	0,000	0,000	0,113	0,0107
8,5 (PS)	2,738	0,035	2826,813	0,750	0,640	0,000	0,000	0,110	0,0117
9,0 (PS)	2,746	0,032	2826,813	0,784	0,678	0,000	0,000	0,106	0,0126
9,5 (PS)	2,754	0,030	2826,813	0,818	0,715	0,000	0,000	0,103	0,0135
10,0 (PS)	2,762	0,028	2826,813	0,851	0,752	0,000	0,000	0,099	0,0144
10,5 (PS)	2,770	0,027	2826,813	0,885	0,789	0,000	0,000	0,095	0,0153
11,0 (PS)	2,779	0,025	2826,812	0,918	0,827	0,000	0,000	0,092	0,0161
11,5 (PS)	2,787	0,024	2826,812	0,952	0,864	0,000	0,000	0,088	0,0169
12,0 (PS)	2,796	0,023	2826,811	0,985	0,901	0,000	0,000	0,084	0,0176
12,5 (PS)	2,805	0,022	2826,811	1,018	0,938	0,000	0,000	0,081	0,0183
13,0 (PS)	2,814	0,022	2826,810	1,051	0,974	0,000	0,000	0,077	0,0190
13,5 (PS)	2,823	0,021	2826,810	1,085	1,011	0,000	0,000	0,073	0,0197
14,0 (PS)	2,832	0,021	2826,810	1,118	1,048	0,000	0,000	0,070	0,0203
14,5 (PS)	2,841	0,021	2826,809	1,151	1,085	0,000	0,000	0,066	0,0209
15,0 (PS)	2,850	0,021	2826,809	1,184	1,121	0,000	0,000	0,063	0,0215
15,5 (PS)	2,859	0,021	2826,809	1,217	1,158	0,000	0,000	0,060	0,0220
16,0 (PS)	2,868	0,021	2826,809	1,251	1,194	0,000	0,000	0,057	0,0225
16,5 (PS)	2,878	0,021	2826,812	1,284	1,230	0,000	0,000	0,054	0,0230



ES-TRIN Art. 27.02 non-secured containers 3 layers

Description	Attained value	Criterion	Required value	Complies
Transverse metacentric height	1,201 m	>=	1,000 m	Complies
Combined heeling moment	3,3 degr	<=	5,0 degr	Complies
Calculated heeling moment (upright)	195,720 t*m			
Required freeboard	0,152 m	>=	0,000 m	Complies
Weight	195,720 t			
Trv. location of weight	1,000 m			

The condition complies with the stability criteria



Summary

Mean moulded draft	2,700 m	Trim	0,047 m
Displacement	2826,809 t	GM	1,201 m
Minimum shear force	-326,246 t	Distance from AP	13,231 m
Maximum shear force	322,543 t	Distance from AP	79,570 m

Summary

Maximum sagging moment	-7456,858 t*m	Distance from AP	46,200 m
Maximum hogging moment	1,692 t*m	Distance from AP	93,600 m

Bending moment and shear force calculation

Distance from AP	Weight	Buoyancy	Load	Shear force	Refer to min/max	Bending moment	Refer to min/max
m	t	m ²	t	t	[%]	t*m	[%]
-0,001	0,000	0,00	0,000	0,000	0,0	0,000	0,0
0,000	0,000	0,00	0,000	0,000	0,0	0,000	0,0
1,000	5,207	27,54	-22,330	-21,078	0,0	-10,386	0,0
2,000	5,204	28,68	-23,477	-43,982	0,0	-43,024	0,0
3,000	5,201	29,80	-24,596	-68,026	0,0	-99,139	0,0
4,000	5,198	30,42	-25,223	-93,033	0,0	-179,816	0,0
5,000	5,195	30,43	-25,232	-118,260	0,0	-285,663	0,0
6,000	5,191	30,43	-25,241	-143,497	0,0	-416,742	0,0
7,000	5,188	30,44	-25,250	-168,743	0,0	-573,062	0,0
8,000	5,185	30,44	-25,259	-193,997	0,0	-754,631	0,0
9,000	5,182	30,45	-25,268	-219,260	0,0	-961,460	0,0
10,000	5,179	30,46	-25,276	-244,532	0,0	-1193,556	0,0
11,000	5,176	30,46	-25,285	-269,813	0,0	-1450,928	0,0
12,000	5,173	30,47	-25,294	-295,102	0,0	-1733,586	0,0
13,000	5,170	30,47	-25,303	-320,401	0,0	-2041,537	0,0
14,000	40,546	30,48	10,067	-318,502	0,0	-2364,331	0,0
15,000	40,542	30,48	10,058	-308,439	0,0	-2678,001	0,0
16,000	40,539	30,49	10,049	-298,385	0,0	-2981,613	0,0
17,000	40,536	30,50	10,041	-288,340	0,0	-3275,176	0,0
18,000	40,533	30,50	10,032	-278,304	0,0	-3558,698	0,0
19,000	40,530	30,51	10,023	-268,277	0,0	-3832,188	0,0
20,000	40,527	30,51	10,014	-258,258	0,0	-4095,655	0,0
21,000	40,524	30,52	10,005	-248,249	0,0	-4349,109	0,0
22,000	40,521	30,52	9,996	-238,248	0,0	-4592,557	0,0
23,000	40,517	30,53	9,987	-228,256	0,0	-4826,009	0,0
24,000	40,514	30,54	9,979	-218,273	0,0	-5049,474	0,0
25,000	40,511	30,54	9,970	-208,299	0,0	-5262,960	0,0
26,000	40,508	30,55	9,961	-198,334	0,0	-5466,477	0,0
27,000	40,505	30,55	9,952	-188,378	0,0	-5660,033	0,0
28,000	40,502	30,56	9,943	-178,430	0,0	-5843,637	0,0
29,000	40,499	30,56	9,934	-168,492	0,0	-6017,297	0,0
30,000	40,496	30,57	9,925	-158,562	0,0	-6181,024	0,0
31,000	40,492	30,58	9,916	-148,641	0,0	-6334,825	0,0
32,000	40,489	30,58	9,908	-138,729	0,0	-6478,710	0,0
33,000	40,486	30,59	9,899	-128,826	0,0	-6612,687	0,0
34,000	40,483	30,59	9,890	-118,931	0,0	-6736,766	0,0
35,000	40,480	30,60	9,881	-109,046	0,0	-6850,955	0,0
36,000	40,477	30,60	9,872	-99,169	0,0	-6955,262	0,0
37,000	40,474	30,61	9,863	-89,302	0,0	-7049,698	0,0
38,000	40,471	30,62	9,854	-79,443	0,0	-7134,270	0,0
39,000	40,467	30,62	9,846	-69,593	0,0	-7208,988	0,0
40,000	40,464	30,63	9,837	-59,752	0,0	-7273,861	0,0
41,000	40,461	30,63	9,828	-49,920	0,0	-7328,896	0,0
42,000	40,458	30,64	9,819	-40,096	0,0	-7374,104	0,0
43,000	40,455	30,64	9,810	-30,282	0,0	-7409,493	0,0
44,000	40,452	30,65	9,801	-20,476	0,0	-7435,072	0,0
45,000	40,449	30,66	9,792	-10,679	0,0	-7450,850	0,0
46,000	40,446	30,66	9,783	-0,892	0,0	-7456,835	0,0
47,000	40,442	30,67	9,775	8,888	0,0	-7453,037	0,0
48,000	40,439	30,67	9,766	18,658	0,0	-7439,465	0,0
49,000	40,436	30,68	9,757	28,419	0,0	-7416,126	0,0
50,000	40,433	30,69	9,748	38,171	0,0	-7383,031	0,0
51,000	40,430	30,69	9,739	47,915	0,0	-7340,188	0,0

Bending moment and shear force calculation

Distance from AP	Weight	Buoyancy	Load	Shear force	Refer to min/max	Bending moment	Refer to min/max
m	t	m ²	t	t	[%]	t*m	[%]
52,000	40,427	30,70	9,730	57,650	0,0	-7287,605	0,0
53,000	40,424	30,70	9,721	67,376	0,0	-7225,293	0,0
54,000	40,421	30,71	9,712	77,093	0,0	-7153,258	0,0
55,000	40,417	30,71	9,704	86,801	0,0	-7071,512	0,0
56,000	40,414	30,72	9,695	96,500	0,0	-6980,062	0,0
57,000	40,411	30,73	9,686	106,190	0,0	-6878,917	0,0
58,000	40,408	30,73	9,677	115,872	0,0	-6768,086	0,0
59,000	40,405	30,74	9,668	125,544	0,0	-6647,578	0,0
60,000	40,402	30,74	9,659	135,208	0,0	-6517,401	0,0
61,000	40,399	30,75	9,650	144,863	0,0	-6377,566	0,0
62,000	40,396	30,75	9,642	154,509	0,0	-6228,080	0,0
63,000	40,392	30,76	9,633	164,146	0,0	-6068,952	0,0
64,000	40,389	30,77	9,624	173,774	0,0	-5900,192	0,0
65,000	40,386	30,77	9,615	183,394	0,0	-5721,808	0,0
66,000	40,383	30,78	9,606	193,005	0,0	-5533,808	0,0
67,000	40,380	30,78	9,597	202,606	0,0	-5336,203	0,0
68,000	40,377	30,79	9,588	212,199	0,0	-5129,000	0,0
69,000	40,374	30,79	9,580	221,783	0,0	-4912,209	0,0
70,000	40,371	30,80	9,571	231,358	0,0	-4685,839	0,0
71,000	40,367	30,81	9,562	240,924	0,0	-4449,898	0,0
72,000	40,364	30,81	9,553	250,481	0,0	-4204,395	0,0
73,000	40,361	30,82	9,544	260,030	0,0	-3949,340	0,0
74,000	40,358	30,82	9,535	269,569	0,0	-3684,740	0,0
75,000	40,355	30,83	9,526	279,100	0,0	-3410,605	0,0
76,000	40,352	30,83	9,517	288,622	0,0	-3126,944	0,0
77,000	40,349	30,84	9,509	298,135	0,0	-2833,765	0,0
78,000	40,345	30,85	9,500	307,639	0,0	-2531,078	0,0
79,000	40,342	30,85	9,491	317,135	0,0	-2218,891	0,0
80,000	4,964	30,86	-25,894	311,409	0,0	-1900,484	0,0
81,000	4,961	30,86	-25,902	285,511	0,0	-1602,223	0,0
82,000	4,957	30,87	-25,911	259,605	0,0	-1329,865	0,0
83,000	4,954	30,87	-25,920	233,689	0,0	-1083,419	0,0
84,000	4,951	30,88	-25,929	207,764	0,0	-862,892	0,0
85,000	4,948	30,89	-25,938	181,831	0,0	-668,294	0,0
86,000	4,945	30,89	-25,947	155,889	0,0	-499,634	0,0
87,000	4,942	30,83	-25,891	129,947	0,0	-356,920	0,0
88,000	4,939	30,10	-25,163	104,375	0,0	-240,019	0,0
89,000	4,936	28,99	-24,057	79,739	0,0	-148,250	0,0
90,000	4,933	27,39	-22,462	56,419	0,0	-80,498	0,0
91,000	4,930	24,76	-19,833	35,187	0,0	-35,108	0,0
92,000	4,927	20,65	-15,721	17,221	0,0	-9,433	0,0
93,000	4,924	14,72	-9,794	4,377	0,0	0,691	0,0
94,000	4,921	6,75	-1,827	-1,737	0,0	1,178	0,0
94,770	4,918	0,00	4,918	0,000	0,0	0,000	0,0

2020.056 IW-NET - Moments of inertia main section

Vessel: 001 IW-NET Europa 2b
 ENI: ---

Material of hull: Grade A shipbuilding steel

Calculation of J_U :

Height H = 400 cm
 Breadth B = 1145 cm

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	J_{part} [cm ⁴]
Bottom plate 7 mm	1	29,8	0,35	730,1	119,2
Double bottom 7 mm	1	32,7	49,70	801,5	1979809,9
Gangway 7 mm	2	3,3	319,70	79,7	16283799,4
Bilge plate 8 mm	2	18367,9	24,90	65,9	118457,5
Side plate 6 mm	2	964597,9	185,20	160,9	12967998,9
Inner cargo hold plate 6 mm	2	2125427,5	224,50	209,4	25358479,6
Longitudinal girders bottom L 75x55x7	11	47,9	5,80	8,7	3732,9
Longitudinal girders double bottom L 75x55x7	11	47,9	44,20	8,7	186686,5
Longitudinal girders wing tank L 75x55x7 (1)	4	21,8	68,60	8,7	163150,0
Longitudinal girders wing tank L 75x55x7 (2)	4	21,8	118,60	8,7	487477,0
Longitudinal girders wing tank L 75x55x7 (3)	4	21,8	168,60	8,7	985055,6
Longitudinal girders wing tank L 75x55x7 (4)	4	21,8	218,60	8,7	1655885,8
Longitudinal girders wing tank L 75x55x7 (5)	4	21,8	268,60	8,7	2499967,6
Longitudinal girders gangway L 75x55x7	2	47,9	314,20	8,7	1710464,1
Double bottom web plates BI 486x6	10	5739,6	25,00	29,2	239645,6
Hatch coaming top profile BI-95x10	2	0,8	399,50	9,5	3032406,3
Summe:					67673136,1

$J_U = 67673136 \text{ cm}^4$

Calculation of J_O :

Height H = 400 cm
 Breadth B = 1145 cm

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	J_{part} [cm ⁴]
Bottom plate 7 mm	1	29,8	399,65	730,1	116611691,2
Double bottom 7 mm	1	32,7	350,30	801,5	98352169,9
Gangway 7 mm	2	3,3	80,30	79,7	1027316,2
Bilge plate 8 mm	2	18367,9	375,10	65,9	18581968,0
Side plate 6 mm	2	964597,9	214,80	160,9	16778584,5
Inner cargo hold plate 6 mm	2	2125427,5	175,50	209,4	17149999,6
Longitudinal girders bottom L 75x55x7	11	47,9	394,20	8,7	14807735,6
Longitudinal girders double bottom L 75x55x7	11	47,9	355,80	8,7	12063430,2
Longitudinal girders wing tank L 75x55x7 (1)	4	21,8	331,40	8,7	3805591,7
Longitudinal girders wing tank L 75x55x7 (2)	4	21,8	281,40	8,7	2743905,9
Longitudinal girders wing tank L 75x55x7 (3)	4	21,8	231,40	8,7	1855471,7
Longitudinal girders wing tank L 75x55x7 (4)	4	21,8	181,40	8,7	1140289,1
Longitudinal girders wing tank L 75x55x7 (5)	4	21,8	131,40	8,7	598358,1
Longitudinal girders gangway L 75x55x7	2	47,9	85,80	8,7	127637,5
Double bottom web plates BI 486x6	10	5739,6	375,00	29,2	41063645,6
Hatch coaming top profile BI-95x10	2	0,8	0,50	9,5	6,3
Summe:					346707801,0

$J_O = 346707801 \text{ cm}^4$

Calculation of J_N :

Height H = 400 cm
 Breadth B = 1145 cm

$x_N = (J_U \times H) / (J_U + J_O) = 65,3 \text{ cm}$

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	J_{part} [cm ⁴]
Bottom plate 7 mm	1	29,8	64,97	730,1	3082288,7
Double bottom 7 mm	1	32,7	15,62	801,5	195700,5
Gangway 7 mm	2	3,3	-254,38	79,7	10309103,8
Bilge plate 8 mm	2	18367,9	40,42	65,9	252127,5
Side plate 6 mm	2	964597,9	-119,88	160,9	6554075,3
Inner cargo hold plate 6 mm	2	2125427,5	-159,18	209,4	14861914,7
Longitudinal girders bottom L 75x55x7	11	47,9	59,52	8,7	338150,6
Longitudinal girders double bottom L 75x55x7	11	47,9	21,12	8,7	43049,5
Longitudinal girders wing tank L 75x55x7 (1)	4	21,8	-3,28	8,7	458,8
Longitudinal girders wing tank L 75x55x7 (2)	4	21,8	-53,28	8,7	98434,1
Longitudinal girders wing tank L 75x55x7 (3)	4	21,8	-103,28	8,7	369660,9
Longitudinal girders wing tank L 75x55x7 (4)	4	21,8	-153,28	8,7	814139,4
Longitudinal girders wing tank L 75x55x7 (5)	4	21,8	-203,28	8,7	1431869,5
Longitudinal girders gangway L 75x55x7	2	47,9	-248,88	8,7	1073198,7
Double bottom web plates BI 486x6	10	5739,6	40,32	29,2	531557,8
Hatch coaming top profile BI-95x10	2	0,8	-334,18	9,5	2121792,8
Summe:					42077522,6

$J_N = 42077522,6 \text{ cm}^4$

Calculation of section modulus

$W_O = J_U / (H - x_N) = 125726,4 \text{ cm}^3$
 $W_U = J_U / x_N = 644130,2 \text{ cm}^3$

Calculation of permissible bending moments

$\sigma_{zul} = 145 \text{ N/mm}^2$ corresponds to approx. 62% of yield strength of grade A shipbuilding steel (min. 235 N/mm²)

$M_{hogging, max} = 18230,3 \text{ kNm}$ $1858,3406 \text{ tm}$
 $M_{sagging, max} = 93398,9 \text{ kNm}$ $9520,7822 \text{ tm}$

Max. bending moment acc. to longitudinal strength calculation Delftship

$M_{hogging} = 3279,26718 \text{ kNm}$ $334,278 \text{ tm}$
 $M_{sagging} = 43528,71618 \text{ kNm}$ $4437,178 \text{ tm}$

Safety coefficient hogging = 5,559
 Safety coefficient sagging = 2,146

B [mm]	H [mm]	J [cm ⁴]	A [cm ²]	W [cm ³]	J [mm ⁴]	J [cm ⁴]	A [mm ²]	A [cm ²]
10430	7	29,8124167	730,1	85,178		0		0
11450	7	32,7279167	801,5	93,508		0		0
1138	7	3,25276333	79,66	9,294		0		0
		0	0	0,000	183679447,8	18367,9448	6590,345	65,90345
6	2682	964597,928	160,92	7193,124		0		0
6	3490	2125427,45	209,4	12180,100		0		0
		0	0	0,000	479408,946	47,9408946	866,258	8,66258
		0	0	0,000	479408,946	47,9408946	866,258	8,66258
		0	0	0,000	217552,469	21,7552469	866,258	8,66258
		0	0	0,000	217552,469	21,7552469	866,258	8,66258
		0	0	0,000	217552,469	21,7552469	866,258	8,66258
		0	0	0,000	217552,469	21,7552469	866,258	8,66258
		0	0	0,000	217552,469	21,7552469	866,258	8,66258
		0	0	0,000	479408,946	47,9408946	866,258	8,66258
6	486	5739,5628	29,16	236,196		0		0
95	10	0,79166667	9,5	1,583		0		0

Sectional area hull plating A [cm²]
 2563,3669
 Sectional area girders 691,75352
 frame factor (net) 1,27
 uncertainty allowance 0,10
 frame factor (total) 1,37

2020.056 IW-NET - Moments of inertia main section

Vessel: 001 IW-NET Europa 2b
 ENI: ---

Material of hull: Aluminium (Al Mg 4,5 Mn) - same dimensions as steel

Calculation of J_U :

Height H = 400 cm
 Breadth B = 1145 cm

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	J_{part} [cm ⁴]
Bottom plate 7 mm	1	29,8	0,35	730,1	119,2
Double bottom 7 mm	1	32,7	49,70	801,5	1979809,9
Gangway 7 mm	2	3,3	319,70	79,7	16283799,4
Bilge plate 8 mm	2	18367,9	24,90	65,9	118457,5
Side plate 6 mm	2	964597,9	185,20	160,9	12967998,9
Inner cargo hold plate 6 mm	2	2125427,5	224,50	209,4	25358479,6
Longitudinal girders bottom L 75x55x7	11	47,9	5,80	8,7	3732,9
Longitudinal girders double bottom L 75x55x7	11	47,9	44,20	8,7	186686,5
Longitudinal girders wing tank L 75x55x7 (1)	4	21,8	68,60	8,7	163150,0
Longitudinal girders wing tank L 75x55x7 (2)	4	21,8	118,60	8,7	487477,0
Longitudinal girders wing tank L 75x55x7 (3)	4	21,8	168,60	8,7	985055,6
Longitudinal girders wing tank L 75x55x7 (4)	4	21,8	218,60	8,7	1655885,8
Longitudinal girders wing tank L 75x55x7 (5)	4	21,8	268,60	8,7	2499967,6
Longitudinal girders gangway L 75x55x7	2	47,9	314,20	8,7	1710464,1
Double bottom web plates BI 486x6	10	5739,6	25,00	29,2	239645,6
Hatch coaming top profile BI-95x10	2	0,8	399,50	9,5	3032406,3
Summe:					67673136,1

$J_U = 67673136 \text{ cm}^4$

Calculation of J_O :

Height H = 400 cm
 Breadth B = 1145 cm

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	J_{part} [cm ⁴]
Bottom plate 7 mm	1	29,8	399,65	730,1	116611691,2
Double bottom 7 mm	1	32,7	350,30	801,5	98352169,9
Gangway 7 mm	2	3,3	80,30	79,7	1027316,2
Bilge plate 8 mm	2	18367,9	375,10	65,9	18581968,0
Side plate 6 mm	2	964597,9	214,80	160,9	16778584,5
Inner cargo hold plate 6 mm	2	2125427,5	175,50	209,4	17149999,6
Longitudinal girders bottom L 75x55x7	11	47,9	394,20	8,7	14807735,6
Longitudinal girders double bottom L 75x55x7	11	47,9	355,80	8,7	12063430,2
Longitudinal girders wing tank L 75x55x7 (1)	4	21,8	331,40	8,7	3805591,7
Longitudinal girders wing tank L 75x55x7 (2)	4	21,8	281,40	8,7	2743905,9
Longitudinal girders wing tank L 75x55x7 (3)	4	21,8	231,40	8,7	1855471,7
Longitudinal girders wing tank L 75x55x7 (4)	4	21,8	181,40	8,7	1140289,1
Longitudinal girders wing tank L 75x55x7 (5)	4	21,8	131,40	8,7	598358,1
Longitudinal girders gangway L 75x55x7	2	47,9	85,80	8,7	127637,5
Double bottom web plates BI 486x6	10	5739,6	375,00	29,2	41063645,6
Hatch coaming top profile BI-95x10	2	0,8	0,50	9,5	6,3
Summe:					346707801,0

$J_O = 346707801 \text{ cm}^4$

Calculation of J_N :

Height H = 400 cm
 Breadth B = 1145 cm

$x_N = (J_U \times H) / (J_U + J_O) = 65,3 \text{ cm}$

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	J_{part} [cm ⁴]
Bottom plate 7 mm	1	29,8	64,97	730,1	3082288,7
Double bottom 7 mm	1	32,7	15,62	801,5	195700,5
Gangway 7 mm	2	3,3	-254,38	79,7	10309103,8
Bilge plate 8 mm	2	18367,9	40,42	65,9	252127,5
Side plate 6 mm	2	964597,9	-119,88	160,9	6554075,3
Inner cargo hold plate 6 mm	2	2125427,5	-159,18	209,4	14861914,7
Longitudinal girders bottom L 75x55x7	11	47,9	59,52	8,7	338150,6
Longitudinal girders double bottom L 75x55x7	11	47,9	21,12	8,7	43049,5
Longitudinal girders wing tank L 75x55x7 (1)	4	21,8	-3,28	8,7	458,8
Longitudinal girders wing tank L 75x55x7 (2)	4	21,8	-53,28	8,7	98434,1
Longitudinal girders wing tank L 75x55x7 (3)	4	21,8	-103,28	8,7	369660,9
Longitudinal girders wing tank L 75x55x7 (4)	4	21,8	-153,28	8,7	814139,4
Longitudinal girders wing tank L 75x55x7 (5)	4	21,8	-203,28	8,7	1431869,5
Longitudinal girders gangway L 75x55x7	2	47,9	-248,88	8,7	1073198,7
Double bottom web plates BI 486x6	10	5739,6	40,32	29,2	531557,8
Hatch coaming top profile BI-95x10	2	0,8	-334,18	9,5	2121792,8
Summe:					42077522,6

$J_N = 42077522,6 \text{ cm}^4$

Calculation of section modulus

$W_O = J_U / (H - x_N) = 125726,4 \text{ cm}^3$
 $W_U = J_U / x_N = 644130,2 \text{ cm}^3$

Calculation of permissible bending moments

$\sigma_{zul} = 71 \text{ N/mm}^2$ corresponds to approx. 62% of yield strength of Al Mg 4,5 Mn (min. 115 N/mm²)

$M_{hogging, max} = 8926,6 \text{ kNm}$ $909,9461 \text{ tm}$
 $M_{sagging, max} = 45733,2 \text{ kNm}$ $4661,9003 \text{ tm}$

Max. bending moment acc. to longitudinal strength calculation Delftship

$M_{hogging} = 3279,26718 \text{ kNm}$ $334,278 \text{ tm}$
 $M_{sagging} = 43528,71618 \text{ kNm}$ $4437,178 \text{ tm}$

Safety coefficient hogging = 2,722
 Safety coefficient sagging = 1,051

B [mm]	H [mm]	J [cm ⁴]	A [cm ²]	W [cm ³]	J [mm ⁴]	J [cm ⁴]	A [mm ²]	A [cm ²]
10430	7	29,8124167	730,1	85,178		0		0
11450	7	32,7279167	801,5	93,508		0		0
1138	7	3,25276333	79,66	9,294		0		0
		0	0	0,000	183679447,8	18367,9448	6590,345	65,90345
6	2682	964597,928	160,92	7193,124		0		0
6	3490	2125427,45	209,4	12180,100		0		0
		0	0	0,000	479408,946	47,9408946	866,258	8,66258
		0	0	0,000	479408,946	47,9408946	866,258	8,66258
		0	0	0,000	217552,469	21,7552469	866,258	8,66258
		0	0	0,000	217552,469	21,7552469	866,258	8,66258
		0	0	0,000	217552,469	21,7552469	866,258	8,66258
		0	0	0,000	217552,469	21,7552469	866,258	8,66258
		0	0	0,000	217552,469	21,7552469	866,258	8,66258
		0	0	0,000	479408,946	47,9408946	866,258	8,66258
6	486	5739,5628	29,16	236,196		0		0
95	10	0,79166667	9,5	1,583		0		0

Sectional area hull plating = 2563,3669
 Sectional area girders = 691,75352
 frame factor (net) = 1,27
 uncertainty allowance = 0,10
 frame factor (total) = 1,37

2020.056 IW-NET - Moments of inertia main section

Vessel: 001 IW-NET Europa 2b
 ENI: ---
 Material of hull: Aluminium (Al Mg 4,5 Mn) - same longitudinal strength as steel

Calculation of J_U :

Height H = 400 cm
 Breadth B = 1145 cm

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	$J [cm^4]$
Bottom plate 16 mm	1	356,0	0,80	1668,8	1424,0
Double bottom 14 mm	1	261,8	49,30	1603,0	3896337,3
Gangway 14 mm	2	26,0	319,20	159,3	32465848,3
Bilge plate 18 mm	2	42581,6	24,60	149,8	266437,5
Side plate 14 mm	2	2250728,5	185,20	375,5	30258664,1
Inner cargo hold plate 14 mm	2	4959330,7	224,50	488,6	59169785,7
Longitudinal girders bottom L 100x50x8	11	116,9	8,00	11,4	9283,5
Longitudinal girders double bottom L 100x50x8	11	116,9	42,20	11,4	223819,8
Longitudinal girders wing tank L 100x50x8 (1)	4	20,2	68,90	11,4	215793,8
Longitudinal girders wing tank L 100x50x8 (2)	4	20,2	118,90	11,4	642475,4
Longitudinal girders wing tank L 100x50x8 (3)	4	20,2	168,90	11,4	1296357,0
Longitudinal girders wing tank L 100x50x8 (4)	4	20,2	218,90	11,4	2177438,6
Longitudinal girders wing tank L 100x50x8 (5)	4	20,2	268,90	11,4	3285720,2
Longitudinal girders gangway L 100x50x8	2	116,9	312,20	11,4	2214725,9
Double bottom web plates BI 468x10	10	8651,9	25,10	47,0	382623,9
Hatch coaming top profile BI-95x10	2	0,8	399,50	9,5	3032406,3
Summe:					139539141,5

$J_U = 139539142 \text{ cm}^4$

Calculation of J_O :

Height H = 400 cm
 Breadth B = 1145 cm

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	$J [cm^4]$
Bottom plate 16 mm	1	356,0	399,20	1668,8	265941392,0
Double bottom 14 mm	1	261,8	350,70	1603,0	197154017,3
Gangway 14 mm	2	26,0	80,80	159,3	2080337,9
Bilge plate 18 mm	2	42581,6	375,40	149,8	42298990,4
Side plate 14 mm	2	2250728,5	214,80	375,5	39150030,5
Inner cargo hold plate 14 mm	2	4959330,7	175,50	488,6	40016665,7
Longitudinal girders bottom L 100x50x8	11	116,9	392,00	11,4	19203139,5
Longitudinal girders double bottom L 100x50x8	11	116,9	357,80	11,4	15998770,2
Longitudinal girders wing tank L 100x50x8 (1)	4	20,2	331,10	11,4	4981541,0
Longitudinal girders wing tank L 100x50x8 (2)	4	20,2	281,10	11,4	3590622,6
Longitudinal girders wing tank L 100x50x8 (3)	4	20,2	231,10	11,4	2426904,2
Longitudinal girders wing tank L 100x50x8 (4)	4	20,2	181,10	11,4	1490385,8
Longitudinal girders wing tank L 100x50x8 (5)	4	20,2	131,10	11,4	781067,4
Longitudinal girders gangway L 100x50x8	2	116,9	87,80	11,4	175378,7
Double bottom web plates BI 468x10	10	8651,9	374,90	47,0	66145023,9
Hatch coaming top profile BI-95x10	2	0,8	0,50	9,5	6,3
Summe:					701434273,6

$J_O = 701434274 \text{ cm}^4$

Calculation of J_N :

Height H = 400 cm
 Breadth B = 1145 cm

$x_N = (J_U \times H) / (J_U + J_O) = 66,4 \text{ cm}$

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	$J [cm^4]$
Bottom plate 16 mm	1	356,0	65,57	1668,8	7175301,6
Double bottom 14 mm	1	261,8	17,07	1603,0	467368,2
Gangway 14 mm	2	26,0	-252,83	159,3	20368431,5
Bilge plate 18 mm	2	42581,6	41,77	149,8	607801,6
Side plate 14 mm	2	2250728,5	-118,83	375,5	15105386,1
Inner cargo hold plate 14 mm	2	4959330,7	-158,13	488,6	34353549,9
Longitudinal girders bottom L 100x50x8	11	116,9	58,37	11,4	427036,2
Longitudinal girders double bottom L 100x50x8	11	116,9	24,17	11,4	74288,1
Longitudinal girders wing tank L 100x50x8 (1)	4	20,2	-2,53	11,4	371,4
Longitudinal girders wing tank L 100x50x8 (2)	4	20,2	-52,53	11,4	125466,4
Longitudinal girders wing tank L 100x50x8 (3)	4	20,2	-102,53	11,4	477761,3
Longitudinal girders wing tank L 100x50x8 (4)	4	20,2	-152,53	11,4	1057256,3
Longitudinal girders wing tank L 100x50x8 (5)	4	20,2	-202,53	11,4	1863951,3
Longitudinal girders gangway L 100x50x8	2	116,9	-245,83	11,4	1373254,4
Double bottom web plates BI 468x10	10	8651,9	41,27	47,0	887040,8
Hatch coaming top profile BI-95x10	2	0,8	-333,13	9,5	2108534,1
Summe:					86472799,2

$J_N = 86472799,2 \text{ cm}^4$

Calculation of section modulus

$W_O = J_U / (H - x_N) = 259188,0 \text{ cm}^3$
 $W_U = J_U / x_N = 1302884,0 \text{ cm}^3$

Calculation of permissible bending moments

$\sigma_{zul} = 71 \text{ N/mm}^2$ corresponds to approx. 62% of yield strength of Al Mg 4,5 Mn (min. 115 N/mm²)

$M_{hogging, max} = 18402,3 \text{ kNm}$ $1875,8761 \text{ tm}$
 $M_{sagging, max} = 92504,8 \text{ kNm}$ $9429,6395 \text{ tm}$

Max. bending moment acc. to longitudinal strength calculation Delftship

$M_{hogging} = 3279,26718 \text{ kNm}$ $334,278 \text{ tm}$
 $M_{sagging} = 43528,71618 \text{ kNm}$ $4437,178 \text{ tm}$

Safety coefficient hogging = 5,612
 Safety coefficient sagging = 2,125

B [mm]	H [mm]	J [cm ⁴]	A [cm ²]	W [cm ³]	J [mm ⁴]	J [cm ⁴]	A [mm ²]	A [cm ²]
10430	16	356,010667	1668,8	445,013		0		0
11450	14	261,823333	1603	374,033		0		0
1138	14	26,0222667	159,32	37,175		0		0
		0	0	0,000	425815552,7	42581,5553	14977,392	149,77392
14	2682	2250728,5	375,48	16783,956		0		0
14	3490	4959330,72	488,6	28420,233		0		0
		0	0	0,000	1169145,984	116,914598	1136	11,36
		0	0	0,000	1169145,984	116,914598	1136	11,36
		0	0	0,000	201545,991	20,1545991	1136	11,36
		0	0	0,000	201545,991	20,1545991	1136	11,36
		0	0	0,000	201545,991	20,1545991	1136	11,36
		0	0	0,000	201545,991	20,1545991	1136	11,36
		0	0	0,000	201545,991	20,1545991	1136	11,36
		0	0	0,000	1169145,984	116,914598	1136	11,36
10	470	8651,91667	47	368,167		0		0
95	10	0,79166667	9,5	1,583		0		0

Sectional area hull plating A [cm²]
 Sectional area girders 5618,14784
 frame factor (net) 988,84
 uncertainty allowance 1,18
 frame factor (total): 0,10
 1,28

2020.056 IW-NET - Moments of inertia main section

Vessel: 002 IW-NET Europa 3a
 ENI: ---

Material of hull: Grade A shipbuilding steel

Calculation of J_U :

Height H = 405 cm
 Breadth B = 1145 cm

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	\underline{J} [cm ⁴]
Bottom plate 10 mm	1	86,9	0,50	1043,0	347,7
Double bottom 10 mm	1	95,4	49,80	1145,0	2839741,2
Gangway 10 mm	2	9,5	319,70	113,8	23262580,3
Bilge plate 10 mm	2	46132,5	24,80	82,5	193802,0
Side plate 7 mm	2	1189484,8	187,70	191,2	15854233,3
Inner cargo hold plate 7 mm	2	2587775,4	227,00	247,8	30713323,2
Longitudinal girders bottom L 80x65x8	11	87,7	6,50	11,0	6089,9
Longitudinal girders double bottom L 80x65x8	11	87,7	43,80	11,0	233700,6
Longitudinal girders wing tank L 80x65x8 (1)	4	20,5	73,30	11,0	237105,4
Longitudinal girders wing tank L 80x65x8 (2)	4	20,5	123,30	11,0	670752,7
Longitudinal girders wing tank L 80x65x8 (3)	4	20,5	173,30	11,0	1324973,4
Longitudinal girders wing tank L 80x65x8 (4)	4	20,5	223,30	11,0	2199767,5
Longitudinal girders wing tank L 80x65x8 (5)	4	20,5	273,30	11,0	3295135,0
Longitudinal girders gangway L 80x65x8	2	87,7	318,50	11,0	2237721,5
Double bottom web plates BI 480x8	10	7372,8	25,20	38,4	317583,4
Hatch coaming top profile BI-95x10	2	0,8	404,50	9,5	3108786,3
Summe:					86495643,6

$J_U = 86495644 \text{ cm}^4$

Calculation of J_O :

Height H = 405 cm
 Breadth B = 1145 cm

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	J [cm ⁴]
Bottom plate 10 mm	1	86,9	404,50	1043,0	170656007,7
Double bottom 10 mm	1	95,4	355,20	1145,0	144461356,2
Gangway 10 mm	2	9,5	85,30	113,8	1656057,1
Bilge plate 10 mm	2	46132,5	380,20	82,5	23956358,5
Side plate 7 mm	2	1189484,8	217,30	191,2	20439403,5
Inner cargo hold plate 7 mm	2	2587775,4	178,00	247,8	20878141,2
Longitudinal girders bottom L 80x65x8	11	87,7	398,50	11,0	19266118,1
Longitudinal girders double bottom L 80x65x8	11	87,7	361,20	11,0	15828427,5
Longitudinal girders wing tank L 80x65x8 (1)	4	20,5	331,70	11,0	4853794,9
Longitudinal girders wing tank L 80x65x8 (2)	4	20,5	281,70	11,0	3500797,7
Longitudinal girders wing tank L 80x65x8 (3)	4	20,5	231,70	11,0	2368373,8
Longitudinal girders wing tank L 80x65x8 (4)	4	20,5	181,70	11,0	1456523,4
Longitudinal girders wing tank L 80x65x8 (5)	4	20,5	131,70	11,0	765246,4
Longitudinal girders gangway L 80x65x8	2	87,7	86,50	11,0	165213,9
Double bottom web plates BI 480x8	10	7372,8	379,80	38,4	55464975,4
Hatch coaming top profile BI-95x10	2	0,8	0,50	9,5	6,3
Summe:					485716801,5

$J_O = 485716801 \text{ cm}^4$

Calculation of J_N :

Height H = 405 cm
 Breadth B = 1145 cm

$x_N = (J_U \times H) / (J_U + J_O) = 61,2 \text{ cm}$

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	J [cm ⁴]
Bottom plate 10 mm	1	86,9	60,72	1043,0	3845518,4
Double bottom 10 mm	1	95,4	11,42	1145,0	149417,2
Gangway 10 mm	2	9,5	-258,48	113,8	15206432,4
Bilge plate 10 mm	2	46132,5	36,42	82,5	311240,8
Side plate 7 mm	2	1189484,8	-126,48	191,2	8497593,5
Inner cargo hold plate 7 mm	2	2587775,4	-165,78	247,8	18796161,4
Longitudinal girders bottom L 80x65x8	11	87,7	54,72	11,0	364213,8
Longitudinal girders double bottom L 80x65x8	11	87,7	17,42	11,0	37777,5
Longitudinal girders wing tank L 80x65x8 (1)	4	20,5	-12,08	11,0	6519,8
Longitudinal girders wing tank L 80x65x8 (2)	4	20,5	-62,08	11,0	170097,9
Longitudinal girders wing tank L 80x65x8 (3)	4	20,5	-112,08	11,0	554249,4
Longitudinal girders wing tank L 80x65x8 (4)	4	20,5	-162,08	11,0	1158974,2
Longitudinal girders wing tank L 80x65x8 (5)	4	20,5	-212,08	11,0	1984272,5
Longitudinal girders gangway L 80x65x8	2	87,7	-257,28	11,0	1460219,0
Double bottom web plates BI 480x8	10	7372,8	36,02	38,4	571939,8
Hatch coaming top profile BI-95x10	2	0,8	-343,28	9,5	2238986,1
Summe:					55353613,7

$J_N = 55353613,7 \text{ cm}^4$

Calculation of section modulus

$W_O = J_O / (H - x_N) = 161014,6 \text{ cm}^3$
 $W_U = J_U / x_N = 904178,2 \text{ cm}^3$

Calculation of permissible bending moments

$\sigma_{zul} = 145 \text{ N/mm}^2$ corresponds to approx. 62% of yield strength of grade A shipbuilding steel (min. 235 N/mm²)

$M_{hogging, max} = 23347,1 \text{ kNm}$ 2379,93 tm
 $M_{sagging, max} = 131105,8 \text{ kNm}$ 13364,5 tm

Max. bending moment acc. to longitudinal strength calculation Delftship

$M_{hogging} = 3885,22107 \text{ kNm}$ 396,047 tm
 $M_{sagging} = 60857,53182 \text{ kNm}$ 6203,62 tm

Safety coefficient hogging = 6,009
 Safety coefficient sagging = 2,154

B [mm]	H [mm]	J [cm ⁴]	A [cm ²]	W [cm ³]	J [mm ⁴]	J [cm ⁴]	A [mm ²]	A [cm ²]
10430	10	86,9166667	1043	173,833	0	0	0	0
11450	10	95,4166667	1145	190,833	0	0	0	0
1138	10	9,48333333	113,8	18,967	0	0	0	0
		0	0	0,000	461325353,8	46132,5354	8254,499	82,54499
7	2732	1189484,75	191,24	8707,795	0	0	0	0
7	3540	2587775,4	247,8	14620,200	0	0	0	0
		0	0	0,000	876699,135	87,6699135	1102,867	11,02867
		0	0	0,000	876699,135	87,6699135	1102,867	11,02867
		0	0	0,000	205237,348	20,5237348	1102,867	11,02867
		0	0	0,000	205237,348	20,5237348	1102,867	11,02867
		0	0	0,000	205237,348	20,5237348	1102,867	11,02867
		0	0	0,000	205237,348	20,5237348	1102,867	11,02867
		0	0	0,000	205237,348	20,5237348	1102,867	11,02867
		0	0	0,000	205237,348	20,5237348	1102,867	11,02867
		0	0	0,000	876699,135	87,6699135	1102,867	11,02867
8	480	7372,8	38,4	307,200	0	0	0	0
95	10	0,79166667	9,5	1,583	0	0	0	0

Sectional area hull plating A [cm²]
 3458,76998
 Sectional area girders 888,26148
 frame factor (net) 1,26
 uncertainty allowance 0,10
 frame factor (total): 1,36

2020.056 IW-NET - Moments of inertia main section

Vessel: 002 IW-NET Europa 3a
 ENI: ---
 Material of hull: Aluminium - same dimensions as steel

Calculation of J_U :

Height H = 405 cm
 Breadth B = 1145 cm

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	\underline{J} [cm ⁴]
Bottom plate 10 mm	1	29.8	0.35	730.1	119.2
Double bottom 10 mm	1	32.7	49.70	801.5	1979809.9
Gangway 10 mm	2	3.3	319.70	79.7	16283799.4
Bilge plate 10 mm	2	18367.9	24.90	65.9	118457.5
Side plate 7 mm	2	1189484.8	187.70	191.2	15854233.3
Inner cargo hold plate 7 mm	2	2587775.4	227.00	247.8	30713323.2
Longitudinal girders bottom L 80x65x8	11	47.9	5.80	8.7	3732.9
Longitudinal girders double bottom L 80x65x8	11	47.9	44.20	8.7	186886.5
Longitudinal girders wing tank L 80x65x8 (1)	4	21.8	73.60	8.7	187786.4
Longitudinal girders wing tank L 80x65x8 (2)	4	21.8	123.60	8.7	529438.6
Longitudinal girders wing tank L 80x65x8 (3)	4	21.8	173.60	8.7	1044342.3
Longitudinal girders wing tank L 80x65x8 (4)	4	21.8	223.60	8.7	1732497.7
Longitudinal girders wing tank L 80x65x8 (5)	4	21.8	273.60	8.7	2593904.6
Longitudinal girders gangway L 80x65x8	2	47.9	319.20	8.7	1765332.9
Double bottom web plates BI 480x8	10	7652.8	25.00	38.9	319527.5
Hatch coaming top profile BI-95x10	2	0.8	404.50	9.5	3108786.3
Summe:					76421778.2

$J_U = 76421778 \text{ cm}^4$

Calculation of J_O :

Height H = 405 cm
 Breadth B = 1145 cm

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	J [cm ⁴]
Bottom plate 10 mm	1	29.8	404.65	730.1	119547788.4
Double bottom 10 mm	1	32.7	355.30	801.5	101179861.9
Gangway 10 mm	2	3.3	85.30	79.7	1159233.2
Bilge plate 10 mm	2	18367.9	380.10	65.9	19079670.9
Side plate 7 mm	2	1189484.8	217.30	191.2	20439403.5
Inner cargo hold plate 7 mm	2	2587775.4	178.00	247.8	20878141.2
Longitudinal girders bottom L 80x65x8	11	47.9	399.20	8.7	15185744.6
Longitudinal girders double bottom L 80x65x8	11	47.9	360.80	8.7	12404848.5
Longitudinal girders wing tank L 80x65x8 (1)	4	21.8	331.40	8.7	3805591.7
Longitudinal girders wing tank L 80x65x8 (2)	4	21.8	281.40	8.7	2743905.9
Longitudinal girders wing tank L 80x65x8 (3)	4	21.8	231.40	8.7	1855471.7
Longitudinal girders wing tank L 80x65x8 (4)	4	21.8	181.40	8.7	1140289.1
Longitudinal girders wing tank L 80x65x8 (5)	4	21.8	131.40	8.7	598358.1
Longitudinal girders gangway L 80x65x8	2	47.9	85.80	8.7	127637.5
Double bottom web plates BI 480x8	10	7652.8	380.00	38.9	56219247.5
Hatch coaming top profile BI-95x10	2	0.8	0.50	9.5	6.3
Summe:					376365200

$J_O = 376365200 \text{ cm}^4$

Calculation of J_N :

Height H = 405 cm
 Breadth B = 1145 cm

$x_N = (J_U \times H) / (J_U + J_O) = 68.4 \text{ cm}$

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	J [cm ⁴]
Bottom plate 10 mm	1	29.8	68.01	730.1	3376632.9
Double bottom 10 mm	1	32.7	18.66	801.5	278999.4
Gangway 10 mm	2	3.3	-251.34	79.7	10064837.3
Bilge plate 10 mm	2	18367.9	43.46	65.9	285646.1
Side plate 7 mm	2	1189484.8	-119.34	191.2	7826605.6
Inner cargo hold plate 7 mm	2	2587775.4	-158.64	247.8	17648731.9
Longitudinal girders bottom L 80x65x8	11	47.9	62.56	8.7	373417.9
Longitudinal girders double bottom L 80x65x8	11	47.9	24.16	8.7	56130.4
Longitudinal girders wing tank L 80x65x8 (1)	4	21.8	-5.24	8.7	1039.8
Longitudinal girders wing tank L 80x65x8 (2)	4	21.8	-55.24	8.7	105835.4
Longitudinal girders wing tank L 80x65x8 (3)	4	21.8	-105.24	8.7	383882.5
Longitudinal girders wing tank L 80x65x8 (4)	4	21.8	-155.24	8.7	835181.3
Longitudinal girders wing tank L 80x65x8 (5)	4	21.8	-205.24	8.7	1459731.6
Longitudinal girders gangway L 80x65x8	2	47.9	-250.84	8.7	1090239.8
Double bottom web plates BI 480x8	10	7652.8	43.36	38.9	807379.9
Hatch coaming top profile BI-95x10	2	0.8	-336.14	9.5	2146861.4
Summe:					46741153.0

$J_N = 46741153.0 \text{ cm}^4$

Calculation of section modulus

$W_O = J_U / (H - x_N) = 138844.6 \text{ cm}^3$
 $W_U = J_U / x_N = 683787.5 \text{ cm}^3$

Calculation of permissible bending moments

$\sigma_{zul} = 71 \text{ N/mm}^2$ corresponds to approx. 62% of yield strength of Al Mg 4,5 Mn (min. 115 N/mm²)

$M_{hogging, max} = 9858.0 \text{ kNm}$ 1004.89 tm
 $M_{sagging, max} = 48548.9 \text{ kNm}$ 4948.92 tm

Max. bending moment acc. to longitudinal strength calculation Delftship

$M_{hogging} = 3885.22107 \text{ kNm}$ 396.047 tm
 $M_{sagging} = 60857.53182 \text{ kNm}$ 6203.62 tm

Safety coefficient hogging = 2.537
 Safety coefficient sagging = 0.798

B [mm]	H [mm]	J [cm ⁴]	A [cm ²]	W [cm ³]	
10430	7	29,8124167	730.1	85.178	
11450	7	32,7279167	801.5	93.508	
1138	7	3,25278333	79.66	9.294	
		0	0	0.000	
	7	2732	1189484.75	191.24	8707.795
	7	3540	2587775.4	247.8	14620.200
		0	0	0.000	
		0	0	0.000	
		0	0	0.000	
		0	0	0.000	
		0	0	0.000	
		0	0	0.000	
		0	0	0.000	
		0	0	0.000	
		0	0	0.000	
		0	0	0.000	
		0	0	0.000	
		0	0	0.000	
8	486	7652.7504	38.88	314.928	
95	10	0,79166667	9,5	1,583	

J [mm ⁴]	J [cm ⁴]	A [mm ²]	A [cm ²]
0	0	0	0
0	0	0	0
0	0	0	0
183679447,8	18367,9448	6590,345	65,90345
0	0	0	0
0	0	0	0
479408,946	47,9408946	866,258	8,66258
479408,946	47,9408946	866,258	8,66258
217552,469	21,7552469	866,258	8,66258
217552,469	21,7552469	866,258	8,66258
217552,469	21,7552469	866,258	8,66258
217552,469	21,7552469	866,258	8,66258
217552,469	21,7552469	866,258	8,66258
217552,469	21,7552469	866,258	8,66258
479408,946	47,9408946	866,258	8,66258
0	0	0	0
0	0	0	0

Sectional area hull plating **A [cm²]**
 Sectional area girders 2700,8069
 frame factor (net) 788,95352
 uncertainty allowance 1,29
 frame factor (total): 0,10
 1,39

2020.056 IW-NET - Moments of inertia main section

Vessel: 002 IW-NET Europa 3a
 ENI: ---

Material of hull: Aluminium - same longitudinal strength as steel

Calculation of J_U :

Height H = 405 cm
 Breadth B = 1145 cm

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	\underline{J} [cm ⁴]
Bottom plate 21 mm	1	804,9	0,90	2190,3	2579,1
Double bottom 21 mm	1	883,7	49,10	2404,5	5797676,3
Gangway 18 mm	2	55,3	324,10	204,8	43033229,7
Bilge plate 25 mm	2	120526,9	24,30	209,5	488432,6
Side plate 18 mm	2	3058675,1	187,70	491,8	40788028,5
Inner cargo hold plate 18 mm	2	6654279,6	227,00	637,2	78977116,8
Longitudinal girders bottom L 100x50x8	11	116,9	8,50	11,4	10314,4
Longitudinal girders double bottom L 100x50x8	11	116,9	41,50	11,4	216498,4
Longitudinal girders wing tank L 100x50x8 (1)	4	20,2	73,90	11,4	248238,0
Longitudinal girders wing tank L 100x50x8 (2)	4	20,2	123,90	11,4	697639,6
Longitudinal girders wing tank L 100x50x8 (3)	4	20,2	173,90	11,4	1374241,2
Longitudinal girders wing tank L 100x50x8 (4)	4	20,2	223,90	11,4	2278042,8
Longitudinal girders wing tank L 100x50x8 (5)	4	20,2	273,90	11,4	3409044,4
Longitudinal girders gangway L 100x50x8	2	116,9	316,80	11,4	2280463,9
Double bottom web plates BI 458x18	10	14410,8	25,00	82,4	659357,9
Hatch coaming top profile BI-95x10	2	6,3	404,50	19,0	6217582,2
Summe:					186458485,7

$J_U = 186458486 \text{ cm}^4$

Calculation of J_O :

Height H = 405 cm
 Breadth B = 1145 cm

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	J [cm ⁴]
Bottom plate 21 mm	1	804,9	404,10	2190,3	357669807,9
Double bottom 21 mm	1	883,7	355,90	2404,5	304566419,3
Gangway 18 mm	2	55,3	80,90	204,8	2681388,4
Bilge plate 25 mm	2	120526,9	380,70	209,5	60958804,4
Side plate 18 mm	2	3058675,1	217,30	491,8	52558466,3
Inner cargo hold plate 18 mm	2	6654279,6	178,00	637,2	53686648,8
Longitudinal girders bottom L 100x50x8	11	116,9	396,50	11,4	19646528,8
Longitudinal girders double bottom L 100x50x8	11	116,9	363,50	11,4	16512532,0
Longitudinal girders wing tank L 100x50x8 (1)	4	20,2	331,10	11,4	4981541,0
Longitudinal girders wing tank L 100x50x8 (2)	4	20,2	281,10	11,4	3590622,6
Longitudinal girders wing tank L 100x50x8 (3)	4	20,2	231,10	11,4	2426904,2
Longitudinal girders wing tank L 100x50x8 (4)	4	20,2	181,10	11,4	1490385,8
Longitudinal girders wing tank L 100x50x8 (5)	4	20,2	131,10	11,4	781067,4
Longitudinal girders gangway L 100x50x8	2	116,9	88,20	11,4	176978,2
Double bottom web plates BI 458x18	10	14410,8	380,00	82,4	119187467,9
Hatch coaming top profile BI-95x10	2	6,3	0,50	19,0	22,2
Summe:					1000915585,3

$J_O = 1000915585 \text{ cm}^4$

Calculation of J_N :

Height H = 405 cm
 Breadth B = 1145 cm

$x_N = (J_U \times H) / (J_U + J_O) = 63,6 \text{ cm}$

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	J [cm ⁴]
Bottom plate 21 mm	1	804,9	62,70	2190,3	8611207,7
Double bottom 21 mm	1	883,7	14,50	2404,5	506353,2
Gangway 18 mm	2	55,3	-260,50	204,8	27801332,3
Bilge plate 25 mm	2	120526,9	39,30	209,5	888063,4
Side plate 18 mm	2	3058675,1	-124,10	491,8	21264622,9
Inner cargo hold plate 18 mm	2	6654279,6	-163,40	637,2	47334935,9
Longitudinal girders bottom L 100x50x8	11	116,9	55,10	11,4	380650,7
Longitudinal girders double bottom L 100x50x8	11	116,9	22,10	11,4	62311,7
Longitudinal girders wing tank L 100x50x8 (1)	4	20,2	-10,30	11,4	4902,4
Longitudinal girders wing tank L 100x50x8 (2)	4	20,2	-60,30	11,4	165310,6
Longitudinal girders wing tank L 100x50x8 (3)	4	20,2	-110,30	11,4	552918,8
Longitudinal girders wing tank L 100x50x8 (4)	4	20,2	-160,30	11,4	1167726,9
Longitudinal girders wing tank L 100x50x8 (5)	4	20,2	-210,30	11,4	2009735,1
Longitudinal girders gangway L 100x50x8	2	116,9	-253,20	11,4	1456831,1
Double bottom web plates BI 458x18	10	14410,8	38,60	82,4	1372361,0
Hatch coaming top profile BI-95x10	2	6,3	-340,90	19,0	4416127,9
Summe:					117995391,7

$J_N = 117995391,7 \text{ cm}^4$

Calculation of section modulus

$W_O = J_U / (H - x_N) = 345621,0 \text{ cm}^3$
 $W_U = J_U / x_N = 1855305,5 \text{ cm}^3$

Calculation of permissible bending moments

$\sigma_{zul} = 71 \text{ N/mm}^2$ corresponds to approx. 62% of yield strength of Al Mg 4,5 Mn (min. 115 N/mm²)

$M_{hogging, max} = 24539,1 \text{ kNm}$ 2501,44 tm
 $M_{sagging, max} = 131726,7 \text{ kNm}$ 13427,8 tm

Max. bending moment acc. to longitudinal strength calculation Delftship

$M_{hogging} = 3885,22107 \text{ kNm}$ 396,047 tm
 $M_{sagging} = 60857,53182 \text{ kNm}$ 6203,62 tm

Safety coefficient hogging = 6,316
 Safety coefficient sagging = 2,165

B [mm]	H [mm]	J [cm ⁴]	A [cm ²]	W [cm ³]	J [mm ⁴]	J [cm ⁴]	A [mm ²]	A [cm ²]
10430	21	804,93525	2190,3	766,805	0	0	0	0
11450	21	883,65375	2404,5	841,575	0	0	0	0
1138	18	55,3068	204,84	61,452	0	0	0	0
		0	0	0,000	1205268794	120526,879	20946,908	209,46908
18	2732	3058675,08	491,76	22391,472	0	0	0	0
18	3540	6654279,6	637,2	37594,800	0	0	0	0
		0	0	0,000	1169145,984	116,914598	1136	11,36
		0	0	0,000	1169145,984	116,914598	1136	11,36
		0	0	0,000	201545,991	20,1545991	1136	11,36
		0	0	0,000	201545,991	20,1545991	1136	11,36
		0	0	0,000	201545,991	20,1545991	1136	11,36
		0	0	0,000	201545,991	20,1545991	1136	11,36
		0	0	0,000	201545,991	20,1545991	1136	11,36
		0	0	0,000	201545,991	20,1545991	1136	11,36
		0	0	0,000	1169145,984	116,914598	1136	11,36
18	458	14410,7868	82,44	629,292	0	0	0	0
95	20	6,33333333	19	6,333	0	0	0	0

Sectional area hull plating = 7681,33816
 Sectional area girders = 1362,24
 frame factor (net) = 1,18
 uncertainty allowance = 0,10
 frame factor (total) = 1,28

2020.056 IW-NET - Moments of inertia main section

Vessel: 003 IW-NET 3 units abreast
 ENI: ---
 Material of hull: Aluminium (Al Mg 4,5 Mn) - same longitudinal strength as steel

Calculation of J_U :

Height H = 410 cm
 Braedth B = 950 cm

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	\underline{J} [cm ⁴]
Bottom plate 18 mm	1	411,0	0,90	1522,1	1643,8
Double bottom 18 mm	1	460,5	50,90	1705,7	4419553,3
Gangway 18 mm	2	39,6	316,60	146,5	29373107,6
Bilge plate 20 mm	2	175,7	24,50	166,7	200530,9
Side plate 18 mm	2	2766239,0	183,70	475,6	37628678,7
Inner cargo hold plate 18 mm	2	2766239,0	183,70	475,6	37628678,7
Longitudinal girders bottom L 150x50x8	8	363,3	11,10	15,4	18038,4
Longitudinal girders double bottom L 150x50x8	10	363,3	40,90	15,4	260433,6
Longitudinal girders wing tank L 150x50x8 (1)	4	15,6	92,90	15,4	530018,5
Longitudinal girders wing tank L 150x50x8 (2)	4	15,6	137,90	15,4	1167777,9
Longitudinal girders wing tank L 150x50x8 (3)	4	15,6	182,90	15,4	2054230,3
Longitudinal girders wing tank L 150x50x8 (4)	4	15,6	227,90	15,4	3189375,7
Longitudinal girders wing tank L 150x50x8 (5)	4	15,6	272,90	15,4	4573214,1
Cargo hold extention Plate 18mm	2	126092,4	367,60	159,2	43277500,3
Longitudinal girders gangway L 150x50x8	2	363,3	309,10	15,4	2934162,3
Double bottom web plates BI 482x16	9	14930,7	25,80	77,1	596383,6
Summe:					167853327,9

$J_U = 167853328 \text{ cm}^4$

Calculation of J_O :

Height H = 410 cm
 Braedth B = 950 cm

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	J [cm ⁴]
Bottom plate 18 mm	1	411,0	409,10	1522,1	254739996,8
Double bottom 18 mm	1	460,5	359,10	1705,7	219952689,5
Gangway 18 mm	2	39,6	93,40	146,5	2556431,1
Bilge plate 20 mm	2	175,7	385,50	166,7	49560930,5
Side plate 18 mm	2	2766239,0	226,30	475,6	54240940,6
Inner cargo hold plate 18 mm	2	2766239,0	226,30	475,6	54240940,6
Longitudinal girders bottom L 150x50x8	8	363,3	398,90	15,4	19544799,0
Longitudinal girders double bottom L 150x50x8	10	363,3	369,10	15,4	20917611,4
Longitudinal girders wing tank L 150x50x8 (1)	4	15,6	317,10	15,4	6174551,5
Longitudinal girders wing tank L 150x50x8 (2)	4	15,6	272,10	15,4	4546441,3
Longitudinal girders wing tank L 150x50x8 (3)	4	15,6	227,10	15,4	3167024,1
Longitudinal girders wing tank L 150x50x8 (4)	4	15,6	182,10	15,4	2036299,9
Longitudinal girders wing tank L 150x50x8 (5)	4	15,6	137,10	15,4	1154268,7
Cargo hold extention Plate 18mm	2	126092,4	42,40	159,2	824591,5
Longitudinal girders gangway L 150x50x8	2	363,3	100,90	15,4	313306,5
Double bottom web plates BI 482x16	9	14930,7	384,20	77,1	102587275,1
Summe:					796558097,9

$J_O = 796558098 \text{ cm}^4$

Calculation of J_N :

Height H = 410 cm
 Braedth B = 950 cm

$x_N = (J_U \times H) / (J_U + J_O) = 71,4 \text{ cm}$

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	J [cm ⁴]
Bottom plate 18 mm	1	411,0	70,46	1522,1	7556828,0
Double bottom 18 mm	1	460,5	20,46	1705,7	714439,3
Gangway 18 mm	2	39,6	-245,24	146,5	17624363,2
Bilge plate 20 mm	2	175,7	46,86	166,7	732639,3
Side plate 18 mm	2	2766239,0	-112,34	475,6	17535993,0
Inner cargo hold plate 18 mm	2	2766239,0	-112,34	475,6	17535993,0
Longitudinal girders bottom L 150x50x8	8	363,3	60,26	15,4	448859,5
Longitudinal girders double bottom L 150x50x8	10	363,3	30,46	15,4	146060,6
Longitudinal girders wing tank L 150x50x8 (1)	4	15,6	-21,54	15,4	28554,3
Longitudinal girders wing tank L 150x50x8 (2)	4	15,6	-66,54	15,4	271944,9
Longitudinal girders wing tank L 150x50x8 (3)	4	15,6	-111,54	15,4	764028,5
Longitudinal girders wing tank L 150x50x8 (4)	4	15,6	-156,54	15,4	1504805,2
Longitudinal girders wing tank L 150x50x8 (5)	4	15,6	-201,54	15,4	2494274,8
Cargo hold extention Plate 18mm	2	126092,4	-296,24	159,2	28194480,4
Longitudinal girders gangway L 150x50x8	2	363,3	-237,74	15,4	1736068,8
Double bottom web plates BI 482x16	9	14930,7	45,56	77,1	1575052,4
Summe:					98864385,2

$J_N = 98864385,2 \text{ cm}^4$

Calculation of section modulus

$W_O = J_U / (H - x_N) = 291944,9 \text{ cm}^3$
 $W_U = J_U / x_N = 1385442,2 \text{ cm}^3$

Calculation of permissible bending moments

$\sigma_{zul} = 71 \text{ N/mm}^2$ corresponds to approx. 62% of yield strength of Al Mg 4,5 Mn (min. 115 N/mm²)

$M_{hogging, max} = 20728,1 \text{ kNm}$ $2112,95 \text{ tm}$
 $M_{sagging, max} = 98366,4 \text{ kNm}$ $10027,2 \text{ tm}$

Max. bending moment acc. to longitudinal strength calculation Delftship

$M_{hogging} = 2046,11094 \text{ kNm}$ $208,574 \text{ tm}$
 $M_{sagging} = 44981,11611 \text{ kNm}$ $4585,23 \text{ tm}$

Safety coefficient hogging = 10,130
 Safety coefficient sagging = 2,187

B [mm]	H [mm]	J [cm ⁴]	A [cm ²]	W [cm ³]	J [mm ⁴]	J [cm ⁴]	A [mm ²]	A [cm ²]
8456	18	410,9616	1522,08	456,824	0	0	0	0
9476	18	460,5336	1705,68	511,704	0	0	0	0
814	18	39,5604	146,52	43,956	0	0	0	0
		0	0	0,000	1756528,502	175,65285	16674,684	166,74684
		0	0	0,000	0	0	0	0
		0	0	0,000	0	0	0	0
		0	0	0,000	3633491,789	363,349179	1535,142	15,35142
		0	0	0,000	3633491,789	363,349179	1535,142	15,35142
		0	0	0,000	155873,507	15,5873507	1535,142	15,35142
		0	0	0,000	155873,507	15,5873507	1535,142	15,35142
		0	0	0,000	155873,507	15,5873507	1535,142	15,35142
		0	0	0,000	155873,507	15,5873507	1535,142	15,35142
		0	0	0,000	155873,507	15,5873507	1535,142	15,35142
		0	0	0,000	1260923617	126092,362	15920	159,2
		0	0	0,000	3633491,789	363,349179	1535,142	15,35142
		0	0	0,000	0	0	0	0
16	482	14930,6891	77,12	619,531				

Sectional area hull plating = 5756,53368
 Sectional area girders = 1626,5368
 frame factor (net) = 1,28
 uncertainty allowance = 0,10
 frame factor (total) = 1,38

2020.056 IW-NET - Moments of inertia main section

Vessel: 005v2 IW-NET Containers transverse
 ENI: ---

Material of hull: Grade A shipbuilding steel

Calculation of J_U :

Height H = 400 cm
 Braedth B = 1628 cm

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	\underline{J} [cm ⁴]
Bottom plate 11 mm	1	166,7	0,40	1653,3	431,2
Double bottom 11 mm	1	180,6	60,70	1790,8	6598365,3
Gangway 9 mm	2	7,5	399,60	111,6	35640626,6
Bilge plate 11 mm	2	82102,9	29,80	106,4	353264,1
Side plate 9 mm	2	2870456,5	230,70	303,3	38025675,4
Inner cargo hold plate 9 mm	2	2901229,4	230,10	304,4	38033871,9
Longitudinal girders bottom L 90x60x8	16	91,8	7,20	11,5	10980,3
Longitudinal girders double bottom L 90x60x8	14	91,8	54,00	11,5	469426,4
Longitudinal girders wing tank L 90x60x8 (1)	4	32,5	98,50	11,5	445164,3
Longitudinal girders wing tank L 90x60x8 (2)	4	32,5	148,50	11,5	1011648,9
Longitudinal girders wing tank L 90x60x8 (3)	4	32,5	198,50	11,5	1807479,5
Longitudinal girders wing tank L 90x60x8 (4)	4	32,5	248,50	11,5	2832656,2
Longitudinal girders wing tank L 90x60x8 (5)	4	32,5	298,50	11,5	4087178,8
Longitudinal girders wing tank L 90x60x8 (6)	4	32,5	348,50	11,5	5571047,4
Longitudinal girders gangway L 90x60x8	2	91,8	393,10	11,5	3544212,5
Double bottom web plates BI 590x9	15	15403,4	30,50	53,1	971995,5
Summe:					139404024,6

$J_U = 139404026 \text{ cm}^4$

Calculation of J_O :

Height H = 400 cm
 Braedth B = 1628 cm

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	J [cm ⁴]
Bottom plate 11 mm	1	166,7	399,60	1653,3	263999375,2
Double bottom 11 mm	1	180,6	339,30	1790,8	206165117,3
Gangway 9 mm	2	7,5	0,40	111,6	50,8
Bilge plate 11 mm	2	82102,9	370,20	106,4	29340903,0
Side plate 9 mm	2	2870456,5	169,30	303,3	23127579,4
Inner cargo hold plate 9 mm	2	2901229,4	169,90	304,4	23374931,1
Longitudinal girders bottom L 90x60x8	16	91,8	392,80	11,5	28310442,0
Longitudinal girders double bottom L 90x60x8	14	91,8	346,00	11,5	19220755,3
Longitudinal girders wing tank L 90x60x8 (1)	4	32,5	301,50	11,5	4169743,3
Longitudinal girders wing tank L 90x60x8 (2)	4	32,5	251,50	11,5	2901460,0
Longitudinal girders wing tank L 90x60x8 (3)	4	32,5	201,50	11,5	1862522,6
Longitudinal girders wing tank L 90x60x8 (4)	4	32,5	151,50	11,5	1052931,2
Longitudinal girders wing tank L 90x60x8 (5)	4	32,5	101,50	11,5	472685,8
Longitudinal girders wing tank L 90x60x8 (6)	4	32,5	51,50	11,5	121786,4
Longitudinal girders gangway L 90x60x8	2	91,8	6,90	11,5	1275,5
Double bottom web plates BI 590x9	15	15403,4	369,50	53,1	108977395,5
Summe:					713098954,5

$J_O = 713098954 \text{ cm}^4$

Calculation of J_N :

Height H = 400 cm
 Braedth B = 1628 cm

$x_N = (J_U \times H) / (J_U + J_O) = 65,4 \text{ cm}$

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	J [cm ⁴]
Bottom plate 11 mm	1	166,7	65,01	1653,3	6987354,8
Double bottom 11 mm	1	180,6	4,71	1790,8	39895,8
Gangway 9 mm	2	7,5	-334,19	111,6	24927757,6
Bilge plate 11 mm	2	82102,9	35,61	106,4	434159,8
Side plate 9 mm	2	2870456,5	-165,29	303,3	22313844,1
Inner cargo hold plate 9 mm	2	2901229,4	-164,69	304,4	22313875,7
Longitudinal girders bottom L 90x60x8	16	91,8	58,21	11,5	623147,2
Longitudinal girders double bottom L 90x60x8	14	91,8	11,41	11,5	22183,4
Longitudinal girders wing tank L 90x60x8 (1)	4	32,5	-33,09	11,5	50356,4
Longitudinal girders wing tank L 90x60x8 (2)	4	32,5	-83,09	11,5	316813,9
Longitudinal girders wing tank L 90x60x8 (3)	4	32,5	-133,09	11,5	812617,4
Longitudinal girders wing tank L 90x60x8 (4)	4	32,5	-183,09	11,5	1537766,8
Longitudinal girders wing tank L 90x60x8 (5)	4	32,5	-233,09	11,5	2492262,3
Longitudinal girders wing tank L 90x60x8 (6)	4	32,5	-283,09	11,5	3676103,8
Longitudinal girders gangway L 90x60x8	2	91,8	-327,69	11,5	2462928,6
Double bottom web plates BI 590x9	15	15403,4	34,91	53,1	1201712,6
Summe:					90212780,1

$J_N = 90212780,1 \text{ cm}^4$

Calculation of section modulus

$W_O = J_U / (H - x_N) = 269621,3 \text{ cm}^3$
 $W_U = J_U / x_N = 1379204,5 \text{ cm}^3$

Calculation of permissible bending moments

$\sigma_{zul} = 145 \text{ N/mm}^2$ corresponds to approx. 62% of yield strength of grade A shipbuilding steel (min. 235 N/mm²)

$M_{hogging, max} = 39095,1 \text{ kNm}$ 3985,23 tm
 $M_{sagging, max} = 199984,7 \text{ kNm}$ 20385,8 tm

Max. bending moment acc. to longitudinal strength calculation Delftship

$M_{hogging} = 4676,40738 \text{ kNm}$ 476,698 tm
 $M_{sagging} = 94196,26746 \text{ kNm}$ 9602,07 tm

Safety coefficient hogging = 8,360
 Safety coefficient sagging = 2,123

B [mm]	H [mm]	J [cm ⁴]	A [cm ²]	W [cm ³]
15030	11	166,70775	1653,3	303,105
16280	11	180,572333	1790,8	328,313
1240	9	7,533	111,6	16,740
		0	0	0,000
9	3370	2870456,48	303,3	17035,350
9	3382	2901229,42	304,38	17156,886
		0	0	0,000
		0	0	0,000
		0	0	0,000
		0	0	0,000
		0	0	0,000
		0	0	0,000
		0	0	0,000
		0	0	0,000
		0	0	0,000
		0	0	0,000
9	590	15403,425	53,1	522,150

J [mm ⁴]	J [cm ⁴]	A [mm ²]	A [cm ²]
0	0	0	0
0	0	0	0
0	0	0	0
821029038	82102,9038	10644,697	106,44697
0	0	0	0
0	0	0	0
918068,092	91,8068092	1146,73	11,4673
918068,092	91,8068092	1146,73	11,4673
324659,207	32,4659207	1146,73	11,4673
324659,207	32,4659207	1146,73	11,4673
324659,207	32,4659207	1146,73	11,4673
324659,207	32,4659207	1146,73	11,4673
324659,207	32,4659207	1146,73	11,4673
324659,207	32,4659207	1146,73	11,4673
324659,207	32,4659207	1146,73	11,4673
918068,092	91,8068092	1146,73	11,4673
0	0	0	0

Sectional area hull plating A [cm²]
 5095,55394
 Sectional area girders 1438,6688
 frame factor (net) 1,28
 uncertainty allowance 0,10
 frame factor (total): 1,38

2020.056 IW-NET - Moments of inertia main section

Vessel: 005v2 IW-NET Containers transverse
 ENI: ---

Material of hull: Aluminium (Al Mg 4,5 Mn) - same dimensions as steel

Calculation of J_U :

Height H = 400 cm
 Braedth B = 1628 cm

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	\underline{J} [cm ⁴]
Bottom plate 11 mm	1	91,3	0,40	1352,7	307,7
Double bottom 11 mm	1	98,9	60,60	1465,2	5380840,8
Gangway 9 mm	2	7,5	399,60	111,6	35640626,8
Bilge plate 11 mm	2	33446,6	29,80	86,9	221312,5
Side plate 9 mm	2	2870456,5	230,70	303,3	38025675,4
Inner cargo hold plate 9 mm	2	2901229,4	230,10	304,4	38033871,9
Longitudinal girders bottom L 90x60x8	16	91,8	6,90	11,5	10204,2
Longitudinal girders double bottom L 90x60x8	14	91,8	54,10	11,5	471161,8
Longitudinal girders wing tank L 90x60x8 (1)	4	32,5	98,50	11,5	445164,3
Longitudinal girders wing tank L 90x60x8 (2)	4	32,5	148,50	11,5	1011648,9
Longitudinal girders wing tank L 90x60x8 (3)	4	32,5	198,50	11,5	1807479,5
Longitudinal girders wing tank L 90x60x8 (4)	4	32,5	248,50	11,5	2832656,2
Longitudinal girders wing tank L 90x60x8 (5)	4	32,5	298,50	11,5	4087178,8
Longitudinal girders wing tank L 90x60x8 (6)	4	32,5	348,50	11,5	5571047,4
Longitudinal girders gangway L 90x60x8	2	91,8	393,10	11,5	3544212,5
Double bottom web plates BI 590x9	15	15560,6	30,50	53,3	976864,8
Summe:					138060253,7

$J_U = 138060254 \text{ cm}^4$

Calculation of J_O :

Height H = 400 cm
 Braedth B = 1628 cm

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	J [cm ⁴]
Bottom plate 11 mm	1	91,3	399,60	1352,7	215999443,7
Double bottom 11 mm	1	98,9	339,40	1465,2	168779944,8
Gangway 9 mm	2	7,5	0,40	111,6	50,8
Bilge plate 11 mm	2	33446,6	370,20	86,9	23897864,5
Side plate 9 mm	2	2870456,5	169,30	303,3	23127579,4
Inner cargo hold plate 9 mm	2	2901229,4	169,90	304,4	23374931,1
Longitudinal girders bottom L 90x60x8	16	91,8	393,10	11,5	28353700,3
Longitudinal girders double bottom L 90x60x8	14	91,8	345,90	11,5	19209647,4
Longitudinal girders wing tank L 90x60x8 (1)	4	32,5	301,50	11,5	4169743,3
Longitudinal girders wing tank L 90x60x8 (2)	4	32,5	251,50	11,5	2901460,0
Longitudinal girders wing tank L 90x60x8 (3)	4	32,5	201,50	11,5	1862522,6
Longitudinal girders wing tank L 90x60x8 (4)	4	32,5	151,50	11,5	1052931,2
Longitudinal girders wing tank L 90x60x8 (5)	4	32,5	101,50	11,5	472685,8
Longitudinal girders wing tank L 90x60x8 (6)	4	32,5	51,50	11,5	121786,4
Longitudinal girders gangway L 90x60x8	2	91,8	6,90	11,5	1275,5
Double bottom web plates BI 590x9	15	15560,6	369,50	53,3	109348384,8
Summe:					622673952,7

$J_O = 622673952 \text{ cm}^4$

Calculation of J_N :

Height H = 400 cm
 Braedth B = 1628 cm

$x_N = (J_U \times H) / (J_U + J_O) = 72,6 \text{ cm}$

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	J [cm ⁴]
Bottom plate 11 mm	1	91,3	72,19	1352,7	7050164,4
Double bottom 11 mm	1	98,9	11,99	1465,2	210847,3
Gangway 9 mm	2	7,5	-327,01	111,6	23867566,0
Bilge plate 11 mm	2	33446,6	42,79	86,9	385326,0
Side plate 9 mm	2	2870456,5	-158,11	303,3	20904561,6
Inner cargo hold plate 9 mm	2	2901229,4	-157,51	304,4	20904822,9
Longitudinal girders bottom L 90x60x8	16	91,8	65,69	11,5	793279,8
Longitudinal girders double bottom L 90x60x8	14	91,8	18,49	11,5	56190,3
Longitudinal girders wing tank L 90x60x8 (1)	4	32,5	-25,91	11,5	30915,6
Longitudinal girders wing tank L 90x60x8 (2)	4	32,5	-75,91	11,5	264421,2
Longitudinal girders wing tank L 90x60x8 (3)	4	32,5	-125,91	11,5	727272,8
Longitudinal girders wing tank L 90x60x8 (4)	4	32,5	-175,91	11,5	1419470,4
Longitudinal girders wing tank L 90x60x8 (5)	4	32,5	-225,91	11,5	2341014,0
Longitudinal girders wing tank L 90x60x8 (6)	4	32,5	-275,91	11,5	3491903,6
Longitudinal girders gangway L 90x60x8	2	91,8	-320,51	11,5	2356132,0
Double bottom web plates BI 590x9	15	15560,6	42,09	53,3	1649459,0
Summe:					86453346,9

$J_N = 86453346,9 \text{ cm}^4$

Calculation of section modulus

$W_O = J_U / (H - x_N) = 264054,8 \text{ cm}^3$
 $W_U = J_U / x_N = 1190929,6 \text{ cm}^3$

Calculation of permissible bending moments

$\sigma_{zul} = 71 \text{ N/mm}^2$ corresponds to approx. 62% of yield strength of Al Mg 4,5 Mn (min. 115 N/mm²)

$M_{hogging, max} = 18747,9 \text{ kNm}$ $1911,1 \text{ tm}$
 $M_{sagging, max} = 84556,0 \text{ kNm}$ $8619,37 \text{ tm}$

Max. bending moment acc. to longitudinal strength calculation Delftship

$M_{hogging} = 4676,40738 \text{ kNm}$ $476,698 \text{ tm}$
 $M_{sagging} = 94196,26746 \text{ kNm}$ $9602,07 \text{ tm}$

Safety coefficient hogging = 4,009
 Safety coefficient sagging = 0,898

B [mm]	H [mm]	J [cm ⁴]	A [cm ²]	W [cm ³]
15030	9	91,30725	1352,7	202,905
16280	9	98,901	1465,2	219,780
1240	9	7,533	111,6	16,740
		0	0	0,000
9	3370	2870456,48	303,3	17035,350
9	3382	2901229,42	304,38	17156,886
		0	0	0,000
		0	0	0,000
		0	0	0,000
		0	0	0,000
		0	0	0,000
		0	0	0,000
		0	0	0,000
		0	0	0,000
		0	0	0,000
		0	0	0,000
		0	0	0,000
		0	0	0,000
9	592	15560,6016	53,28	525,696

J [mm ⁴]	J [cm ⁴]	A [mm ²]	A [cm ²]
0	0	0	0
0	0	0	0
0	0	0	0
334466448,8	33446,6449	8694,386	86,94386
0	0	0	0
0	0	0	0
918068,092	91,8068092	1146,73	11,4673
918068,092	91,8068092	1146,73	11,4673
324659,207	32,4659207	1146,73	11,4673
324659,207	32,4659207	1146,73	11,4673
324659,207	32,4659207	1146,73	11,4673
324659,207	32,4659207	1146,73	11,4673
324659,207	32,4659207	1146,73	11,4673
324659,207	32,4659207	1146,73	11,4673
324659,207	32,4659207	1146,73	11,4673
918068,092	91,8068092	1146,73	11,4673
0	0	0	0

Sectional area hull plating = 4430,34772
 Sectional area girders = 1441,3688
 frame factor (net) = 1,33
 uncertainty allowance = 0,10
 frame factor (total) = 1,43

2020.056 IW-NET - Moments of inertia main section

Vessel: 005v2 IW-NET Containers transverse
 ENI: ---
 Material of hull: Aluminium (Al Mg 4,5 Mn) - same longitudinal strength as steel

Calculation of J_U :

Height H = 400 cm
 Braedth B = 1628 cm

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	\underline{J} [cm ⁴]
Bottom plate 23 mm	1	1523,9	1,15	3456,9	6095,7
Double bottom 22 mm	1	1444,6	61,10	3581,6	13372309,5
Gangway 20 mm	2	82,7	399,00	248,0	78963961,3
Bilge plate 25 mm	2	193277,8	29,30	244,8	806914,2
Side plate 20 mm	2	6378792,2	230,10	674,0	84128905,8
Inner cargo hold plate 20 mm	2	6447176,5	230,50	676,4	84768955,2
Longitudinal girders bottom L 120x80x10	16	278,3	10,30	19,0	36704,5
Longitudinal girders double bottom L 120x80x10	14	278,3	49,70	19,0	660940,4
Longitudinal girders wing tank L 120x80x10 (1)	4	103,3	98,00	19,0	730317,2
Longitudinal girders wing tank L 120x80x10 (2)	4	103,3	148,00	19,0	1665117,2
Longitudinal girders wing tank L 120x80x10 (3)	4	103,3	198,00	19,0	2979917,2
Longitudinal girders wing tank L 120x80x10 (4)	4	103,3	248,00	19,0	4674717,2
Longitudinal girders wing tank L 120x80x10 (5)	4	103,3	298,00	19,0	6749517,2
Longitudinal girders wing tank L 120x80x10 (6)	4	103,3	348,00	19,0	9204317,2
Longitudinal girders gangway L 120x80x10	2	103,3	390,00	19,0	5780006,6
Double bottom web plates BI 577x20	15	32016,7	30,60	115,4	2101089,2
Summe:					296629585,7

$J_U = 296629588 \text{ cm}^4$

Calculation of J_O :

Height H = 400 cm
 Braedth B = 1628 cm

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	J [cm ⁴]
Bottom plate 23 mm	1	1523,9	398,85	3456,9	549929747,7
Double bottom 22 mm	1	1444,6	338,90	3581,6	411359701,5
Gangway 20 mm	2	82,7	1,00	248,0	661,3
Bilge plate 25 mm	2	193277,8	370,70	244,8	67673359,8
Side plate 20 mm	2	6378792,2	169,90	674,0	51668965,8
Inner cargo hold plate 20 mm	2	6447176,5	169,50	676,4	51760635,2
Longitudinal girders bottom L 120x80x10	16	278,3	389,70	19,0	46171744,5
Longitudinal girders double bottom L 120x80x10	14	278,3	350,30	19,0	32644780,4
Longitudinal girders wing tank L 120x80x10 (1)	4	103,3	302,00	19,0	6931917,2
Longitudinal girders wing tank L 120x80x10 (2)	4	103,3	252,00	19,0	4826717,2
Longitudinal girders wing tank L 120x80x10 (3)	4	103,3	202,00	19,0	3101517,2
Longitudinal girders wing tank L 120x80x10 (4)	4	103,3	152,00	19,0	1756317,2
Longitudinal girders wing tank L 120x80x10 (5)	4	103,3	102,00	19,0	791117,2
Longitudinal girders wing tank L 120x80x10 (6)	4	103,3	52,00	19,0	205917,2
Longitudinal girders gangway L 120x80x10	2	103,3	10,00	19,0	4006,6
Double bottom web plates BI 577x20	15	32016,7	369,40	115,4	236686209,2
Summe:					1465513315,3

$J_O = 1465513315 \text{ cm}^4$

Calculation of J_N :

Height H = 400 cm
 Braedth B = 1628 cm

$x_N = (J_U \times H) / (J_U + J_O) = 67,3 \text{ cm}$

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	J [cm ⁴]
Bottom plate 23 mm	1	1523,9	66,18	3456,9	15143781,7
Double bottom 22 mm	1	1444,6	6,23	3581,6	140627,9
Gangway 20 mm	2	82,7	-331,67	248,0	54561379,0
Bilge plate 25 mm	2	193277,8	38,03	244,8	1094868,1
Side plate 20 mm	2	6378792,2	-162,77	674,0	48469913,0
Inner cargo hold plate 20 mm	2	6447176,5	-163,17	676,4	48910215,7
Longitudinal girders bottom L 120x80x10	16	278,3	57,03	19,0	993322,0
Longitudinal girders double bottom L 120x80x10	14	278,3	17,63	19,0	86609,7
Longitudinal girders wing tank L 120x80x10 (1)	4	103,3	-30,67	19,0	71884,7
Longitudinal girders wing tank L 120x80x10 (2)	4	103,3	-80,67	19,0	494947,5
Longitudinal girders wing tank L 120x80x10 (3)	4	103,3	-130,67	19,0	1298010,4
Longitudinal girders wing tank L 120x80x10 (4)	4	103,3	-180,67	19,0	2481073,3
Longitudinal girders wing tank L 120x80x10 (5)	4	103,3	-230,67	19,0	4044136,2
Longitudinal girders wing tank L 120x80x10 (6)	4	103,3	-280,67	19,0	5987199,0
Longitudinal girders gangway L 120x80x10	2	103,3	-322,67	19,0	3956517,9
Double bottom web plates BI 577x20	15	32016,7	36,73	115,4	2816017,2
Summe:					190550503,3

$J_N = 190550503,3 \text{ cm}^4$

Calculation of section modulus

$W_O = J_U / (H - x_N) = 572798,0 \text{ cm}^3$
 $W_U = J_U / x_N = 2829937,0 \text{ cm}^3$

Calculation of permissible bending moments

$\sigma_{zul} = 71 \text{ N/mm}^2$ corresponds to approx. 62% of yield strength of Al Mg 4,5 Mn (min. 115 N/mm²)

$M_{hogging, max} = 40668,7 \text{ kNm}$ 4145,63 tm
 $M_{sagging, max} = 200925,5 \text{ kNm}$ 20481,7 tm

Max. bending moment acc. to longitudinal strength calculation Delftship

$M_{hogging} = 4676,40738 \text{ kNm}$ 476,698 tm
 $M_{sagging} = 94196,26746 \text{ kNm}$ 9602,07 tm

Safety coefficient hogging = 8,697
 Safety coefficient sagging = 2,133

B [mm]	H [mm]	J [cm ⁴]	A [cm ²]	W [cm ³]	J [mm ⁴]	J [cm ⁴]	A [mm ²]	A [cm ²]
15030	23	1523,91675	3456,9	1325,145	0	0	0	0
16280	22	1444,57867	3581,6	1313,253	0	0	0	0
1240	20	82,6666667	248	82,667	0	0	0	0
		0	0	0,000	1932777996	193277,8	24482,442	244,82442
		0	0	0,000	0	0	0	0
		0	0	0,000	2783201,754	278,320175	1900	19
		0	0	0,000	2783201,754	278,320175	1900	19
		0	0	0,000	1033001,548	103,300155	1900	19
		0	0	0,000	1033001,548	103,300155	1900	19
		0	0	0,000	1033001,548	103,300155	1900	19
		0	0	0,000	1033001,548	103,300155	1900	19
		0	0	0,000	1033001,548	103,300155	1900	19
		0	0	0,000	1033001,548	103,300155	1900	19
		0	0	0,000	1033001,548	103,300155	1900	19
		0	0	0,000	1033001,548	103,300155	1900	19
		0	0	0,000	1033001,548	103,300155	1900	19
		0	0	0,000	1033001,548	103,300155	1900	19
20	577	32016,6722	115,4	1109,763	0	0	0	0

Sectional area hull plating = 10724,9488
 Sectional area girders = 2795
 frame factor (net) = 1,26
 uncertainty allowance = 0,10
 frame factor (total) = 1,36

2020.056 IW-NET - Moments of inertia main section

Vessel: 006 IW-NET 3 units abreast long
 ENI: ---

Material of hull: Grade A shipbuilding steel

Calculation of J_U :

Height H = 410 cm
 Breadth B = 950 cm

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	\underline{J} [cm ⁴]
Bottom plate 13 mm	1	155,3	0,40	1102,4	331,6
Double bottom 13 mm	1	173,9	50,60	1235,0	3162219,5
Gangway 8 mm	2	3,5	319,60	65,4	13368634,6
Bilge plate 13 mm	2	60504,6	24,70	107,6	252339,1
Side plate 8 mm	2	1267519,0	185,20	213,5	17182099,9
Inner cargo hold plate 8 mm	2	3053723,8	229,50	286,2	36260112,3
Longitudinal girders bottom L 75x55x7	11	87,7	6,80	11,0	6574,0
Longitudinal girders double bottom L 75x55x7	11	87,7	44,10	11,0	236899,7
Longitudinal girders wing tank L 75x55x7 (1)	4	20,5	68,30	11,0	205872,2
Longitudinal girders wing tank L 75x55x7 (2)	4	20,5	118,30	11,0	617462,2
Longitudinal girders wing tank L 75x55x7 (3)	4	20,5	168,30	11,0	1249625,6
Longitudinal girders wing tank L 75x55x7 (4)	4	20,5	218,30	11,0	2102362,3
Longitudinal girders wing tank L 75x55x7 (5)	4	20,5	268,30	11,0	3175672,5
Longitudinal girders gangway L 75x55x7	2	87,7	313,70	11,0	2170787,2
Double bottom web plates BI 488x8	9	7747,6	25,60	39,0	299995,9
Hatch coaming top profile BI-95x10	2	0,8	409,50	9,5	3186116,3
Summe:					83477104,0

$J_U = 83477104 \text{ cm}^4$

Calculation of J_O :

Height H = 410 cm
 Breadth B = 950 cm

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	J [cm ⁴]
Bottom plate 13 mm	1	155,3	409,60	1102,4	184952184,4
Double bottom 13 mm	1	173,9	359,40	1235,0	159523098,5
Gangway 8 mm	2	3,5	90,40	65,4	1069579,3
Bilge plate 13 mm	2	60504,6	385,30	107,6	32078136,2
Side plate 8 mm	2	1267519,0	224,80	213,5	24115521,4
Inner cargo hold plate 8 mm	2	3053723,8	180,50	286,2	24758989,1
Longitudinal girders bottom L 75x55x7	11	87,7	403,20	11,0	19723233,2
Longitudinal girders double bottom L 75x55x7	11	87,7	365,90	11,0	16243007,0
Longitudinal girders wing tank L 75x55x7 (1)	4	20,5	341,70	11,0	5150863,2
Longitudinal girders wing tank L 75x55x7 (2)	4	20,5	291,70	11,0	3753751,2
Longitudinal girders wing tank L 75x55x7 (3)	4	20,5	241,70	11,0	2577212,7
Longitudinal girders wing tank L 75x55x7 (4)	4	20,5	191,70	11,0	1621247,6
Longitudinal girders wing tank L 75x55x7 (5)	4	20,5	141,70	11,0	885855,9
Longitudinal girders gangway L 75x55x7	2	87,7	96,30	11,0	204728,3
Double bottom web plates BI 488x8	9	7747,6	384,40	39,0	51987862,7
Hatch coaming top profile BI-95x10	2	0,8	0,50	9,5	6,3
Summe:					528645277,1

$J_O = 528645277 \text{ cm}^4$

Calculation of J_N :

Height H = 410 cm
 Breadth B = 950 cm

$x_N = (J_U \times H) / (J_U + J_O) = 55,9 \text{ cm}$

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	J [cm ⁴]
Bottom plate 13 mm	1	155,3	55,51	1102,4	3397416,6
Double bottom 13 mm	1	173,9	5,31	1235,0	35035,8
Gangway 8 mm	2	3,5	-263,69	65,4	9100201,0
Bilge plate 13 mm	2	60504,6	31,21	107,6	330729,9
Side plate 8 mm	2	1267519,0	-129,29	213,5	9673063,8
Inner cargo hold plate 8 mm	2	3053723,8	-173,59	286,2	23357666,0
Longitudinal girders bottom L 75x55x7	11	87,7	49,11	11,0	293587,8
Longitudinal girders double bottom L 75x55x7	11	87,7	11,81	11,0	17893,6
Longitudinal girders wing tank L 75x55x7 (1)	4	20,5	-12,39	11,0	6850,9
Longitudinal girders wing tank L 75x55x7 (2)	4	20,5	-62,39	11,0	171782,4
Longitudinal girders wing tank L 75x55x7 (3)	4	20,5	-112,39	11,0	557287,2
Longitudinal girders wing tank L 75x55x7 (4)	4	20,5	-162,39	11,0	1163365,5
Longitudinal girders wing tank L 75x55x7 (5)	4	20,5	-212,39	11,0	1990017,1
Longitudinal girders gangway L 75x55x7	2	87,7	-257,79	11,0	1465976,6
Double bottom web plates BI 488x8	9	7747,6	30,31	39,0	392586,0
Hatch coaming top profile BI-95x10	2	0,8	-353,59	9,5	2375452,8
Summe:					54328913,1

$J_N = 54328913,1 \text{ cm}^4$

Calculation of section modulus

$W_O = J_U / (H - x_N) = 153433,8 \text{ cm}^3$
 $W_U = J_U / x_N = 971668,3 \text{ cm}^3$

Calculation of permissible bending moments

$\sigma_{zul} = 145 \text{ N/mm}^2$ corresponds to approx. 62% of yield strength of grade A shipbuilding steel (min. 235 N/mm²)

$M_{hogging, max} = 22247,9 \text{ kNm}$ 2267,88 tm
 $M_{sagging, max} = 140891,9 \text{ kNm}$ 14362,1 tm

Max. bending moment acc. to longitudinal strength calculation Delftship

$M_{hogging} = 2499,07788 \text{ kNm}$ 254,748 tm
 $M_{sagging} = 61666,43499 \text{ kNm}$ 6286,08 tm

Safety coefficient hogging = 8,902
 Safety coefficient sagging = 2,285

B [mm]	H [mm]	J [cm ⁴]	A [cm ²]	W [cm ³]	J [mm ⁴]	J [cm ⁴]	A [mm ²]	A [cm ²]
8480	13	155,254667	1102,4	238,853	0	0	0	0
9500	13	173,929167	1235	267,563	0	0	0	0
818	8	3,49013333	65,44	8,725	605045815,6	60504,5816	10763,158	107,63158
		0	0	0,000	0	0	0	0
8	2669	1267518,95	213,52	9498,081	0	0	0	0
8	3578	3053723,77	286,24	17069,445	0	0	0	0
		0	0	0,000	876699,135	87,6699135	1102,867	11,02867
		0	0	0,000	876699,135	87,6699135	1102,867	11,02867
		0	0	0,000	205237,348	20,5237348	1102,867	11,02867
		0	0	0,000	205237,348	20,5237348	1102,867	11,02867
		0	0	0,000	205237,348	20,5237348	1102,867	11,02867
		0	0	0,000	205237,348	20,5237348	1102,867	11,02867
		0	0	0,000	205237,348	20,5237348	1102,867	11,02867
		0	0	0,000	205237,348	20,5237348	1102,867	11,02867
		0	0	0,000	876699,135	87,6699135	1102,867	11,02867
8	488	7747,61813	39,04	317,525	0	0	0	0
95	10	0,79166667	9,5	1,583	0	0	0	0

Sectional area hull plating = 3683,06316
 Sectional area girders = 855,62148
 frame factor (net) = 1,23
 uncertainty allowance = 0,10
 frame factor (total) = 1,33

2020.056 IW-NET - Moments of inertia main section

Vessel: 006 IW-NET 3 units abreast long
 ENI: ---

Material of hull: Aluminium (Al Mg 4,5 Mn) - same dimensions as steel

Calculation of J_U :

Height H = 410 cm
 Breadth B = 950 cm

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	\underline{J} [cm ⁴]
Bottom plate 13 mm	1	36.2	0,40	678,4	144,7
Double bottom 13 mm	1	40,5	49,60	760,0	1869762,1
Gangway 8 mm	2	3,5	319,60	65,4	13368634,6
Bilge plate 13 mm	2	20725,7	24,90	74,2	133480,5
Side plate 8 mm	2	1124105,9	185,20	187,7	15122013,5
Inner cargo hold plate 8 mm	2	2698982,9	229,50	251,3	31870033,5
Longitudinal girders bottom L 75x55x7	11	47,9	5,90	8,7	3844,3
Longitudinal girders double bottom L 75x55x7	11	47,9	44,10	8,7	185845,1
Longitudinal girders wing tank L 75x55x7 (1)	4	21,8	68,60	8,7	163150,0
Longitudinal girders wing tank L 75x55x7 (2)	4	21,8	118,60	8,7	487477,0
Longitudinal girders wing tank L 75x55x7 (3)	4	21,8	168,60	8,7	985055,6
Longitudinal girders wing tank L 75x55x7 (4)	4	21,8	218,60	8,7	1655885,8
Longitudinal girders wing tank L 75x55x7 (5)	4	21,8	268,60	8,7	2499967,6
Longitudinal girders gangway L 75x55x7	2	47,9	314,10	8,7	1709375,6
Double bottom web plates BI 488x8	9	7558,7	25,00	38,7	285827,9
Hatch coaming top profile BI-95x10	2	0,8	409,50	9,5	3186116,3
Summe:					73526614,6

$J_U = 73526614,6 \text{ cm}^4$

Calculation of J_O :

Height H = 410 cm
 Breadth B = 950 cm

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	J [cm ⁴]
Bottom plate 13 mm	1	36,2	409,60	678,4	113816669,5
Double bottom 13 mm	1	40,5	360,40	760,0	98715042,1
Gangway 8 mm	2	3,5	90,40	65,4	1069579,3
Bilge plate 13 mm	2	20725,7	385,10	74,2	22054194,5
Side plate 8 mm	2	1124105,9	224,80	187,7	21216033,8
Inner cargo hold plate 8 mm	2	2698982,9	180,50	251,3	21772799,5
Longitudinal girders bottom L 75x55x7	11	47,9	404,10	8,7	15560815,8
Longitudinal girders double bottom L 75x55x7	11	47,9	365,90	8,7	12758003,4
Longitudinal girders wing tank L 75x55x7 (1)	4	21,8	341,40	8,7	4038719,0
Longitudinal girders wing tank L 75x55x7 (2)	4	21,8	291,40	8,7	2942382,9
Longitudinal girders wing tank L 75x55x7 (3)	4	21,8	241,40	8,7	2019298,4
Longitudinal girders wing tank L 75x55x7 (4)	4	21,8	191,40	8,7	1269465,5
Longitudinal girders wing tank L 75x55x7 (5)	4	21,8	141,40	8,7	692884,1
Longitudinal girders gangway L 75x55x7	2	47,9	95,90	8,7	159432,1
Double bottom web plates BI 488x8	9	7558,7	385,00	38,7	51721475,9
Hatch coaming top profile BI-95x10	2	0,8	0,50	9,5	6,3
Summe:					369806802,3

$J_O = 369806802,3 \text{ cm}^4$

Calculation of J_N :

Height H = 410 cm
 Breadth B = 950 cm

$x_N = (J_U \cdot H) / (J_U + J_O) = 68,0 \text{ cm}$

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	J [cm ⁴]
Bottom plate 13 mm	1	36,2	67,60	678,4	3100004,1
Double bottom 13 mm	1	40,5	18,40	760,0	257298,2
Gangway 8 mm	2	3,5	-251,60	65,4	8285159,0
Bilge plate 13 mm	2	20725,7	43,10	74,2	317157,9
Side plate 8 mm	2	1124105,9	-117,20	187,7	7403972,9
Inner cargo hold plate 8 mm	2	2698982,9	-161,50	251,3	18507183,2
Longitudinal girders bottom L 75x55x7	11	47,9	62,10	8,7	367978,1
Longitudinal girders double bottom L 75x55x7	11	47,9	23,90	8,7	54949,2
Longitudinal girders wing tank L 75x55x7 (1)	4	21,8	-0,60	8,7	99,6
Longitudinal girders wing tank L 75x55x7 (2)	4	21,8	-50,60	8,7	88810,3
Longitudinal girders wing tank L 75x55x7 (3)	4	21,8	-100,60	8,7	350772,7
Longitudinal girders wing tank L 75x55x7 (4)	4	21,8	-150,60	8,7	785986,7
Longitudinal girders wing tank L 75x55x7 (5)	4	21,8	-200,60	8,7	1394452,2
Longitudinal girders gangway L 75x55x7	2	47,9	-246,10	8,7	1049412,5
Double bottom web plates BI 488x8	9	7558,7	43,00	38,7	712316,1
Hatch coaming top profile BI-95x10	2	0,8	-341,50	9,5	2215846,6
Summe:					44891399,1

$J_N = 44891399,1 \text{ cm}^4$

Calculation of section modulus

$W_O = J_U / (H - x_N) = 131260,7 \text{ cm}^3$
 $W_U = J_U / x_N = 660184,3 \text{ cm}^3$

Calculation of permissible bending moments

$\sigma_{zul} = 71 \text{ N/mm}^2$ corresponds to approx. 62% of yield strength of Al Mg 4,5 Mn (min. 115 N/mm²)

$M_{hogging, max} = 9319,5 \text{ kNm}$ $950,001 \text{ tm}$
 $M_{sagging, max} = 46873,1 \text{ kNm}$ $4778,09 \text{ tm}$

Max. bending moment acc. to longitudinal strength calculation Delftship

$M_{hogging} = 2499,07788 \text{ kNm}$ $254,748 \text{ tm}$
 $M_{sagging} = 61666,43499 \text{ kNm}$ $6286,08 \text{ tm}$

Safety coefficient hogging = 3,729
 Safety coefficient sagging = 0,760

B [mm]	H [mm]	J [cm ⁴]	A [cm ²]	W [cm ³]
8480	8	36,1813333	678,4	90,453
9500	8	40,5333333	760	101,333
818	8	3,49013333	65,44	8,725
		0	0	0,000
7	2681	1124105,92	187,67	8385,721
7	3590	2698982,94	251,3	15036,117
		0	0	0,000
		0	0	0,000
		0	0	0,000
		0	0	0,000
		0	0	0,000
		0	0	0,000
		0	0	0,000
		0	0	0,000
		0	0	0,000
		0	0	0,000
8	484	7558,66027	38,72	312,341
95	10	0,79166667	9,5	1,583

J [mm ⁴]	J [cm ⁴]	A [mm ²]	A [cm ²]
0	0	0	0
0	0	0	0
0	0	0	0
207256531,9	20725,6532	7421,593	74,21593
0	0	0	0
0	0	0	0
479408,946	47,9408946	866,258	8,66258
479408,946	47,9408946	866,258	8,66258
217552,469	21,7552469	866,258	8,66258
217552,469	21,7552469	866,258	8,66258
217552,469	21,7552469	866,258	8,66258
217552,469	21,7552469	866,258	8,66258
217552,469	21,7552469	866,258	8,66258
217552,469	21,7552469	866,258	8,66258
479408,946	47,9408946	866,258	8,66258
0	0	0	0
0	0	0	0

Sectional area hull plating **A [cm²]**
 Sectional area girders 2595,65186
 frame factor (net) 748,63352
 uncertainty allowance 1,29
 frame factor (total): 0,10
 1,39

2020.056 IW-NET - Moments of inertia main section

Vessel: 006 IW-NET 3 units abreast long
 ENI: ---
 Material of hull: Aluminium (Al Mg 4,5 Mn) - same longitudinal strength as steel

Calculation of J_U :

Height H = 410 cm
 Breadth B = 950 cm

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	J_U [cm ⁴]
Bottom plate 26 mm	1	1242,0	0,95	2204,8	3231,9
Double bottom 26 mm	1	1391,4	49,10	2470,0	5956092,1
Gangway 19 mm	2	46,1	319,10	153,1	31186994,9
Bilge plate 25 mm	2	120526,9	24,50	209,5	492521,4
Side plate 19 mm	2	2929877,0	185,90	502,6	40594813,9
Inner cargo hold plate 19 mm	2	7113628,3	231,30	675,5	86499987,9
Longitudinal girders bottom L 100x50x8	11	264,3	10,60	15,4	21891,4
Longitudinal girders double bottom L 100x50x8	11	264,3	41,90	15,4	299534,9
Longitudinal girders wing tank L 100x50x8 (1)	4	47,1	68,10	15,4	285123,3
Longitudinal girders wing tank L 100x50x8 (2)	4	47,1	118,10	15,4	857129,7
Longitudinal girders wing tank L 100x50x8 (3)	4	47,1	168,10	15,4	1736336,1
Longitudinal girders wing tank L 100x50x8 (4)	4	47,1	218,10	15,4	2922742,5
Longitudinal girders wing tank L 100x50x8 (5)	4	47,1	268,10	15,4	4416348,9
Longitudinal girders gangway L 100x50x8	2	264,3	310,00	15,4	2952720,5
Double bottom web plates BI 462x10	9	19369,0	26,30	97,6	781901,9
Hatch coaming top profile BI-95x10	2	0,8	406,50	9,5	3139604,3
Summe:					182146975,4

$J_U = 182146975 \text{ cm}^4$

Calculation of J_O :

Height H = 410 cm
 Breadth B = 950 cm

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	J_O [cm ⁴]
Bottom plate 26 mm	1	1242,0	409,05	2204,8	368912572,7
Double bottom 26 mm	1	1391,4	360,90	2470,0	321715952,1
Gangway 19 mm	2	46,1	90,90	153,1	2530825,6
Bilge plate 25 mm	2	120526,9	385,50	209,5	62499558,5
Side plate 19 mm	2	2929877,0	224,10	502,6	56336690,1
Inner cargo hold plate 19 mm	2	7113628,3	178,70	675,5	57366478,5
Longitudinal girders bottom L 100x50x8	11	264,3	399,40	15,4	26955467,0
Longitudinal girders double bottom L 100x50x8	11	264,3	368,10	15,4	22896583,2
Longitudinal girders wing tank L 100x50x8 (1)	4	47,1	341,90	15,4	7182254,8
Longitudinal girders wing tank L 100x50x8 (2)	4	47,1	291,90	15,4	5235221,2
Longitudinal girders wing tank L 100x50x8 (3)	4	47,1	241,90	15,4	3595387,6
Longitudinal girders wing tank L 100x50x8 (4)	4	47,1	191,90	15,4	2262754,0
Longitudinal girders wing tank L 100x50x8 (5)	4	47,1	141,90	15,4	1237320,4
Longitudinal girders gangway L 100x50x8	2	264,3	100,00	15,4	307728,5
Double bottom web plates BI 462x10	9	19369,0	383,70	97,6	129497367,5
Hatch coaming top profile BI-95x10	2	0,8	3,50	9,5	234,3
Summe:					1068532395,9

$J_O = 1068532396 \text{ cm}^4$

Calculation of J_N :

Height H = 410 cm
 Breadth B = 950 cm

$x_N = (J_U \times H) / (J_U + J_O) = 59,7 \text{ cm}$

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	J_N [cm ⁴]
Bottom plate 26 mm	1	1242,0	58,76	2204,8	7614292,6
Double bottom 26 mm	1	1391,4	10,61	2470,0	279536,5
Gangway 19 mm	2	46,1	-259,39	153,1	20607303,3
Bilge plate 25 mm	2	120526,9	35,21	209,5	760481,6
Side plate 19 mm	2	2929877,0	-126,19	502,6	21864436,9
Inner cargo hold plate 19 mm	2	7113628,3	-171,59	675,5	54001164,9
Longitudinal girders bottom L 100x50x8	11	264,3	49,11	15,4	410432,5
Longitudinal girders double bottom L 100x50x8	11	264,3	17,81	15,4	56511,0
Longitudinal girders wing tank L 100x50x8 (1)	4	47,1	-8,39	15,4	4511,6
Longitudinal girders wing tank L 100x50x8 (2)	4	47,1	-58,39	15,4	209649,0
Longitudinal girders wing tank L 100x50x8 (3)	4	47,1	-108,39	15,4	721986,3
Longitudinal girders wing tank L 100x50x8 (4)	4	47,1	-158,39	15,4	1541523,7
Longitudinal girders wing tank L 100x50x8 (5)	4	47,1	-208,39	15,4	2668261,1
Longitudinal girders gangway L 100x50x8	2	264,3	-250,29	15,4	1924958,5
Double bottom web plates BI 462x10	9	19369,0	33,41	97,6	1154919,2
Hatch coaming top profile BI-95x10	2	0,8	-346,79	9,5	2284981,2
Summe:					116104950,0

$J_N = 116104950,0 \text{ cm}^4$

Calculation of section modulus

$W_O = J_O / (H - x_N) = 331455,5 \text{ cm}^3$
 $W_U = J_U / x_N = 1944423,7 \text{ cm}^3$

Calculation of permissible bending moments

$\sigma_{zul} = 71 \text{ N/mm}^2$ corresponds to approx. 62% of yield strength of Al Mg 4,5 Mn (min. 115 N/mm²)

$M_{hogging, max} = 23533,3 \text{ kNm}$ $2398,91 \text{ tm}$
 $M_{sagging, max} = 138054,1 \text{ kNm}$ $14072,8 \text{ tm}$

Max. bending moment acc. to longitudinal strength calculation Delftship

$M_{hogging} = 2499,07788 \text{ kNm}$ $254,748 \text{ tm}$
 $M_{sagging} = 61666,43499 \text{ kNm}$ $6286,08 \text{ tm}$

Safety coefficient hogging = 9,417
 Safety coefficient sagging = 2,239

B [mm]	H [mm]	J [cm ⁴]	A [cm ²]	W [cm ³]	J [mm ⁴]	J [cm ⁴]	A [mm ²]	A [cm ²]
8480	26	1242,03733	2204,8	955,413	0	0	0	0
9500	26	1391,43333	2470	1070,333	0	0	0	0
806	19	46,0696167	153,14	48,494	0	0	0	0
		0	0	0,000	1205268794	120526,879	20946,908	209,46908
19	2645	2929876,97	502,55	22154,079	0	0	0	0
19	3555	7113628,32	675,45	40020,412	0	0	0	0
		0	0	0,000	2642748,918	264,274892	1536	15,36
		0	0	0,000	2642748,918	264,274892	1536	15,36
		0	0	0,000	471235,04	47,123504	1536	15,36
		0	0	0,000	471235,04	47,123504	1536	15,36
		0	0	0,000	471235,04	47,123504	1536	15,36
		0	0	0,000	471235,04	47,123504	1536	15,36
		0	0	0,000	471235,04	47,123504	1536	15,36
		0	0	0,000	471235,04	47,123504	1536	15,36
		0	0	0,000	471235,04	47,123504	1536	15,36
		0	0	0,000	2642748,918	264,274892	1536	15,36
20	488	19369,0453	97,6	793,813	0	0	0	0
95	10	0,79166667	9,5	1,583	0	0	0	0

Sectional area hull plating = 7756,01816
 Sectional area girders = 1573,24
 frame factor (net) = 1,20
 uncertainty allowance = 0,10
 frame factor (total) = 1,30

2020.056 IW-NET - Moments of inertia main section

Vessel: 004v2 IW-NET NEWS Evolution
 ENI: ---
 Material of hull: Aluminium (Al Mg 4,5 Mn) - same longitudinal strength as steel

Calculation of J_U :

Height H = 410 cm
 Braedth B = 1145 cm

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	J [cm ⁴]
Bottom plate 28 mm	1	1902,5	1,40	2912,0	7610,0
Double bottom 27 mm	1	1878,1	51,40	3091,5	8169497,4
Middle deck 20 mm	1	46,7	319,00	140,0	14246586,7
Blige plate 28 mm	2	136180,1	24,20	235,3	547963,8
Side plate 20 mm	2	7519669,3	231,00	712,0	91025402,7
Inner cargo hold plate 20 mm	2	3215326,4	185,40	536,4	43306178,9
Hatch coaming 20 mm	2	117494,8	365,00	178,0	47663089,7
Side deck BI 160x10	2	10,7	409,50	32,0	10732197,3
Longitudinal girders bottom L 120x80x10	12	278,3	12,10	19,0	36721,3
Longitudinal girders double bottom L 120x80x10	14	278,3	42,00	19,0	473120,5
Longitudinal girders side walls L 140x80x10 (1)	2	59,9	108,10	20,6	480884,5
Longitudinal girders side walls L 140x80x10 (2)	2	59,9	158,10	20,6	1028479,2
Longitudinal girders side walls L 140x80x10 (3)	2	59,9	208,10	20,6	1781781,9
Longitudinal girders side walls L 140x80x10 (4)	2	59,9	258,10	20,6	2740792,6
Longitudinal girders side walls L 140x80x10 (5)	2	59,9	308,10	20,6	3905511,3
Longitudinal girders side walls L 140x80x10 (6)	2	59,9	358,10	20,6	5275938,0
Longitudinal girders inner cargo hold L 140x80x10 (1)	2	59,9	108,10	20,6	480884,5
Longitudinal girders inner cargo hold L 140x80x10 (2)	2	59,9	158,10	20,6	1028479,2
Longitudinal girders inner cargo hold L 140x80x10 (3)	2	59,9	208,10	20,6	1781781,9
Longitudinal girders inner cargo hold L 140x80x10 (4)	2	59,9	258,10	20,6	2740792,6
Double bottom web plates BI 472x20	8	17525,7	26,40	94,4	666549,6
Summe:					238120243,9

$J_U = 238120244 \text{ cm}^4$

Calculation of J_O :

Height H = 410 cm
 Braedth B = 1145 cm

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	J [cm ⁴]
Bottom plate 28 mm	1	1902,5	408,60	2912,0	486171834,0
Double bottom 27 mm	1	1878,1	358,60	3091,5	397550105,4
Middle deck 20 mm	1	46,7	91,00	140,0	1199386,7
Blige plate 28 mm	2	136180,1	385,80	235,3	70317606,1
Side plate 20 mm	2	7519669,3	179,00	712,0	60665722,7
Inner cargo hold plate 20 mm	2	3215326,4	224,60	536,4	60548220,5
Hatch coaming 20 mm	2	117494,8	45,00	178,0	955889,7
Side deck BI 160x10	2	10,7	0,50	32,0	37,3
Longitudinal girders bottom L 120x80x10	12	278,3	397,90	19,0	36101305,3
Longitudinal girders double bottom L 120x80x10	14	278,3	368,00	19,0	36026680,5
Longitudinal girders side walls L 140x80x10 (1)	2	59,9	301,90	20,6	3749913,8
Longitudinal girders side walls L 140x80x10 (2)	2	59,9	251,90	20,6	2610702,9
Longitudinal girders side walls L 140x80x10 (3)	2	59,9	201,90	20,6	1677200,0
Longitudinal girders side walls L 140x80x10 (4)	2	59,9	151,90	20,6	949405,1
Longitudinal girders side walls L 140x80x10 (5)	2	59,9	101,90	20,6	427318,2
Longitudinal girders side walls L 140x80x10 (6)	2	59,9	51,90	20,6	110939,3
Longitudinal girders inner cargo hold L 140x80x10 (1)	2	59,9	301,90	20,6	3749913,8
Longitudinal girders inner cargo hold L 140x80x10 (2)	2	59,9	251,90	20,6	2610702,9
Longitudinal girders inner cargo hold L 140x80x10 (3)	2	59,9	201,90	20,6	1677200,0
Longitudinal girders inner cargo hold L 140x80x10 (4)	2	59,9	151,90	20,6	949405,1
Double bottom web plates BI 472x20	8	17525,7	383,60	94,4	111267100,0
Summe:					1279276591,0

$J_O = 1279276591 \text{ cm}^4$

Calculation of J_{II} :

Height H = 410 cm
 Braedth B = 1145 cm

$x_{II} = (J_U \times H) / (J_U + J_O) = 64,3 \text{ cm}$

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	J [cm ⁴]
Bottom plate 28 mm	1	1902,5	62,94	2912,0	11537623,3
Double bottom 27 mm	1	1878,1	12,94	3091,5	519529,3
Middle deck 20 mm	1	46,7	-254,66	140,0	9079287,4
Blige plate 28 mm	2	136180,1	40,14	235,3	1030603,9
Side plate 20 mm	2	7519669,3	-166,66	712,0	54591733,7
Inner cargo hold plate 20 mm	2	3215326,4	-121,06	536,4	22153100,7
Hatch coaming 20 mm	2	117494,8	-300,66	178,0	32416122,5
Side deck BI 160x10	2	10,7	-345,16	32,0	7624688,9
Longitudinal girders bottom L 120x80x10	12	278,3	52,24	19,0	625555,7
Longitudinal girders double bottom L 120x80x10	14	278,3	22,34	19,0	136650,5
Longitudinal girders side walls L 140x80x10 (1)	2	59,9	-43,76	20,6	78903,5
Longitudinal girders side walls L 140x80x10 (2)	2	59,9	-93,76	20,6	361793,1
Longitudinal girders side walls L 140x80x10 (3)	2	59,9	-143,76	20,6	850390,8
Longitudinal girders side walls L 140x80x10 (4)	2	59,9	-193,76	20,6	1544696,5
Longitudinal girders side walls L 140x80x10 (5)	2	59,9	-243,76	20,6	2444710,2
Longitudinal girders side walls L 140x80x10 (6)	2	59,9	-293,76	20,6	3550431,8
Longitudinal girders inner cargo hold L 140x80x10 (1)	2	59,9	-43,76	20,6	78903,5
Longitudinal girders inner cargo hold L 140x80x10 (2)	2	59,9	-93,76	20,6	361793,1
Longitudinal girders inner cargo hold L 140x80x10 (3)	2	59,9	-143,76	20,6	850390,8
Longitudinal girders inner cargo hold L 140x80x10 (4)	2	59,9	-193,76	20,6	1544696,5
Double bottom web plates BI 472x20	8	17525,7	37,94	94,4	1227272,7
Summe:					152608878,5

$J_{II} = 152608878,5 \text{ cm}^4$

Calculation of section modulus

$W_{II} = J_{II} / (H - x_{II}) = 441500,0 \text{ cm}^3$
 $W_{II} = J_{II} / x_{II} = 2371913,2 \text{ cm}^3$

Calculation of permissible bending moments

$\sigma_{zul} = 71 \text{ N/mm}^2$ corresponds to approx. 62% of yield strength of Al Mg 4,5 Mn (min. 115 N/mm²)

$M_{hogging, max} = 31346,5 \text{ kNm}$ $3195,36 \text{ tm}$
 $M_{sagging, max} = 168405,8 \text{ kNm}$ $17166,8 \text{ tm}$

Max. bending moment acc. to longitudinal strength calculation Delftship

$M_{hogging} = 3686,67648 \text{ kNm}$ $375,808 \text{ tm}$
 $M_{sagging} = 77765,10606 \text{ kNm}$ $7927,13 \text{ tm}$

Safety coefficient hogging = 8,503
 Safety coefficient sagging = 2,166

B [mm]	H [mm]	J [cm ⁴]	A [cm ²]	W [cm ³]
10400	28	1902,50667	2912	1358,933
11450	27	1878,08625	3091,5	1391,175
700	20	46,6666667	140	46,667
28	0	0	0	0,000
20	3560	7519669,33	712	42245,333
20	2682	3215326,43	536,4	23977,080
20	890	117494,833	178	2640,333
160	20	10,6666667	32	10,667
		0	0	0,000
		0	0	0,000
		0	0	0,000
		0	0	0,000
		0	0	0,000
		0	0	0,000
		0	0	0,000
		0	0	0,000
		0	0	0,000
		0	0	0,000
		0	0	0,000
		0	0	0,000
		0	0	0,000
20	472	17525,6747	94,4	742,613

J [mm ⁴]	J [cm ⁴]	A [mm ²]	A [cm ²]
0	0	0	0
0	0	0	0
0	0	0	0
1361800939	136180,094	23530,125	235,30125
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
2783201,754	278,320175	1900	19
2783201,754	278,320175	1900	19
599205,705	59,9205705	2057,08	20,5708
599205,705	59,9205705	2057,08	20,5708
599205,705	59,9205705	2057,08	20,5708
599205,705	59,9205705	2057,08	20,5708
599205,705	59,9205705	2057,08	20,5708
599205,705	59,9205705	2057,08	20,5708
599205,705	59,9205705	2057,08	20,5708
599205,705	59,9205705	2057,08	20,5708
599205,705	59,9205705	2057,08	20,5708
599205,705	59,9205705	2057,08	20,5708
599205,705	59,9205705	2057,08	20,5708
0	0	0	0

Sectional area hull plating = 9530,9025
 Sectional area girders = 1660,616
 frame factor (net) = 1,17
 uncertainty allowance = 0,1
 frame factor (total) = 1,27

2020.056 IW-NET - Moments of inertia main section

Vessel: 008 IW-NET 3 units abreast long/shallow
 ENI: ---

Material of hull: Grade A shipbuilding steel

Calculation of J_U :

Height H = 410 cm
 Braedth B = 1145 cm

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	\underline{J} [cm ⁴]
Bottom plate 15 mm	1	238,5	0,75	1272,0	954,0
Double bottom 15 mm	1	266,7	50,75	1422,6	3664262,0
Gangway 10 mm	2	14,9	318,10	179,0	36225194,2
Bilge plate 15 mm	2	70225,0	23,60	124,4	279064,9
Side plate 8 mm	2	1278950,8	184,50	214,2	17138021,6
Inner cargo hold plate 8 mm	2	1278950,8	184,50	214,2	17138021,6
Longitudinal girders bottom L 120x80x6	12	187,9	9,60	11,5	15005,5
Longitudinal girders double bottom L 120x80x6	12	187,9	41,90	11,5	245157,1
Longitudinal girders wing tank L 120x80x6 (1)	4	33,5	92,30	11,5	393037,7
Longitudinal girders wing tank L 120x80x6 (2)	4	33,5	137,30	11,5	869542,5
Longitudinal girders wing tank L 120x80x6 (3)	4	33,5	182,30	11,5	1532830,6
Longitudinal girders wing tank L 120x80x6 (4)	4	33,5	227,30	11,5	2382901,9
Longitudinal girders wing tank L 120x80x6 (5)	4	33,5	272,30	11,5	3419756,4
Cargo hold extension Plate 10mm	2	78089,7	366,90	99,3	26890839,5
Longitudinal girders gangway L 120x80x6	4	33,5	309,40	11,5	4415060,7
Double bottom web plates BI 485x10	9	9924,6	25,40	49,2	374998,5
Summe:					114984648,5

$J_U = 114984649 \text{ cm}^4$

Calculation of J_O :

Height H = 410 cm
 Braedth B = 1145 cm

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	J [cm ⁴]
Bottom plate 15 mm	1	238,5	409,25	1272,0	213041874,0
Double bottom 15 mm	1	266,7	359,25	1422,6	183601823,0
Gangway 10 mm	2	14,9	91,90	179,0	3023558,2
Bilge plate 15 mm	2	70225,0	386,40	124,4	37299113,1
Side plate 8 mm	2	1278950,8	225,50	214,2	24338080,8
Inner cargo hold plate 8 mm	2	1278950,8	225,50	214,2	24338080,8
Longitudinal girders bottom L 120x80x6	12	187,9	400,40	11,5	22183824,8
Longitudinal girders double bottom L 120x80x6	12	187,9	368,10	11,5	18749427,4
Longitudinal girders wing tank L 120x80x6 (1)	4	33,5	317,70	11,5	4655108,5
Longitudinal girders wing tank L 120x80x6 (2)	4	33,5	272,70	11,5	3429810,4
Longitudinal girders wing tank L 120x80x6 (3)	4	33,5	227,70	11,5	2391295,6
Longitudinal girders wing tank L 120x80x6 (4)	4	33,5	182,70	11,5	1539564,0
Longitudinal girders wing tank L 120x80x6 (5)	4	33,5	137,70	11,5	874615,6
Cargo hold extension Plate 10mm	2	78089,7	43,10	99,3	525100,7
Longitudinal girders gangway L 120x80x6	4	33,5	100,60	11,5	466877,9
Double bottom web plates BI 485x10	9	9924,6	384,60	49,2	65587040,1
Summe:					606045194,8

$J_O = 606045195 \text{ cm}^4$

Calculation of J_N :

Height H = 410 cm
 Braedth B = 1145 cm

$x_N = (J_U \times H) / (J_U + J_O) = 65,4 \text{ cm}$

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	J [cm ⁴]
Bottom plate 15 mm	1	238,5	64,63	1272,0	5314062,2
Double bottom 15 mm	1	266,7	14,63	1422,6	304915,8
Gangway 10 mm	2	14,9	252,72	179,0	22863862,1
Bilge plate 15 mm	2	70225,0	41,78	124,4	574962,9
Side plate 8 mm	2	1278950,8	119,12	214,2	8635187,5
Inner cargo hold plate 8 mm	2	1278950,8	119,12	214,2	8635187,5
Longitudinal girders bottom L 120x80x6	12	187,9	55,78	11,5	432802,0
Longitudinal girders double bottom L 120x80x6	12	187,9	23,48	11,5	78557,7
Longitudinal girders wing tank L 120x80x6 (1)	4	33,5	26,92	11,5	33546,3
Longitudinal girders wing tank L 120x80x6 (2)	4	33,5	71,92	11,5	238659,9
Longitudinal girders wing tank L 120x80x6 (3)	4	33,5	116,92	11,5	630556,6
Longitudinal girders wing tank L 120x80x6 (4)	4	33,5	161,92	11,5	1209236,7
Longitudinal girders wing tank L 120x80x6 (5)	4	33,5	206,92	11,5	1974699,9
Cargo hold extension Plate 10mm	2	78089,7	301,52	99,3	18211300,6
Longitudinal girders gangway L 120x80x6	4	33,5	244,02	11,5	2746257,2
Double bottom web plates BI 485x10	9	9924,6	39,98	49,2	797229,6
Summe:					72681024,5

$J_N = 72681024,5 \text{ cm}^4$

Calculation of section modulus

$W_O = J_U / (H - x_N) = 210904,3 \text{ cm}^3$
 $W_U = J_U / x_N = 1111605,2 \text{ cm}^3$

Calculation of permissible bending moments

$\sigma_{zul} = 145 \text{ N/mm}^2$ corresponds to approx. 62% of yield strength of grade A shipbuilding steel (min. 235 N/mm²)

$M_{hogging, max} = 30581,1 \text{ kNm}$ $3117,34 \text{ tm}$
 $M_{sagging, max} = 161182,8 \text{ kNm}$ $16430,5 \text{ tm}$

Max. bending moment acc. to longitudinal strength calculation Delftship

$M_{hogging} = 3587,45814 \text{ kNm}$ $365,694 \text{ tm}$
 $M_{sagging} = 73151,77698 \text{ kNm}$ $7456,86 \text{ tm}$

Safety coefficient hogging = 8,524
 Safety coefficient sagging = 2,203

B [mm]	H [mm]	J [cm ⁴]	A [cm ²]	W [cm ³]	J [mm ⁴]	J [cm ⁴]	A [mm ²]	A [cm ²]
8480	15	238,5	1272	318,000	0	0	0	0
9484	15	266,7375	1422,6	355,650	0	0	0	0
1790	10	14,9166667	179	29,833	0	0	0	0
		0	0	0,000	702249977,4	70224,9977	12443,881	124,43881
8	2677	1278950,85	214,16	9555,105	0	0	0	0
8	2677	1278950,85	214,16	9555,105	0	0	0	0
		0	0	0,000	1878724,101	187,87241	1152,983	11,52983
		0	0	0,000	1878724,101	187,87241	1152,983	11,52983
		0	0	0,000	334562,037	33,4562037	1152,983	11,52983
		0	0	0,000	334562,037	33,4562037	1152,983	11,52983
		0	0	0,000	334562,037	33,4562037	1152,983	11,52983
		0	0	0,000	334562,037	33,4562037	1152,983	11,52983
		0	0	0,000	334562,037	33,4562037	1152,983	11,52983
		0	0	0,000	780896949,6	78089,695	9930	99,3
		0	0	0,000	334562,037	33,4562037	1152,983	11,52983
10	485	9507,01042	48,5	392,042	99246240	9924,624	4920	49,2

Sectional area hull plating A [cm²]
 4158,11762
 Sectional area girders 1194,83184
 frame factor (net) 1,29
 uncertainty allowance 0,10
 frame factor (total): 1,39

2020.056 IW-NET - Moments of inertia main section

Vessel: 008 IW-NET 3 units abreast long/shallow
 ENI: ---

Material of hull: Aluminium (Al Mg 4,5 Mn) - same longitudinal strength as steel

Calculation of J_U :

Height H = 410 cm
 Braedth B = 1145 cm

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	\underline{J} [cm ⁴]	B [mm]	H [mm]	J [cm ⁴]	A [cm ²]	W [cm ³]	J [mm ⁴]	J [cm ⁴]	A [mm ²]	A [cm ²]
Bottom plate 30 mm	1	1902,6	0,90	2536,8	3957,4	8456	30	1902,6	2536,8	1268,400	0	0	0	0
Double bottom 30 mm	1	2132,1	50,90	2842,8	7367286,8	9476	30	2132,1	2842,8	1421,400	0	0	0	0
Gangway 18 mm	2	39,6	316,60	146,5	29373107,6	814	18	39,5604	146,52	43,956	0	0	0	0
Bilge plate 30 mm	2	146762,5	24,30	252,6	591847,0			0	0	0,000	1467624787	146762,479	25260,554	252,60554
Side plate 18 mm	2	2766239,0	183,70	475,6	37628678,7		18	2642	2766238,99	475,56	20940,492	0	0	0
Inner cargo hold plate 18 mm	2	2766239,0	183,70	475,6	37628678,7		18	2642	2766238,99	475,56	20940,492	0	0	0
Longitudinal girders bottom L 150x100x10	12	645,2	13,10	24,0	57166,1			0	0	0,000	6452023,768	645,202377	2400	24
Longitudinal girders double bottom L 150x100x10	12	645,2	39,90	24,0	466241,3			0	0	0,000	6452023,768	645,202377	2400	24
Longitudinal girders wing tank L 150x100x10 (1)	4	115,0	91,40	24,0	802440,4			0	0	0,000	1150476,233	115,047623	2400	24
Longitudinal girders wing tank L 150x100x10 (2)	4	115,0	136,40	24,0	1786536,4			0	0	0,000	1150476,233	115,047623	2400	24
Longitudinal girders wing tank L 150x100x10 (3)	4	115,0	181,40	24,0	3159432,4			0	0	0,000	1150476,233	115,047623	2400	24
Longitudinal girders wing tank L 150x100x10 (4)	4	115,0	226,40	24,0	4921128,4			0	0	0,000	1150476,233	115,047623	2400	24
Longitudinal girders wing tank L 150x100x10 (5)	4	115,0	271,40	24,0	7071624,4			0	0	0,000	1150476,233	115,047623	2400	24
Cargo hold extension Plate 16mm	2	126092,4	307,90	159,2	30437272,1			0	0	0,000	1260923617	126092,362	15920	159,2
Longitudinal girders gangway L 150x100x10	4	645,2	307,90	24,0	9103612,2			0	0	0,000	6452023,768	645,202377	2400	24
Double bottom web plates BI 470x20	9	17303,8	25,80	94,0	718865,9	20	470	17303,8333	94	736,333	0	0	0	0
					Summe:									

$J_U = 171117876 \text{ cm}^4$

Calculation of J_O :

Height H = 410 cm
 Braedth B = 1145 cm

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	J [cm ⁴]	
Bottom plate 30 mm	1	1902,6	409,10	2536,8	424567879,0	
Double bottom 30 mm	1	2132,1	359,10	2842,8	366589180,4	
Gangway 18 mm	2	39,6	93,40	146,5	2556431,1	
Bilge plate 30 mm	2	146762,5	385,70	252,6	75450993,6	
Side plate 18 mm	2	2766239,0	226,30	475,6	54240940,6	
Inner cargo hold plate 18 mm	2	2766239,0	226,30	475,6	54240940,6	
Longitudinal girders bottom L 150x100x10	12	645,2	396,90	24,0	45376270,1	
Longitudinal girders double bottom L 150x100x10	12	645,2	370,10	24,0	39456257,3	
Longitudinal girders wing tank L 150x100x10 (1)	4	115,0	318,60	24,0	9745032,4	
Longitudinal girders wing tank L 150x100x10 (2)	4	115,0	273,60	24,0	7186728,4	
Longitudinal girders wing tank L 150x100x10 (3)	4	115,0	228,60	24,0	5017224,4	
Longitudinal girders wing tank L 150x100x10 (4)	4	115,0	183,60	24,0	3236520,4	
Longitudinal girders wing tank L 150x100x10 (5)	4	115,0	138,60	24,0	1844616,4	
Cargo hold extension Plate 16mm	2	126092,4	102,10	159,2	3571316,9	
Longitudinal girders gangway L 150x100x10	4	645,2	102,10	24,0	1003324,2	
Double bottom web plates BI 470x20	9	17303,8	384,20	94,0	125033489,9	
					Summe:	1219117145,4

$J_O = 1219117145 \text{ cm}^4$

Calculation of J_N :

Height H = 410 cm
 Braedth B = 1145 cm

$x_N = (J_U \times H) / (J_U + J_O) = 50,5 \text{ cm}$

Designation of part	No.	J [cm ⁴]	x abv.B. [cm]	A [cm ²]	J [cm ⁴]	
Bottom plate 30 mm	1	1902,6	49,57	2536,8	6234053,3	
Double bottom 30 mm	1	2132,1	-0,43	2842,8	2669,8	
Gangway 18 mm	2	39,6	-266,13	146,5	20755455,5	
Bilge plate 30 mm	2	146762,5	26,17	252,6	639398,4	
Side plate 18 mm	2	2766239,0	-133,23	475,6	22416325,1	
Inner cargo hold plate 18 mm	2	2766239,0	-133,23	475,6	22416325,1	
Longitudinal girders bottom L 150x100x10	12	645,2	37,37	24,0	409833,5	
Longitudinal girders double bottom L 150x100x10	12	645,2	10,57	24,0	39889,3	
Longitudinal girders wing tank L 150x100x10 (1)	4	115,0	-40,93	24,0	161324,2	
Longitudinal girders wing tank L 150x100x10 (2)	4	115,0	-85,93	24,0	709401,9	
Longitudinal girders wing tank L 150x100x10 (3)	4	115,0	-130,93	24,0	1646279,6	
Longitudinal girders wing tank L 150x100x10 (4)	4	115,0	-175,93	24,0	2971957,2	
Longitudinal girders wing tank L 150x100x10 (5)	4	115,0	-220,93	24,0	4686434,9	
Cargo hold extension Plate 16mm	2	126092,4	-257,43	159,2	21353423,6	
Longitudinal girders gangway L 150x100x10	4	645,2	-257,43	24,0	6364763,4	
Double bottom web plates BI 470x20	9	17303,8	24,67	94,0	670412,5	
					Summe:	111477947,3

$J_N = 111477947,3 \text{ cm}^4$

Calculation of section modulus

$W_O = J_U / (H - x_N) = 310061,5 \text{ cm}^3$
 $W_U = J_U / x_N = 2209011,4 \text{ cm}^3$

Calculation of permissible bending moments

$\sigma_{zul} = 71 \text{ N/mm}^2$ corresponds to approx. 62% of yield strength of Al Mg 4,5 Mn (min. 115 N/mm²)

$M_{hogging, max} = 22014,4 \text{ kNm}$ $2244,07 \text{ tm}$
 $M_{sagging, max} = 156839,8 \text{ kNm}$ $15987,7 \text{ tm}$











Max. bending moment acc. to longitudinal strength calculation Delftship

$M_{hogging} = 3587,45814 \text{ kNm}$ $365,694 \text{ tm}$
 $M_{sagging} = 73151,77698 \text{ kNm}$ $7456,86 \text{ tm}$











Safety coefficient hogging = 6,136
 Safety coefficient sagging = 2,144

Sectional area hull plating **A [cm²]**
 Sectional area girders **8080,09108**
 frame factor (net) **2316,4**
 uncertainty allowance **1,29**
 frame factor (total): **0,10**
1,39











Layer properties

Description	Visible	Symmetric	Color	Density	Thickness	Area	Weight	LCG	TCG	VCG
					m	m ²	t	m	m	m
Bottom	YES	YES		0,0000	0,000	798,20	0,000	37,830	0,000	0,142 (CL)
Side	YES	YES		0,0000	0,000	432,95	0,000	35,516	0,000	1,914 (CL)
Bilge	YES	YES		0,0000	0,000	112,43	0,000	41,740	0,000	0,635 (CL)
Deck	YES	YES		0,0000	0,000	259,64	0,000	40,811	0,000	3,341 (CL)
Hatch coaming	YES	YES		0,0000	0,000	116,83	0,000	35,591	0,000	3,611 (CL)
Cargo hold	YES	YES		0,0000	0,000	409,57	0,000	36,864	0,000	1,887 (CL)
Double bottom	YES	YES		0,0000	0,000	613,89	0,000	37,030	0,000	0,515 (CL)
Bulkheads	YES	YES		0,0000	0,000	118,46	0,000	45,374	0,000	1,451 (CL)
Binnencontainer 45 ft wecon	YES	NO		0,0000	0,000	3939,94	0,000	35,690	0,000	3,400 (CL)
Binnencontainer 45 ft wecon 3rd layer	NO	NO		0,0000	0,000	1969,97	0,000	35,690	0,000	7,748 (CL)












Layer properties

Description	Visible	Symmetric	Color	Density	Thickness	Area	Weight	LCG	TCG	VCG
					m	m ²	t	m	m	m
Bottom	YES	YES		0,0000	0,000	941,55	0,000	44,572	0,000	0,122 (CL)
Side	YES	YES		0,0000	0,000	518,74	0,000	42,300	0,000	1,924 (CL)
Bilge	YES	YES		0,0000	0,000	127,97	0,000	48,700	0,000	0,581 (CL)
Deck	YES	YES		0,0000	0,000	290,76	0,000	47,767	0,000	3,376 (CL)
Hatch coaming	YES	YES		0,0000	0,000	138,43	0,000	42,316	0,000	3,659 (CL)
Cargo hold	YES	YES		0,0000	0,000	491,44	0,000	43,614	0,000	1,907 (CL)
Double bottom	YES	YES		0,0000	0,000	737,34	0,000	43,775	0,000	0,513 (CL)
Bulkheads	YES	YES		0,0000	0,000	131,74	0,000	51,761	0,000	1,444 (CL)
Binnencontainer 45 ft wecon	YES	NO		0,0000	0,000	4924,93	0,000	42,573	0,000	3,400 (CL)
Binnencontainer 45 ft wecon 3rd layer	NO	NO		0,0000	0,000	2462,46	0,000	42,573	0,000	7,748 (CL)











Layer properties

Description	Visible	Symmetric	Color	Density	Thickness	Area		Weight	LCG	TCG	VCG
						m	m ²				
Bottom	YES	YES		0,0000	0,000	686,20	0,000	40,424	0,000	0,077	(CL)
Side	YES	YES		0,0000	0,000	449,29	0,000	37,944	0,000	1,909	(CL)
Bilge	YES	YES		0,0000	0,000	127,23	0,000	41,928	0,000	0,457	(CL)
Deck	YES	YES		0,0000	0,000	226,44	0,000	45,146	0,000	3,264	(CL)
Hatch coaming	YES	YES		0,0000	0,000	151,11	0,000	38,239	0,000	3,689	(CL)
Cargo hold	YES	YES		0,0000	0,000	414,33	0,000	38,391	0,000	1,850	(CL)
Double bottom	YES	YES		0,0000	0,000	540,50	0,000	38,395	0,000	0,500	(CL)
Bulkheads	YES	YES		0,0000	0,000	127,77	0,000	38,717	0,000	1,380	(CL)
Binnencontainer 45 ft wecon	YES	NO		0,0000	0,000	4924,93	0,000	38,390	0,000	3,400	(CL)
Binnencontainer 45 ft wecon 3rd layer	NO	YES		0,0000	0,000	4225,41	0,000	38,390	0,000	7,748	(CL)











Layer properties

Description	Visible	Symmetric	Color	Density	Thickness	Area	Weight	LCG	TCG	VCG	
					m	m ²	t	m	m	m	
Bottom	YES	YES		7,8000	0,011	897,41	76,998	42,992	0,000	0,076 (CL)	
Side	YES	YES		7,8000	0,008	625,50	39,031	40,592	0,000	2,309 (CL)	
Bilge	YES	YES		7,8000	0,012	135,05	12,641	44,124	0,000	0,448 (CL)	
Deck	YES	YES		7,8000	0,010	283,59	22,120	48,484	0,000	3,381 (CL)	
Hatch coaming	YES	YES		0,0000	0,000	219,87	0,000	40,851	0,000	3,654 (CL)	
Cargo hold	YES	YES		0,0000	0,000	763,98	0,000	40,999	0,000	1,712 (CL)	
Double bottom	YES	YES		0,0000	0,000	711,99	0,000	40,695	0,000	0,500 (CL)	
Cargo hold plating outside	NO	YES		0,0000	0,000	496,80	0,000	40,850	0,000	2,300 (CL)	
Bulkheads	YES	YES		0,0000	0,000	193,87	0,000	40,800	0,000	0,976 (CL)	
Binnencontainer 45 ft wecon	NO	NO		0,0000	0,000	6566,57	0,000	40,858	0,000	3,400 (CL)	
Binnencontainer 45 ft wecon 3rd layer	NO	YES		0,0000	0,000	6566,57	0,000	40,858	0,000	7,748 (CL)	
							17461,21	150,789	43,271	0,000	1,170 (CL)












Layer properties

Description	Visible	Symmetric	Color	Density	Thickness	Area		Weight	LCG	TCG	VCG
						m	m ²				
Bottom	YES	YES		0,0000	0,000	1362,88	0,000	45,222	0,000	0,104	(CL)
Side	YES	YES		0,0000	0,000	650,96	0,000	41,160	0,000	2,370	(CL)
Bilge	YES	YES		0,0000	0,000	171,28	0,000	45,512	0,000	0,538	(CL)
Deck	YES	YES		0,0000	0,000	384,83	0,000	49,923	0,000	4,068	(CL)
Cargo hold	YES	YES		0,0000	0,000	624,06	0,000	43,001	0,000	2,300	(CL)
Double bottom	YES	YES		0,0000	0,000	1074,27	0,000	43,004	0,000	0,600	(CL)
Bulkheads	YES	YES		0,0000	0,000	482,88	0,000	43,058	0,000	2,001	(CL)
Aftpeak bulkhead	YES	YES		0,0000	0,000	0,00	0,000	0,000	0,000	0,000	(CL)
Binnencontainer 45 ft wecon	YES	NO		0,0000	0,000	9849,86	0,000	42,997	0,000	3,496	(CL)
Binnencontainer 45 ft wecon 3rd layer	NO	NO		0,0000	0,000	4924,93	0,000	42,997	0,000	7,840	(CL)











Layer properties

Description	Visible	Symmetric	Color	Density	Thickness	Area	Weight	LCG	TCG	VCG
Bottom	YES	YES		0,0000	0,000	803,21	0,000	47,304	0,000	0,066 (CL)
Side	YES	YES		0,0000	0,000	523,62	0,000	44,808	0,000	1,900 (CL)
Bilge	YES	YES		0,0000	0,000	146,69	0,000	48,857	0,000	0,430 (CL)
Deck	YES	YES		0,0000	0,000	249,15	0,000	52,458	0,000	3,259 (CL)
Hatch coaming	YES	YES		0,0000	0,000	178,18	0,000	45,031	0,000	3,689 (CL)
Cargo hold	YES	YES		0,0000	0,000	488,66	0,000	45,274	0,000	1,850 (CL)
Double bottom	YES	YES		0,0000	0,000	648,48	0,000	45,280	0,000	0,500 (CL)
Bulkheads	YES	YES		0,0000	0,000	145,70	0,000	46,870	0,000	1,339 (CL)
Binnencontainer 45 ft wecon	YES	NO		0,0000	0,000	5909,91	0,000	45,273	0,000	3,400 (CL)
Binnencontainer 45 ft wecon 3rd layer	NO	NO		0,0000	0,000	2954,96	0,000	45,273	0,000	7,748 (CL)

Layer properties

Description	Visible	Symmetric	Color	Density	Thickness	Area	Weight	LCG	TCG	VCG
Bottom	YES	YES		0,0000	0,000	1016,54	0,000	48,690	0,000	0,067 (CL)
Side	YES	YES		0,0000	0,000	707,58	0,000	46,282	0,000	2,308 (CL)
Bilge	YES	YES		0,0000	0,000	151,17	0,000	49,856	0,000	0,427 (CL)
Deck	YES	YES		0,0000	0,000	266,28	0,000	55,766	0,000	3,399 (CL)
Hatch coaming	YES	YES		0,0000	0,000	207,28	0,000	46,550	0,000	3,655 (CL)
Cargo hold	YES	YES		0,0000	0,000	691,38	0,000	46,542	0,000	1,747 (CL)
Double bottom	YES	YES		0,0000	0,000	859,74	0,000	46,557	0,000	0,500 (CL)
Cargo hold plating outside	NO	YES		0,0000	0,000	596,17	0,000	46,550	0,000	2,300 (CL)
Bulkheads	YES	YES		0,0000	0,000	204,86	0,000	46,560	0,000	0,873 (CL)
Binnencontainer 45 ft wecon	YES	NO		0,0000	0,000	7879,89	0,000	46,541	0,000	3,400 (CL)
Binnencontainer 45 ft wecon 3rd layer	NO	NO		0,0000	0,000	3939,94	0,000	46,541	0,000	7,748 (CL)

Layer properties

Description	Visible	Symmetric	Color	Density	Thickness	Area	Weight	LCG	TCG	VCG
Bottom	YES	YES		0,0000	0,000	989,62	0,000	47,408	0,000	0,070 (CL)
Side	YES	YES		0,0000	0,000	529,38	0,000	44,530	0,000	1,904 (CL)
Bilge	YES	YES		0,0000	0,000	147,55	0,000	48,574	0,000	0,431 (CL)
Deck	YES	YES		0,0000	0,000	433,97	0,000	50,299	0,000	3,241 (CL)
Hatch coaming	YES	YES		0,0000	0,000	178,18	0,000	45,031	0,000	3,689 (CL)
Cargo hold	YES	YES		0,0000	0,000	488,66	0,000	45,274	0,000	1,850 (CL)
Double bottom	YES	YES		0,0000	0,000	648,48	0,000	45,280	0,000	0,500 (CL)
Bulkheads	YES	YES		0,0000	0,000	219,80	0,000	47,097	0,000	1,438 (CL)
Binnencontainer 45 ft wecon	YES	NO		0,0000	0,000	5909,91	0,000	45,273	0,000	3,400 (CL)
Binnencontainer 45 ft wecon 3rd layer	NO	NO		0,0000	0,000	2954,96	0,000	45,273	0,000	7,748 (CL)



2020.056 - IW-NET - Weight estimation aluminium (dimensions for same longitudinal strength as steel)

specific weight aluminium 2,66 [t/m³]
welding allowance 3 [%]

Europa 2b

specific weight aluminium 2,66 [t/m³]
frame factor (brutto) 1,28
welding allowance 3 [%]

LoA 76,50 m
BoA 11,45 m
Side height 3,20 m

No. of Containers 2 layers
3 layers

Delftship Layer	Area [m ²]	LCG [m]	TCG [m]	VCG [m]	Thickness [mm]	Volume [m ³]	Weight [t]
Hull	1343,57	37,411	0,000	0,754	15,523	20,856	55,477
<i>Bottom</i>	798,20	37,830	0,000	0,142	16,000	12,771	33,971
<i>Side</i>	432,94	35,515	0,000	1,914	14,000	6,061	16,123
<i>Bilge</i>	112,43	41,739	0,000	0,634	18,000	2,024	5,383
Deck	259,64	40,811	0,000	3,341	14,000	3,635	9,669
Hatch coaming	116,83	35,591	0,000	3,611	14,000	1,636	4,351
Cargo hold	409,56	36,863	0,000	1,887	14,000	5,734	15,252
Double bottom	613,89	37,030	0,000	0,516	14,000	8,594	22,861
Bulkheads	118,46	45,374	0,000	1,451	14,000	1,658	4,411

casco 37,857 0,000 1,197 147,689

Anchor and chain 74,500 0,000 2,800 2,545
Equipment (winches, bollards) 38,250 0,000 3,500 3,000

anchor 1705 kg
chain 26 mm
60 m
14 kg/m
840 kg

Lightship total 38,473 0,000 1,269 153,234

Europa 3a

specific weight aluminium 2,66 [t/m³]
frame factor (brutto) 1,28
welding allowance 3 [%]

LoA 90,00 m
BoA 11,45 m
Side height 3,25 m

No. of Containers 2 layers
3 layers

Delftship Layer	Area [m ²]	LCG [m]	TCG [m]	VCG [m]	Thickness [mm]	Volume [m ³]	Weight [t]
Hull	1588,26	44,163	0,000	0,748	20,342	32,309	85,942
<i>Bottom</i>	941,56	44,573	0,000	0,122	21,000	19,773	52,596
<i>Side</i>	518,74	42,299	0,000	1,924	18,000	9,337	24,837
<i>Bilge</i>	127,96	48,697	0,000	0,581	25,000	3,199	8,509
Deck	290,76	47,767	0,000	3,376	18,000	5,234	13,922
Hatch coaming	138,43	42,316	0,000	3,659	18,000	2,492	6,628
Cargo hold	491,43	43,613	0,000	1,907	18,000	8,846	23,530
Double bottom	737,34	43,775	0,000	0,513	21,000	15,484	41,188
Bulkheads	131,74	51,761	0,000	1,444	18,000	2,371	6,308

casco 44,562 0,000 1,158 234,038

Anchor and chain 88,000 0,000 2,850 2,885
Equipment (winches, bollards) 45,000 0,000 3,550 3,000

anchor 2045 kg
chain 26 mm
60 m
14 kg/m
840 kg

Lightship total 45,090 0,000 1,208 239,923

003 IW-NET 3 units abreast

specific weight aluminium 2,66 [t/m³]
frame factor (brutto) 1,38
welding allowance 3 [%]

LoA 81,00 m
BoA 9,50 m
Side height 3,20 m

No. of Containers 2 layers
3 layers

30
45

Delftship Layer	Area [m ²]	LCG [m]	TCG [m]	VCG [m]	Thickness [mm]	Volume [m ³]	Weight [t]
Hull	1262,72	39,693	0,000	0,767	18,202	22,983	61,136
<i>Bottom</i>	686,20	40,424	0,000	0,077	18,000	12,352	32,855
<i>Side</i>	449,29	37,944	0,000	1,909	18,000	8,087	21,512
<i>Bilge</i>	127,23	41,928	0,000	0,457	20,000	2,545	6,769
Deck	226,44	45,146	0,000	3,264	18,000	4,076	10,842
Hatch coaming	151,11	38,239	0,000	3,689	18,000	2,720	7,235
Cargo hold	414,33	38,391	0,000	1,850	18,000	7,458	19,838
Double bottom	540,50	38,395	0,000	0,500	18,000	9,729	25,879
Bulkheads	127,77	38,717	0,000	1,380	18,000	2,300	6,118

casco 39,576 0,000 1,273 186,271

Anchor and chain 79,000 0,000 2,800 2,105
Equipment (winches, bollards) 40,500 0,000 3,500 3,500

anchor 1415 kg
chain 24 mm
60 m
11,5 kg/m
690 kg
<http://www.sotra.net/catalogue/2018/index.html>
studless chain, grade 3

Lightship total 40,026 0,000 1,331 191,876

004_v2 IW-NET NEWS Evolution v2

specific weight aluminium 2,66 [t/m³]
frame factor (brutto) 1,26
welding allowance 3 [%]

LoA 85,92 m
BoA 11,45 m
Side height 4,10 m

No. of Containers 2 layers
3 layers

40
60

Delftship Layer	Area [m ²]	LCG [m]	TCG [m]	VCG [m]	Thickness [mm]	Volume [m ³]	Weight [t]
Hull	1657,96	42,179	0,000	0,949	21,245	35,224	93,696
<i>Bottom</i>	897,41	42,992	0,000	0,076	22,000	19,743	52,516
<i>Side</i>	625,50	40,592	0,000	2,309	20,000	12,510	33,277
<i>Bilge</i>	135,05	44,124	0,000	0,448	22,000	2,971	7,903
Deck	283,59	48,484	0,000	3,381	20,000	5,672	15,087
Hatch coaming	219,87	40,851	0,000	3,654	20,000	4,397	11,697
Cargo hold	796,98	40,999	0,000	1,712	20,000	15,940	42,399
Double bottom	711,99	40,695	0,000	0,500	22,000	15,664	41,666
Bulkheads	193,87	40,800	0,000	0,976	20,000	3,877	10,314

casco 41,987 0,000 1,311 278,844

Anchor and chain 83,920 0,000 3,700 2,680
Equipment (winches, bollards) 42,960 0,000 4,400 3,500

anchor 1840 kg
chain 26 mm
60 m
14 kg/m
840 kg
<http://www.sotra.net/catalogue/2018/index.html>
studless chain, grade 3

Lightship total 42,393 0,000 1,371 285,024

005_v2 IW-NET Containers transverse v2

specific weight aluminium	2,66 [t/m ³]	LoA	89,80 m	No. of Containers	2 layers	60
frame factor (brutto)	1,36	BoA	16,28 m		3 layers	90
welding allowance	3 [%]	Side height	4,00 m			

Delftship Layer		Area [m ²]	LCG [m]	TCG [m]	VCG [m]	Thickness [mm]	Volume [m ³]	Weight [t]
Hull		2185,12	44,035	0,000	0,813	22,263	48,647	129,402
	Bottom	1362,88	45,222	0,000	0,104	23,000	31,346	83,381
	Side	650,96	41,160	0,000	2,370	20,000	13,019	34,631
	Bilge	171,28	45,512	0,000	0,538	25,000	4,282	11,390
Deck		384,83	49,923	0,000	4,068	20,000	7,697	20,473
Hatch coaming		0,00	0,000	0,000	0,000	20,000	0,000	0,000
Cargo hold		624,06	43,001	0,000	2,300	20,000	12,481	33,200
Double bottom		1074,27	43,004	0,000	0,600	22,000	23,634	62,866
Bulkheads		482,88	43,058	0,000	2,001	20,000	9,658	25,689
casco			44,081	0,000	1,272			380,500
Anchor and chain			87,800	0,000	3,600			4,760
Equipment (winches, bollards)			44,900	0,000	4,300			3,500
Lightship total			44,624	0,000	1,328			388,760

anchor	3080 kg	chain	26 mm	http://www.sotra.net/catalogue/2018/index.html
			120 m	studless chain, grade 3
			14 kg/m	
			1680 kg	

006 IW-NET 3 units abreast long

specific weight aluminium	2,66 [t/m ³]	LoA	94,77 m	No. of Containers	2 layers	36
frame factor (brutto)	1,30	BoA	9,50 m		3 layers	54
welding allowance	3 [%]	Side height	3,20 m			

Delftship Layer		Area [m ²]	LCG [m]	TCG [m]	VCG [m]	Thickness [mm]	Volume [m ³]	Weight [t]
Hull		1473,52	46,572	0,000	0,754	23,413	34,499	91,769
	Bottom	803,21	47,304	0,000	0,066	26,000	20,883	55,550
	Side	523,62	44,808	0,000	1,900	19,000	9,949	26,464
	Bilge	146,69	48,857	0,000	0,430	25,000	3,667	9,755
Deck		249,15	52,458	0,000	3,259	19,000	4,734	12,592
Hatch coaming		178,20	45,029	0,000	3,689	19,000	3,386	9,006
Cargo hold		488,66	45,274	0,000	1,850	19,000	9,285	24,697
Double bottom		648,48	45,280	0,000	0,500	26,000	16,860	44,849
Bulkheads		145,70	46,870	0,000	1,339	19,000	2,768	7,364
casco			46,513	0,000	1,106			254,780
Anchor and chain			92,770	0,000	2,800			2,310
Equipment (winches, bollards)			47,385	0,000	3,500			3,500
Lightship total			46,934	0,000	1,153			260,590

anchor	1470 kg	chain	26 mm	http://www.sotra.net/catalogue/2018/index.html
			60 m	studless chain, grade 3
			14 kg/m	
			840 kg	

007 IW-NET NEWS Evolution long

specific weight aluminium	2,66 [t/m ³]	LoA	97,32 m	No. of Containers	2 layers	48
frame factor (brutto)	1,27	BoA	11,45 m		3 layers	72
welding allowance	3 [%]	Side height	4,10 m			

Delftship Layer		Area [m ²]	LCG [m]	TCG [m]	VCG [m]	Thickness [mm]	Volume [m ³]	Weight [t]
Hull		1875,29	47,875	0,000	0,942	24,981	46,847	124,614
	Bottom	1016,54	48,690	0,000	0,067	28,000	28,463	75,712
	Side	707,58	46,282	0,000	2,308	20,000	14,152	37,643
	Bilge	151,17	49,856	0,000	0,427	28,000	4,233	11,259
Deck		266,28	55,766	0,000	3,399	20,000	5,326	14,166
Hatch coaming		207,28	46,550	0,000	3,655	20,000	4,146	11,027
Cargo hold		691,38	46,542	0,000	1,747	20,000	13,828	36,781
Double bottom		859,74	46,557	0,000	0,500	27,000	23,213	61,747
Bulkheads		204,86	46,560	0,000	0,873	20,000	4,097	10,899
casco			47,784	0,000	1,118			339,104
Anchor and chain			95,320	0,000	3,700			2,870
Equipment (winches, bollards)			48,660	0,000	4,400			3,500
Lightship total			48,188	0,000	1,173			345,474

anchor	1910 kg	chain	28 mm	http://www.sotra.net/catalogue/2018/index.html
			60 m	studless chain, grade 3
			16 kg/m	
			960 kg	

008 IW-NET 3 units abreast long/shallow

specific weight aluminium	2,66 [t/m ³]	LoA	94,77 m	No. of Containers	2 layers	36
frame factor (brutto)	1,39	BoA	11,45 m		3 layers	54
welding allowance	3 [%]	Side height	3,20 m			

Delftship Layer		Area [m ²]	LCG [m]	TCG [m]	VCG [m]	Thickness [mm]	Volume [m ³]	Weight [t]
Hull		1666,55	46,597	0,000	0,685	26,188	43,644	116,093
	Bottom	989,62	47,408	0,000	0,070	30,000	29,689	78,972
	Side	529,38	44,530	0,000	1,904	18,000	9,529	25,347
	Bilge	147,55	48,574	0,000	0,431	30,000	4,427	11,774
Deck		433,97	50,299	0,000	3,241	18,000	7,811	20,778
Hatch coaming		178,18	45,031	0,000	3,689	18,000	3,207	8,531
Cargo hold		488,66	45,274	0,000	1,850	18,000	8,796	23,397
Double bottom		648,48	45,280	0,000	0,500	30,000	19,454	51,749
Bulkheads		219,80	47,097	0,000	1,438	18,000	3,956	10,524
casco			46,617	0,000	1,047			330,826
Anchor and chain			92,770	0,000	2,800			2,340
Equipment (winches, bollards)			47,385	0,000	3,500			3,500
Lightship total			46,946	0,000	1,085			336,666

anchor	1500 kg	chain	26 mm	http://www.sotra.net/catalogue/2018/index.html
			60 m	studless chain, grade 3
			14 kg/m	
			840 kg	



2020.056 - IW-NET - Weight estimation aluminium (same dimensions as steel)

specific weight aluminium 2,66 [t/m³]
welding allowance 3 [%]

Europa 2b

specific weight aluminium 2,66 [t/m³]
frame factor (brutto) 1,37
welding allowance 3 [%]

LoA 76,50 m
BoA 11,45 m
Side height 3,20 m

No. of Containers 2 layers
3 layers

Delftship Layer	Area [m ²]	LCG [m]	TCG [m]	VCG [m]	Thickness [mm]	Volume [m ³]	Weight [t]
Hull	1343,57	37,411	0,000	0,754	6,761	9,084	24,165
<i>Bottom</i>	798,20	37,830	0,000	0,142	7,00	5,587	14,862
<i>Side</i>	432,94	35,515	0,000	1,914	6,00	2,598	6,910
<i>Bilge</i>	112,43	41,739	0,000	0,634	8,00	0,899	2,393
Deck	259,64	40,811	0,000	3,341	7,00	1,817	4,834
Hatch coaming	116,83	35,591	0,000	3,611	6,00	0,701	1,865
Cargo hold	409,56	36,863	0,000	1,887	6,00	2,457	6,537
Double bottom	613,89	37,030	0,000	0,516	7,00	4,297	11,431
Bulkheads	118,46	45,374	0,000	1,451	6,00	0,711	1,891

casco 37,877 0,000 1,197 71,573

Anchor and chain 74,500 0,000 2,800 2,545
Equipment (winches, bollards) 38,250 0,000 3,500 3,000

anchor 1705 kg
chain 26 mm
60 m
14 kg/m
840 kg

Lightship total 39,100 0,000 1,339 77,118

Europa 3a

specific weight aluminium 2,66 [t/m³]
frame factor (brutto) 1,36
welding allowance 3 [%]

LoA 90,00 m
BoA 11,45 m
Side height 3,25 m

No. of Containers 2 layers
3 layers

Delftship Layer	Area [m ²]	LCG [m]	TCG [m]	VCG [m]	Thickness [mm]	Volume [m ³]	Weight [t]
Hull	1588,26	44,163	0,000	0,748	9,020	14,326	38,108
<i>Bottom</i>	941,56	44,573	0,000	0,122	10,00	9,416	25,045
<i>Side</i>	518,74	42,299	0,000	1,924	7,00	3,631	9,659
<i>Bilge</i>	127,96	48,697	0,000	0,581	10,00	1,280	3,404
Deck	290,76	47,767	0,000	3,376	10,00	2,908	7,734
Hatch coaming	138,43	42,316	0,000	3,659	7,00	0,969	2,578
Cargo hold	491,43	43,613	0,000	1,907	7,00	3,440	9,150
Double bottom	737,34	43,775	0,000	0,513	10,00	7,373	19,613
Bulkheads	131,74	51,761	0,000	1,444	7,00	0,922	2,453

casco 44,625 0,000 1,133 111,555

Anchor and chain 88,000 0,000 2,850 2,885
Equipment (winches, bollards) 45,000 0,000 3,550 3,000

anchor 2045 kg
chain 26 mm
60 m
14 kg/m
840 kg

Lightship total 45,700 0,000 1,237 117,440

003 IW-NET 3 units abreast

specific weight aluminium 2,66 [t/m³]
frame factor (brutto) 1,53
welding allowance 3 [%]

LoA 81,00 m
BoA 9,50 m
Side height 3,20 m

No. of Containers 2 layers
3 layers

30
45

Delftship Layer	Area [m ²]	LCG [m]	TCG [m]	VCG [m]	Thickness [mm]	Volume [m ³]	Weight [t]
Hull	1262,72	39,693	0,000	0,767	8,101	10,229	27,209
<i>Bottom</i>	686,20	40,424	0,000	0,077	8,00	5,490	14,602
<i>Side</i>	449,29	37,944	0,000	1,909	8,00	3,594	9,561
<i>Bilge</i>	127,23	41,928	0,000	0,457	9,00	1,145	3,046
Deck	226,44	45,146	0,000	3,264	8,00	1,812	4,819
Hatch coaming	151,11	38,239	0,000	3,689	8,00	1,209	1,850
Cargo hold	414,33	38,391	0,000	1,850	8,00	3,315	8,817
Double bottom	540,50	38,395	0,000	0,500	8,00	4,324	11,502
Bulkheads	127,77	38,717	0,000	1,380	8,00	1,022	2,719

casco 39,610 0,000 1,215 89,692

Anchor and chain 79,000 0,000 2,800 2,105
Equipment (winches, bollards) 40,500 0,000 3,500 3,500

anchor 1415 kg
chain 24 mm
60 m
11,5 kg/m
690 kg
<http://www.sotra.net/catalogue/2018/index.html>
studless chain, grade 3

Lightship total 40,513 0,000 1,334 95,297

004_v2 IW-NET NEWS Evolution v2

specific weight aluminium 2,66 [t/m³]
frame factor (brutto) 1,38
welding allowance 3 [%]

LoA 85,92 m
BoA 11,45 m
Side height 4,10 m

No. of Containers 2 layers
3 layers

40
60

Delftship Layer	Area [m ²]	LCG [m]	TCG [m]	VCG [m]	Thickness [mm]	Volume [m ³]	Weight [t]
Hull	1657,96	42,179	0,000	0,949	9,704	16,089	42,797
<i>Bottom</i>	897,41	42,992	0,000	0,076	10,00	8,974	23,871
<i>Side</i>	625,50	40,592	0,000	2,309	9,00	5,630	14,974
<i>Bilge</i>	135,05	44,124	0,000	0,448	11,00	1,486	3,952
Deck	283,59	48,484	0,000	3,381	8,00	2,269	6,035
Hatch coaming	219,87	40,851	0,000	3,654	9,00	1,979	2,731
Cargo hold	796,98	40,999	0,000	1,712	9,00	7,173	19,080
Double bottom	711,99	40,695	0,000	0,500	9,00	6,408	17,045
Bulkheads	193,87	40,800	0,000	0,976	9,00	1,745	4,641

casco 42,001 0,000 1,238 131,236

Anchor and chain 83,920 0,000 3,700 2,680
Equipment (winches, bollards) 42,960 0,000 4,400 3,500

anchor 1840 kg
chain 26 mm
60 m
14 kg/m
840 kg
<http://www.sotra.net/catalogue/2018/index.html>
studless chain, grade 3

Lightship total 42,843 0,000 1,366 137,416

005_v2 IW-NET Containers transverse v2

specific weight aluminium	2,66 [t/m³]	LoA	89,80 m	No. of Containers	2 layers	60
frame factor (brutto)	1,38	BoA	16,28 m		3 layers	90
welding allowance	3 [%]	Side height	4,00 m			

Delftship Layer	Area [m²]	LCG [m]	TCG [m]	VCG [m]	Thickness [mm]	Volume [m³]	Weight [t]
Hull	2185,12	44,035	0,000	0,813	10,404	22,734	60,474
<i>Bottom</i>	1362,88	45,222	0,000	0,104	11,00	14,992	39,878
<i>Side</i>	650,96	41,160	0,000	2,370	9,00	5,859	15,584
<i>Bilge</i>	171,28	45,512	0,000	0,538	11,00	1,884	5,012
Deck	384,83	49,923	0,000	4,068	9,00	3,463	9,213
Hatch coaming	0,00	0,000	0,000	0,000	0,00	0,000	0,000
Cargo hold	624,06	43,001	0,000	2,300	9,00	5,617	14,940
Double bottom	1074,27	43,004	0,000	0,600	11,00	11,817	31,433
Bulkheads	482,88	43,058	0,000	2,001	9,00	4,346	11,560

casco		44,074	0,000	1,235			181,399
Anchor and chain		87,800	0,000	3,600			4,760
Equipment (winches, bollards)		44,900	0,000	4,300			3,500
Lightship total		45,187	0,000	1,351			189,659

anchor	3080 kg	chain	26 mm	http://www.sotra.net/catalogue/2018/index.html
			120 m	studless chain, grade 3
			14 kg/m	
			1680 kg	

006 IW-NET 3 units abreast long

specific weight aluminium	2,66 [t/m³]	LoA	94,77 m	No. of Containers	2 layers	36
frame factor (brutto)	1,33	BoA	9,50 m		3 layers	54
welding allowance	3 [%]	Side height	3,20 m			

Delftship Layer	Area [m²]	LCG [m]	TCG [m]	VCG [m]	Thickness [mm]	Volume [m³]	Weight [t]
Hull	1473,52	46,572	0,000	0,754	11,223	16,538	43,990
<i>Bottom</i>	803,21	47,304	0,000	0,066	13,00	10,442	27,775
<i>Side</i>	523,62	44,808	0,000	1,900	8,00	4,189	11,143
<i>Bilge</i>	146,69	48,857	0,000	0,430	13,00	1,907	5,073
Deck	249,15	52,458	0,000	3,259	8,00	1,993	5,302
Hatch coaming	178,20	45,029	0,000	3,689	8,00	1,426	1,896
Cargo hold	488,66	45,274	0,000	1,850	8,00	3,909	10,399
Double bottom	648,48	45,280	0,000	0,500	13,00	8,430	22,424
Bulkheads	145,70	46,870	0,000	1,339	8,00	1,166	3,100

casco		46,561	0,000	0,965			119,334
Anchor and chain		92,770	0,000	2,800			2,310
Equipment (winches, bollards)		47,385	0,000	3,500			3,500
Lightship total		47,437	0,000	1,070			125,144

anchor	1470 kg	chain	26 mm	http://www.sotra.net/catalogue/2018/index.html
			60 m	studless chain, grade 3
			14 kg/m	
			840 kg	

007 IW-NET NEWS Evolution long

specific weight aluminium	2,66 [t/m³]	LoA	97,32 m	No. of Containers	2 layers	48
frame factor (brutto)	1,34	BoA	11,45 m		3 layers	72
welding allowance	3 [%]	Side height	4,10 m			

Delftship Layer	Area [m²]	LCG [m]	TCG [m]	VCG [m]	Thickness [mm]	Volume [m³]	Weight [t]
Hull	1875,29	47,875	0,000	0,942	11,491	21,548	57,319
<i>Bottom</i>	1016,54	48,690	0,000	0,067	13,00	13,215	35,152
<i>Side</i>	707,58	46,282	0,000	2,308	9,00	6,368	16,939
<i>Bilge</i>	151,17	49,856	0,000	0,427	13,00	1,965	5,227
Deck	266,28	55,766	0,000	3,399	8,00	2,130	5,666
Hatch coaming	207,28	46,550	0,000	3,655	9,00	1,866	2,500
Cargo hold	691,38	46,542	0,000	1,747	9,00	6,222	16,552
Double bottom	859,74	46,557	0,000	0,500	13,00	11,177	29,730
Bulkheads	204,86	46,560	0,000	0,873	9,00	1,844	4,904

casco		47,753	0,000	1,030			161,029
Anchor and chain		95,320	0,000	3,700			2,870
Equipment (winches, bollards)		48,660	0,000	4,400			3,500
Lightship total		48,587	0,000	1,146			167,399

anchor	1910 kg	chain	28 mm	http://www.sotra.net/catalogue/2018/index.html
			60 m	studless chain, grade 3
			16 kg/m	
			960 kg	

008 IW-NET 3 units abreast long/shallow

specific weight aluminium	2,66 [t/m³]	LoA	94,77 m	No. of Containers	2 layers	36
frame factor (brutto)	1,39	BoA	11,45 m		3 layers	54
welding allowance	3 [%]	Side height	3,20 m			

Delftship Layer	Area [m²]	LCG [m]	TCG [m]	VCG [m]	Thickness [mm]	Volume [m³]	Weight [t]
Hull	1666,55	46,597	0,000	0,685	12,776	21,293	56,638
<i>Bottom</i>	989,62	47,408	0,000	0,070	15,00	14,844	39,486
<i>Side</i>	529,38	44,530	0,000	1,904	8,00	4,235	11,265
<i>Bilge</i>	147,55	48,574	0,000	0,431	15,00	2,213	5,887
Deck	433,97	50,299	0,000	3,241	10,00	4,340	11,544
Hatch coaming	178,18	45,031	0,000	3,689	8,00	1,425	1,981
Cargo hold	488,66	45,274	0,000	1,850	8,00	3,909	10,399
Double bottom	648,48	45,280	0,000	0,500	15,00	9,727	25,874
Bulkheads	219,80	47,097	0,000	1,438	8,00	1,758	4,677

casco		46,728	0,000	0,993			159,081
Anchor and chain		92,770	0,000	2,800			2,340
Equipment (winches, bollards)		47,385	0,000	3,500			3,500
Lightship total		47,395	0,000	1,072			164,921

anchor	1500 kg	chain	26 mm	http://www.sotra.net/catalogue/2018/index.html
			60 m	studless chain, grade 3
			14 kg/m	
			840 kg	



2020.056 - IW-NET - Weight estimation

specific weight steel	7,8 [t/m ³]
welding allowance	3 [%]

Europa 2b

specific weight steel	7,8 [t/m ³]	LoA	76,50 m	No. of Containers	2 layers	24
frame factor (brutto)	1,37	BoA	11,45 m		3 layers	36
welding allowance	3 [%]	Side height	3,20 m			

Delftship Layer	Area [m ²]	LCG [m]	TCG [m]	VCG [m]	Thickness [mm]	Volume [m ³]	Weight [t]
Hull	1343,57	37,411	0,000	0,754	6,761	9,084	70,859
Bottom	798,20	37,830	0,000	0,142	7,000	5,587	43,582
Side	432,94	35,515	0,000	1,914	6,000	2,598	20,262
Bilge	112,43	41,739	0,000	0,634	8,000	0,899	7,016
Deck	259,64	40,811	0,000	3,341	7,000	1,817	14,176
Hatch coaming	116,83	35,591	0,000	3,611	6,000	0,701	5,468
Cargo hold	409,56	36,863	0,000	1,887	6,000	2,457	19,167
Double bottom	613,89	37,030	0,000	0,516	7,000	4,297	33,518
Bulkheads	118,46	45,374	0,000	1,451	6,000	0,711	5,544
casco		37,877	0,000	1,197			209,877
Anchor and chain		74,500	0,000	2,800			2,545
Equipment (winches, bollards)		38,250	0,000	3,500			3,000
Lightship total		38,315	0,000	1,248			215,422

anchor	1705 kg	chain	26 mm 60 m 14 kg/m 840 kg	http://www.sotra.net/catalogue/2018/index.html studless chain, grade 3
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Europa 3a

specific weight steel	7,8 [t/m ³]	LoA	90,00 m	No. of Containers	2 layers	30
frame factor (brutto)	1,36	BoA	11,45 m		3 layers	45
welding allowance	3 [%]	Side height	3,25 m			

Delftship Layer	Area [m ²]	LCG [m]	TCG [m]	VCG [m]	Thickness [mm]	Volume [m ³]	Weight [t]
Hull	1588,26	44,163	0,000	0,748	9,020	14,326	111,746
Bottom	941,56	44,573	0,000	0,122	10,000	9,416	73,442
Side	518,74	42,299	0,000	1,924	7,000	3,631	28,323
Bilge	127,96	48,697	0,000	0,581	10,000	1,280	9,981
Deck	290,76	47,767	0,000	3,376	10,000	2,908	22,679
Hatch coaming	138,43	42,316	0,000	3,659	7,000	0,969	7,558
Cargo hold	491,43	43,613	0,000	1,907	7,000	3,440	26,832
Double bottom	737,34	43,775	0,000	0,513	10,000	7,373	57,513
Bulkheads	131,74	51,761	0,000	1,444	7,000	0,922	7,193
casco		44,625	0,000	1,133			327,116
Anchor and chain		88,000	0,000	2,850			2,885
Equipment (winches, bollards)		45,000	0,000	3,550			3,000
Lightship total		45,004	0,000	1,169			333,001

anchor	2045 kg	chain	26 mm 60 m 14 kg/m 840 kg	http://www.sotra.net/catalogue/2018/index.html studless chain, grade 3
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003 IW-NET 3 units abreast

specific weight steel	7,8 [t/m ³]	LoA	81,00 m	No. of Containers	2 layers	30
frame factor (brutto)	1,53	BoA	9,50 m		3 layers	45
welding allowance	3 [%]	Side height	3,20 m			

Delftship Layer	Area [m ²]	LCG [m]	TCG [m]	VCG [m]	Thickness [mm]	Volume [m ³]	Weight [t]
Hull	1262,72	39,693	0,000	0,767	8,101	10,229	79,786
Bottom	686,20	40,424	0,000	0,077	8,000	5,490	42,819
Side	449,29	37,944	0,000	1,909	8,000	3,594	28,036
Bilge	127,23	41,928	0,000	0,457	9,000	1,145	8,932
Deck	226,44	45,146	0,000	3,264	8,000	1,812	14,130
Hatch coaming	151,11	38,239	0,000	3,689	8,000	1,209	9,429
Cargo hold	414,33	38,391	0,000	1,850	8,000	3,315	25,854
Double bottom	540,50	38,395	0,000	0,500	8,000	4,324	33,727
Bulkheads	127,77	38,717	0,000	1,380	8,000	1,022	7,973
casco		39,578	0,000	1,273			269,320
Anchor and chain		79,000	0,000	2,800			2,105
Equipment (winches, bollards)		40,500	0,000	3,500			3,500
Lightship total		39,892	0,000	1,313			274,925

anchor	1415 kg	chain	24 mm 60 m 11,5 kg/m 690 kg	http://www.sotra.net/catalogue/2018/index.html studless chain, grade 3
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004_v2 IW-NET NEWS Evolution

specific weight steel	7,8 [t/m ³]	LoA	85,92 m	No. of Containers	2 layers	40
frame factor (brutto)	1,38	BoA	11,45 m		3 layers	60
welding allowance	3 [%]	Side height	4,10 m			

Delftship Layer	Area [m ²]	LCG [m]	TCG [m]	VCG [m]	Thickness [mm]	Volume [m ³]	Weight [t]
Hull	1657,96	42,179	0,000	0,949	9,704	16,089	125,495
Bottom	897,41	42,992	0,000	0,076	10,000	8,974	69,998
Side	625,50	40,592	0,000	2,309	9,000	5,630	43,910
Bilge	135,05	44,124	0,000	0,448	11,000	1,486	11,587
Deck	283,59	48,484	0,000	3,381	8,000	2,269	17,696
Hatch coaming	219,87	40,851	0,000	3,654	9,000	1,979	15,435
Cargo hold	796,98	40,999	0,000	1,712	9,000	7,173	55,948
Double bottom	711,99	40,695	0,000	0,500	9,000	6,408	49,982
Bulkheads	193,87	40,800	0,000	0,976	9,000	1,745	13,610
casco		41,970	0,000	1,302			395,385
Anchor and chain		83,920	0,000	3,700			2,680
Equipment (winches, bollards)		42,960	0,000	4,400			3,500
Lightship total		42,259	0,000	1,345			401,565

278,166	anchor	1840 kg	chain	26 mm 60 m 14 kg/m 840 kg	http://www.sotra.net/catalogue/2018/index.html studless chain, grade 3
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005_v2 IW-NET Containers transverse

specific weight steel	7,8 [t/m ³]	LoA	89,80 m	No. of Containers	2 layers	60
frame factor (brutto)	1,38	BoA	16,28 m		3 layers	90
welding allowance	3 [%]	Side height	4,00 m			

Delftship Layer	Area [m ²]	LCG [m]	TCG [m]	VCG [m]	Thickness [mm]	Volume [m ³]	Weight [t]
Hull	2185,12	44,035	0,000	0,813	10,404	22,734	177,328
<i>Bottom</i>	1362,88	45,222	0,000	0,104	11,000	14,992	116,935
<i>Side</i>	650,96	41,160	0,000	2,370	9,000	5,859	45,697
<i>Bilge</i>	171,28	45,512	0,000	0,538	11,000	1,884	14,696
Deck	384,83	49,923	0,000	4,068	9,000	3,463	27,015
Hatch coaming						0,000	0,000
Cargo hold	624,06	43,001	0,000	2,300	9,000	5,617	43,809
Double bottom	1074,27	43,004	0,000	0,600	11,000	11,817	92,172
Bulkheads	482,88	43,058	0,000	2,001	9,000	4,346	33,898
casco		44,074	0,000	1,235			531,920
Anchor and chain		87,800	0,000	3,600			4,760
Equipment (winches, bollards)		44,900	0,000	4,300			3,500
Lightship total		44,465	0,000	1,276			540,180

anchor 3080 kg chain 26 mm
120 m
14 kg/m
1680 kg
<http://www.sotra.net/catalogue/2018/index.html>
studless chain, grade 3

006 IW-NET 3 units abreast long

specific weight steel	7,8 [t/m ³]	LoA	94,77 m	No. of Containers	2 layers	36
frame factor	1,33	BoA	9,50 m		3 layers	54
welding allowance	3 [%]	Side height	3,20 m			

Delftship Layer	Area [m ²]	LCG [m]	TCG [m]	VCG [m]	Thickness [mm]	Volume [m ³]	Weight [t]
Hull	1473,52	46,572	0,000	0,754	11,223	16,538	128,994
<i>Bottom</i>	803,21	47,304	0,000	0,066	13,000	10,442	81,445
<i>Side</i>	523,62	44,808	0,000	1,900	8,000	4,189	32,674
<i>Bilge</i>	146,69	48,857	0,000	0,430	13,000	1,907	14,874
Deck	249,15	52,458	0,000	3,259	8,000	1,993	15,547
Hatch coaming	178,20	45,029	0,000	3,689	8,000	1,426	11,120
Cargo hold	488,66	45,274	0,000	1,850	8,000	3,909	30,492
Double bottom	648,48	45,280	0,000	0,500	13,000	8,430	65,756
Bulkheads	145,70	46,870	0,000	1,339	8,000	1,166	9,092
casco		46,528	0,000	1,023			357,544
Anchor and chain		92,770	0,000	2,800			2,310
Equipment (winches, bollards)		47,385	0,000	3,500			3,500
Lightship total		46,830	0,000	1,058			363,354

anchor 1470 kg chain 26 mm
60 m
14 kg/m
840 kg
<http://www.sotra.net/catalogue/2018/index.html>
studless chain, grade 3

007 IW-NET NEWS Evolution long

specific weight steel	7,8 [t/m ³]	LoA	97,32 m	No. of Containers	2 layers	48
frame factor (brutto)	1,34	BoA	11,45 m		3 layers	72
welding allowance	3 [%]	Side height	4,10 m			

Delftship Layer	Area [m ²]	LCG [m]	TCG [m]	VCG [m]	Thickness [mm]	Volume [m ³]	Weight [t]
Hull	1875,29	47,875	0,000	0,942	11,491	21,548	168,078
<i>Bottom</i>	1016,54	48,690	0,000	0,067	13,000	13,215	103,077
<i>Side</i>	707,58	46,282	0,000	2,308	9,000	6,368	49,672
<i>Bilge</i>	151,17	49,856	0,000	0,427	13,000	1,965	15,329
Deck	266,28	55,766	0,000	3,399	8,000	2,130	16,616
Hatch coaming	207,28	46,550	0,000	3,655	9,000	1,866	14,551
Cargo hold	691,38	46,542	0,000	1,747	9,000	6,222	48,535
Double bottom	859,74	46,557	0,000	0,500	13,000	11,177	87,178
Bulkheads	204,86	46,560	0,000	0,873	9,000	1,844	14,381
casco		47,728	0,000	1,084			482,157
Anchor and chain		95,320	0,000	3,700			2,870
Equipment (winches, bollards)		48,660	0,000	4,400			3,500
Lightship total		48,014	0,000	1,123			488,527

anchor 1910 kg chain 28 mm
60 m
16 kg/m
960 kg
<http://www.sotra.net/catalogue/2018/index.html>
studless chain, grade 3

008 IW-NET 3 units abreast long/shallow

specific weight steel	7,8 [t/m ³]	LoA	94,77 m	No. of Containers	2 layers	36
frame factor (brutto)	1,39	BoA	11,45 m		3 layers	54
welding allowance	3 [%]	Side height	3,20 m			

Delftship Layer	Area [m ²]	LCG [m]	TCG [m]	VCG [m]	Thickness [mm]	Volume [m ³]	Weight [t]
Hull	1666,55	46,597	0,000	0,685	12,776	21,293	166,082
<i>Bottom</i>	989,62	47,408	0,000	0,070	15,000	14,844	115,786
<i>Side</i>	529,38	44,530	0,000	1,904	8,000	4,235	33,033
<i>Bilge</i>	147,55	48,574	0,000	0,431	15,000	2,213	17,263
Deck	433,97	50,299	0,000	3,241	10,000	4,340	33,850
Hatch coaming	178,18	45,031	0,000	3,689	8,000	1,425	11,118
Cargo hold	488,66	45,274	0,000	1,850	8,000	3,909	30,492
Double bottom	648,48	45,280	0,000	0,500	15,000	9,727	75,872
Bulkheads	219,80	47,097	0,000	1,438	8,000	1,758	13,716
casco		46,700	0,000	1,037			474,079
Anchor and chain		92,770	0,000	2,800			2,340
Equipment (winches, bollards)		47,385	0,000	3,500			3,500
Lightship total		46,930	0,000	1,063			479,919

anchor 1500 kg chain 26 mm
60 m
14 kg/m
840 kg
<http://www.sotra.net/catalogue/2018/index.html>
studless chain, grade 3



2020.056 - IW-NET - Weight estimation

specific weight steel 7,8 [t/m³]
welding allowance 3 [%]

004_v2 IW-NET NEWS Evolution - reduced height - same plate thickness

specific weight steel 7,8 [t/m³] LoA 85,92 m No. of Containers 2 layers 40
frame factor (brutto) 1,37 BoA 11,45 m 3 layers 60
welding allowance 3 [%] Side height 3,60 m

Delftship Layer	Area [m ²]	LCG [m]	TCG [m]	VCG [m]	Thickness [mm]	Volume [m ³]	Weight [t]
Hull	1564,03	42,127	0,000	0,781	9,746	15,244	118,901
<i>Bottom</i>	897,41	42,992	0,000	0,076	10,000	8,974	69,998
<i>Side</i>	531,57	40,159	0,000	2,056	9,000	4,784	37,316
<i>Bilge</i>	135,05	44,124	0,000	0,448	11,000	1,486	11,587
Deck	286,29	48,318	0,000	2,887	8,000	2,290	17,864
Hatch coaming	219,87	40,851	0,000	3,154	9,000	1,979	15,435
Cargo hold	796,98	40,999	0,000	1,712	9,000	7,173	55,948
Double bottom	711,99	40,695	0,000	0,500	9,000	6,408	49,982
Bulkheads	180,17	40,584	0,000	0,813	9,000	1,622	12,648
casco		41,931	0,000	1,176			382,096
Anchor and chain		83,920	0,000	3,200			2,680
Equipment (winches, bollards)		42,960	0,000	3,900			3,500
Lightship total		42,230	0,000	1,215			388,276

anchor 1840 kg chain 26 mm 60 m 14 kg/m 840 kg
<http://www.sotra.net/catalogue/2018/index.html>
studless chain, grade 3

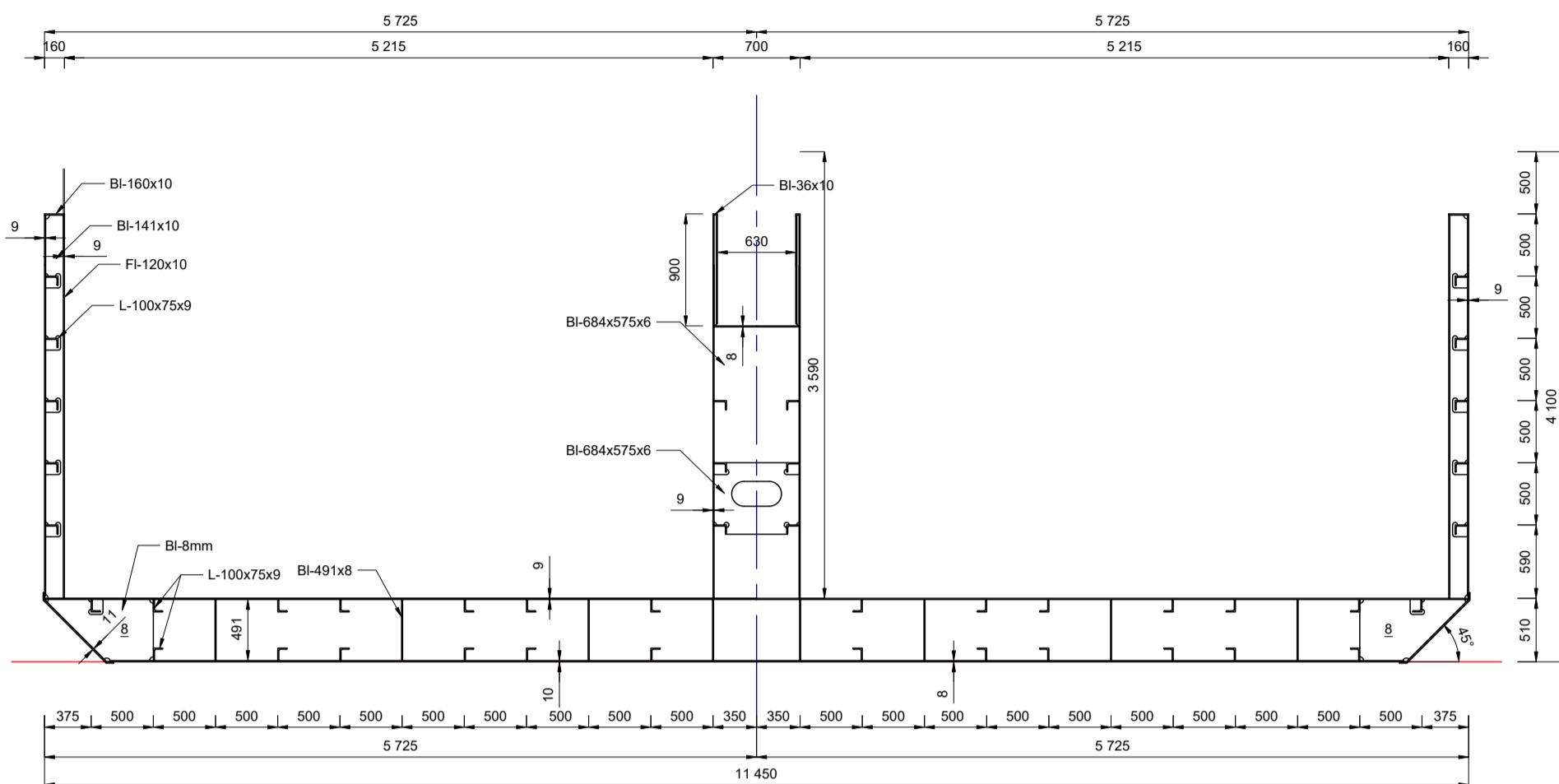
004_v2 IW-NET NEWS Evolution - reduced height - same longitudinal strength

specific weight steel 7,8 [t/m³] LoA 85,92 m No. of Containers 2 layers 40
frame factor (brutto) 1,35 BoA 11,45 m 3 layers 60
welding allowance 3 [%] Side height 3,60 m

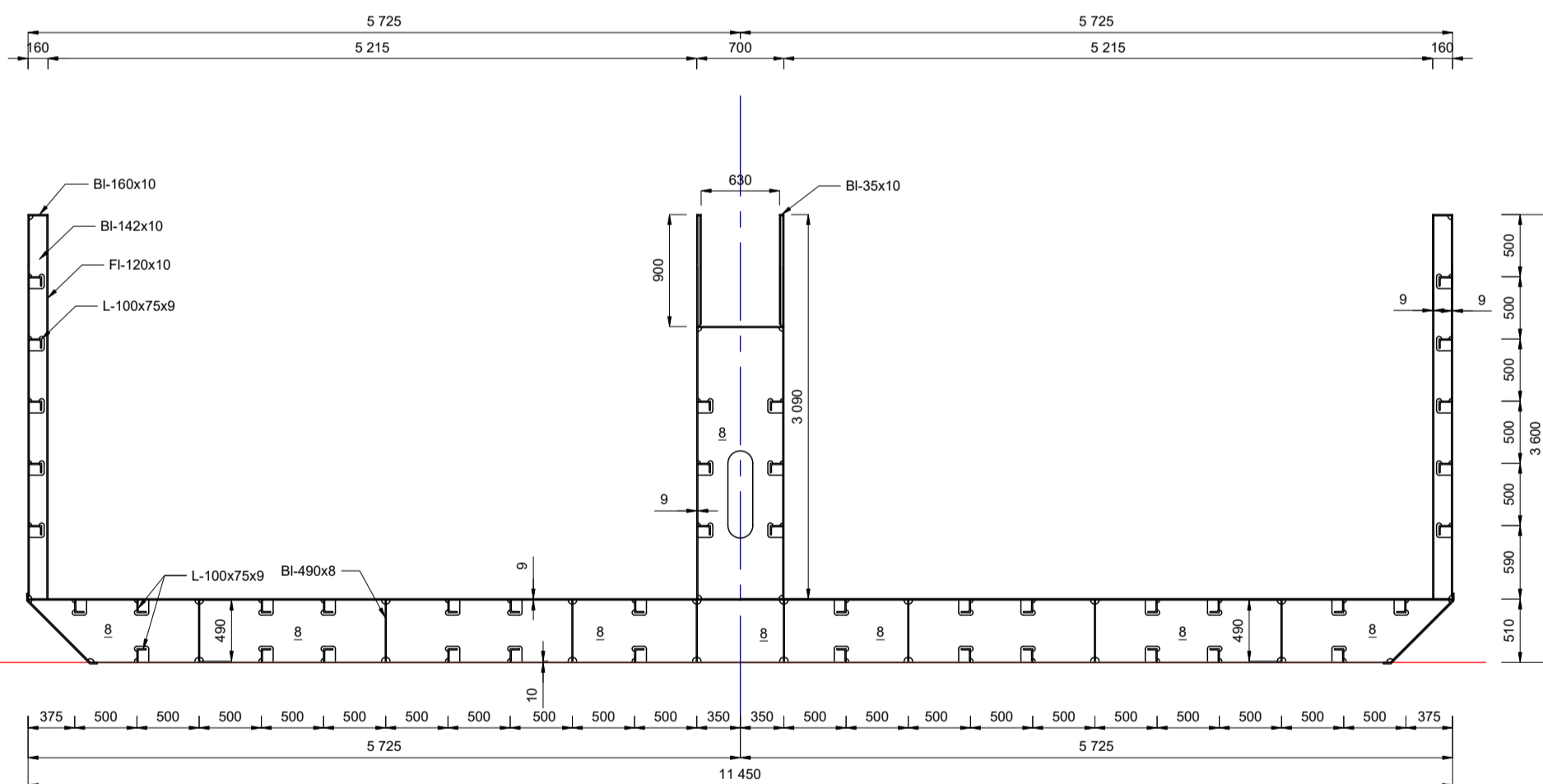
Delftship Layer	Area [m ²]	LCG [m]	TCG [m]	VCG [m]	Thickness [mm]	Volume [m ³]	Weight [t]
Hull	1564,03	42,127	0,000	0,781	11,660	18,237	142,247
<i>Bottom</i>	897,41	42,992	0,000	0,076	12,000	10,769	83,998
<i>Side</i>	531,57	40,159	0,000	2,056	11,000	5,847	45,609
<i>Bilge</i>	135,05	44,124	0,000	0,448	12,000	1,621	12,641
Deck	286,29	48,318	0,000	2,887	11,000	3,149	24,564
Hatch coaming	219,87	40,851	0,000	3,154	11,000	2,419	18,865
Cargo hold	796,98	40,999	0,000	1,712	11,000	8,767	68,381
Double bottom	711,99	40,695	0,000	0,500	11,000	7,832	61,089
Bulkheads	180,17	40,584	0,000	0,813	9,000	1,622	12,648
casco		41,981	0,000	1,202			455,796
Anchor and chain		83,920	0,000	3,200			2,680
Equipment (winches, bollards)		42,960	0,000	3,900			3,500
Lightship total		42,231	0,000	1,234			461,976



anchor 1840 kg chain 26 mm 60 m 14 kg/m 840 kg
<http://www.sotra.net/catalogue/2018/index.html>
studless chain, grade 3

Regular frame - steel distance: 0,5m



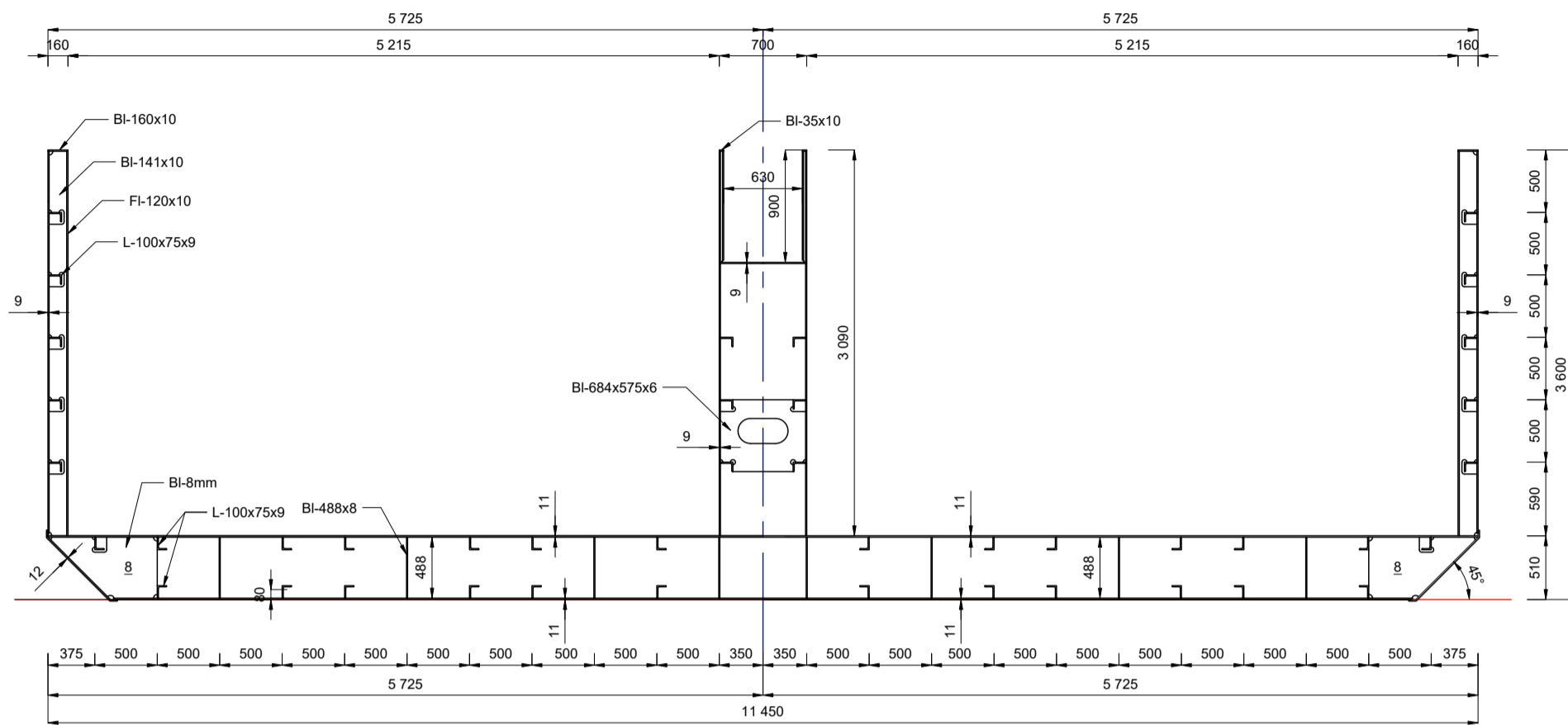
Web frame - steel distance: 2,5 m



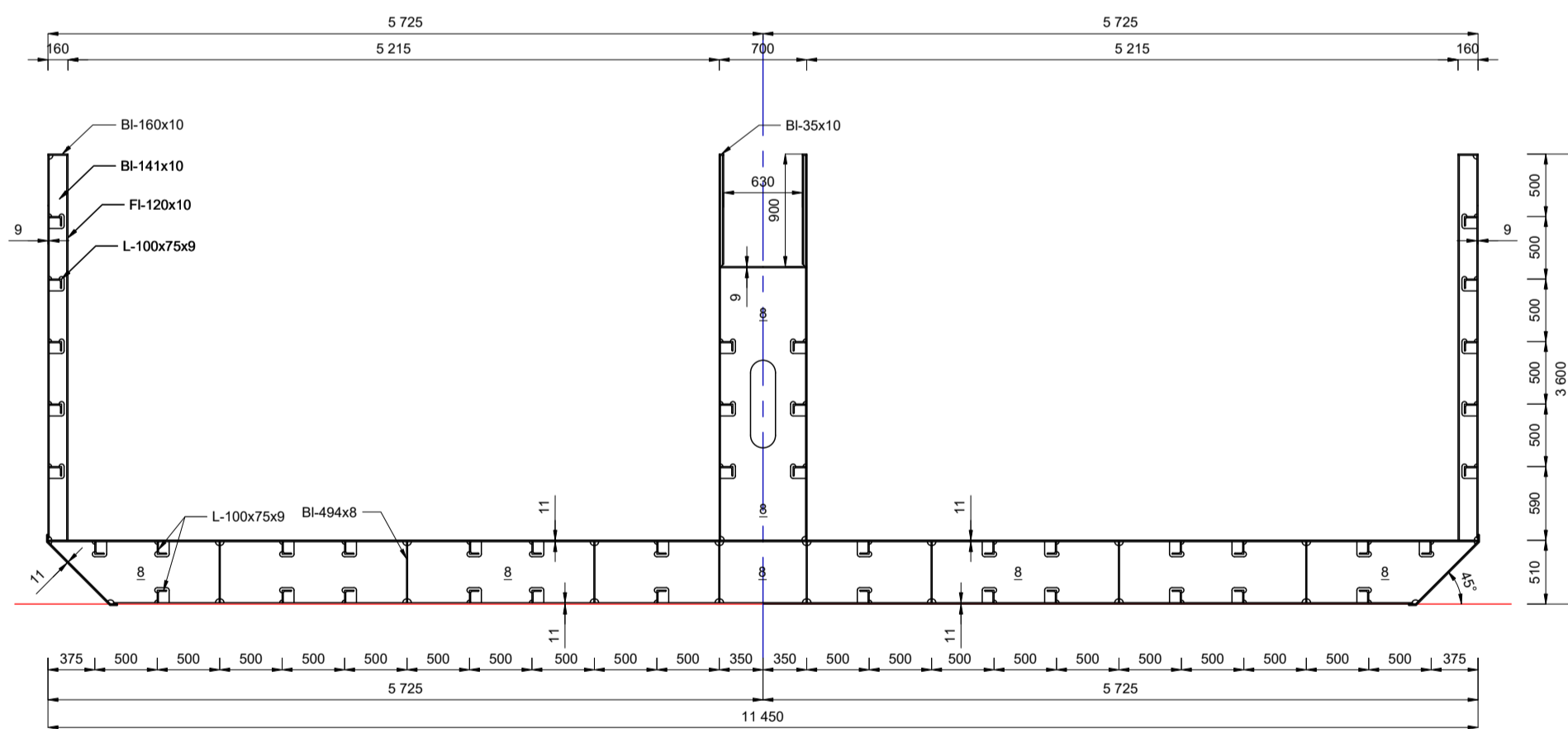
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Version	Description of the Amendment	Date	Created	Verified
Customer		 DIPL.-ING. RICHARD ANZBÖCK STAATLICH BEFUGTER UND BEEIDETER ZIVILINGENIEUR FÜR SCHIFFSTECHNIK A-1190 Wien office@anzboeck.com Gugitzgasse 8/29 Tel.: +43-1-320 88 93		
IW-NET A project co-funded by the Horizon 2020 programme of the European Union				
Vessel				
IW-NET NEWS Evolution steel - same plate thickness				
Project No.	Drawing No.	Area of Navigation		
2020.056	004 c3	EU Binnenwasserstraßen Zone 3		
Designation		Scale	Format	
Section plan - reduced height		1:50	A2 	

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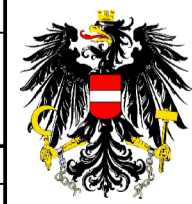
Regular frame - steel distance: 0,5m



Web frame - steel distance: 2,5 m



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02				
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---	Original Version	02.03.2023	Potzmann	Dipl.-Ing. Anzböck
Version	Description of the Amendment	Date	Created	Verified
Customer				
IW-NET A project co-funded by the Horizon 2020 programme of the European Union				
Vessel				
IW-NET NEWS Evolution steel - same longitudinal strength				
Project No.		Drawing No.		Area of Navigation
2020.056		004 c4		EU Binnenwasserstraßen Zone 3
Designation			Scale	Format
Section plan - reduced height			1:50	A2



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2020.056 - IW-NET - Weight estimation

specific weight steel 7,8 [t/m³]
welding allowance 3 [%]

004_v2 IW-NET NEWS Evolution - girders S355

specific weight steel 7,8 [t/m³] LoA 85,92 m No. of Containers 2 layers 40
frame factor (brutto) 1,24 BoA 11,45 m 3 layers 60
welding allowance 3 [%] Side height 4,10 m

Delftship Layer	Area [m²]	LCG [m]	TCG [m]	VCG [m]	Thickness [mm]	Volume [m³]	Weight [t]
Hull	1657,96	42,179	0,000	0,949	9,704	16,089	125,495
<i>Bottom</i>	897,41	42,992	0,000	0,076	10,000	8,974	69,998
<i>Side</i>	625,50	40,592	0,000	2,309	9,000	5,630	43,910
<i>Bilge</i>	135,05	44,124	0,000	0,448	11,000	1,486	11,587
Deck	283,59	48,484	0,000	3,381	8,000	2,269	17,696
Hatch coaming	219,87	40,851	0,000	3,654	9,000	1,979	15,435
Cargo hold	796,98	40,999	0,000	1,712	9,000	7,173	55,948
Double bottom	711,99	40,695	0,000	0,500	9,000	6,408	49,982
Bulkheads	193,87	40,800	0,000	0,976	9,000	1,745	13,610
							278,166

casco 41,970 0,000 1,302 355,273

Anchor and chain 83,920 0,000 3,700 2,680 anchor 1840 kg
Equipment (winches, bollards) 42,960 0,000 4,400 3,500

Lightship total 42,291 0,000 1,350 361,453

chain 26 mm
60 m <http://www.sotra.net/catalogue/2018/index.html>
14 kg/m
studless chain, grade 3
840 kg

004_v2 IW-NET NEWS Evolution - girders S460

specific weight steel 7,8 [t/m³] LoA 85,92 m No. of Containers 2 layers 40
frame factor (brutto) 1,21 BoA 11,45 m 3 layers 60
welding allowance 3 [%] Side height 4,10 m

Delftship Layer	Area [m²]	LCG [m]	TCG [m]	VCG [m]	Thickness [mm]	Volume [m³]	Weight [t]
Hull	1657,96	42,179	0,000	0,949	9,704	16,089	125,495
<i>Bottom</i>	897,41	42,992	0,000	0,076	10,000	8,974	69,998
<i>Side</i>	625,50	40,592	0,000	2,309	9,000	5,630	43,910
<i>Bilge</i>	135,05	44,124	0,000	0,448	11,000	1,486	11,587
Deck	283,59	48,484	0,000	3,381	8,000	2,269	17,696
Hatch coaming	219,87	40,851	0,000	3,654	9,000	1,979	15,435
Cargo hold	796,98	40,999	0,000	1,712	9,000	7,173	55,948
Double bottom	711,99	40,695	0,000	0,500	9,000	6,408	49,982
Bulkheads	193,87	40,800	0,000	0,976	9,000	1,745	13,610
							278,166

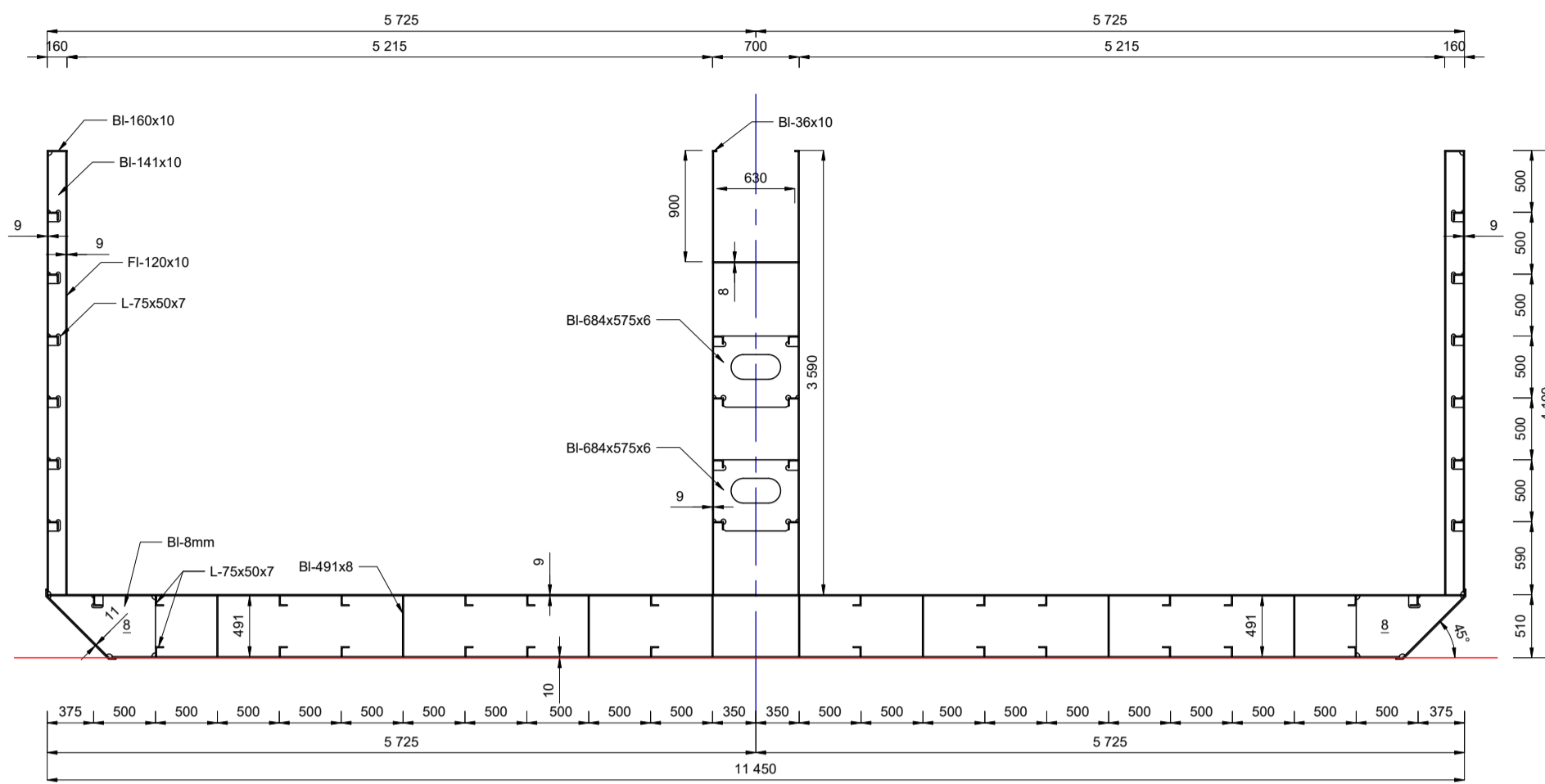
casco 41,970 0,000 1,302 346,678

Anchor and chain 83,920 0,000 3,700 2,680 anchor 1840 kg
Equipment (winches, bollards) 42,960 0,000 4,400 3,500

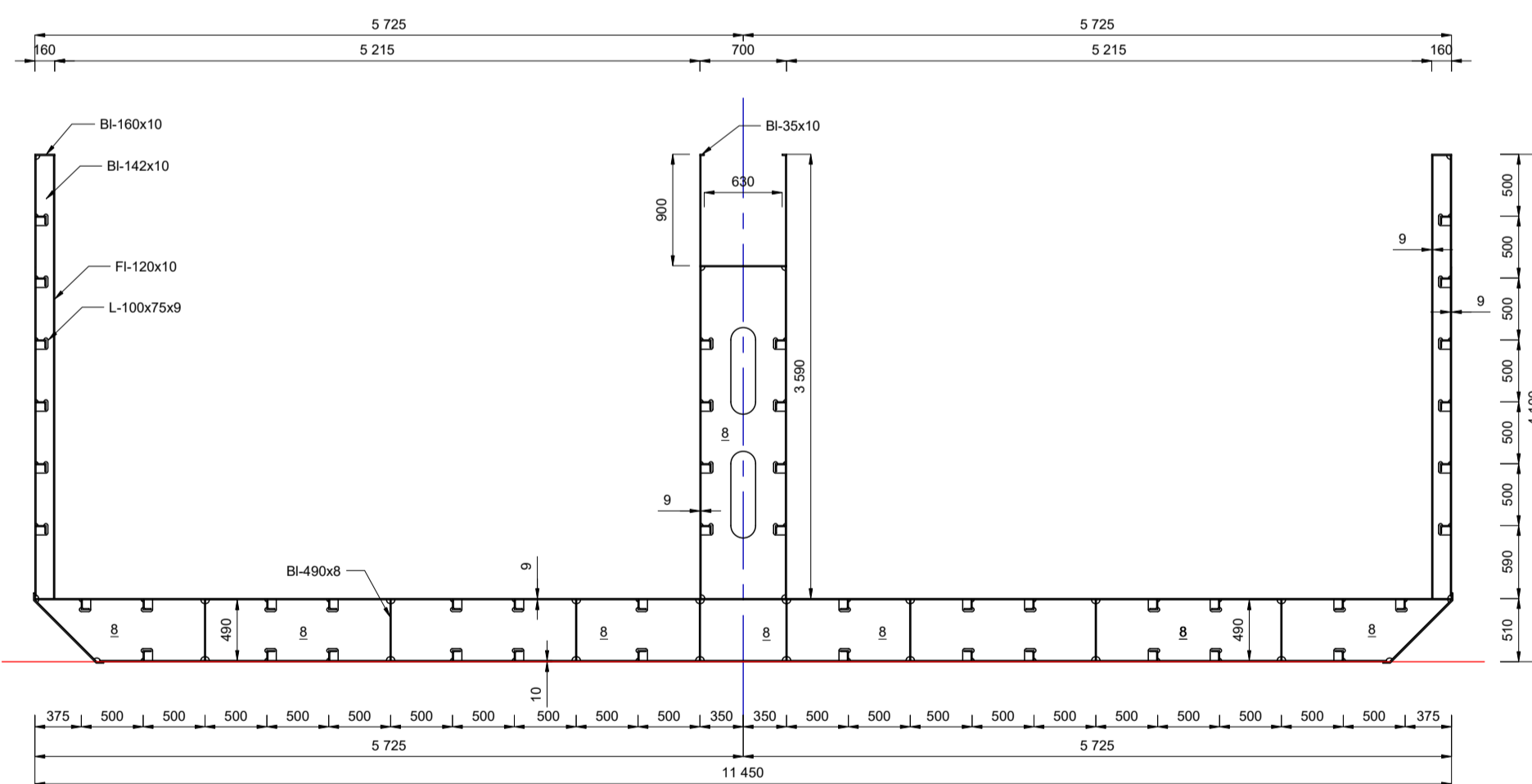
Lightship total 42,298 0,000 1,351 352,858

chain 26 mm
60 m <http://www.sotra.net/catalogue/2018/index.html>
14 kg/m
studless chain, grade 3
840 kg

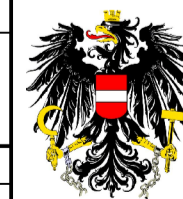
Regular frame - HTS 355 - distance: 0,5m



Web frame - HTS 355 - distance: 2,5 m



03				
02				
01				
---	Original Version	02.03.2023	Potzmann	Dipl.-Ing. Anzböck
Version	Description of the Amendment	Date	Created	Verified
Customer				
IW-NET A project co-funded by the Horizon 2020 programme of the European Union				
Vessel				
IW-NET NEWS Evolution high tension steel S355				
Project No.	Drawing No.	Area of Navigation		
2020.056	004 c5	EU Binnenwasserstraßen Zone 3		
Designation		Scale	Format	
Section plan		1:50	A2	

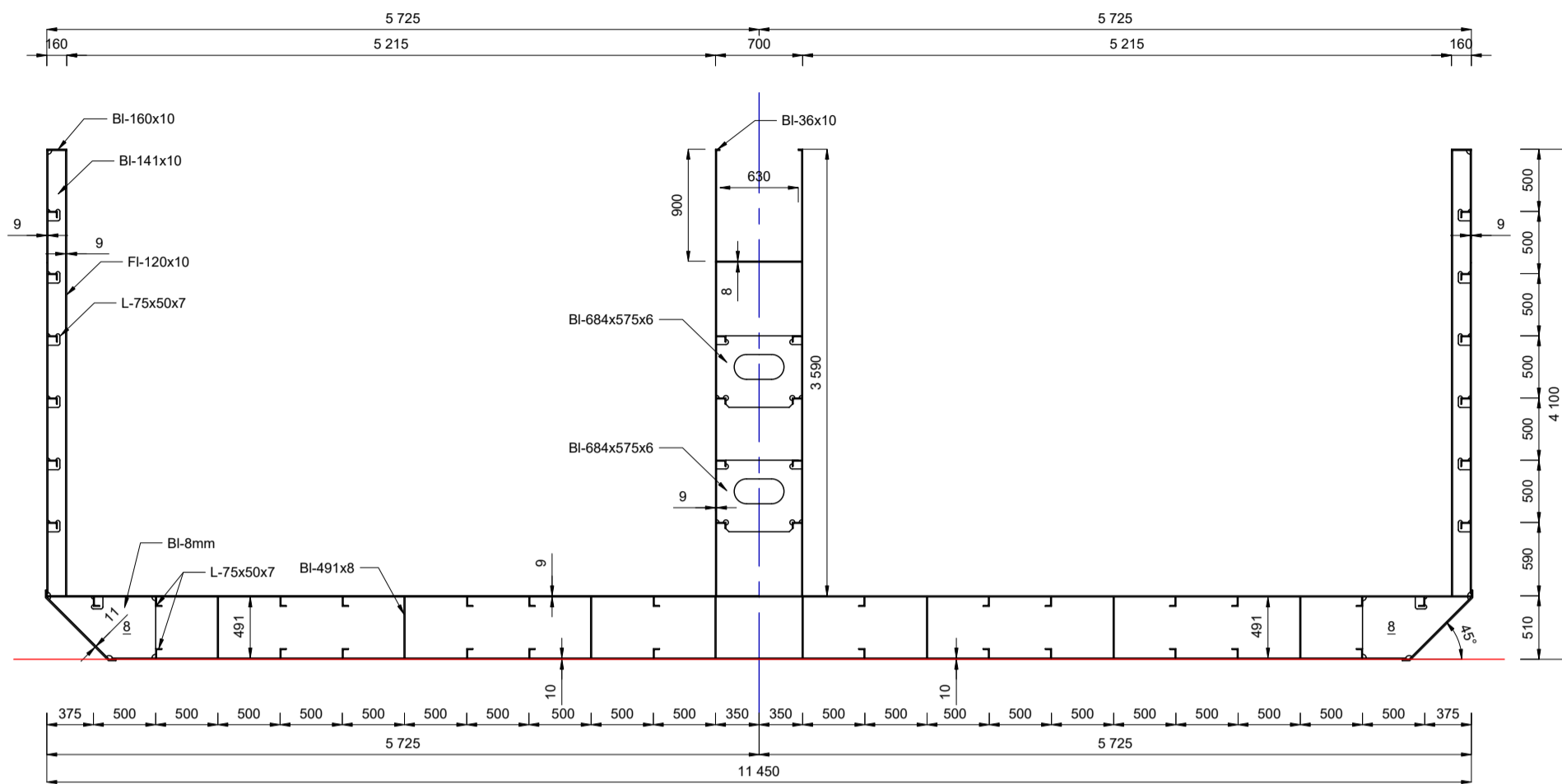


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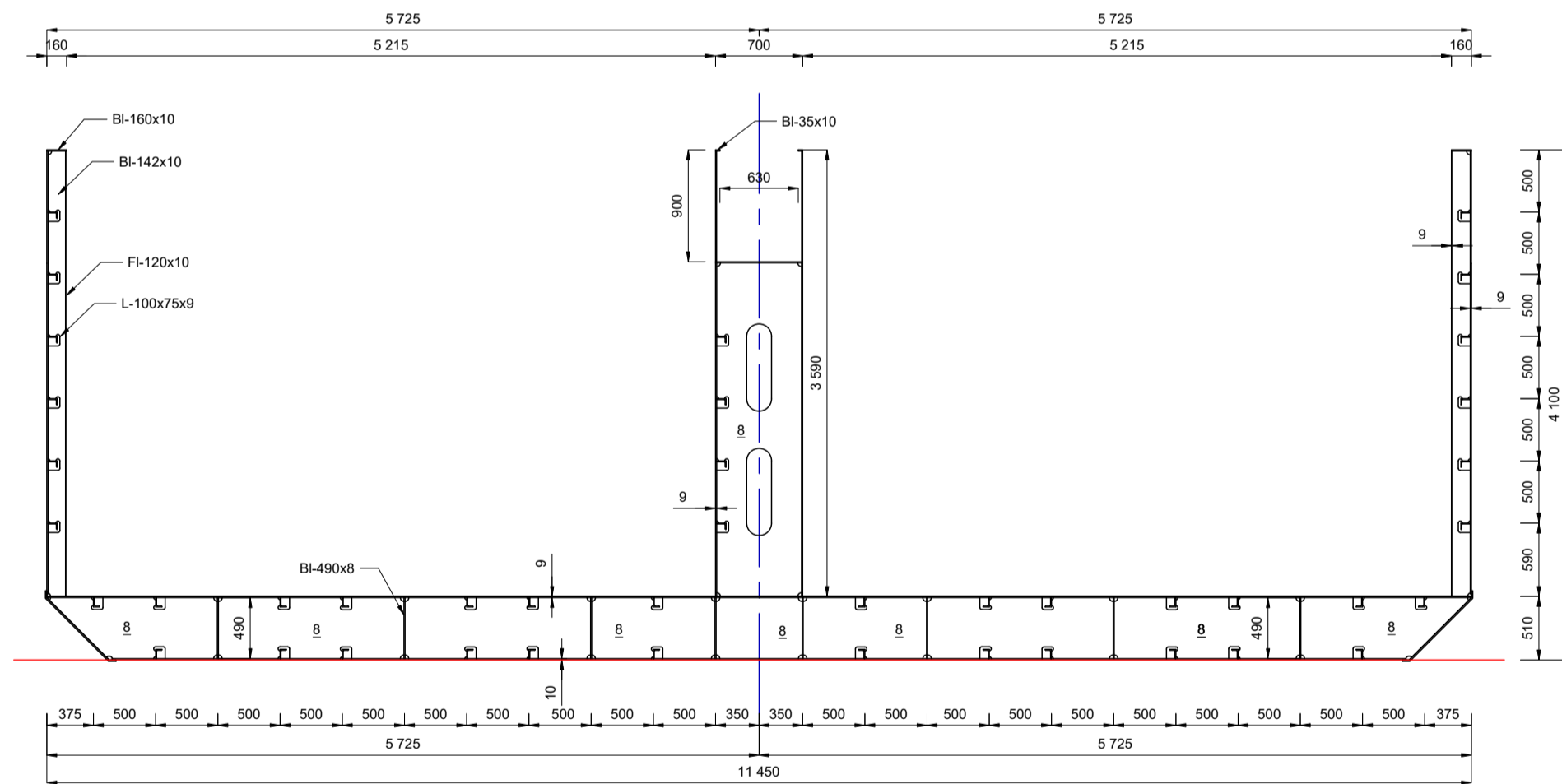
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Regular frame - HTS 460 - distance: 0,5m



Web frame - HTS 460 - distance: 2,5 m



03				
02				
01				
---	Original Version	02.03.2023	Potzmann	Dipl.-Ing. Anzböck
Version	Description of the Amendment	Date	Created	Verified
Customer		 DIPL.-ING. RICHARD ANZBÖCK STAATLICH BEFUGTER UND BEEIDETER ZIVILINGENIEUR FÜR SCHIFFSTECHNIK A-1190 Wien office@anzboeck.com Gugitzgasse 8/29 Tel.: +43-1-320 88 93		
IW-NET A project co-funded by the Horizon 2020 programme of the European Union				
Vessel IW-NET NEWS Evolution high tension steel S460				
Project No.	Drawing No.	Area of Navigation		
2020.056	004 c6	EU Binnenwasserstraßen Zone 3		
Designation		Scale	Format	
Section plan		1:50	A2 	

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