

Table 3: Towlines and mooring lines

Equipment number <i>EN</i> $A < EN \leq B$		Towline ⁽¹⁾		Mooring lines		
<i>A</i>	<i>B</i>	Minimum length, in m	Breaking load, in kN	<i>N</i> ⁽²⁾	Length of each line, in m	Breaking load, in kN
50	70	180	98.1	3	80	34
70	90	180	98.1	3	100	37
90	110	180	98.1	3	110	39
110	130	180	98.1	3	110	44
130	150	180	98.1	3	120	49
150	175	180	98.1	3	120	54
175	205	180	112	3	120	59
205	240	180	129	4	120	64
240	280	180	150	4	120	69
280	320	180	174	4	140	74
320	360	180	207	4	140	78
360	400	180	224	4	140	88
400	450	180	250	4	140	98
450	500	180	277	4	140	108
500	550	190	306	4	160	123
550	600	190	338	4	160	132
600	660	190	371	4	160	147
660	720	190	406	4	160	157
720	780	190	441	4	170	172
780	840	190	480	4	170	186
840	910	190	518	4	170	201
910	980	190	550	4	170	216
980	1060	200	603	4	180	230
1060	1140	200	647	4	180	250
1140	1220	200	692	4	180	270
1220	1300	200	739	4	180	284
1300	1390	200	786	4	180	309
1390	1480	200	836	4	180	324
1480	1570	220	889	5	190	324
1570	1670	220	942	5	190	333
1670	1790	220	1024	5	190	353
1790	1930	220	1109	5	190	378
1930	2080	220	1168	5	190	402
2080	2230	240	1259	5	200	422
2230	2380	240	1356	5	200	451
2380	2530	240	1453	5	200	481
2530	2700	260	1471	6	200	481
2700	2870	260	1471	6	200	490
2870	3040	260	1471	6	200	500
3040	3210	280	1471	6	200	520
3210	3400	280	1471	6	200	554
3400	3600	280	1471	6	200	588

Equipment number <i>EN</i> $A < EN \leq B$		Towline ⁽¹⁾		Mooring lines		
<i>A</i>	<i>B</i>	Minimum length, in m	Breaking load, in kN	<i>N</i> ⁽²⁾	Length of each line, in m	Breaking load, in kN
3600	3800	300	1471	6	200	612
3800	4000	300	1471	6	200	647
4000	4200	300	1471	7	200	647
4200	4400	300	1471	7	200	657
4400	4600	300	1471	7	200	667
4600	4800	300	1471	7	200	677
4800	5000	300	1471	7	200	686
5000	5200	300	1471	8	200	686
5200	5500	300	1471	8	200	696
5500	5800	300	1471	8	200	706
5800	6100	300	1471	9	200	706
6100	6500			9	200	716
6500	6900			9	200	726
6900	7400			10	200	726
7400	7900			11	200	726
7900	8400			11	200	735
8400	8900			12	200	735
8900	9400			13	200	735
9400	10000			14	200	735
10000	10700			15	200	735
10700	11500			16	200	735
11500	12400			17	200	735
12400	13400			18	200	735
13400	14600			19	200	735
14600	16000			21	200	735

⁽¹⁾ The towline is not compulsory. It is recommended for ships having length not greater than 180 m.
⁽²⁾ See [3.5.4].

Table 4: Steel wire composition

Breaking load <i>BL</i> , in kN	Steel wire components		
	Number of threads	Ultimate tensile strength of threads, in N/mm ²	Composition of wire
$BL < 216$	72	1420 ÷ 1570	6 strands with 7-fibre core
$216 < BL < 490$	144	1570 ÷ 1770	6 strands with 7-fibre core
$BL > 490$	216 or 222	1770 ÷ 1960	6 strands with 1-fibre core

3.5.4 Number of mooring lines

When the breaking load of each mooring line is greater than 490 kN, either a greater number of mooring lines than those required in Tab 3 having lower strength, or a lower number of mooring lines than those required in

No. 10
cont'd

Table 5
Mooring lines and tow line

EQUIPMENT NUMBER			MOORING LINES				TOW LINE	
Exceeding	Not exceeding	No.	Minimum length of each line (m)	Minimum breaking strength (kN)			minimum length (m)	Breaking strength (kN)
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5a</i>	<i>5</i>	<i>5b*</i>	<i>6</i>	<i>7</i>
50	70	3	80	34		34.3	180	98
70	90	3	100	37		36.8	180	98
90	110	3	110	39		39.2	180	98
110	130	3	110	44		44.1	180	98
130	150	3	120	49		—	180	98
150	175	3	120	54		—	180	98
175	205	3	120	59		—	180	112
205	240	4	120	64		63.7	180	129
240	280	4	120	69		68.6	180	150
280	320	4	140	74		73.6	180	174
320	360	4	140	78		78.4	180	207
360	400	4	140	88		88.3	180	224
400	450	4	140	98		98.1	180	250
450	500	4	140		108		180	277
500	550	4	160		123		190	306
550	600	4	160		132		190	338
600	660	4	160		147		190	370
660	720	4	160		157		190	406
720	780	4	170		172		190	441
780	840	4	170		186		190	479
840	910	4	170		201		190	518
910	980	4	170		216		190	559
980	1060	4	180		230		200	603
1060	1140	4	180		250		200	647
1140	1220	4	180		270		200	691
1220	1300	4	180		284		200	738
1300	1390	4	180		309		200	786
1390	1480	4	180		324		200	836
1480	1570	5	190		324		220	888
1570	1670	5	190		333		220	941
1670	1790	5	190		353		220	1024
1790	1930	5	190		378		220	1109
1930	2080	5	190		402		220	1168
2080	2230	5	200		422		240	1259
2230	2380	5	200		451		240	1356
2380	2530	5	200		480		240	1453
2530	2700	6	200		480		260	1471
2700	2870	6	200		490		260	1471
2870	3040	6	200		500		260	1471
3040	3210	6	200		520		280	1471
3210	3400	6	200		554		280	1471
3400	3600	6	200		588		280	1471

No. 10
cont'd

Table 5 (continued)

EQUIPMENT NUMBER			MOORING LINES			TOW LINE		
Exceeding	Not exceeding	No.	Minimum length of each line (m)	Minimum breaking strength (kN)		minimum length (m)	Breaking strength (kN)	
1	2	3	4	5a	5	5b*	6	7
3600	3800	6	200		618		300	1471
3800	4000	6	200		647		300	1471
4000	4200	7	200		647		300	1471
4200	4400	7	200		657		300	1471
4400	4600	7	200		667		300	1471
4600	4800	7	200		677		300	1471
4800	5000	7	200		686		300	1471
5000	5200	8	200		686		300	1471
5200	5500	8	200		696		300	1471
5500	5800	8	200		706		300	1471
5800	6100	9	200		706		300	1471
6100	6500	9	200		716			
6500	6900	9	200		726			
6900	7400	10	200		726			
7400	7900	11	200		726			
7900	8400	11	200		736			
8400	8900	12	200		736			
8900	9400	13	200		736			
9400	10000	14	200		736			
10000	10700	15	200		736			
10700	11500	16	200		736			
11500	12400	17	200		736			
12400	13400	18	200		736			
13400	14600	19	200		736			
14600	16000	21	200		736			

* The values of column 5b may be adopted in alternative to the corresponding values of column 5a.

- For individual mooring lines with breaking strength above 490 kN (50000 kg) the latter may be reduced with corresponding increase of the number of the mooring lines and vice versa, provided that the total breaking load of all lines aboard the ship is not less than the Rules value. The number of lines is not to be less than 6 and no one line is to have a strength less than 490 kN (50000 kg).

2.3 Mooring winches*

2.3.1 Each winch should be fitted with drum brakes the strength of which is sufficient to prevent unreeling of the mooring line when the rope tension is equal to 80 percent of the breaking strength of the rope as fitted on the first layer.

2.3.2 For powered winches the maximum hauling tension which can be applied to the mooring line (the reeled first layer) should not be less than 1/4.5 times the rope's breaking strength and not more than 1/3 times the rope's breaking strength. For automatic winches these figures shall apply when the winch is set on the maximum power with automatic control.

* Requirements of this paragraph are to be considered as a guidance.

