RUSSIAN MARITIME REGISTER OF SHIPPING

CIRCULAR LETTER **No. 314-18-1738c** dated 11.04.2022

Re:

amendments to the Rules for the Classification and Construction of Sea-Going Ships, 2022, ND No. 2-020101-152-E

Item(s) of supervision:

ships under construction

Entry-into-force date:
01.05.2022

~~Cancels / amends / adds Circular Letter No.~~ ~~dated~~

Number of pages: 1+7

Appendices:

Appendix 1: information on amendments introduced by the Circular Letter

Appendix 2: text of amendments to Part III "Equipment, Arrangements and Outfit"

Director General Konstantin G. Palnikov

Text of CL:

We hereby inform that the Rules for the Classification and Construction of Sea-Going Ships shall be amended as specified in the Appendices to the Circular Letter.

It is necessary to do the following:

1. Bring the content of the Circular Letter to the notice of the RS surveyors, interested organizations and persons in the area of the RS Branch Offices' activity.
2. Apply the provisions of the Circular Letter during review and approval of the technical documentation on ships contracted for construction or conversion on or after 01.05.2022*, in the absence of a contract — according to 5.10 of Part II "Technical Documentation" of the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships, starting from 01.05.2022.

* The definition "Date of contract for construction of a ship (series of ships)" is given in 1.1.2 of Part I "Classification" of the Rules for the Classification and Construction of Sea-Going Ships.

List of the amended and/or introduced paras/chapters/sections:

Part III: para 2.1.3, Table 3.1.3-1, paras 3.2.5, 4.1.3, 7.10.6.34 and 7.14.2

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Appendix 1 to Circular Letter
No. 314-18-1738c dated 11.04.2022

Information on amendments introduced by the Circular Letter
(for inclusion in the Revision History to the RS Publication)

Nos.	Amended paras/chapters/ sections	Information on amendments	Number and date of the Circular Letter	Entry-into-force date
1	Para 2.1.3	Reference to IACS UR S10 (Rev.6 Sep 2019) has been specified	314-18-1738c of 11.04.2022	01.05.2022
2	Table 3.1.3-1	Footnote has been specified	314-18-1738c of 11.04.2022	01.05.2022
3	Paras 3.2.5 — 3.2.5.3	Reference to IACS recommendation has been replaced by reference to the applicable requirements of these Rules; new paras 3.2.5.1 — 3.2.5.3 have been introduced considering IACS recommendation No. 10 (Rev.4 Sep 2020)	314-18-1738c of 11.04.2022	01.05.2022
4	Paras 4.1.3 — 4.1.3.3	Reference to IACS recommendation has been replaced by reference to the applicable requirements of these Rules; new paras 4.3.1.1 — 4.1.3.3 have been introduced considering IACS recommendation No. 10 (Rev.4 Sep 2020)	314-18-1738c of 11.04.2022	01.05.2022
5	Para 7.10.6.34	Reference to the applicable requirements of these Rules has been specified	314-18-1738c of 11.04.2022	01.05.2022
6	Para 7.14.2	Reference to IACS UI SC191 (Rev.8 Apr 2019) has been specified	314-18-1738c of 11.04.2022	01.05.2022

RULES FOR THE CLASSIFICATION AND CONSTRUCTION OF SEA-GOING SHIPS, 2022

ND No. 2-020101-152-E

PART III. EQUIPMENT, ARRANGEMENTS AND OUTFIT

2 RUDDER AND STEERING GEAR

1 **Para 2.1.3** is replaced by the following text:

"**2.1.3** Steering gears may be designed compliant to IACS unified requirement (UR) S10 (Rev.6 Sept 2019) (the document is available at the IACS website: www.iacs.org.uk).".

3 ANCHOR ARRANGEMENT

2 **Table 3.1.3-1. Footnote [2)]** is replaced by the following text:

"[2)] Refer to 3.2.5.".

3 **Para 3.2.5** is replaced by the following text:

"**3.2.5** For ships with an equipment length of not less than 135 m, intended to anchor in deep and unsheltered water, as well as to anchor in water with depth up to 120 m, current with up to 1,54 m/s, wind with up to 14 m/s and waves with significant height of up to 3 m, the anchoring equipment shall be selected according to 3.2.5.1 — 3.2.5.3.

3.2.5.1 The scope of chain cable is defined as the ratio between the length of chain paid out and water depth, and is assumed to be not less than 3 to 4.

3.2.5.2 Anchors and chain cables shall be in accordance with Table 3.2.5.2 and based on the Equipment Number EN_1 obtained from the following formula:

$$EN_1 = 0{,}628\left[a\left(\frac{EN}{0{,}628}\right)^{\frac{1}{2{,}3}} + b(1-a)\right]^{2{,}3} \qquad (3.2.5.2)$$

where $a = 1{,}83 \cdot 10^{-9} \cdot L^3 + 2{,}09 \cdot 10^{-6} \cdot L^2 - 6{,}21 \cdot 10^{-4} \cdot L + 0{,}0866$;

$b = 0{,}156 \cdot L + 8{,}372$;

L = the equipment length of the ship between perpendiculars which shall not be less than 96 % nor greater than 97 % of the extreme length on the summer load waterline (measured from forward end of the waterline);

EN = Equipment Number calculated in compliance with 3.2.1.

Anchors shall be of the stockless high holding power (HHP) type. The mass of the head of a stockless anchor, including pins and fittings, shall not be less than 60 % of the total mass of the anchor. HHP anchors shall comply with the requirements of 8.1.3.2 of Part XIII "Materials".

The mass, per anchor, of bower anchors given in Table 3.2.5.2 is for anchors of equal mass. The mass of individual anchors may vary to 7 % of the tabular mass, but the total mass of anchors shall not be less than that recommended for anchors of equal mass.

Suitable arrangements shall be provided for securing the anchors in accordance with 3.6.1.2.

Table 3.2.5.2

Anchoring equipment for ships in unsheltered water with depth up to 120 m

Equipment Number EN_1		High holding power stockless bower anchors		Chain cable for bower anchors		
Equal to or greater than	Less than	Number	Mass per anchor (m_A), in kg	Length, in m	Min. diameter (d)	
					Grade 2, in mm	Grade 3, in mm
	1790	2	14150	1017,5	105	84
1790	1930	2	14400	990	105	84
1930	2080	2	14800	990	105	84
2080	2230	2	15200	990	105	84
2230	2380	2	15600	990	105	84
2380	2530	2	16000	990	105	84
2530	2700	2	16300	990	105	84
2700	2870	2	16700	990	105	84
2870	3040	2	17000	990	105	84
3040	3210	2	17600	990	105	84
3210	3400	2	18000	990	105	84
3400	3600	2	18300	990	106	84
3600	3800	2	19000	990	107	85
3800	4000	2	19700	962,5	108	87
4000	4200	2	20300	962,5	111	90
4200	4400	2	21100	962,5	114	92
4400	4600	2	22000	962,5	117	95
4600	4800	2	22900	962,5	119	97
4800	5000	2	23500	962,5	122	99
5000	5200	2	24000	935	125	102
5200	5500	2	24500	907,5	130	105
5500	5800	2	25000	907,5	133	107
5800	6100	2	25500	880	137	111
6100	6500	2	25700	880	140	113
6500	6900	2	26000	852,5	143	115
6900	7400	2	26500	852,5	147	119
7400	7900	2	27000	825	152	121
7900	8400	2	27500	825	154	123
8400	8900	2	28000	797,5	158	127
8900	9400	2	28900	770	162	132
9400	10000	2	29400	770	—	135
10000	10700	2	29900	770	—	139
10700	11500	2	30600	770	—	143
11500	12400	2	31500	770	—	147
12400	13400	2	33200	770	—	152
13400	14600	2	35000	770	—	157
14600		2	38000	770	—	162

3.2.5.3 Chain cables for bower anchors.

Bower anchors shall be associated with chain cables of Grade 2 or Grade 3. The total length of chain cable, as given in Table 3.2.5.2 shall be divided between the two bower anchors.

The application of 6.3 of Part IX "Machinery" is recommended for the anchor windlass design and testing.

Notwithstanding the requirements according to 6.3 of Part IX "Machinery", the windlass unit prime mover shall be able to supply for at least 30 min a continuous duty pull Z_{cont}, in N, determined by the formula:

$$Z_{cont} = 35\,d^2 + 13{,}4m_A \qquad (3.2.5.3)$$

where d = chain diameter as per Table 3.2.5.2, in mm;
m_A = HHP anchor mass as per Table 3.2.5.2,in kg.

In addition to the requirements of 6.3 of Part IX "Machinery", as far as practicable, for testing purpose the speed of the chain cable during hoisting of the anchor and cable shall be measured over 37,5 m of chain cable and initially with at least 120 m of chain and the anchor submerged and hanging free. The mean speed of the chain cable during hoisting of the anchor from the depth of 120 m to the depth of 82,5 m shall be at least 4,5 m/min.".

4 MOORING LINES

4 **Para 4.1.3** is replaced by the following text:

"**4.1.3** For ships with *EN* ≤ 2000 and having the ratio *A/EN* > 0,9, the following number of lines shall be added to the number of mooring lines as given by Table 3.1.3-1:

one line where 0,9 < *A/EN* ≤ 1,1;
two lines where 1,1 < *A/EN* ≤ 1,2;
three lines where *A/EN* > 1,2,

where *EN* and *A* = Equipment Number and side-projected area (windage area), respectively, specified under 3.2.

The minimum recommended strength and number of mooring lines for ships with an Equipment Number *EN* > 2000 are given in 4.1.3.1 and 4.1.3.2, respectively. The length of mooring lines is specified in 4.1.3.3.

The strength of mooring lines and the number of head, stern, and breast lines (refer to the Note) for ships with an Equipment Number *EN* > 2000 are based on the side-projected area A_1. Side-projected area A_1 shall be calculated similar to the side-projected area A according to 3.2.1 but considering the following conditions:

the ballast draught shall be considered for the calculation of the side-projected area A_1. For ship types having small variation in the draught, like e.g. passenger and ro-ro ships, the side-projected area A_1 may be calculated using the summer load waterline;

wind shielding of the pier can be considered for the calculation of the side-projected area A_1 unless the ship is intended to be regularly moored to jetty type piers. A height of the pier surface of 3 m over waterline may be assumed, i.e. the lower part of the side-projected area with a height of 3 m above the waterline for the considered loading condition may be disregarded for the calculation of the side-projected area A_1;

deck cargoes at the ship nominal capacity condition shall be included for the determination of side-projected area A_1. For the condition with cargo on deck, the summer load waterline may be considered. Deck cargoes may not need to be considered if ballast draught condition generates a larger side-projected area A_1 than the full load condition with cargoes on deck. The larger of both side-projected areas shall be chosen as side-projected area A_1.

The nominal capacity condition is defined as the theoretical condition where the maximum possible deck cargoes are included in the ship arrangement in their respective positions. For container ships the nominal capacity condition represents the theoretical condition where the maximum possible number of containers is included in the ship arrangement in their respective positions.

The mooring lines as given here under are based on a maximum current speed of 1,0 m/s and the following maximum wind speed v_w, in m/s:

v_w = 25,0 – 0,002 (A_1 – 2000)	—	for passenger ships, ferries, and car carriers with 2000 m^2 < A_1 ≤ 4000 m^2;
v_w = 21,0	—	for passenger ships, ferries, and car carriers with A_1 > 4000 м^2;
v_w = 25,0	—	for other ships.

The wind speed is considered representative of a 30 second mean speed from any direction and at a height of 10 m above the ground. The current speed is considered representative of the maximum current speed acting on bow or stern (± 10°) and at a depth of one-half of the mean draught. Furthermore, it is considered that ships are moored to solid piers that provide shielding against cross current.

Additional loads caused by, e.g., higher wind or current speeds, cross currents, additional wave loads, or reduced shielding from non-solid piers may need to be particularly considered.

Furthermore, it shall be observed that unbeneficial mooring layouts can considerably increase the loads on single mooring lines.

N o t e : The following is defined with respect to the purpose of mooring lines, refer also to Figure 4.1.3:

breast line — a mooring line that is deployed perpendicular to the ship, restraining the ship in the off-berth direction;

spring line — a mooring line that is deployed almost parallel to the ship, restraining the ship in fore or aft direction;

head/stern line — a mooring line that is oriented between longitudinal and transverse direction, restraining the ship in the off-berth and in fore or aft direction. The amount of restraint in fore or aft and off-berth direction depends on the line angle relative to these directions.

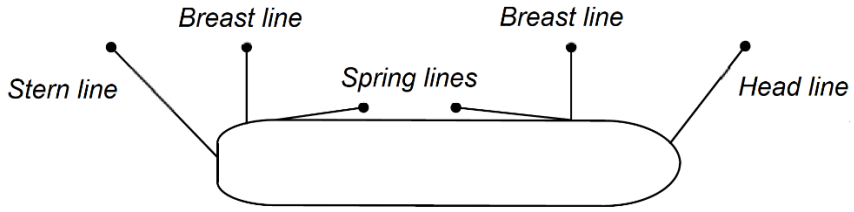

Fig. 4.1.3

4.1.3.1 Ship design minimum breaking load.

The ship design minimum breaking load, in kN, of the mooring lines shall be taken as:

$$MBL_{SD} = 0{,}1 \cdot A_1 + 350. \qquad (4.1.3.1\text{-}1)$$

The ship design minimum breaking load may be limited to 1275 kN (130 t). However, in this case the moorings shall be considered as not sufficient for environmental conditions specified in 4.1.3. For these ships, the acceptable wind speed v_w^*, in m/s, can be estimated as follows:

$$v_w^* = v_w \cdot \sqrt{\frac{MBL_{SD}^*}{MBL_{SD}}} \qquad (4.1.3.1\text{-}2)$$

where v_w = is the wind speed as per 4.1.3;

MBL_{SD}^* = the ship design minimum breaking load of the mooring lines intended to be supplied; and

MBL_{SD} = the ship design minimum breaking load as recommended according to Formula (4.1.3.1-1).

However, the ship design minimum breaking load shall not be taken less than corresponding to an acceptable wind speed of 21 m/s:

$$MBL_{SD}^* v_w^* \geq \left(\frac{21}{v_w}\right)^2 \cdot MBL_{SD}. \qquad (4.1.3.1\text{-}3)$$

If lines are intended to be supplied for an acceptable wind speed v_w^* higher than v_w^* as per 4.1.3, the ship design minimum breaking load shall be taken as:

$$MBL_{SD}^* \geq \left(\frac{v_w^*}{v_w}\right)^2 \cdot MBL_{SD}. \qquad (4.1.3.1\text{-}4)$$

4.1.3.2 Number of mooring lines.

The total number of head, stern and breast lines (refer to the Note in 4.1.3) shall be taken as follows:

$$n = 8{,}3 \cdot 10^{-4} \cdot A_1 + 6. \qquad (4.1.3.2\text{-}1)$$

For oil tankers, chemical tankers, bulk carriers, and ore carriers the total number of head, stern and breast lines shall be taken as follows:

$$n = 8{,}3 \cdot 10^{-4} \cdot A_1 + 4. \qquad (4.1.3.2\text{-}2)$$

The total number of head, stern and breast lines shall be rounded to the nearest whole number.

The number of head, stern and breast lines may be increased or decreased in conjunction with an adjustment to the ship design minimum breaking load of the lines. The adjusted ship design minimum breaking load, MBL_{SD}^{**}, shall be taken as:

$MBL_{SD}^{**} = 1{,}2 \cdot MBL_{SD} \cdot n/n^{**} \leq MBL_{SD}$ for increased number of lines;

$MBL_{SD}^{**} = MBL_{SD} \cdot n/n^{**}$ for reduced number of lines

where MBL_{SD} = MBL_{SD} or MBL_{SD}^{*} specified in 4.1.3.1, as appropriate;
n^{**} = the increased or decreased total number of head, stern and breast lines;
n = the number of lines for the considered ship type as calculated by formulas 4.1.3.2-1 and 4.1.3.2-2 without rounding.

Vice versa, the ship design minimum breaking load of head, stern and breast lines may be increased or decreased in conjunction with an adjustment to the number of lines.

The total number of spring lines (refer to the Note in 4.1.3.2) shall be taken not less than:

two lines where *EN* < 5000;
four lines where *EN* ≥ 5000.

The ship design minimum breaking load of spring lines shall be the same as that of the head, stern and breast lines. If the number of head, stern and breast lines is increased in conjunction with an adjustment to the ship design minimum breaking load of the lines, the number of spring lines shall be taken as follows, but rounded up to the nearest even number:

$$n_S^{*} = MBL_{SD}/MBL_{SD}^{**} \cdot n_S \qquad (4.1.3.2\text{-}3)$$

where MBL_{SD} = MBL_{SD} or MBL_{SD}^{*}, specified in 4.1.3.1, as appropriate;
n_S = the number of spring lines as given above;
n_S^{*} = the increased number of spring lines.

4.1.3.3 Length of mooring lines.

The length of mooring lines for ships with *EN* ≤ 2000 may be taken from Table 3.1.3-1. For ships with *EN* > 2000 the length of mooring lines may be taken as 200 m.

The lengths of individual mooring lines may be reduced by up to 7 % of the above given lengths, but the total length of mooring lines shall not be less than would have resulted had all lines been of equal length.".

7 OPENINGS IN HULL, SUPERSTRUCTURES AND DECKHOUSES AND THEIR CLOSING APPLIANCES

5 **Para 7.10.6.34** is replaced by the following text:

"**7.10.6.34** To ensure weather tightness, the requirements of 7.10.6.45 — 7.10.6.51 applicable to hatch covers shall be met.

The packing material of hatch covers gaskets shall be suitable for all expected service conditions of the ship and shall be compatible with the cargoes to be transported. The packing material shall be selected with regard to dimensions and elasticity in such a way that expected deformations can be carried. Forces shall be carried by the steel structure only.

The packings shall be compressed so as to give the necessary tightness effect for all expected operating conditions. Special consideration shall be given to the packing arrangement in ships with large relative movements between hatch covers and coamings or between hatch cover sections.".

6 **Para 7.14.2** is replaced by the following text:

"**7.14.2** Means of access and passages on ships referred to in 7.14.1 shall comply with the requirements of IMO resolutions MSC.134(76), MCS.151(78) and MSC.158(78), as well as IACS UI SC191 (Rev.8 Apr 2019) (the document is available at the IACS website: www.iacs.org.uk).".