



RUSSIAN MARITIME REGISTER OF SHIPPING

CIRCULAR LETTER

No. 314-31-1506c

dated 12.02.2021

Re:

amendments to the Rules for the Classification and Construction of Sea-Going Ships considering the experience of technical supervision

Item(s) of supervision:

ships under construction

Entry-into-force date:

15.03.2021

~~Valid till:~~

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

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Number of pages:

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Appendices:

Appendix 1: information on amendments introduced by the Circular Letter

Appendix 2: text of amendments to Part XIII "Materials"

Director General

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Text of CL:

We hereby inform that the Rules for the Classification and Construction of Sea-Going Ships, at their re-publication in 2021, 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, as well as 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 15.03.2021, in the absence of a contract, the keels of which are laid or which are at a similar stage of construction on or after 15.03.2021.

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

Part XIII: paras 2.5.6.5 and 2.5.7.1 — 2.5.7.3, Figure 2.5.7.2 and Table 6.5.3.1

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**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 2.5.6.5	Requirements for procedure for determining of cathode disbandment have been specified, the formula has been introduced	314-31-1506c of 12.02.2021	15.03.2021
2	Paras 2.5.7.1 — 2.5.7.3	Requirements for test procedures for determining coefficient of friction for ice have been specified	314-31-1506c of 12.02.2021	15.03.2021
3	Figure 2.5.7.2	Symbolic notations of devices for determining coefficient of friction of the protective coating on ice have been specified	314-31-1506c of 12.02.2021	15.03.2021
4	Table 6.5.3.1	Criteria of coating classification have been specified considering accumulated statistics on testing for determining of friction for ice and changes in test procedures	314-31-1506c of 12.02.2021	15.03.2021

RULES FOR THE CLASSIFICATION AND CONSTRUCTION OF SEA-GOING SHIPS, 2020,

ND No. 2-020101-124-E

PART XIII. MATERIALS

2 PROCEDURES OF TESTING

- 1 **Para 2.5.6.5** is supplemented by the following text:

"Value of cathode disbandment L , in mm, shall be calculated using formula

$$L = \frac{1}{\sqrt{\pi}} (\sqrt{S_2} - \sqrt{S_1}) \quad (2.5.6.5)$$

where S_2 — surface area with disbanded coat including cut-out area, in mm²;
 S_1 — cut-out area, in mm².

Coat as per standard ISO 4628-2 shall be assessed immediately after testing. The value of cathode disbandment shall be determined in 4-5 hours after testing. Holding and assessment shall be performed at the ambient temperature 23 ± 2 °C and relative humidity 50 ± 5 °C."

- 2 **Para 2.5.7.1** is supplemented by the following text:

"The test coat shall contain defects affecting the result, such as scale, paint, shagreen, etc."

- 3 **Paras 2.5.7.2 and 2.5.7.3** are replaced by the following text:

"**2.5.7.2** Description of the device recommended for testing. Examples of mechanical devices are shown in Fig. 2.5.7.2.

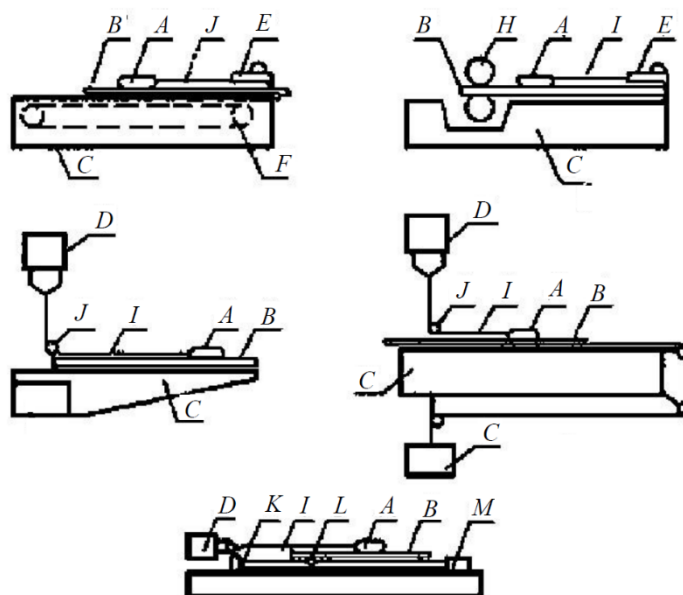


Fig. 2.5.7.2 Types of devices for determining coefficient of friction of the protective coating on ice:
A — specimen; B — bearing plane with recess for ice; C — supporting base; D — gauge;
E — spring gauge; F — constant speed chain drive; H — constant speed drive rolls; I — non-extensible bond;
J — low-friction pulley; K — worm screw; L — half-coupling; M — synchronous motor

2.5.7.3 Test procedure.

To perform tests, the bearing plane recess *B* (refer to Fig. 2.5.7.2) shall be filled with distilled water cooled to the ambient temperature $-(20\pm 2)^{\circ}\text{C}$ and held within the time necessary for ice formation. Panels for tests shall be rectangular dimensioned $(250 \times 130 \times 3 (\pm 0,5))$ mm. Before testing, the specimens shall be conditioned at the temperature of $(20\pm 2)^{\circ}\text{C}$ for at least 15 minutes. Tests shall be carried out under standard conditions at the temperature of $-(20\pm 2)^{\circ}\text{C}$.

A panel with applied coating shall be placed on the bearing plane *B* and fixed in the device (refer to Fig. 2.5.7.2). Then the travel mechanism pre-adjusted to the specified speed shall be switched on.

Due to the frictional loads between the adjoining surfaces of the specimen and ice, they can remain fixed relative to each other until the force shifting the sample becomes equal to or exceeds the static friction force between the surfaces. That maximum initial force value shall be marked as a force, which is a component of the initial (static) coefficient of friction.

The average force value shall be visually marked or marked by means of strain gauges, as read on the indicator scale with a uniform movement of the surfaces relative to each other for 1 min. This force is equal to the kinetic sliding friction force, which is necessary to maintain the uniform, linear surfaces movement relative to each other.

To assess sustainability of results three panels of each coating type shall be tested with the speed of 120, 150 and 180 mm/min varying three variants of vertical load (uniformly distributed along the specimen) taken within 2 — 5 mass range of the test panel."

6 PLASTICS AND MATERIALS OF ORGANIC ORIGIN

4 **Table 6.5.3.1** is replaced by the following text:

"Table 6.5.3.1

No.	Characteristic	Value			
		Group 1 for icebreakers of all ice-classes		Group 2 for Arc4 and above ice-class ships	
		Class I	Class II	Class I	Class II
1	Durability as per ISO 12944-6 for a corrosivity category Im2 in compliance with ISO 12944-2 (refer to 2.5.1)	High		High	
2	Adhesion by a cross-cut test method as per ISO 2409 or X-cut test method as per ISO16276-2 after testing for resistance to low temperature exposure (refer to 2.5.2.3) depending on the thickness and type of ice-resistant coating	not more than 3		not more than 3	
3	Adhesion strength as per ISO 4624 (refer to 2.5.3.4)	above 16 MPa	above 10 MPa	above 10 MPa	above 8 MPa
4	Abrasive wear after 1000 cycle tests on the Taber's abrader (wheel CS-17) (refer to 2.5.4)	not more than 80 mg	not more than 120 mg	not more than 120 mg	not more than 160 mg
5	Impact resistance as per ISO 6272 (refer to 2.5.5)	not less than 5 J		not less than 5 J	
6	Cathode disbandment as per ISO 15711 (method A) (refer to 2.5.6) for coatings compatible with cathode protection	less than 5 mm after three month testing, less than 8 mm after 6 month testing		less than 5 mm 3 month testing, less than 10 mm after 6 month testing	
7	Coefficient of sliding friction for ice (refer to 2.5.7)	not exceeding 0,05	not exceeding 0,08	not exceeding 0,05	not exceeding 0,08