



RUSSIAN MARITIME REGISTER OF SHIPPING

CIRCULAR LETTER

No. 313-67-1664c

dated 19.11.2021

Re:

amendments to the Rules for the Classification and Construction of Sea-Going Ships, 2021, ND No. 2-020101-138-E, considering the experience of technical supervision, results of Scientific Research, IACS recommendation No.167 (Corr.1, Mar 2021), IACS UR M68 (Rev.3, Feb. 2021) and M69 (Rev.1, Feb. 2021)

Item(s) of supervision:

machinery, equipment and systems (conditions of work and vibration), intermediate shafts and couplings, cargo control rooms on chemical tankers, shaft bearings, propulsion plant and steering system of passenger ships

Entry-into-force date:

refer to Appendix 1

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

~~dated~~

Number of pages: 1+4

Appendices:

Appendix 1: information on amendments introduced by the Circular Letter

Appendix 2: text of amendments to Part VII "Machinery Installations"

Acting Director General

Sergey A. Kulikov

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 RS Branch Offices' activity.
 2. Apply the provisions of the Circular Letter during review and approval of the technical documentation on machinery, equipment, propulsion plant, systems and cargo control rooms contracted for construction or conversion on or after the dates specified in Appendix 1, in the absence of a contract – on ships, the keels of which are laid, or which are at a similar stage of construction on or after the dates specified in Appendix 1, as well as during review and approval of the technical documentation on ships the delivery of which is on or after the dates specified in Appendix 1.
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List of the amended and/or introduced paras/chapters/sections:

Part VII: Table 2.3.1-2, paras 2.4.2, 3.2.10, 5.6.5, 9.1.7, 11.1.1, Chapter 5.10 and Appendix 2

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"Thesis" System No. 21-262091

**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	Table 2.3.1-2	Values of ambient temperature at which the machinery, equipment and systems installed on the ship shall remain operational have been specified depending on the installed location	313-67-1664c of 19.11.2021	01.01.2022
2	Para 2.4.2	Considering the results of Scientific Research the requirements have been introduced for shafts and couplings of Fiber-Reinforced Plastic	313-67-1664c of 19.11.2021	01.01.2022
3	Para 3.2.10	Reference has been specified	313-67-1664c of 19.11.2021	01.01.2022
4	Para 5.6.5	Considering the results of Scientific Research the requirements have been introduced for bearings of synthetic material	313-67-1664c of 19.11.2021	01.01.2022
5	Chapter 5.10	Considering the results of Scientific Research the requirements have been introduced for shafts and couplings of Fiber-Reinforced Plastic	313-67-1664c of 19.11.2021	01.01.2022
6	Para 9.1.7	Requirements have been introduced considering IACS recommendation No. 167 (Corr. 1, Mar 2021)	313-67-1664c of 19.11.2021	01.01.2022
7	Para 11.1.1	References to IMO resolutions have been specified considering IACS UR M69 (Rev.1, Feb. 2021)	313-67-1664c of 19.11.2021	01.07.2022
8	Paras 2.1 and 2.3 of Appendix 2	References to standards have been specified considering IACS UR M68 (Rev.3, Feb. 2021)	313-67-1664c of 19.11.2021	01.07.2022

RULES FOR THE CLASSIFICATION AND CONSTRUCTION OF SEA-GOING SHIPS, 2021,

ND No. 2-020101-138-E

PART VII. MACHINERY INSTALLATIONS

2 GENERAL

1 **Table 2.3.1.2** is replaced by the following:

"Table 2.3.1-2

Ambient temperature

Installed location	Temperature range, °C
In enclosed spaces	0 to + 45
Spaces subject to temperatures exceeding 45 °C and below 0 °C	According to specific local conditions
On the open deck	-25 to + 45
Note. For ships intended for geographically restricted service other temperatures may be adopted on agreement with the Register.	

2 **Para 2.4.2** is replaced by the following text:

"2.4.2 Intermediate, thrust and propeller shafts shall generally be made of steel with tensile strength R_m between 400 and 800 MPa.

It is allowed to manufacture the central sections of intermediate shafts and couplings from Fiber-Reinforced Plastic: fiber glass and carbon fiber."

3 CONTROL DEVICES AND STATIONS. MEANS OF COMMUNICATION

3 **Para 3.2.10** is replaced by the following text:

"3.2.10 CCR shall be located as far from the machinery spaces as practicable. Onboard the tankers the CCR shall be arranged according to 2.4.9, Part VI "Fire Protection".

Furthermore, arrangement of CCR onboard chemical tankers shall comply with the requirements of Section 3, Part II "Structure of Chemical Tanker" of the Rules for the Classification and Construction of Chemical Tankers, and on ships intended for the carriage of liquefied gases in bulk - the requirements of Section 10, Part VI "Systems and Piping" of the Rules for the Classification and Construction of Ships Carrying Liquefied Gases in Bulk."

5 SHAFTING

4 New **Para 5.6.5** is introduced reading as follows:

"5.6.5 When using synthetic materials, the bearing clearance shall consider the material swelling and thermal expansion properties. This clearance shall not be less than 1,5 mm in the diameter of the bearing, unless a lower clearance (below 1,5 mm) is specified, as confirmed by the manufacturer's recommendations, and there is documented evidence of a satisfactory service history with a reduced clearance."

5 New **Chapter 5.10** is introduced reading as follows:

"5 SHAFTS WITH FIBER-REINFORCED COMPOSITE PLASTIC COMPONENTS

5.10.1 Shafts shall remain operative under environmental conditions in compliance with requirement in 2.3.1, be resistant to vibration loads considering Section 9, be oil- and water-resistant.

5.10.2 In addition to the documentation specified in Section 3 of Part I "Classification" the following shall be submitted

specification for the materials used, including a list of initial components, technological and auxiliary materials, the composition of the fiber-polymer plastic and its physical and mechanical properties;

a guideline document on manufacturing technology indicating the composition of the reinforcement material and the binder, the structure of the reinforcement by layers, the packing density (surface density), the number of layers of the reinforcement material, as well as the requirements for manufacturing quality control, including the norms of permissible defects, as well as technological instructions for eliminating unacceptable defects;

drawings of joining parts of fiber-polymer plastic with metal elements.

5.10.3 Strength calculations shall take into account shaft loads, considering Chapter 5.2, and check the conditions of strength, stiffness and stability of the links. The norms of hazardous and permissible stresses and strains shall be determined, it has been demonstrated that the strength of the joints of parts made of polymer composite material with metal elements is not lower than the strength of the parts to be joined. The accuracy of the calculations, the design scheme and the applied methodology shall be agreed with the Register."

9 VIBRATION OF MACHINERY AND EQUIPMENT. VIBRATION STANDARDS

5 New **Para 9.1.7** is introduced reading as follows:

"9.1.7 Designing shall be carried out considering IACS recommendation No. 167 (Corr.1, Mar 2021)."

11 QUALITATIVE FAILURE ANALYSIS FOR PROPULSION AND STEERING ON PASSENGER SHIPS

6 **Para 11.1.1** replaced by the following text:

"11.1.1 The requirements of the present Section refer to the qualitative failure analysis for propulsion and steering for new passenger ships, including those having a length of 120 m or more or having three or more main vertical zones (refer to 2.2, Part VI "Fire Protection") in compliance with the revised SOLAS Chapter II-2, Regulation 21 introduced by IMO resolutions (IMO resolution MSC.421(98) included)."

APPENDIX 2

SPECIAL APPROVAL OF ALLOY STEEL FOR INTERMEDIATE SHAFT MATERIAL

7 **Para 2.1** is replaced by the following text:

"2.1 The tests shall be carried out with notched and unnotched specimens respectively. For calculation of the stress concentration factor of the notched specimen, fatigue strength reduction factor β shall be evaluated in consideration of the severest torsional stress concentration in the design criteria. Mean surface roughness shall be $<0,2\mu\text{m } R_a$ with the absence of localized machining marks verified by visual examination at low magnification (x20) as required

by Section 8.4 of ISO 1352:2011. Test procedures shall be in accordance with Section 10 of ISO 1352:2011."

8 **Para 2.3** is replaced by the following text:

"2.3 The steels shall have a degree of cleanliness as shown in Table 2 when tested according to ISO 4967:2013 method A. Representative samples shall be obtained from each heat of forged or rolled products. The samples shall be subject to ultrasonic testing required by 3.7.7.2 Part XIII "Materials" prior to acceptance."