



# RUSSIAN MARITIME REGISTER OF SHIPPING

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**CIRCULAR LETTER**

**No. 314-56-1180c**

dated 18.12.2018

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Re:

amendments to the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships, 2018, ND No. 2-020101-040-E

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Item(s) of supervision:

materials for hull structure manufacture

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Implementation:

**from the date of publication**

Valid till:

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Validity period extended till: -

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Cancels / amends / adds Circular Letter No. 314-56-1179c

dated 18.12.2018

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Number of pages:

1+5

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Appendix(-ces):

amendments to Part III "Technical Supervision During Manufacture of Materials" of the Rules for Technical Supervision During Construction of Ships and Manufacture of Materials and Products for Ships, 2018

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Director General

K.G. Palnikov

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Text of CL:

We hereby inform that Part III "Technical Supervision during Manufacture of Materials" of the Rules for Technical Supervision During Construction of Ships and Manufacture of Materials and Products for Ships shall be amended related to the requirements for supervision of the application of protective coatings of ice ships outer shell.

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It is necessary to do the following:

Familiarize the surveyors of the RS Branch Offices with the content of the Circular Letter. Bring the content of the Circular Letter to the notice of the interested organizations in the area of the RS Branch Offices' activity. Implement the provisions of the Circular Letter.

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List of amended and introduced paras/chapters/sections (to specify in the List of Circular Letters (form 8.3.36)):

Part III: Chapter 3.5

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Person in charge:

S.M. Kordonets

Department 314

+7 (812) 605-05-29

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"Thesis" System No.

18-316411

**RULES FOR TECHNICAL SUPERVISION DURING CONSTRUCTION  
OF SHIPS AND MANUFACTURE OF MATERIALS AND PRODUCTS  
FOR SHIPS**

**ND No. 2-020101-04-E**

**PART III. TECHNICAL SUPERVISION DURING MANUFACTURE OF  
MATERIALS**

**3 NON-METALLIC MATERIALS**

Chapter 3.5 shall be amended to read:

**"3.5 Ice resistant coatings**

**3.5.1** Ice resistant coatings are applied on ships in accordance with the requirements of 3.10, Part II "Hull" and 7.12.6.1, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships. Ice resistant coatings shall comply with requirements of 6.5.3, Part XIII "Materials" of the said Rules.

**3.5.2** Ice resistant coatings developed and approved by the Register or another classification society (refer to 2.16, Part I "General Regulations for Technical Supervision" of these Rules) prior to 1 July 2012 may be allowed on having distinguishing marks **WINTERIZATION**, provided these coatings comply with requirements of 6.5.3, Part XIII "Materials" of the Rules for the Classification and Construction of Sea-Going Ships and on the basis of relevant documents (Type Approval Certificate/CTO, etc.).

**3.5.3** The documentation being submitted for approval, which defines the coating properties, composition and characteristics, shall also contain the following data:

type of a coating system (epoxy and epoxy with the minimum solvent content);

coating colour;

data on incompatibility with anodic protection;

reports on coating testing according to 2.5 and complying with 6.5.3, Part XIII "Materials" of the Rules for the Classification and Construction of Sea-Going Ships conducted in the RS-recognized laboratories or in the laboratories with the attendance of the RS surveyor according to the agreed test program;

description of the application process of ice resistant coatings (refer to 3.5.4);

Manufacturer's recommendations on repair of coating in service.

**3.5.4** The application process of ice resistant coatings shall contain:

**.1** technical characteristics of ice resistant coatings specified in the Manufacturer's documents (specification of requirements, specifications, Technical Data Sheet);

**.2** methods of surface preparation prior to application of ice resistant coatings (rust cleaning level, no contamination, profile, roughness, etc.);

**.3** methods of surface preparation examination prior to application of ice resistant coating (visual examination using visual ISO standards and instrumentation check using comparator);

**.4** process conditions required for application of ice resistant coating (air temperature, relative humidity);

**.5** the requirements for equipment for application of ice resistant coatings.

**3.5.5** The requirements to surface preparation prior to application of ice resistant coatings.

Process of surface preparation prior to application of ice resistant coatings shall comply with the requirements of ISO 8501-1. When ice resistant coatings are applied, the grade of surface preparation shall be equal to Sa 2 ½ in compliance with ISO 8501-1.

Roughness of the surface shall be medium (G) - 75 micrometers/μm as per ISO 8503-1. Abrasive applicable for the surface cleaning shall meet the requirements of ISO 11126, Part 2-8 and have a certificate, as appropriate.

Content of water-soluble chlorides (ISO 11127, Part 7) at the steel surface immediately prior the coating application shall not exceed 50 mg/m<sup>2</sup>.

Prior to application of ice resistant coatings, dust ratio of the surface shall be examined in compliance with ISO 8502-3. Dust quantity rating "1" for dust particles of classes "3", "4" or "5". Dust having the particles of lower classes shall be removed when visually available without image magnification at the surface subject to coating application.

**3.5.6** The requirements to temperature conditions and relative humidity for application of ice resistant coatings.

The coating shall be applied under controlled conditions of humidity and surface depending on the type of the particular coating in compliance with the manufacturer's specifications.

If not otherwise specified by the coating manufacturer, the ambient conditions for application of ice resistant coatings shall be as follows: relative air humidity shall not exceed 80 %; air temperature shall not be less than 10 °C (where not otherwise stated by the coating manufacturer); the coating surface temperature for the coating application shall be less than 3 °C above the dew-point temperature.

**3.5.7** The number of layers and dry film thickness of ice resistant coating given the approved documentation shall be observed during the application. Subject to customer approval, thickness

of ice resistant coating may be increased in particular areas of the underwater hull. It is recommended to increase thickness of ice resistant coating in the anode area. When application of a number of layers of ice resistant coating is permitted by the coating manufacturer, using of different colour for each layer is recommended.

**3.5.8** Duration and degree of drying of the ice resistant coating shall be examined at every stage of application. Determination of condition and thorough drying period of paint-and-lacquer coatings. Recommended standards: ISO 1517, ISO 9117.

**3.5.9** For ice resistant coatings, the minimum time prior to ship's launching depending on water temperature and the minimum time prior to commencement of ship operation in ice shall be specified.

**3.5.10** In case of increased thickness of ice resistant coating, the duration of drying and curing at such conditions shall be additionally determined.

**3.5.11** The control procedure of application of ice resistant coatings shall include:

Table 3.5.11

Process stage	Documentation to be submitted	Process participants	Requirements	Person in charge
Selection of coating system	Coating Technical File	Coating manufacturer, customer, RS	para 3.5.1	Customer
Coating type			Epoxy-based systems	
Approval of coating by RS	CTO/Type Approval Certificate, Test report	Coating manufacturer, RS	para 3.5.1	Coating manufacturer
Application process	Coating application flowchart	Coating manufacturer, shipyard, RS	para 3.5.4	Coating manufacturer
Coating preparation	Final inspection report on surface preparation for protective coating application (reference recommended form in Appendix 2, Section 2, "Survey of hulls of steel ships" of the Guidelines on Technical Supervision of Ships under Construction ).	Coating manufacturer, shipyard, RS	3.5.5 -3.5.8	Coating Inspection having NACE qualification Coating Inspector Level II, FROSIO. Coating Inspector Level III or equivalent
Ambient conditions		Coating manufacturer, shipyard, RS, customer		
Coating application		Coating manufacturer, shipyard, RS, customer		
Coating repair		Coating manufacturer,	3.5.3 -3.5.8	

Process stage	Documentation to be submitted	Process participants	Requirements	Person in charge
		shipyard, customer, RS		
Quality control of the coating application		Coating manufacturer, customer, RS	Customer's document	

Prior to work, the process stage given in Table 3.5.11 shall be agreed among the customer, shipyard, coating manufacturer and approved by the RS Branch Office for technical supervision under construction. Documentation shall be presented as a single document - Coating Technical File (CTF).

**3.5.11.1** The RS functions for the supervision of observance of the procedure for application of protective ice resistant coatings are as follows:

.1 the availability of CTO of ice resistant coating complying the requirements of 3.5.1;

.2 the availability of certificate to confirm the qualification of coating inspector: "NACE. Coating Inspector Level II", "FROSIO. Coating Inspector Level III" or equivalent to be issued upon the satisfactory results of completion of the RS-recognized training course and complying with 3.5.11.2;

.3 compliance of Final Inspection Report on surface preparation and coating application (reference recommended form in Appendix 2, Section 2, "Survey of hulls of steel ships" of the Guidelines on Technical Supervision of Ships under Construction) with the requirements of the manufacturer's documents (technical requirements, specifications, Technical Data Sheet). The Inspection Report shall be issued by the coating inspector having qualification in compliance with 3.5.11.1.2. The coating inspector shall be responsible for confirmation that quality control procedures for surface preparation and coating application meet the requirements of the RS-approved documentation.

.4 compliance with the requirements for the application process and the quality of the applied ice resistant coating.

**3.5.11.2** Training courses for coating inspectors responsible for ice resistant coatings application shall contain the main sections of the syllabus based on the documents associated with PSPC specified in 3.2.9.3.1.2 and the following additional sections:

types of ice resistant coatings;

the procedure and methods of application of ice resistant coatings and the requirements to work performance;

the procedure for the coating curing;

the inspection activity and the inspector responsibility.

Duration of training courses for coating inspectors responsible for inspection of ice resistant coatings application (as applied to lessons in class and group sessions, practical training) shall not be less than 80 academic hours (10 days or more). Therewith, the training course shall be conducted for 10 days or more in the form of a series of sessions.

The trainees shall attend the theoretical classes and participate in practical training, practical use of equipment and tools containing at least 40 % of the total training duration.

Theoretical classes shall intersperse with practical training.

Training aids of CD/DVD type that directly refer to the training course program may be used by the instructors as optional materials.

At the end of theoretical and practical training under the program for training of Coating Inspectors responsible for inspection of ice resistant coatings application, an examination (4 academic hours) shall be conducted for assessment of special theoretical knowledge and practical skills allowing to use the equipment and evaluations required for inspecting work. The training course and examination shall be approved by the Register.

The approved courses may be conducted by the coating manufacturers, shipyards, etc.

**3.5.11.3** The educational organization conducting the training courses for the coating inspectors responsible for inspection of ice resistant coatings application as per 3.5.11.2, shall perform its activity based on the RS Certificate of Firm Conformity (CCII) coded 22017020 -Training and examination of coating inspectors. The organization shall meet the requirements specified in Section 7 and special requirements of 11.3, Part I "Technical Supervision during the Manufacture of Materials and Products for Ships".

**3.5.12** All systems other than the epoxy-based systems shall be determined as the alternative systems. Acceptance of the alternative ice resistant protective coatings depends on the evidence that their properties and characteristics comply with 6.5.3.1, Part XIII "Materials" of the Rules for the Classification and Construction of Sea-Going Ships.

The application procedure of the alternative or new ice resistant protective coatings shall be carried out in compliance with 3.5.4 - 3.5.8 and the requirements of manufacturer's documents (technical requirements, specifications, Technical Data Sheet)".