



# RUSSIAN MARITIME REGISTER OF SHIPPING

**CIRCULAR LETTER**

**No. 314-01-1391c**

dated 12.05.2020

Re:

amendments to the Rules for the Classification and Construction of Sea-Going Ships, 2020, ND No. 2-020101-124-E

Item(s) of supervision:

materials and welding

Entry-into-force date:

**01.07.2020**

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Appendices:

Appendix 1: information on amendments introduced by the Circular Letter

Appendix 2: text of amendments to Part XIII "Materials", XIV "Welding", XVI "Structure and Strength of Fiber-Reinforced Plastic Ships" and XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships"

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, as well as interested organizations and persons in the area of the RS Branch Offices' activity.
2. Apply the provisions of the Circular Letter to products installed on ships contracted for construction on or after 01.07.2020.

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

Part XIII: 1.2.1, 1.3.1.2, 1.4.3, 2.6.4, 3.1.3, 3.2.2, 3.2.4, Chapter 3.4, 3.6.1.2, 3.6.8, 3.7.7.4, 3.7.8.4, 3.8.6.5, 3.8.8.4, 3.12.10.3, 3.12.10.4, 3.16.1.3, 3.16.1.7, 3.16.2.5, 3.16.3.4, 3.17.1.1, 3.17.1.2, 3.18.2.2, 3.18.16.1, 3.18.16.5 – 3.18.16.7, 4.1.3, 5.1.1, 5.1.4, 5.1.11, 5.2.3, 5.3.1.2, 5.3.3.1, 5.3.5.1, 6.1.3.1, 6.2.2.7, 6.2.3.6, 6.3.4.4, 6.4.6, 6.5.4.3, 6.6.7, 6.7.6, 7.1.2.2, 7.2.5.8.2, 8.4.5, 9.2.4, 9.2.9, 9.3.7.3, 9.6.1.2, 9.6.3.1, 9.6.5.1 and 10.3.1.2;

Part XIV: 4.1.1, 4.1.4, 4.1.8.1, 4.1.8.9, 4.5.1.3.1, 4.9.1.4 and 4.10.1.4;

Part XVI: 1.4.2, 2.1.3 and Chapter 2.2;

Part XVII: 7.12.3

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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	Part XIII, para 1.2.1	The list of definitions, the definition "Register Certificate" and the term "Manufacturer's certificate" have been specified considering the provisions of Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships (the Rules for Technical Supervision)	314-01-1391c of 12.05.2020	01.07.2020
2	Part XIII, para 1.3.1.2	Requirements for the recognition of manufacture have been specified considering the provisions of Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020
3	Part XIII, para 1.4.3	Requirements for materials and products have been specified. The term "Manufacturer's Certificate" has been specified considering the provisions of Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020
4	Part XIII, para 2.6.4	The term "Manufacturer's Certificate" has been specified (only for the English version)	314-01-1391c of 12.05.2020	01.07.2020

Nos	Amended paras/chapters/sections	Information on amendments	Number and date of the Circular Letter	Entry-into-force date
5	Part XIII, Section 3 (3.2.4, 3.6.1.2, 3.6.8, 3.7.8.4, 3.8.6.5, 3.8.8.4, 3.12.10.4, 3.16.1.7, 3.16.2.5, 3.16.3.4, 3.17.1.2, 3.18.2.2)	Throughout the text of the Section to unify terminology the terms "the manufacturer's document", "the manufacturer's certificate", "the manufacturer certificate", "Manufacturer Certificate of Quality", "the Certificate of Quality", "the Semi-Finished Certificate" and "the certificates" have been replaced by replaced by the term "the Manufacturer's Certificate(s)". The terms "Register Certificate" and "Recognition Certificate for Manufacturer" have been specified considering the provisions of Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020
6	Part XIII, para 3.1.3	Requirements for Manufacturer's Certificate have been specified considering the provisions of Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020
7	Part XIII, para 3.2.2	Requirements for the documents for steel being delivered have been specified considering the provisions of Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020
8	Part XIII, Chapter 3.4	The Chapter is completely revised as regards the requirements for structural tubes intended for manufacture of hull structures considering the provisions of Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020

Nos	Amended paras/chapters/sections	Information on amendments	Number and date of the Circular Letter	Entry-into-force date
9	Part XIII, para 3.7.7.4	Requirements for rejection of forgings considering the provisions of Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020
10	Part XIII, para 3.12.10.3	The text of the para and the term "Manufacturer's Certificate" have been specified considering the provisions of Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020
11	Part XIII, para 3.16.1.3	Requirements for the manufacturer of ingots and blanks have been specified considering the provisions of Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020
12	Part XIII, para 3.17.1.1	Requirements for clad steel have been specified considering the provisions of Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020
13	Part XIII, para 3.18.16.1	The text of the para has been aligned with the amendments to the Russian version of the Rules considering the provisions of Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020
14	Part XIII, para 3.18.16.5	The text of the para and the term "Manufacturer's Certificate" have been specified considering the provisions of Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020

Nos	Amended paras/chapters/sections	Information on amendments	Number and date of the Circular Letter	Entry-into-force date
15	Part XIII, para 3.18.16.6	The text of the para and the term "Manufacturer's Certificate" have been specified considering the provisions of Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020
16	Part XIII, para 3.18.16.7	The para is deleted considering the provisions of Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020
17	Part XIII, para 4.1.3	The term "Manufacturer's Certificate" has been specified considering the provisions of Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020
18	Part XIII, Section 5 (5.1.1, 5.1.4, 5.2.3, 5.3.1.2, 5.3.3.1, 5.3.5.1)	Throughout the text of the Section to unify the terminology the terms "Certificate(s)", "certificate", "manufacturer quality certificates", "manufacturer's certificate of quality" and "manufacturer's certificate(s)" have been replaced by the term "the Manufacturer's Certificate(s)" considering the provisions of Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020
19	Part XIII, para 5.1.11	Requirements for manufacturer certificate have been specified considering the provisions of Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020

Nos	Amended paras/chapters/sections	Information on amendments	Number and date of the Circular Letter	Entry-into-force date
20	Part XIII, Section 6 (6.2.2.7, 6.2.3.6, 6.4.6, 6.6.7, 6.7.6)	Throughout the text of the Section to unify terminology the terms "Certificate", "Certificate of Test" and "manufacturer's certificate(s)" have been replaced by the term "the Manufacturer's Certificate(s)".considering the provisions of Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020
21	Part XIII, para 6.1.3.1	Reference to Part III "Technical Supervision during Manufacture of Materials" of the Rules for Technical Supervision has been specified	314-01-1391c of 12.05.2020	01.07.2020
22	Part XIII, para 6.1.3.2	Requirements for documents attached to the firm request and manufacturer and products survey when issuing the Certificate specified considering the provisions of Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020
23	Part XIII, para 6.3.4.4	The para has been supplemented to align with the amendments to the Russian version of the Rules	314-01-1391c of 12.05.2020	01.07.2020
24	Part XIII, para 6.5.4.3	Requirements for Register Certificate have been specified considering the provisions of Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020
25	Part XIII, para 7.1.2.2	The term "manufacturer's certificates" has been replaced by the term "the Manufacturer's Certificates" to unify terminology	314-01-1391c of 12.05.2020	01.07.2020

Nos	Amended paras/chapters/sections	Information on amendments	Number and date of the Circular Letter	Entry-into-force date
26	Part XIII, para 7.2.5.8.2	The term "manufacturer's certificate" has been replaced by the term "the Manufacturer's Certificate" to unify terminology	314-01-1391c of 12.05.2020	01.07.2020
27	Part XIII, para 8.4.5	The term "the Manufacturer's Certificate" has been specified considering the provisions of Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020
28	Para XIII, Section 9 (9.2.4, 9.3.7.3, 9.6.1.2, 9.6.3.1)	Throughout the text of Section to unify terminology " the terms certificates", "the manufacturer's certificate of quality" and "manufacturer quality certificates" have been replaced by the term "the Manufacturer's Certificate(s)".considering the provisions of Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020
29	Part XIII, para 9.2.9	Requirements for manufacturer certificate have been specified considering the provisions of Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020
30	Part XIII, para 9.6.5.1	Requirements for Register Certificate have been specified considering the provisions of Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020
31	Part XIII, para 10.3.1.2	Requirements for manufacture of plywood have been specified considering the provisions of Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020

Nos	Amended paras/chapters/sections	Information on amendments	Number and date of the Circular Letter	Entry-into-force date
32	Part XIV, para 4.1.1	Requirements for issuing the Certificate (C) have been specified considering the provisions of Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020
33	Part XIV, para 4.1.4	Requirements for drawing up the MC document have been specified considering the provisions of Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020
34	Part XIV, para 4.1.8.1	Requirements for special cases of approval of welding consumables have been specified considering the provisions of Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020
35	Part XIV, para 4.1.8.9	The para has been deleted considering the provisions of Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020
36	Part XIV, para 4.5.1.3.1	Requirements for entering the composition of shielding gas in Register Certificates have been specified considering the provisions of Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020
37	Part XIV, para 4.9.1.4	Requirements for entering the composition of shielding gas in Register Certificates have been specified considering the provisions of Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020

Nos	Amended paras/chapters/sections	Information on amendments	Number and date of the Circular Letter	Entry-into-force date
38	Part XIV, para 4.10.1.4	Requirements for entering the composition of shielding gas in Register Certificates have been specified considering the provisions of Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020
39	Part XVI, para 1.4.2	Requirements for the scope of the supplementary technical documentation of the hull have been specified considering Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020
40	Part XVI, para 2.1.3	Requirements for structural FRPs and cores for ship structures have been specified considering Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020
41	Part XVI, Chapter 2.2	Requirements for the scope of the technical supervision have been specified considering Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020
42	Part XVII, para 7.12.3	Requirements for structural tubes and pipes for systems have been specified considering Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision	314-01-1391c of 12.05.2020	01.07.2020

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

### **ND No. 2-020101-124-E**

#### **PART XIII. MATERIALS**

##### **1 GENERAL**

1 **Para 1.2.1.** The following definitions are deleted from the list of definitions:

"Recognized works", "Type Approval Certificate", "Register Certificate".

The definition "Approval of quality system" is replaced by the following text:

"Approval of quality system means an action of the Register, certifying that that the properly identified quality management system complies with the Register requirements."

In the definition "Manufacturer Certificate" the phrases "Manufacturer Certificate" and "Certificate are replaced by "Manufacturer's Certificate".

The definition "Register Certificate" is replaced by the following text:

"Register Certificate (Certificate) means a document certifying the compliance of a particular volume of the specific type of product with the requirements of the Register."

2 **Para 1.3.1.2** is replaced by the following text:

"**1.3.1.2** If the recognition of manufacturer is required by the chapters of this Part of the Rules, such recognition shall be performed prior to commencement of manufacture of products. For this purpose the Register carries out survey of the works, which comprises the following:

.1 review and recognition of technical documentation specifying the properties and conditions of production. Review of technical documentation on materials and products, as a rule, is carried out prior to the testing of materials;

.2 direct survey of production and the quality system of the firm, conducting of check testing. In course of taking the above actions, a compliance of the manufacture parameters and the products with the requirements of the documentation shall be confirmed (refer to 1.3.1.2.1) and the Rules of the Register, as well as the appropriate level of quality stability;

.3 issue of the survey results:  
issue of the Recognition Certificate for Manufacturer or Type Approval Certificate, (if the results are satisfactory);

preparation of the conclusion on impossibility of issue of the above mentioned Register documents, (if the results are unsatisfactory).

All the procedures necessary for obtaining the Recognition Certificate for Manufacturer and Type Approval Certificate and the documents, confirming the recognition of the firm and its products by the Register shall be executed in accordance with the requirements of Sections 2 and 3, 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 based on the requests of firms."

3. **Para 1.4.3** is replaced by the following text:

**"1.4.3 Documentation.**

Every batch of the metallic materials and products, or a separate semi-finished product and a separate item, if the delivery is performed in single pieces, which passed the tests, shall be accompanied by the Register certificate or the manufacturer's document certified by the Register representative.

**1.4.3.1 Manufacturer's Certificate.**

The Register representative simultaneously with the submission of the final material or in advance shall be presented with the Manufacturer's Certificate for Material. The Certificate shall be attested by the works quality division, witnessed by the authorized person, and, as minimum, shall contain the following data:

name of the works and the order number;

project number, if known;

name, number, dimensions and mass of the semi-finished product with indication of the drawing number or sketch, (if applicable);

mark, (grade) of the material, type of alloy, number of ladle and chemical composition;

identification number;

type and mode of heat treatment (if necessary);

mechanical test results;

non-destructive testing results, (satisfactory or unsatisfactory), if applied.

**1.4.3.2** The Register Certificate, at least, shall contain the following data:

order number;

building project, if known;

name, number, dimensions and mass of the material;

mark, (grade) of the material and delivery status;

number of Manufacturer's Certificate;

number of batch or semi-finished product or identification number, which enables to identify the supplied material;

drawing number, (if applicable).

The obligatory supplement to the Register certificate shall be the Manufacturer's Certificates attested by the authorized representative of the Manufacturer.

If the material is supplied only with the Manufacturer's Certificates, attested by the Register representative, its form and contents shall be agreed with the Register and the purchaser."

## **2 PROCEDURES OF TESTING**

4 **Para 2.6.4.** Throughout the text of the para terms "manufacturer's certificate", "certificates", "a certificate" are replaced by the term "Manufacturer's Certificate".

## **3 STEEL AND CAST IRON**

5 Throughout the text of Section 3 (3.2.4, 3.6.1.2, 3.6.8, 3.7.8.4, 3.8.8.4, 3.12.10.4, 3.16.1.7, 3.16.2.5, 3.17.1.2) the terms "the manufacturer's document", "the manufacturer's certificate", "the manufacturer certificate", "Manufacturer Certificate of Quality", "the Certificate of Quality", "the Semi-Finished Certificate" and "the certificates" are replaced by the term "the Manufacturer's Certificate(s)".

**Para 3.6.8.** The term "certificate number" is replaced by the term "document number".

**Para 3.8.6.5.** The term "certificates" is replaced by the term "documents".

**Para 3.16.3.4.** The term "the Certificate" is replaced by the term "the Register Certificate".

**Para 3.18.2.2.** The term "the Certificate" is replaced by the term "the Recognition Certificate for Manufacturer".

6 **Para 3.1.3** is replaced by the following text:

**3.1.3** Steel shall be melted in an oxygen steel-making converter, electric or open hearth furnaces, and cast iron in cupolas or electric furnaces. The deoxidation of steel is conducted in accordance with the requirements of Tables 3.2.2-1 and 3.2.2-2. The condition of steel supply shall meet the requirements of Tables 3.2.4-1 and 3.2.4-2.

Use of other methods of steel and cast iron making shall be agreed with the Register.

When steel is not produced at the works where it is rolled, forged or drawn, a Manufacturer's Certificate shall be supplied to the surveyor at the mill engaged in further processing of the steel stating the steelworks, process of manufacture, number of cast and chemical composition of steel.

The surveyor shall have access to steel-making and steel-rolling works."

7 **Para 3.2.2.** The thirteenth paragraph is replaced by the following text:

"The actual values of  $C_{eq}$  or  $P_{cm}$  may be also shown in Manufacturer's and/or Register Certificates for steel being delivered."

8 **Chapter 3.4** is replaced by the following text:

### **"3.4 STEEL STRUCTURAL TUBES**

#### **3.4.1 General.**

**3.4.1.1** The present requirements apply to hot- and cold-formed steel tubes and welded tubes intended for manufacture of hull structures subject to survey by the Register.

**3.4.1.2** Steel structural tubes shall comply with the requirements of this Chapter and be manufactured in accordance with international and national standards or technical documentation approved by the Register.

**3.4.1.3** Steel structural tubes shall be manufactured at works recognized in accordance with the requirements of 1.3.1.2 by the procedure approved by the Register.

If rolled steel products used for manufacture of welded tubes are produced at separate works, the steel rolled products manufacturer shall also be recognized by the Register in accordance with the requirements of 1.3.1.2.

**3.4.1.4** Requirements of 3.2, 3.5, 3.13 and 3.14 for relevant steel grades shall apply to the steel of structural tubes.

**3.4.1.4.1** For welded tubes, the requirements of 3.4.1.4 apply only to rolled plates used for their manufacture. At that the manufactured tube shall be subject to testing required by international or national standard or technical documentation approved by the Register.

**3.4.1.4.2** Hot- and cold-formed steel tubes are tested in the same scope as the rolled products for welded tubes in accordance with 3.4.1.4.

**3.4.1.5** Requirements for corrosion resistant steel products are specified in 3.16.

**3.4.1.6** In case of technical reasons preventing the fulfillment of testing required by the Rules of the Register, repair, inspection etc., replacement is permitted after being confirmed by the Register as equivalent.

#### **3.4.2 Inspection and non-destructive testing.**

**3.4.2.1** All the tubes shall undergo visual testing.

**3.4.2.2** Quality of surface and defects grinding of surface of manufactured tubes shall comply with the requirements of 3.2.7.

**3.4.2.3** Thickness tolerances of manufactured tubes shall comply with the requirements of 3.2.8.

**3.4.2.4** All welds of welded tubes shall undergo non-destructive testing.

#### **3.4.3 Marking and documentation.**

**3.4.3.1** Identification, marking and issued documentation shall be in accordance with the requirements of 3.2.9.

**3.4.3.2** Branding of tubes may be performed on a label. At that the manufacturer shall confirm the identification system of every tube in a bundle."

9 **Para 3.7.7.4** is replaced by the following text:

"**3.7.7.4** In the event of any forging proving defective in accordance with the Rules or Register approved documentation during subsequent machining or testing, it shall be rejected notwithstanding prior survey results."

10 **Para 3.12.10.3** is replaced by the following text:

**3.12.10.3** Manufacturer's Certificate.

The Manufacturer's Certificate for a casting shall be submitted to the Register representative simultaneously with the presentation of the casting in the finished condition or in good time. The Certificate shall be verified by the quality service of a works and witnessed by the person authorized for this by the works. The Certificate shall contain the following data:

- manufacturer's name and order number;
- shipbuilding project number, if known;
- description of the casting with drawing number;
- propeller diameter, number of blades, pitch and directions of turning;
- final weight;
- grade and type of alloy, number of a cast and chemical composition;
- identification number;
- heat treatment schedule;
- results of mechanical tests;
- result of non-destructive testing (satisfactory or unsatisfactory), if applied."

11 **Para 3.16.1.3** is replaced by the following text:

**3.16.1.3** The procedure for recognition of stainless steel manufacturers is given in 2.2.5, 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.

Materials meeting the Register requirements shall be supplied with the Register Certificates.

Manufacturer's Certificates for ingots and blanks with indication of the manufacturer, steel mark, heat No., chemical composition and documentation, in compliance with which ingots/blanks were manufactured, shall be submitted to the surveyor to the Register who carries out the survey at the manufacturer's where there are no melting processes."

12 **Para 3.17.1.1** is replaced by the following text:

**3.17.1.1** The present requirements cover steel plates of low-alloy metal coated with a thin layer of stainless steel on one or both sides and intended for tanks and vessels being subject to the Register technical supervision, as well as for ice strakes of icebreakers, arctic ice class ships, mobile offshore drilling units and fixed offshore platforms.

Clad steel shall be manufactured by works recognized in accordance with 1.3.1.2."

13 **Para 3.18.16.1** is replaced by the following text:

**3.18.16.1** Register and Manufacturer's Certificate shall be thoroughly verified before the material application."

14 **Para 3.18.16.5** is replaced by the following text.

**3.18.16.5** The document (Register and Manufacturer's Certificate) shall contain, in addition to the description, dimensions, etc., of the material, at least the following particulars as a minimum:

- .1 purchaser's order number and if known the hull number, for which the material is intended;
- .2 identification of the cast and product, including, where appropriate, the test specimen number;
- .3 identification of the steelworks;
- .4 identification of the grade of steel and the manufacturer's brand name;
- .5 ladle analysis (for chemical elements specified in 3.2);
- .6 if the steel is approved in accordance with 3.4.2, the weight percentage of each chemical element added or intentionally controlled for improving corrosion resistance;
- .7 condition of supply when other than as rolled i.e. normalised, controlled rolled or thermomechanically rolled;
- .8 results of mechanical tests."

15 **Para 3.18.16.6** is replaced by the following text:

**3.18.16.6** Before the Certificate is issued, the manufacturer is required to furnish the surveyor to the Register with a written declaration stating that the material has been made by an approved process and that it has been subjected to and has withstood satisfactorily the required tests in the presence of the surveyor to the Register. The Register name shall appear on the Manufacturer's Certificate. The following form of declaration will be accepted if stamped or printed on each test certificate or shipping statement with the name of the steelworks and initialled for the makers by an authorized official: "We hereby certify that the material has been made by an approved process and has been satisfactorily tested in accordance with the Register Rules".

16 **Para 3.18.16.7** is deleted.

#### 4 COPPER AND COPPER-BASE ALLOYS

17 **Para 4.1.3.** The term "material certificate" is replaced by the term "the Manufacturer's Certificate for material".

#### 5 ALUMINIUM ALLOYS

18 Throughout the text of Section 5 (5.1.1, 5.1.4, 5.2.3, 5.3.1.2, 5.3.3.1, 5.3.5.1) the terms "Certificate(s)", "certificate", "manufacturer quality certificates", "manufacturer's certificate of quality" and "manufacturer's certificate(s)" are replaced by the term "the Manufacturer's Certificate(s)".

19 **Para 5.1.11** replaced by the following text:

**5.1.11 Documents.**

**5.1.11.1** Each batch or semi-finished product (if products are delivered in pieces) tested in accordance with 5.1.6, shall have the Manufacturer's Certificate and the Register Certificate. As a minimum, the Manufacturer's Certificate shall contain the following:

- order number;
- construction of the ship or floating facility number, when known;
- name, number, dimensions and weight of the semi-finished product;
- alloy designation (grade) and temper condition;
- batch number or semi-finished product number, or identification number, which allows to identify the material delivered.

The results of chemical analysis, mechanical tests and corrosion tests (if any) are the mandatory supplement to the Manufacturer's Certificate. The results of those tests shall confirm the material compliance with the Register requirements."

## 6 PLASTICS AND MATERIALS OF ORGANIC ORIGIN

20 Throughout the text of Section 6 (6.2.2.7, 6.2.3.6, 6.4.6, 6.6.7, 6.7.6) the terms "Certificate", "Certificate of Test" and "manufacturer's certificate(s)" are replaced by the term "the Manufacturer's Certificate(s)".

21 **Para 6.1.3.1** is replaced by the following text:

**6.1.3.1** The main provisions defining the scope and procedure of technical supervision are stipulated in Section 3, 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."

22 **Para 6.1.3.2** is replaced by the following text:

**6.1.3.2** Technical supervision over manufacture of materials and products at works includes:

review and analysis of the manufacturer's application with attachments thereto (refer to 6.1.3.2.1);

survey of the works including the quality system assessment and control testing of products (refer to 6.1.3.2.2);

issue of the Register Certificate (refer to 6.1.3.2.3).

**6.1.3.2.1** Application shall be supplemented by the following documents:

.1 information describing the works and its products (documents confirming the works status, its structure, production and control management schemes);

.2 list of manufactured materials and products;

.3 information on the staff of employees and their qualification;

.4 information on qualification of the personnel involved in the product quality system;

.5 information on availability of ISO 9001 standards;

.6 information on available approvals by other classification societies and results of earlier tests, also data on practical application of materials and products indicated in the application confirming the possibility of their application for intended purpose;

.7 Quality Manual with description of quality policy;

.8 procedures and instructions describing production processes, sources of supply and stockyards of source materials, storage of finished products;

.9 data on periodical control equipment and devices employed in the process of production, as well as equipment of the works laboratory;

.10 specifications or other technical documents describing materials mentioned in the application and defining their main characteristics and conditions of manufacture;

.11 rules for safe utilization of materials or products;

.12 program of testing the specimens of materials or products compiled on the basis of requirements of these Rules.

**6.1.3.2.2** If the results of consideration of the submitted documentation are positive, a survey of the manufacturer's works is undertaken; it is aimed at establishing the actual condition of organization and quality control processes including products manufacture, as well as control tests in accordance with the program approved by the Register.

If the tests of products in question cannot be conducted at the manufacturer's works, it can be done at a laboratory approved by the Register

**6.1.3.2.3** Where results of the manufacturer's and products survey are satisfactory, the Register Certificate for works and products is issued."

23 **Para 6.3.4.4** is supplemented by the text:

"and shall be given in the Manufacturer's Certificate".

24 **Para 6.5.4.3** is replaced by the following text:

**6.5.4.3** Welding of structures subject to the RS technical supervision without removing the shop primer is permitted only provided the latter complies with the requirements of 6.5.4.4, which is confirmed by Register Certificate or manufacturing testing at the manufacturers' of welded structures (shipyards) under the Register supervision, as well as the requirements of 6.5.4.5."

## **7 ANCHOR AND MOORING CHAIN CABLES**

25 **Para 7.1.2.2.** The term "manufacturer's certificates" is replaced by the term "the Manufacturer's Certificates".

26 **Para 7.2.5.8.2.** The term "manufacturer's certificate" is replaced by the term "the Manufacturer's Certificate".

## **8 REQUIREMENTS FOR MANUFACTURE OF ANCHORS**

27 **Para 8.4.5.** The text in brackets "or certificate No." is replaced by "or Manufacturer's certificate No."

## **9 TITANIUM ALLOYS**

28 Throughout the text of Section 9 (9.2.4, 9.3.7.3, 9.6.1.2, 9.6.3.1) the terms "certificates", "the manufacturer's certificate of quality", "manufacturer quality certificates" and "manufacturer's document" are replaced by the term "the Manufacturer's Certificate(s)".

29 **Para 9.2.9** is replaced by the following text:

### **"9.2.9 Documents.**

If supply is provided by piece, every batch or semi-finished product, which has undergone testing according to 9.2.6, shall be provided with the Register Certificate and Manufacturer's Certificate. Form and content of the Manufacturer's Certificate shall be agreed with the Register and the customer.

The Register Certificate shall include:

order number;

construction project number, if known;

name, number, dimensions and weight of a semi-finished product;

grade (category) of alloy and condition of supply;

number of a batch or a semi-finished product, or identification number, which allows identifying the supplied material and tracing the whole production process;

name of manufacturer; code and designation of drawing;

designation of documentation the material supply complies with.

The Register Certificate shall be supplemented with the Manufacturer's Certificates containing the details of the chemical analysis and mechanical properties, which confirm the material conformity to the Register requirements, test reports."

30 **Para 9.6.5.1** is replaced by the following text:

**"9.6.5.1** If supply is provided by piece, every batch of semi-finished product, which has undergone testing shall be provided with the Register certificate. The Register certificate shall include, as a minimum:

- order number;
- construction project number, if known;
- name, number, dimensions and mass of a semi-finished product;
- grades of titanium alloy and steel, standards for supply;
- condition of supply;
- number of a batch or a semi-finished product or identification number, which allows identifying the supplied material.

The Register certificate shall be compulsorily supplemented with the results of the chemical analysis and mechanical tests, which confirm the material conformity with the Register requirements (the supplement may be a Manufacturer's Certificate and/or test reports).".

## **10 MATERIALS USED FOR CARGO CONTAINMENT SYSTEMS OF GAS CARRIERS**

31 **Para 10.3.1.2** is replaced by the following text:

**"10.3.1.2** The plywood shall be manufactured, stored and supplied in compliance with the standards agreed for application with the Register and technical requirements of firms. The Register may require for surveys of the suppliers of basic materials for plywood manufacture to be carried out.".

## **PART XIV. WELDING**

### **4 WELDING CONSUMABLES**

32 **Para 4.1.1** is replaced by the following text:

#### **"4.1.1 Application.**

**4.1.1.1** The welding consumables intended for welding the structures specified in 1.1.1 shall be tested and approved by the Register. Based on the results of manufacturer survey and testing of welding consumables, the Register issues the Certificate of Approval for Welding Consumables, which is drawn up by the manufacturer's name and is subject to annual endorsement. In case of single approval of welding consumable the Register shall survey single batches and issue the Certificate (C) drawn up by the applicant company's name.

**4.1.1.2** The requirements of this Section apply to the initial approval and annual endorsement of the Certificate of Approval for Welding Consumables as well as the Certificate (C) regarding the welding consumables used for welding the normal, higher and high strength hull structural steels, corrosion-resistant (stainless) steels and aluminium alloys.

This Section specifies the requirements for approval of the following categories of welding consumables:

- covered electrodes for manual arc welding, and also for gravity and contact welding;
- "wire – flux" combinations for submerged arc welding;
- "wire – gas" combinations for gas-shielded metal arc welding (including tungsten inert gas welding –TIG, as well as plasma arc welding);
- flux-cored wire with or without shielding gas for metal arc welding;
- welding consumables for electrogas and electroslag welding.".

33 **Para 4.1.4** is replaced by the following text:

**«4.1.4 Issuance of the Certificate.**

**4.1.4.1** Upon satisfactory completion of the survey and tests required in this Section to the extent of the initial approval, the Register issues to a manufacturer the Certificate of Approval for Welding Consumables (COCM) or the Certificate (C) of a set form. After issuance of the Certificate of Approval for Welding Consumables the manufacturer shall draw up the MC document for the batch stipulating the compliance of the consumable with RS requirements. MC content shall meet the requirements of 5.4, Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships. The approved welding consumables, having the Certificate of Approval for Welding Consumables, and manufacturers shall be registered and entered in the special list located at the Register website (<http://www.rs-class.org/en> → "Online information" → "Approved materials and products, service suppliers, companies" → "Approved materials and products").

**4.1.4.2** Upon satisfactory completion of tests, the Register assigns one grade to the relevant welding consumable requested by the manufacturer. In accordance with the requirements of 2.2.4.4, at the manufacturer's request, the Register may assign to the welding consumable additional grades within one temperature value of impact test upon receiving satisfactory test results. In this case preparation and welding of test assemblies shall be carried out in accordance with the requirements of 4.2.1."

34 **Para 4.1.8.1** is replaced by the following text:

**"4.1.8.1** The following is referred to as special cases of approval of welding consumable:  
upgrading/uprating of welding consumables at manufacturer's request;  
approval of welding consumables for compliance with international or national standards;  
approval of welding consumables for compliance with the properties guaranteed by the manufacturer, which exceed or supplement the requirements of the Register Rules or appropriate standards;  
approval of welding consumables fabricated under license or manufacturer's subsidiary companies;  
approval of welding consumables based on the tests carried out in the course of approval by the Register of the welding procedures of the company using the welding consumables;  
approval of welding consumables based on the results of the tests carried out by other classification societies or technical supervision authorities;  
single permits for use of welding consumables having an approval of other classification societies or technical supervision authorities."

35 **Para 4.1.8.9** is deleted.

36 **Para 4.5.1.3.1** is replaced by the following text:

**".1** Composition of the shielding gas used in approval testing shall be given in the test report and Certificate of Approval for Welding Consumables/Certificate (C). Unless otherwise agreed with the Register, the use of the shielding gas of another composition for the same wire requires additional approval testing."

37 **Para 4.9.1.4.** The text of the para is replaced by the following text:

**"4.9.1.4** 4.9.1.4 Approval of a wire or a rod shall be granted in conjunction with a specific shielding gas according to Table 4.9.1.4 or defined in terms of composition and purity of "special" gas to be designated with group sign "S". The shielding gas composition shall be entered in a test report and the Certificate of Approval for Welding Consumables/Certificate (C). The approval of the wire with any particular gas can be applied or transferred to any combination of the same wire and any gas in the same numbered group as defined in Table 4.9.1.4. For special gases designated with sign "S" the approval is valid only for the specific composition and purity of the shielding gas or mixture used in testing."

38 **Para 4.10.1.4** is replaced by the following text:

"**4.10.1.4** Approval of a wire or a rod shall be granted in conjunction with a specific shielding gas type composition group according to Table 4.9.1.4 or defined in terms of composition and purity of "special" gas to be designated with group sign "S". The shielding gas composition shall be entered in a test report and the Certificate of Approval for Welding Consumables/Certificate (C). The approval of the wire with any particular gas can be applied or transferred to any combination of the same wire and any gas in the same numbered type composition group as defined in Table 4.9.1.4. For special gases designated with sign "S" the approval is valid only for the specific composition and purity of the shielding gas or mixture used in testing."

## **PART XVI. STRUCTURE AND STRENGTH OF FIBER-REINFORCED PLASTIC SHIPS**

### **1 GENERAL**

39 **Para 1.4.2** is replaced by the following text:

"**1.4.2** The technical documentation of the hull shall be supplemented by technical specifications on FRPs and reference guidelines on the manufacturing procedure (technological instruction). The above-mentioned documents shall contain the following:

- complete list of basic components (reinforcement materials, resins, curing agents, glues, etc.) used in manufacture of FRP structural members, as well production and auxiliary materials;

- composition of FRPs, physical and mechanical characteristics, chemical formulation of a binder;

- information on the RS approval (Certificates) for basic materials, cores (if any);

- requirements for the equipment to be used in moulding hull structures and construction documentation on its manufacture;

- list of measures to be taken for manufacture preparation of hull structures, including the list of the process equipment required for production;

- technological instructions for moulding of hull structures, their individual members and elements, as well as assembly instructions;

- requirements for structures cure conditions;

- requirements for quality control, including allowances for maximum permissible defects;

- technological instructions for repair of impermissible defects."

### **2 MATERIALS**

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

"**2.1.3** Structural FRPs and cores approved by the Register delivered in accordance with standards and provided with technical specifications for industrial supply, as well as a Manufacturer's Certificates per batch (refer to 2.2) shall be used for ship structures."

41 **Chapter 2.2** is replaced by the following text:

## **"2.2 SCOPE OF TECHNICAL SUPERVISION**

**2.2.1** Binders for manufacture of FRPs and cores shall be approved by the Register (provided with Type Approval Certificate (CTO) and/or Register Certificate per batch) in accordance with Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships. Application of FRP binders for boats is allowed based on the report documents of firms (manufacturers) or laboratories recognized by the Register.

Register approval for reinforcement materials applied for FRP manufacture is recommended (refer to 2.3.1.6).

**2.2.2** Register Certificates are issued to a material firm (manufacturer) based on the approved documentation, results of materials tests for verification of compliance with the requirements of these Rules (refer to 2.3.1 — 2.3.3, 2.3.5), direct survey of production (for drawing up of the Type Approval Certificate (CTO)) and check tests of serial products. Tests shall be performed by a firm's (manufacturer's) laboratory or another laboratory recognized by the Register.

Where the production is transferred to another firm (manufacturer), the Type Approval Certificate (CTO) shall be issued based on the results of technical supervision and check tests.

The check test program shall be developed by the firm (manufacturer) taking into account the standards of quality performance control and approved by the Register.

### **2.2.3 Technical supervision for manufacture at the firm (manufacturer) for drawing up of the Type Approval Certificate (CTO).**

**2.2.3.1** The technical supervision includes the following:

review and analysis of documents submitted by the firm (manufacturer) (refer to 2.2.3.2) confirming the capability of firm (manufacturer) to manufacture products of sustained quality in required amounts;

survey of the firm (manufacturer), including assessment of the product manufacture quality system and carrying out of check tests required (refer to 2.2.3.3);

drawing up of the Type Approval Certificate (CTO) for products manufactured (refer to 2.2.3.4).

**2.2.3.2** The firm (manufacturer) shall submit the following information to the Register for review:

outline of firm (manufacturer), containing the information on its organization structure, production and management structure, affiliation or form of ownership;

list of materials produced, their characteristics, delivery specifications with the letter not lower than "O1", and other technical documentation confirming the stated characteristics of materials;

technological instructions on materials/structures manufacture using FRPs (as applicable) and the quality performance control standards;

instructions on stacking and storage of basic components for manufacture of materials, and their incoming inspection;

report containing the information on the equipment and quality control instruments used during manufacture of materials, and qualification level of laboratory personnel involved in quality performance control product;

Manufacturer's Certificates of Quality confirming availability of an implemented Quality Management System at the firm (manufacturer);

check test program for product specimens;

results of material tests for compliance with the requirements of these Rules, and check tests of material specimens to confirm characteristics stated and ability of using materials as intended.

**2.2.3.3** Upon satisfactory results of the technical documentation review specified in 2.2.3.2, the firm (manufacturer) shall be subject to survey to verify the organization condition and product quality control system management, and availability of conditions for manufacture of required volume of products in accordance with the requirements of Section 8, Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships.

**2.2.3.4** Upon satisfactory survey results of the firm (manufacturer) considering the requirements of Section 6, Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships, the Register shall draw up the Type Approval Certificate (CTO) for materials produced.

**2.2.4 Technical supervision during manufacture of hull/structures using FRP.**

Prior to manufacture, the manufacture (a shipyard) shall submit the following:

approved technical documentation in the scope specified in 1.4.2 (technical specifications on FRPs, technological instruction);

reports on fire safety test results of FRPs carried out in laboratories recognized by the Register, with a conclusion on compliance of the fire protection with the requirements of these Rules according to which the ship design is approved;

where FRPs other than those stated in this Part of the Rules is used, reports on FRP test results in accordance with the approved test program (refer to Appendix 2).

Technical supervision shall include the following:

review of documents submitted by the firm (manufacturer) in a scope specified in 2.2.3.2 to confirm its capability of manufacturing FRP products of stable quality in required volumes;

survey of the firm (manufacturer) to assess its capability of manufacturing FRP hulls/structures and quality control systems;

technical supervision during manufacture in a scope specified in 1.5.1;

technical supervision during tests of FRP specimens cut out from manufacturing allowances or witness sample (as applicable), complying with the technical documentation on the product manufactured;

technical supervision of hull defects detection and repair.

Upon results of technical supervision of FRP hull/structures, the Register shall draw up the Report on Survey (form 6.3.29).

**2.2.5** In case of serial production of FRP hulls/structures (two and more), the Report on Survey (refer to 2.2.4) may be substituted with the Type Approval Certificate (CTO) for FRP hull/structures taking into account the compliance with the requirements of Sections 6 and 8, Part I "General Regulations for Technical Supervision" of the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships. In such case, the manufacturer's report on FRP hull/structures (passport, Manufacturer's Certificate of Quality, etc.) shall be submitted."

**PART XVII. DISTINGUISHING MARKS AND DESCRIPTIVE NOTATIONS  
IN THE CLASS NOTATION SPECIFYING STRUCTURAL  
AND OPERATIONAL PARTICULARS OF SHIPS**

**7 REQUIREMENTS FOR SHIP EQUIPMENT TO ENSURE LONG-TERM OPERATION  
AT LOW TEMPERATURE**

42 **Para 7.12.3** is replaced by the following text:

**"7.12.3** Welded and seamless steel structural tubes shall comply with the requirements of 3.4, Part XIII "Materials".

The material of pipes for systems shall be selected proceeding from their purpose, with regard to their operating temperature and the requirements of Table 2.1-4, Part IX "Materials and Welding" of the Rules for the Classification and Construction of Ships Carrying Liquefied Gases in Bulk for the minimum design temperature of  $-55\text{ }^{\circ}\text{C}$ ."