RUSSIAN MARITIME REGISTER OF SHIPPING

CIRCULAR LETTER **No. 314-01-1472c** dated 26.11.2020

Re:

amendments to the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships

Item(s) of supervision:

Metals and non-metallic materials, welders' certification, welding procedures

Entry-into-force date: ~~Valid till:~~ ~~Validity period extended till:~~
01.01.2021

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

Number of pages: 1 + 5

Appendices:

Appendix 1: information on amendments introduced by the Circular Letter

Appendix 2: text of amendments to Part III "Technical Supervision during Manufacture of Materials"

Director General Konstantin G. Palnikov

Text of CL:

We hereby inform that the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships shall be amended at their re-publication in 2021 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 when performing technical supervision during manufacture of materials, welders' certification and approval of welding procedures requested on or after 01.01.2021.

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

Part III: paras 2.4.3 and 3.6.2, Tables 4.5.7-1, 4.5.7-2, 5.3.3.2.7 and 6.2.2.1, paras 6.4.1.2 and 6.4.4.5, Tables 6.4.4.7.1 and 6.4.4.7.4, paras 6.6.1.6, 6.7.4, 6.7.5 and 6.8.3.4

Person in charge: Alexander S. Tumanov 314 +7 (812) 605-05-29 ext. 2254

"Thesis" System No. 20-204897

Appendix 1 to Circular Letter
No. 314-01-1472c dated 26.11.2020

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 2.4.3	Requirements for the list of products subject to stamping have been specified	314-01-1472c of 26.11.2020	01.01.2021
2	Пункт 3.6.2	New para with the requirements for documentation for approval of polymer materials regarding the introduction of the new Chapter 6.10 into Part XIII "Materials" of the Rules for the Classification and Construction of Sea-Going Ships	314-01-1472c of 26.11.2020	01.01.2021
3	Table 4.5.7-1	Requirements for the range of approval of steel have been specified	314-01-1472c of 26.11.2020	01.01.2021
4	Table 4.5.7-2 (for English version of the Rules only)	Requirements for the range of approval of steel have been specified	314-01-1472c of 26.11.2020	01.01.2021
5	Table 5.3.3.2.7	Title of the table has been deleted	314-01-1472c of 26.11.2020	01.01.2021
6	Table 6.2.2.1 (for English version of the Rules only)	Terminology in code 135 has been specified	314-01-1472c of 26.11.2020	01.01.2021
7	Para 6.4.1.2	Para has been supplemented with requirements for welding procedures of steel with BCA index considering IACS UR W31 (Rev.2 Dec 2019)	314-01-1472c of 26.11.2020	01.01.2021
8	Para 6.4.4.5	Para has been supplemented with requirements for hardness during approval of welding procedures of EH47 steel and steel with BCA index considering IACS UR W31 (Rev.2 Dec 2019)	314-01-1472c of 26.11.2020	01.01.2021

Nos.	Amended paras/chapters/sections	Information on amendments	Number and date of the Circular Letter	Entry-into-force date
9	Table 6.4.4.7.1	Table has been supplemented with requirements for test results of EH47 steel welds considering IACS UR W31 (Rev.2 Dec 2019)	314-01-1472c of 26.11.2020	01.01.2021
10	Table 6.4.4.7.4	Table has been supplemented with new welded steel grades considering IACS UR W31 (Rev.2 Dec 2019)	314-01-1472c of 26.11.2020	01.01.2021
11	Para 6.6.1.6	Para has been supplemented with requirements for scope of approval of welding procedures of steel with BCA index considering IACS UR W31 (Rev.2 Dec 2019)	314-01-1472c of 26.11.2020	01.01.2021
12	Para 6.7.4	New para with requirements for approval of welding procedures of steel with "Arc" index has been introduced	314-01-1472c of 26.11.2020	01.01.2021
13	Para 6.7.5	New para with additional requirements for approval of welding procedures of EH47 steel has been introduced	314-01-1472c of 26.11.2020	01.01.2021
14	Para 6.8.3.4	Requirements for the prolongation period of Welding Procedure Approval Certificate (form 7.1.33)	314-01-1472c of 26.11.2020	01.01.2021

Appendix 2 to Circular Letter
No. 314-01-1472c dated 26.11.2020

RULES FOR TECHNICAL SUPERVISION DURING CONSTRUCTION OF SHIPS AND MANUFACTURE OF MATERIALS AND PRODUCTS FOR SHIPS, 2020,

ND No. 2-020101-130-E

PART III. TECHNICAL SUPERVISION DURING MANUFACTURE OF MATERIALS

2 METALS

1 **Para 2.4.3** is replaced by the following text:

"2.4.3 Marking.

General provisions on marking of the materials are given in 1.4.2, Part XIII "Materials" of the Rules for the Classification and Construction of Sea-Going Ships. Peculiarities of marking may also be specified in the appropriate chapters of Part XIII "Materials" of the Rules for the Classification and Construction of Sea-Going Ships containing the requirements for steel, cast iron, copper and light alloys. Marking shall comply with the effective standards. List of products subject to stamping shall be determined in accordance with the RS Nomenclature.

When semi-finished products are packed in bundles, the manufacturer shall confirm the identification system of every semi-finished product in a bundle, at that putting to put the RS stamp or brand on labels is permitted. When using labels of waterproof film, an imprint of the RS stamp or brand shall be put on the solid surface of these labels.".

3 NON-METALLIC MATERIALS

2 **New para 3.6.2** is introduced reading as follows:

"**3.6.2 Polymer material applied during assembly of machinery, equipment, ship arrangements and their components.**

3.6.2.1 Documentation submitted for review shall contain documents specified in 3.6.1, as well as material safety data sheets.

3.6.2.2 Material test reports shall confirm the properties specified in 6.10.2, Part XIII "Materials" of the Rules for the Classification and Construction of Sea-Going Ships. Tests shall be carried out in RS-recognized laboratories.".

4 WELDING. REGULATIONS FOR WELDERS' CERTIFICATION

3 **Table 4.5.7-1**. In item "Steels" the third column of item "Steels" is replaced by the following text:

"

Range of approval of base metal and weld metal thickness, in mm
from t to $2t^2$ from 3 to $2t^3$ from 3

".

4 **Table 4.5.7-2** (English version only). In item "Steels" the third column is replaced by the following text:

"

Range of approval by outside pipe diameter, in mm
from *D* to 2*D* from 0,5*D* and more but not less than 25

".

5 WELDING CONSUMABLES. QUALITY REQUIREMENTS FOR MANUFACTURE, TESTING AND APPROVAL PROCEDURE

5 Title of **Table 5.3.3.2.7** is deleted.

6 APPROVAL OF WELDING PROCEDURES FOR STEEL STRUCTURES AND ITEMS

6 **Table 6.2.2.1** (English version only). Code 135 is replaced by the following text:

"

135	MAG (GMAW:USA)	Metal Active Gas (MAG) welding with solid wire electrode

".

7 A **new para 6.4.1.2** is introduced reading as follows**:**

"**6.4.1.2** Requirements for welding procedure qualification test of welding procedures of steels with indices "BCA1" and "BCA2» shall comply with the requirements for each steel grade without indices "BCA1" or "BCA2", excluding those of 6.4.4.5.".

8 **Para 6.4.4.5** is supplemented with the following text:

"For EH47 steel and steel with indices "BCA1" and "BCA2", measurement points shall include mid-thickness position in addition to the points specified in Figs. 6.4.4.5-1 – 6.4.4.5-6.".

9 **Table 6.4.4.7.1**. After the welded steel grade item "A460 – F460(W)" new text is introduced reading as follows:

"

EH47	570	570 – 720	460	19	5*t*	180	350

".

10 **Table 6.4.4.7.4.** Welded steel grade item "E32, E36" is supplemented with the text "E36BCA1, E36BCA2".

Welded steel grade item "E40" дополняется значениями "E40BCA1, E40BCA2".

After the welded steel grade item " F460, F460W" new text is introduced reading as follows:

"

EH47	–20	64	64	64	–20	–	64

».

11 **A new para 6.6.1.6** is introduced reading as follows:

"**6.6.1.6** Approved welding procedures for steel without indices "BCA1" and "BCA2" are applicable to the same welding procedures applied to the same grade with index "BCA1" or "BCA2", except high heat input processes over 50 kJ/cm.".

12 New **paras 6.7.4** and **6.7.**5 are introduced reading as follows:

"**6.7.4 Additional requirements for approval of welding procedures of steels with "Arc" index.**

6.7.4.1 Requirements specified below apply to approval of welding procedures of ship and MODU/FOP structures, as well as "Arc"-indexed steel products.

6.7.4.2 Qualification of welding procedures of steels with "Arc" index shall be supplemented by tests of weld metal for crack resistance parameter *CTOD*. The tests shall be carried out in accordance with the requirements of 2.2.10.5, Part XIII "Materials" of the Rules for the Classification and Construction of Sea-Going Ships.

6.7.4.3 Types of test specimens shall comply with the requirements of 2.2.10.5.3.2, Part XIII "Materials" of the Rules for the Classification and Construction of Sea-Going Ships.

6.7.4.4 When imposing requirements for the crack resistance parameter CTOD of the weld metal, the minimum quantity of tested specimens with correct test results shall be at least three. Test temperature for welding procedures of steels with "Arc" index shall correspond to the minimum operating temperature T_d of the structural member.

Values of *CTOD* shall not be less than those indicated in Table 6.7.4.4:

Table 6.7.4.4

Thickness not more than, mm	Strength group								
	норм.	Y32 и Y36	Y40	Y42	Y46	Y50	Y55	Y62	Y69
40	0.10	0,10	0,15	0,15	0,15	0,15	0,15	0,20[1]	0,20[1]
50	0,10	0,10	0,15	0,15	0,15	0,15	0,20[1]	0,20[1]	0,25[1]
70	0,10	0,15	0,15	0,20	0,20	0,20	0,25[1]	0,25[1]	0,30[1]
100	0,15	0,20	0,20	0,20	0,25	0,25	0,30[1]	0,30[1]	0,35[1]

[1] Test result is considered satisfactory if maximum load has been reached before unstable brittle fracture of all tested specimens independently of the reached value of δ_m, refer to 2.2.10.5.1.1, Part XIII "Materials" of the Rules for the Classification and Construction of Sea-Going Ships.

.1 when testing three correct specimens neither of the results obtained shall be lower than 50 % of the average value;

.2 when testing five or more correct specimens one minimum result obtained may be taken out of consideration. The rest shall be not lower than 50 % of the average value.

For materials of welded joints exceeding 70 mm in thickness the possibility of their use for special and primary structures is defined upon agreement with the Register by the procedures for calculation of brittle fracture resistance and, using as the basis of specially determined fracture toughness characteristics Klc or Jlc.

6.7.4.5 When defining the crack resistance of welded joint metal the notch shall be arranged so that the tip of the crack over the largest possible length of its front was located within the welded joint zone specified by the Register (centre of the weld, metal adjoining the fusion line, etc.). The technological parameters of welding procedure and type of edge preparation shall comply with the type of welded joint to be tested. Before marking out and cutting of the notch it is necessary to carry out etching and study of the metal inner structure. The accuracy of obtained results shall be ensured by larger quantity of test specimens (up to 8 — 10 per one test temperature) and by rejection after testing of those specimens where the crack propagated beyond the limits of the zone under study.

6.7.5 Additional requirements for approval of welding procedures of EH47 steel.

6.7.5.1 If *CTOD* testing is carried out, it shall comply with the requirements of 2.2.10.5 and 6.7.4.3 – 6.7.4.5, Part XIII "Materials" of the Rules for the Classification and Construction of Sea-Going Ships.".

13 **Para 6.8.3.4** is supplemented with the following text:

"Request for endorsement of the Welding Procedure Approval Test Certificate for the next 2,5-year period shall be submitted to the Register within 30 days before and after the set date of the Certificate endorsement. Validity of the Welding Procedure Approval Test Certificate may be prolonged within 90 days after the expiry of 2,5-year period.".