RUSSIAN MARITIME REGISTER OF SHIPPING

CIRCULAR LETTER **No. 313-69-1291c** dated 20.11.2019

Re:

Amendments to the Rules on Technical Supervision during Construction of Ships and Manufacture of Materials, 2019, ND No. 2-020101-118

Item(s) of supervision:

Internal combustions engines

Entry-into-force date: ~~Valid till:~~ ~~Validity period extended till:~~
01.01.2020

~~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 IV "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 as specified in the Appendices to the Circular Letter considering IACS Unified Requirements M72 (Rev.2, Jan 2019).

It is necessary to do the following:

1. Bring the content of the Circular Letter to the notice of the RS surveyors and the interested organizations 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 machinery requested for review on or after 01.01.2020, as well as when performing technical supervision during manufacture of machinery with an application for certification dated on or after 01.01.2020.

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

Part IV, Section 5, Appendix 8: Paras 1.2, 1.3, 1.4, 1.7 and Table 2.2.2

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Appendix 1 to Circular Letter
No. 313-69-1291c dated 20.11.2019

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	Section 5, Appendix 8: Para 1.2	The term "Register Certificates (RC)" has been specified considering IACS UR M72 (Rev.2, Jan 2019)	313-69-1291c of 20.11.2019	01.01.2020
2	Section 5, Appendix 8: Para 1.3	The term "Work Certificate (W)" has been specified considering IACS UR M72 (Rev.2, Jan 2019)	313-69-1291c of 20.11.2019	01.01.2020
3	Section 5, Appendix 8: Para 1.4	The Para (in English version of the Rules) has been amended considering IACS UR M72 (Rev.2, Jan 2019)	313-69-1291c of 20.11.2019	01.01.2020
4	Section 5, Appendix 8: Para 1.7	The requirements for manufacturing process and equipment have been specified considering IACS UR M72 (Rev.2, Jan 2019)	313-69-1291c of 20.11.2019	01.01.2020
5	Section 5, Appendix 8: Table 2.2.2	The requirements for required documents for ICE components have been specified considering IACS UR M72 (Rev.2, Jan 2019)	313-69-1291c of 20.11.2019	01.01.2020

RULES FOR TECHNICAL SUPERVISIONDURING CONSTRUCTION OG SHIPS AND MANUFCTURE OF MATERIALS, 2019,

ND No. 2-020101-118-E

PART IV TECHNICAL SUPERVISION DURING MANUFACTURE OF PRODUCTS

5 MACHINERY

APPENDIX 8

PROCEDURE FOR SURVEY ANS ISSUE OF DOCUMENTS OF ICE COMPONENTS

1. GENERAL

1 **Para 1.2** is replaced by the following text:

"**1.2** Register Certificates (RC) means the documents issued by the Register to certify the conformity of the finished component itself or material samples taken from earlier stages in the production of the components with the requirements of the RS Rules and normative documents (refer to Section 3, Part I "General Regulations of Technical Supervision" of the Rules), products (specimens) were surveyed by the RS Surveyor, tests and other checks were carried out in his presence or in compliance with the Agreement on Survey when C3 is drawn up (refer to 4.5, Part I "General Regulations for Technical Supervision" of the Rules).

Form of the Certificate to be issued shall be defined in accordance with the Nomenclature of Items of the Register Technical Supervision (refer to Appendix 1 to Part I "General Regulations for Technical Supervision".".

2 **Para 1.3** is replaced by the following text:

"**1.3** Work certificate (W) means a document signed (affirmed) by the firm (manufacturer) official and confirmed the compliance with the following requirements:

the tests and inspections have been carried out on the finished certified product itself, or on specimens taken from the raw material, used for the product (taken from earlier stages in the production of the component);

the tests were witnessed and signed by a qualified representative of the applicable department of the manufacturer.

Work's Certificate may be considered equivalent to a Register Certificate and endorsed by the Register if:

the test was witnessed by the Register Surveyor or when the CO is available between RS and manufacturer or the materials supplier; or

the tests carried out by the RS-recognized firm (laboratory) independent from the manufacturer or supplier of the materials.".

3 **Para 1.4** is replaced by the following text:

"**1.4** Test Report (TR) means a document signed by the manufacturer stating:

conformity with requirements;

the tests and inspections have been carried out on samples from the current production batch.".

4 **Para 1.7** is replaced by the following text:

1.7 The manufacturer is not exempted from responsibility for any relevant tests and inspections of those parts for which documentation is not explicitly requested by the Register.

The manufacturing process and equipment shall be set up and maintained in such a way that all materials and components can be consistently produced to the required standard. This includes production and assembly lines, machining units, special tools and devices, assembly and test benches as well as all lifting and transportation devices.".

2. ICE COMPONENTS TO BE DOCUMENTED

5 **Table 2.2.2** is replaced by the following Table:

"Table 2.2.2

Summary of required documents for engine components

No.	Component (Part)[1, 2, 3, 4, 5]	Material properties[6]	Non-destructive examination[7]	Hydraulic testing[8]	Dimensional inspection including surface condition	Visual inspection by surveyor	Applicable to ICE	Component certificate
1	Welded bedplate	W (C+M)	W (UT+CD)			fit-up + post welding	All	RC
2	Bearing transverse girders GS	W (C+M)	W (UT+CD)			X	All	RC
3	Welded frame box	W (C+M)	W (UT+CD)			fit-up + post welding	All	RC
4	Cylinder block GJL			W[9]			>400 kW/cyl	
5	Cylinder block GJS			W[9]			>400 kW/cyl	
6	Welded cylinder frames	W(C+M)	W(UT+CD)			fit-up + post welding	CH	RC
7	Engine block GJL			W[9]			>400 kW/cyl	
8	Engine block GJS	W (M)		W[9]			>400 kW/cyl	
9	Cylinder liner	W(C+M)		W[9]			D>300mm	
10	Cylinder head GJL			W			D>300mm	
11	Cylinder head GJS			W			D>300mm	
12	Cylinder head GS	W(C+M)	W(UT+CD)	W		X	D>300mm	RC
13	Forged cylinder head	W(C+M)	W(UT+CD)	W		X	D>300mm	RC
14	Piston crown GS	W(C+M)	W(UT+CD)			X	D>400mm	RC
15	Forged piston crown	W(C+M)	W(UT+CD)			X	D>400mm	RC

No.	Component (Part)[1, 2, 3, 4, 5]	Material properties[6]	Non-destructive examination[7]	Hydraulic testing[8]	Dimensional inspection including surface condition	Visual inspection by surveyor	Applicable to ICE	Component certificate
16	Crankshaft: made in one piece	RC (C+M)	W(UT+CD)		W	Random, of fillets and oil bores	All	RC
17	Semi-built Crankshaft (Crankthrow, forged main journal and journals with flange)	RC (C+M)	W(UT+CD)		W	Random, of fillets and shrink fittings	All	RC
18	Exhaust gas valve cage			W			CH	
19	Piston rod	RC (C+M)	W(UT+CD)			Random	D>400mm CH	RC
20	Cross head	RC (C+M)	W (UT+CD)			Random	CH	RC
21	Connecting rod with cap	RC (C+M)	W (UT+CD)		W	Random, of all surfaces, in particular those shot peened	All	RC
22	Coupling bolts for crankshaft	RC (C+M)	W (UT+CD)		W	Random, of interference	All	RC
23	Bolts and studs for main bearings	W (C+M)	W (UT+CD)				D>300mm	
24	Bolts and studs for cylinder heads	W (C +M)	W (UT+CD)				D>300mm	
25	Bolts and studs for connecting rods	W (C+M)	W (UT+CD)		TR of thread making		D>300mm	
26	Tie rod	W (C+M)	W (UT+CD)		TR of thread making	Random	CH	RC
27	High pressure fuel injection pump body	W (C+M)		W			D>300mm	
		W (C+M)		TR			D≤300mm	
28	High pressure fuel injection valves (only for those not autofretted)			W			D>300mm	
				TR			D≤300mm	
29	High pressure fuel injection pipes including common fuel rail	W (C+M)		W for those that are not autofretted			D>300mm	
		W (C+M)		TR for those that are not autofretted			D≤ 300 mm	
30	High pressure common servo oil system	W (C+M)		W			D > 300 mm	
		W (C+M)		TR			D ≤ 300 mm	
31	Cooler[10], both sides	W (C+M)		W			D > 300 mm	

No.	Component (Part)[1, 2, 3, 4, 5]	Material properties[6]	Non-destructive examination[7]	Hydraulic testing[8]	Dimensional inspection including surface condition	Visual inspection by surveyor	Applicable to ICE	Component certificate
32	Accumulator	W (C+M)		W			All engines with accumulators with a capacity of >0,5 l	
33	Piping, pumps, actuators, etc. for hydraulic drive of valves, if applicable	W (C+M)		W			>800 kW/cyl.	
34	Engine driven pumps (oil, water, fuel, bilge) other than pumps referred to in items 27 and 33			W			>800 kW/cyl.	
35	Bearings for main, crosshead, and crankpin	TR(C)	TR (UT for full contact between basic base material and bearing metal)		W		>800 kW/cyl.	

Footnotes:

[1] Material certification requirements for pumps and piping components are dependent on the operating pressure and temperature. In case other Parts of the Rules define additional requirements for these elements, such requirements shall be met.

[2] For turbochargers, refer to Appendix 9.

[3] Crankcase safety explosion relief valves shall be type tested in accordance with Appendix 10 and documented according to 2.3.5.10 — 2.3.5.13, Part IX of the Rules for the Classification and Construction of Sea-Going Ships.

[4] Oil mist detection systems are to be type tested in accordance with Appendix 11 and documented according to 2.3.4.9, Part IX of the Rules for the Classification and Construction of Sea-Going Ships.

[5] For speed governor and overspeed protective devices, refer to 2.11, Part IX of the Rules for the Classification and Construction of Sea-Going Ships.

[6] Material properties include chemical composition and mechanical properties, and also surface treatment such as surface hardening (hardness, depth and extent), peening and rolling (extent and applied force).

[7] Non-destructive examination means e.g. ultrasonic testing, crack detection by MPI or DP.

[8] Hydraulic testing is applied on the water/oil side of the component. Items shall be tested by hydraulic pressure at the pressure equal to 1,5 times the maximum working pressure. High pressure parts of the fuel injection system are to be tested by hydraulic pressure at the pressure equal to 1,5 maximum working pressure or maximum working pressure plus 30 MPa, whichever is the less. Where design or testing features may require modification of these test requirements, special consideration may be given.

[9] Hydraulic testing is also required for those parts filled with cooling water and having the function of containing the water which is in contact with the cylinder or cylinder liner.

[10]Charge air coolers need only be tested on the water side.

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