



RUSSIAN MARITIME REGISTER OF SHIPPING

CIRCULAR LETTER

No. 315-05-1386c

dated 28.04.2020

Re:

amendments to the Rules for Technical Supervision During Construction of Ships and Manufacture of Materials and Products for Ships, 2020, ND No. 2-020101-130-E

Item(s) of supervision:

electrical equipment

Entry-into-force date:

01.07.2020

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Number of pages:

1 + 4

Appendices:

Appendix 1: information on amendments introduced by the Circular Letter

Appendix 2: text of amendments to Part IV "Technical Supervision During Manufacture of Products"

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.

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 the RS Branch Offices' activity.
 2. Apply the provisions of the Circular Letter during review and approval of the technical documentation on equipment, as well as when performing technical supervision during manufacture of equipment, requested on or after 01.07.2020.
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List of the amended and/or introduced paras/chapters/sections:

Part IV, Section 10: Tables 10.7.10.2 and 10.8.4-3, new Appendix 18

Person in charge: Alexander V. Mamontov 315

+7 812 605-0517

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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 | Table 10.7.10.2 | Table has been supplemented by a footnote on tests of propulsion plants | 315-05-1386c of 28.04.2020 | 01.07.2020 |
| 2 | Table 10.8.4-3 | Table has been supplemented by a footnote on tests of electric drives of propulsion plants | 315-05-1386c of 28.04.2020 | 01.07.2020 |
| 3 | Appendix 18 | New Appendix 18 has been introduced containing special requirements for tests of composite (hybrid) propulsive systems | 315-05-1386c of 28.04.2020 | 01.07.2020 |

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

ND No. 2-020101-130-E

PART VI. TECHNICAL SUPERVISION DURING MANUFACTURE OF PRODUCTS

10 ELECTRICAL EQUIPMENT

1 **Table 10.7.10.2.** In item No.1 the category "Propulsion plants" under "Electric drives" is supplemented by **footnote "1"** reading as follows:

"¹ Bench tests of composite (hybrid) propulsive systems shall be carried out in compliance with Appendix 18."

2 **Table 10.8.4-3.** The category "Electric drives of propulsion plants" under "Complete sets of products" is supplemented by the **new footnote "5"** reading as follows:

"⁵ Bench tests of composite (hybrid) propulsive systems shall be carried out in accordance with Appendix 18."

Existing footnotes "5" and "6" are renumbered **"6"** and **"7"**, accordingly.

3 **New Appendix 18** is introduced reading as follows:

"APPENDIX 18

BENCH FUNCTIONAL TESTS OF COMPOSITE (HYBRID) PROPULSIVE SYSTEMS

1 TEST PROCEDURE

1.1 Bench functional tests of composite (hybrid) propulsion systems (CPS) shall be carried out in maximum possible extent. If there is no possibility to carry out particular types of tests, these tests shall be transferred to the period of mooring and/or sea trials in compliance with 1.5.7, Part IV "Technical Supervision During Manufacture of Products".

1.2 Equipment provided by the RS Nomenclature and being part of composite (hybrid) propulsion systems, prior to the beginning of bench trials shall pass post-manufacturing tests in appropriate scope and according to the requirements specified in the relevant Sections of Part IV "Technical Supervision During Manufacture of Products".

1.3 Bench trials shall be carried out by a calendar schedule developed by the manufacturer of CPS (or by a firm in charge for the tests) and agreed with RS on the basis of approved test program.

2 DOCUMENTATION SUBMITTED BEFORE TRIALS

2.1 Bench tests of CPS shall be carried out according to the program approved by the Register. Prior to the bench tests commencement, the following documents shall be submitted:
document on readiness of the bench for tests;
structural bench scheme and plan of equipment location;
electrical and hydraulic wiring schemes (if any) of composite (hybrid) propulsion systems;

calibration records on the bench instrumentation and qualification of testing equipment;
working design documentation for the CPS equipment;
program and procedure for bench tests of CPS;
operating instructions for the CPS equipment;
service logs (data sheets) on the CPS equipment;
copies of the RS Certificates on the CPS equipment;
copies of reports for previously carried out tests of the CPS equipment.

3 TEST CONDITIONS

Prior to the tests, all installation, wiring, commissioning and adjustment works shall be completed.

The bench tests shall be carried out under conditions close to operational ones. Thus, the bench shall be equipped with the devices including loading ones, providing achievement of necessary features of tested system.

4 LIST OF CHECKS

Scope of bench tests (regarding design and functionalities of the tested system) shall include:

a) mandatory checks:

visual inspection of the CPS equipment and quality of installation on the bench;

check of reliable work of turning gear;

inspection of minimal resistant idle speed of the main heat engine (ME) and at its load according to the propeller curve;

control check of heat ME and electrical propulsion plant (EPP) from remote control stations and local control station of the engine, inspection of reliable switches as well as compliance of reversing devices and speed regulation system to the imposed requirements by using oscillography records of transient processes;

check of simplicity and ease of manual controls switches as well as precise positioning of these controls;

check of start of the CPS engines under all design combinations;

check of frequency regulation of the CPS engines under all design combinations;

check of stop of the CPS engines under all design combinations;

check of emergency stop of the CPS engines under all design combinations;

check of reverse of the CPS engines under all design combinations;

check of reliable and stable functioning of RAC, control, alarm, blocking and protection systems;

CPS torsio-graphy to verify that no barred speed range under all design combinations at speed ahead and astern is present;

check of service parameters (static and dynamic features) of automation facilities (speed regulation, etc.);

functional check of disengaging devices (couplings, reverse-reduction gears) shall be carried out in compliance with 5.7.12, Part IV "Technical Supervision During Manufacture of Products";

functional check of the CPS equipment;

functional check of cooling and lubrication systems;

check of maintenance and repair ease of CPS with standard units, auxiliary machinery, systems and devices when using standard special tools and devices;

the equipment check after specified duration of bench tests (revision);

control check of CPS in operation with its standard units, auxiliary machinery, systems and devices. Check for correct assembly, adjustment and maintenance of main technical parameters within the limit specified in the technical documentation;

b) check of modes if they are provided by the CPS structure:

check of generator operation mode of EPP;

check of electrical heat ME starting from the EPP;

check of other modes provided by the CPS design.

5 DURATION OF TESTING

5.1 The duration of tests shall be sufficient to establish required modes and to control and measure the parameters.

6 TESTING EQUIPMENT AND MEASUREMENT TOOLS

6.1 Bench tests shall be carried out with all standard bench instrumentation including remote monitoring devices. When testing, additional (bench) instrumentation and devices are used the scope and quantity of which are determined by the nature and quantity of measured parameters specified in the test program.

6.2 Bench instrumentation applied during the tests shall have current calibration records. Prior to tests, relevant documents shall be submitted to the RS surveyor.

6.3 The features of the loading device shall provide comprehensive tests of CPS under all modes provided by the test program at speed ahead and astern. Maintenance of test specimen during testing shall be carried out according to the operating instructions with standard tools and devices.

7 DOCUMENTS DRAWN-UP AFTER TESTS

7.1 With the positive results of bench functional tests of CPS, a report on survey of the specimen on an established form is drawn up according to 1.5.10, Part IV "Technical Supervision During Manufacture of Products".

7.2 With the negative results of bench functional tests of CPS in compliance with 1.5.9, Part IV "Technical Supervision During Manufacture of Products" the product is not approved to use onboard."