RUSSIAN MARITIME REGISTER OF SHIPPING

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Corr.

RULES

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

Volume 1

Part I
GENERAL REGULATIONS FOR TECHNICAL SUPERVISION

Part II
TECHNICAL DOCUMENTATION

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Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships have been approved in compliance with the established approval procedure and come into force on 1 July 2017.

The present edition has been prepared on the basis of the latest edition of the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships (2016) taking into account the amendments developed immediately before publication of the Rules.

The Rules are published in four volumes containing the following parts.

Volume 1 – Part I "General Regulations for Technical Supervision";

Part II "Technical Documentation".

Volume 2 – Part III "Technical Supervision during Manufacture of Materials".

Volume 3 – Part IV "Technical Supervision during Manufacture of Products".

Volume 4 – Part V "Technical Supervision during Construction of Ships".

On the entry into force of these Rules, the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships (2015) become void.

In case of discrepancies between the Russian and English versions, the Russian version shall prevail.

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As compared to the previous edition (2016), the present edition of the Rules (2017) contains the following amendments.

PART I. GENERAL REGULATIONS FOR TECHNICAL SUPERVISION

1. Paras 6.4, 8.3.1.1.8, 8.3.1.2.6 and 13.10.7: the requirements have been specified to avoid ambiguous phrases "in each case subject to special consideration by the Register" and "subject to special consideration by RHO".

2. Paras 8.3.1.1.3 and 8.3.1.2.3 have been deleted to avoid ambiguous phrase "subject to special consideration by RHO".

3. Chapter 1.2: the abbreviation "COTO" has been supplemented with new forms of documents. New abbreviation "W" has been introduced meaning the document(s) issued/signed by the manufacturer and verifying the material or product compliance with the RS requirements.

4. Chapter 2: in paras 2.15 and 2.16 the requirements have been specified.

5. Section 3: para 3.5.1 has been amended;

paras 3.5.2, 3.6.3, 3.6.7 and 3.6.9 have been deleted, paras 3.5.3 and 3.5.4 have been renumbered 3.5.2 and 3.5.3 accordingly;

in para 3.8 the requirements have been specified regarding validity period of the Certificate of Type Approval (COTO) (Form 2.5.5).

6. Section 4: paras 4.2, 4.5 and 4.5.1 have been amended.

7. Section 6: in para 6.4 the requirements have been specified.

8. Section 8: in Table 8.1.1 code 22019000 has been deleted, code 22021000MK has been amended regarding kinds of activity;

paras 8.3.1.1.3, 8.3.1.1.7 — 8.3.1.1.9, 8.3.1.2.3, 8.3.1.2.6, 8.3.5.1.1, 8.3.6.3, 8.3.13 (the Russian version only), 8.3.13.1, 8.3.13.2.2 (the Russian version only), 8.3.13.4.2.3, 8.3.13.4.2.5, 8.3.13.5, 8.3.17.4.3 and 8.3.17.4.4 have been amended.

9. Section 11: in Table 11.1.1 and para 11.1.2 code 22014003 has been deleted;

the Section has been supplemented with new para 11.1.5.

10. Section 13: in paras 13.1, 13.3.1, 13.3.3, 13.3.3.1, 13.9, 13.10, 13.10.1, 13.10.7, 13.10.8, 13.16 the requirements have been specified;

para 13.15.4 has been deleted, para 13.15.5 has been renumbered 13.15.4;

para 13.17 has been deleted.

11. Section 14: in para 14.1 the requirement has been specified.

12. New Section 16 "Alternative Certification Scheme" has been introduced.

13. Appendix 1: the Nomenclature of Items of the Register Technical Supervision has been amended, including code 09010000 "Internal combustion engines of power output 55 kW and over (main, auxiliary and emergency)" that has been amended considering IACS UR M72 (Rev.1 Mar 2016).

14. Appendix 3: in Section 6 (the Russian version only) Footnote 1 has been amended;

in Table "Survey Requirements" the requirements have been specified.

15. Appendix 4 has been amended.

16. Appendix 5: Section 3 has been supplemented with new paras 3.2, 3.2.1 and 3.2.2 and Footnote 3.

17. Editorial amendments have been made.

PART II. TECHNICAL DOCUMENTATION

1. Para 3.6 has been deleted to avoid ambiguous phrase "shall be agreed with the Register in each particular case".

2. Section 3: para 3.5 has been amended;

para 3.6 has been deleted, existing paras 3.7 — 3.17 have been renumbered 3.6 — 3.16 accordingly.

3. Section 5: para 5.1 has been amended.

4. Section 8: para 8.3.2 has been amended, including the normative documents where the Register puts the stamps of agreement.

5. Section 12: in para 12.2.1 the reference to 3.8 has been replaced with the reference to 3.9.

6. Appendix: para 1.5 has been amended.

7. Editorial amendments have been made.

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PART I. GENERAL REGULATIONS FOR TECHNICAL SUPERVISION

1 TERMS, DEFINITIONS, ABBREVIATIONS

Definitions and explanations relating to general terminology of the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships[1] are given in Part I "Classification" of the Rules for the Classification and Construction of Sea-Going Ships. For the purpose of these Rules the following terms and definitions are applied.

1.1 DEFINITIONS AND EXPLANATIONS

1.1.1 Definitions.

Administration is the Administration in accordance with the definitions in international conventions.

RS Head Office is the management of the Register and departments of the Head Office.

Prototype ship is a single-built ship or the first ship of the series, which is built under the Register technical supervision.

In case of ships built under the same design at different shipyards, the first ship built at each shipyard is considered to be the prototype ship.

Prototype (first lot) is a material or product (lot) used by the Register to check and confirm by means of tests and surveys that it complies with the RS requirements and may be used for the intended purpose if produced at the firm (manufacturer) concerned.

Keel laying date or the date on which the ship was at a similar stage of construction – for the purposes of application of the RS Rules as well as IMO Conventions and Codes (quality standards, technical standards, resolutions and circular letters) is the date (day, month, year) on which the installation at the building berth of a base section or block (island) in section or block (island) construction respectively, or such a stage of construction at which construction identifiable with a specific ship begins and assembly of that ship has commenced comprising at least 50 t or 1 per cent of the estimated mass of all structural materials, whichever is less.

For fibre-reinforced plastic (FRP) ships the keel laying date shall be interpreted as the date that the first structural reinforcement of the complete thickness of the approved hull laminate schedule is laid either in or on the mould.

Date of delivery of the ship is the completion date (day, month and year) of the survey on which the certificate is based (i.e. the initial survey before the ship is put into service and certificate issued for the first time), provided SOLAS and MARPOL mandatory requirements are applied to new ships, and as entered on the relevant statutory certificates.

Date of build of the ship is the date, month and year at which the new construction survey process of the Register is actually completed, and the Classification Certificate is issued to the ship.

Where there is substantial delay between completion of construction survey process and the ship commencing active service, the date of commissioning may be also specified.

Date of build of the ship for the purpose of application of the requirements of international conventions is the day, month and year in accordance with the definitions in international conventions.

Contract on technical supervision is an agreement in the written form defining rights and responsibilities of the Register and organization (firm) during technical supervision of the items of supervision.

Additional requirements are the requirements caused by the item features or its operational conditions, which are not provided for by the rules imposed by RS in writing to ensure the safety of items of technical supervision.

Under safety in this particular case is meant safe navigation of ships, fixed offshore platforms, safety of life at sea, safe carriage of goods, environmental protection.

Manufacturer is an organization (firm) responsible for the material or product compliance with the applicable RS requirements.

Surveyor is an RS official authorized to perform certain types of the RS technical supervision.

Test is a technical operation on determination of one or more characteristics or operating parameters of an item of supervision in compliance with the established or defined procedure.

Competent organization is an organization recognized as having adequate knowledge and experience in the particular area.

Competent person is a person considered as adequately qualified to do a job in the particular area, using appropriate knowledge and experience.

Normative documents are standards, regulations, technical requirements, norms, calculation procedures, instructions, guidelines and other documents, which provide design, technical or production require-

[1] Hereinafter referred as "the Rules".

ments for design, construction (manufacture), installation, testing and service of the items of the RS technical supervision.

Items of technical supervision (items of supervision) are ships and other floating facilities, fixed offshore platforms, products, materials, works, services and processes within the RS terms of reference in compliance with the current legislation and the Charter.

Approval of a material, product or process is confirmation by branding and/or the RS document of a material, product or process compliance with the RS requirements based on the positive results of their survey.

Approval (agreement) of technical documentation is confirmation by the RS stamp and/or document of compliance of technical documentation with the RS requirements based on the positive results of its review.

Type approval of a material, product or process is an approval of a material, product, process considered by RS as a representative of the particular production without attribution to the particular item of technical supervision.

Pilot specimen (pilot lot) is a material or a product (lot) produced in accordance with newly developed technical documentation to determine a possibility of its use for the intended purpose in compliance with the RS requirements, based on review of technical documentation and checking in the course of tests or research of structural solutions as well as combination of properties and parameters.

Organization (firm) is a legal entity of any legal form, form of ownership and affiliation, as well as a physical person involved in business not being a legal person involved in activity related to the items of supervision.

Survey is an integral part of technical supervision, including:

checking availability of approved technical documentation on the items of technical supervision;

checking availability of the RS documents, recognized and competent organizations or persons on the items of technical supervision;

examinations, including (where necessary) opening-up and dismantling;

participation in measurements and tests;

assessment of the measurement and test results;

drawing-up, endorsement, renewal and extension of the RS documents;

branding and sealing (where necessary) of the item of technical supervision.

Conversion of a ship of substantial nature (major conversion) is conversion resulting in substantial changes of the ship principal characteristics or structural parameters (such as weight characteristics, gross tonnage, overall dimensions, freeboard; power output of the main propulsion installation, ice strengthening, etc.), which can cause change of the ship type, principal dimensions, passenger capacity, cargo carrying capacity, extension of the ship service life or change in the class notation. Nature of conversion (major/minor), unless expressly provided otherwise by international conventions, shall be determined by the RS Head Office in each particular case.

RS Branch Office is a branch office, a district office of the branch office, a representative office, an affiliated company. Regulations for the RS Branch Office determine its legal status, tasks and functions within the certain processes, duties, rights and responsibility of the Director as well as the area of the RS Branch Office activity.

RS rules are a code of normative technical requirements for items of technical supervision.

Recognition of a manufacturer is confirmation by the RS document of capability of a manufacturer to manufacture materials and products in compliance with the RS requirements.

Recognition of a testing laboratory is confirmation by the RS document of technical competence of a testing laboratory in conducting tests in compliance with the RS requirements.

Recognition of an organization (firm) is confirmation by the RS document of capability of an organization (firm) to render services (carry out work) in compliance with the RS requirements.

Plan approval documentation (technical detailed design) is a set of design documents that give full understanding of the ship design in the scope sufficient for determination of its conformity with the requirements of the Register and (if applicable) of international conventions, provision of technical supervision during its construction and class assignment.

Detailed (design) documentation is a set of design documents intended for construction (manufacture), checking, acceptance, delivery, service and repair of the item of supervision.

Single approval of a material, product, process is approval of a material, product, process to be used or installed on a particular item of supervision under construction or in service.

Review of technical documentation is determination of an extent of documentation compliance with the RS requirements.

Recommendations of the International Maritime Organization (IMO) are provisions of resolutions, codes and other normative documents adopted by the governments, which have authorized the Register to supervise the fulfillment of those provisions.

Certificate of conformity (Certificate) is a RS document certifying the compliance of an item of supervision with the RS requirements.

Agreement on Survey is an agreement in a written form establishing interrelations between the

Register and a firm (manufacturer), based on which technical personnel of the firm (manufacturer) is entrusted with performance of check tests or part thereof and filling-in of certificates of conformity, which are submitted to the Register for drawing-up (affirmation) together with the test reports.

Special consideration is determination of an extent of conformity of an item of technical supervision with the additional requirements.

Technical documentation is construction and production documentation as well as the normative documents on items of technical supervision, which contain the data necessary for checking the fulfillment of the RS requirements.

Technical supervision is checking of conformity of items of supervision with the RS requirements during:

review and approval (agreement) of technical documentation;

survey of items of supervision at manufacture, construction, service stages, including conversion, modernization and repair.

Technical design is a set of design documents that give understanding of the item design and engineering solutions.

Requirements of conventions are requirements of international conventions ratified by the governments, which have authorized the Register to supervise the fulfillment of those requirements.

RS requirements are requirements of the RS rules, international conventions and agreements, recommendations of the International Maritime Organization (IMO), governments having granted RS the relevant authorization, and additional requirements.

Type production process is a production process intended for specific field and conditions of application with no reference to a particular ship or item of supervision.

Conceptual design is a set of design documents that give general understanding of the item design, operating principles, principal engineering solutions and provide data determining the item fitness for its purpose.

1.1.2 Explanations.

Measurement of distances — unless explicitly stipulated otherwise in the text of the regulations in SOLAS, Load Line and MARPOL Conventions and any of their mandatory codes and the RS rules and regulations, distances such as tank length, height, width, ship (or subdivision or waterline) length, etc. shall be measured by using moulded dimensions.

1.2 ABBREVIATIONS

Register, RS — Russian Maritime Register of Shipping.

RHO — RS Head Office.

MARPOL 73/78 — International Convention for Prevention of Pollution from Ships as modified by the Protocol 1978 of relating thereto, having regard to the amendments adopted by the Marine Environmental Protection Committee of the International Maritime Organization (IMO).

С — Certificate filled-in and signed by the Register (Form 6.5.30).

СДС — Welder Approval Test Certificate (Form 7.1.30).

СЗ — Certificate (Form 6.5.31) filled-in and signed by an official of a firm (manufacturer) and drawn up (affirmed) by the Register on the basis of the review of the product/equipment test results performed by the manufacturer and only upon signing of С3 on behalf of the manufacturer.

СО — Agreement on Survey (Form 430.1.7).

СОСМ — Certificate of Approval for Welding Consumables (Form 6.5.33).

СОТИ — certificates of type test (Forms 2.4.13 and 2.4.19).

СОТО — certificates of type approval (Forms 2.4.11.1, 2.4.12, 2.4.12.1, 2.4.13.1, 2.4.13.2, 2.4.16.1, 2.4.17.1, 2.4.17.2 и 2.5.5).

СОТПС — Welding Procedure Approval Test Certificate (Form 7.1.33).

СП — Recognition Certificate (Form 7.1.4.2).

СПИ — Recognition Certificate for Manufacturer (Form 7.1.4.1).

СПЛ — Recognition Certificate of Testing Laboratory (Form 7.1.4.3).

СПП — Certificate of Vocational Training (Form 7.1.34).

ССП — Certificate of Firm Conformity (Form 7.1.27).

СТО — Type Approval Certificate (Form 6.8.3).

СТПК — Type Approval Certificate for Fire-Proof Division (Form 6.8.4).

СТОП — Type Approval Certificate for Computer Program (Form 6.8.5).

EIAPP Certificate — Engine International Air Pollution Prevention Certificate (Form 2.4.40).

Report 6.3.18 — Report on Survey of Prototype/Serial/Pilot Specimen of Product/Material/Type Structure (Form 6.3.18).

Report 6.3.19 — Report on Survey of Firm (Form 6.3.19).

RS Nomenclature — Nomenclature of Items of the Register Technical Supervision.

SECC — SO_x Emission Compliance Certificate (Form 2.4.42).

W — document(s) issued/signed by the manufacturer and verifying the material or product compliance with the RS requirements.

2 GENERAL

2.1 The RS activity on technical supervision during manufacture of materials and products, technical supervision of services, processes and construction, conversion, modernization and repair of ships is based on the Regulations for Classification of Ships and Offshore Fixed Platforms.

2.2 All technical supervision services are rendered by the Register based on requests and agreements with organizations, firms and individuals involved in design, manufacture of materials and products, production processes, construction, conversion, modernization and repair of ships, and rendering of services (refer to Section **4**).

2.3 Items of the RS technical supervision and technical requirements thereto are defined in the Rules and are listed in the RS Nomenclature (refer to Appendix **1**).

2.4 Items not regulated by the RS rules of a non-conventional design or intended for special operating conditions, as well as materials and production processes where special requirements are placed thereupon are specified by the Register as items of technical supervision in each particular case, and technical requirements for such items are specified as additional requirements.

Later, based on the results of technical supervision during manufacture and in service, the items of technical supervision may be introduced in the relevant parts of the RS rules and the RS Nomenclature.

2.5 New type materials, products and production processes, which are presented to RS for the first time and which are the items of technical supervision shall be approved by RS for application for the intended purpose.

2.6 Type production processes are subject to the RS review in the following cases:

.1 where the requirements for the particular production process are provided by the RS rules;

.2 where the tests required by the RS rules are provided for in the type production process.

See circular 1051c**2.7** A possibility of deviations from the RS requirements, where application of methods and scope of supervision prescribed by RS is impracticable or unreasonable, is decided by RHO upon presentation by the RS Branch Offices.

2.8 Items subject to the Register technical supervision in accordance with the RS Nomenclature may be used for their intended purpose only in case documents of the Register or other classification societies issued on its behalf are available.

2.9 Where defects are found or doubts arise in a possibility of using items of technical supervision for the intended purpose, necessary check surveys shall be conducted. If the results of check surveys are unsatisfactory, the items of technical supervision are not allowed to be used whether or not the documents required are available.

2.10 Construction of ships classed with the Register and manufacture of materials and products for the ships classed with the Register shall be in conformity with the technical documentation approved by the Register.

2.11 Where conformity of a material, product, ship with the requirements of conventions and IMO recommendations is required, the technical documentation shall be prepared with due regard to such requirements and recommendations and submitted to the Register for approval. After carrying out necessary surveys in compliance with these requirements and recommendations the Register issues documents prescribed by the international conventions or the Register certificates of the established form with indication of the conformity with those requirements and recommendations.

2.12 The procedure of review and approval by the Register of technical documentation on items of technical supervision, scope of surveys in the course of technical supervision at the firm (manufacturer) and production operations to be controlled as well as documents to be issued during supervision, and branding procedure are governed by the relevant sections and parts of these Rules.

2.13 Technical documentation on construction of ships and manufacture of materials and products is reviewed and approved in compliance with Part II "Technical Documentation".

2.14 The scope of the Register technical supervision in the course of construction of a particular ship and manufacture of a particular product is stated in the List of Items of Technical Supervision (refer to Sections **12** and **13**), which is elaborated as a working document of technical supervision at the particular firm (manufacturer).

2.15 Based on the agreement on mutual substitution, the Register may authorize another classification society (ACS) or competent body to perform technical supervision (totally or partially) of the construction of the ship classed with the Register and manufacture of products for the ships classed with the Register or be authorized by ACS to carry out technical supervision during construction of the ship or manufacture of materials and products.

In such cases, the scope and procedure of technical supervision and documents to be issued shall be specified in the appropriate agreements or authorizations.

2.16 A possibility of recognition of documents for materials and products manufactured under technical supervision of ACS without the Register authorization is decided by the Register in each particular case during

survey of these materials and products to an extent sufficient to confirm their compliance with the RS requirements, conventions, IMO recommendations, standards and normative documents.

2.17 When carrying out technical supervision, the Register reserves the right to check the compliance of the design, technology and production standards, which are not required but affect the fulfillment of the RS rules.

2.18 Standards used in elaboration of technical documentation, in construction of ships and manufacture of materials and products referred to the items of the RS technical supervision, of production processes, calculation and design standards, testing, checking and quality control procedures shall be agreed upon with the Register. The Register checks the compliance with the standards agreed upon therewith only as regards the technical requirements, which are within its terms of reference.

2.19 Technical supervision during manufacture of materials and products is performed in relation of those properties only, which are regulated by the RS rules, as well as parameters and characteristics indicated in the approved technical documentation. During technical supervision the Register does not determine a grade and category of product quality or check the fulfillment of safety engineering, sanitary and labor organization requirements, or other production aspects, which are beyond the Register terms of reference.

2.20 In its activity the Register does not substitute the prescribed activity of the state supervision authorities or officials of shipowner, shipyard or firm.

2.21 The Register may impose in the course of technical supervision the necessary requirements for the items and production processes not supervised by the Register if it appears that application thereof has resulted or is likely to result in violation of the RS rules.

2.22 The Register carries out technical supervision during construction of ships at the shipyard and manufacture of materials and products at the firm (manufacturer) by means of surveys. Thus all the questions shall be settled within the frames regulated by the RS requirements.

2.23 The Register can entrust technical personnel at the firm (manufacturer) with the check tests or part thereof aiming to check the compliance of materials or products with the RS requirements (refer to Section **4**).

2.24 In case of the differences associated with requirements and decisions of the Surveyor carrying out technical supervision, a designer, shipowner or firm may apply directly to the RS Branch Office to resolve the problem. In case of the differences with the RS Branch Office, an appeal containing justifications together with a copy of the RS Branch Office decision may be sent to RHO.

2.25 The Register performs its supervision activities on condition that manufacturers and individuals meet their commitments on manufacturing adequate products. In case of any deficiencies of the item of technical supervision, unsteady production process, low technological discipline and inadequate efficiency of quality system at the firm, the Register does not admit any claims for delays in production, caused by an increase in the scope of surveys of the products because of the above reasons.

2.26 For the services rendered the Register charges fees in accordance with the procedure established in the General Conditions for Rendering Services by Russian Maritime Register of Shipping.

3 SERVICES RENDERED IN TECHNICAL SUPERVISION DURING MANUFACTURE OF MATERIALS AND PRODUCTS. DOCUMENTS ISSUED

See circular 1051c

3.1 When carrying out technical supervision during manufacture of materials and products, construction, conversion, modernization and repair of ships, the Register carries out:

type approval of materials or products with issue of the Type Approval Certificate (СТО);

recognition of the manufacturer with issue of the Recognition Certificate for Manufacturer (СПИ);

recognition of the testing laboratory conducting tests and measurements in accordance with Table 9.1.1 with issue of the Recognition Certificate of Testing Laboratory (СПЛ);

recognition of service suppliers performing the activity in accordance with Table 8.1.1 with issue of the Recognition Certificate (СП);

audit of the firms performing the activity in accordance with Table 11.1.1 with issue of the Certificate of Firm Conformity (ССП).

3.2 The Register keeps records of the above services and can give relevant information thereon.

3.3 Based on the results of technical supervision, the Register issues the following documents of the established form that certify the conformity of the item of technical supervision with the RS requirements, as well as its manufacture (construction) under the Register technical supervision:

the certificates (С, С3) are documents certifying the conformity of the particular materials, products or groups of products with the requirements of the RS rules and normative documents;

the Type Approval Certificate (СТО) is a document certifying the conformity of types of materials, products or groups of products, type production processes with the requirements of the RS rules (refer to Section **6**);

the Recognition Certificate for Manufacturer (СПИ) is a document certifying the recognition by the Register of the firm as manufacturer of materials and products for ships subject to the Register technical supervision (refer to Section 10);

the Recognition Certificate of Testing Laboratory (СПЛ) is a document certifying the competence of the laboratory in carrying out certain types of tests of the materials and products (refer to Section 9);

the Recognition Certificate (СП) is a document certifying the recognition of the service supplier rendering services (carrying out works) in compliance with the RS requirements (refer to Section 8);

the Certificate of Firm Conformity (ССП) is a document certifying the conformity of the firm with the RS requirements in rendering services (carrying out works) indicated in the request (refer to Section 11).

3.4 Validity period of the Recognition Certificate for Manufacturer (СПИ), Recognition Certificate of Testing Laboratory (СПЛ), Recognition Certificate (СП) and Certificate of Firm Conformity (ССП) shall not exceed five years. Certificates are subject to endorsement not less than once a year. In well-grounded cases, unless otherwise specified, certificates may be endorsed not less than once every **2**,5 years. Endorsement shall be done within the period limited by thirty (**30**) days before and thirty (**30**) days after the date of the subsequent endorsement of the certificates. Upon expiry of the validity period the certificates are renewed on request of the firm.

RS reserves the right to carry out occasional surveys of a firm having a valid RS certificate in cases that:

.1 an item of technical supervision has been found non-complying with the RS requirements, in particular, based on information from a third party;

.2 the firm has not notified RS of changes to an item of technical supervision stated on the certificate. See circular 1051c

3.5 Validity of the Recognition Certificate for Manufacturer (СПИ), Recognition Certificate of Testing Laboratory (СПЛ), Recognition Certificate (СП) and Certificate of Firm Conformity (ССП) may be suspended for a period agreed upon with the firm but not more than ninety (90) days from the specified date of endorsement, provided:

.1 major nonconformities of the firm activity have been found;

.2 the firm has not applied with the request to endorse the certificate within the established period;

.3 the firm has not informed the Register of the changes in the activity specified in the certificate.

3.6 The Recognition Certificate for Manufacturer (СПИ), Recognition Certificate of Testing Laboratory (СПЛ), Recognition Certificate (СП) and Certificate of Firm Conformity (ССП) become invalid:

.1 upon expiry of the certificate period of validity;

.2 in case causes of the certificate suspension have not been eliminated within the agreed period;

.3 in case the certificate has not been endorsed within the specified period;

.4 if the contract or agreement on technical supervision has become invalid in cases provided for in **4.6**;

.5 in case of the firm bankruptcy or liquidation;

.6 where the firm failed to inform the Register in writing of any alterations to its quality system related to the RS area of recognition;

.7 where the firm submits information known to be false.

3.7 RS informs the firm in the written form of suspension and loss of validity of the certificate.

3.8 Compliance of the equipment with the requirements of Section **17**, Part V "Technical Supervision during Construction of Ships" of the present Rules is certified by the Certificates of Type Approval (СОТО), or Certificates of Type Tests (СОТИ) and SO_x Emission Compliance Certificate (SECC). Validity period of СОТО, СОТИ и SECC is not specified, except the Certificate of Type Approval (СОТО) (Form 2.5.5) issued for 5 years.

3.9 Compliance of the marine engine with the requirements of Annex VI to MARPOL 73/78 is confirmed by the EIAPP Certificate. The EIAPP Certificate is issued to:

.1 the basic engine of the engine family or group;

.2 the member engine of the engine family or group (refer to 5.2).

3.10 Compliance of welding consumables and welding procedures with the requirements of the Rules for the Classification and Construction of Sea-Going Ships is certified by the Certificate of Approval for Welding Consumables (СОСМ) and Welding Procedure Approval Test Certificate (СОТПС).

3.11 In case of technical supervision on behalf of the Register, certificates and other documents of the organization carrying out of technical supervision on behalf of the Register in accordance with Section **14** are recognized.

3.12 The documents confirming the performance of the surveys of materials and products, firms and testing laboratories and being the basis for issuance of the Type Approval Certificate (СТО), Certificate of Approval for Welding Consumables (СОСМ), Recognition Certificate (СП), Recognition Certificate for Manufacturer (СПИ), Recognition Certificate of Testing Laboratory (СПЛ) and Certificate of Firm Conformity (ССП) are the Report **6.3.18** and the Report **6.3.19** (refer to **1.2**) drawn up by the Register upon completion of surveys.

The reports are issued to the firms in the following cases:

when upon the results of surveys the requirements are established, which shall be met by the firm;

when the report is the only Register document confirming rendering of the Register technical supervision services.

In other cases, it is not required to issue the above reports to the firms.

3.13 Branding of items of technical supervision in cases specified in the RS Nomenclature is made in accordance with the Instructions on Branding of Items of the Register Technical Supervision (refer to Appendix 2).

3.14 In case of changing any detail of the valid certificate issued in compliance with the provisions of the Rules, except for the certificates (С, С3), the certificate becomes invalid. In such case, a new certificate may be issued based on the results of technical supervision, the scope of which is determined by the Register in each particular case.

4 REQUESTS, CONTRACTS AND AGREEMENTS ON TECHNICAL SUPERVISION

4.1 Where supervision of the Register is specified in the ordered (contracted) documentation on design, construction, conversion, modernization and repair of ships, manufacture of materials and products for shipbuilding and ship repairing, as well as rendering services referred to in 3.1, a firm shall apply to the Register with a written request to carry out technical supervision and to guarantee payment of the Register services, reimbursement of the Register expenses, as well as with the confirmation of familiarization and agreement with the General Conditions for Rendering Services by Russian Maritime Register of Shipping. The General Conditions for Rendering Services by Russian Maritime Register of Shipping are constituent and integral part of all the contracts concluded by the Register.

4.1.1 If the firm is not the manufacturer of the products, the firm shall, in addition to the provisions of **4.1**, be authorized by the manufacturer (which shall be documented) to do the following:

.1 to submit technical documentation for the product for RS review and approval or to use the technical documentation approved by RS;

.2 to arrange for survey of the product within the necessary scope;

.3 to arrange for testing of the product within the necessary scope or to use reports of the tests earlier conducted by the manufacturer;

.4 to supply the product, and to install and mount it if necessary.

4.1.2 Deviations from the provisions of **4.1.1** shall be regulated with **2.7**.

4.2 The request shall provide the information to an extent sufficient for review and execution thereof. In reviewing the request for technical supervision during manufacture of the material or product, a kind of approval (single or type approval) shall be identified.

The request for type approval of ICE shall additionally provide information submitted according to the form given in Appendix 3 to Section 5 of Part IV "Technical Supervision during Manufacture of Products". The specified form in electronic format to be filled-in is posted on the RS website.

4.3 Upon reviewing the request depending on the particular conditions of the future technical supervision (scope and item of supervision, duration, etc.), the Register, being guided by the regulations in force, decides on the necessity to conclude a contract on technical supervision or carries out technical supervision based on the request without concluding the contract.

4.4 The contract on technical supervision of the Register at the manufacturer specifies the items of technical supervision and regulates mutual relations, rights and responsibilities of the parties in the course of the Register technical supervision during construction of ships and manufacture of materials and products, as well as when rendering services specified in 3.1.

The contract specifies cost of technical supervision, procedure and terms of payment. Where technical supervision is carried out based on the request, without concluding the contract, services are paid and expenses reimbursed according to the invoices made out by the Register.

For concluding the contract for the Register technical supervision, use is made of the established forms or the contract may be drawn up in a free form.

4.5 The Register may entrust the firm (manufacturer) technical personnel with performance of the check tests or part thereof, to which effect the Agreement on Survey (CO) is signed with the firm (manufacturer).

For signing the Agreement on Survey (CO) use is made of the established form or the Agreement on Survey (CO) may be signed in a free form with due regard to all major provisions of the prescribed format.

The Agreement on Survey (CO) is made based on survey of the firm (manufacturer) carried out to the extent and according to the procedure described in Sections 10 and 16, and type approval of the material or product (refer to Section 6).

Rights and responsibilities of the firm (manufacturer), responsibilities of the Register and terms of payment to the Register for technical supervision are stated in the Agreement on Survey (CO).

In order to provide the adherence to the RS requirements for products, to draw up covering documentation and to fulfill the terms and conditions of the Agreement on Survey (CO), an official competent in production and quality control of the items of technical supervision shall be appointed at the firm (manufacturer).

Based on the Agreement on Survey (CO) concluded, the items of technical supervision shall be delivered with the Certificate (C3) to be filled in and signed by the firm (manufacturer) official and drawn up (affirmed) by the Register on the basis of the review of the product/equipment test results performed by the manufacturer and only upon signing of C3 on behalf of the manufacturer (refer to **5.2**) or with the Type Approval Certificate (CTO) copy and the firm (manufacturer) document which shall contain:

name, type and serial number of the item;

name and address of the manufacturer;

address of the manufacturing location;

name of technical documentation for the item and date of its approval by the Register;

name of the document containing data on item surveys and tests performed by the firm (manufacturer);

the Type Approval Certificate (CTO) number, date of issue and period of validity;

firm statement on item conformity to the approved type specified in the Type Approval Certificate (CTO);

signature of the firm (manufacturer) authorized person.

4.5.1 The Agreement on Survey (CO) comes into force from the date of signing and remains valid for at most 5 years subject to:

.1 for the items delivered with the Certificate (C3) — satisfactory results of survey of the item of technical supervision and the firm (manufacturer) in accordance with the requirements of Section 16, to be carried out not less than once a year (in well-grounded cases to be carried out not less than once every **2**, 5 years, unless otherwise specified);

.2 for the items delivered with the Type Approval Certificate (CTO) copy — satisfactory results of survey of the item of technical supervision and the firm (manufacturer) in accordance with the requirements of Section 10, to be carried out not less than once a year (in well-grounded cases to be carried out not less than once every **2**,5 year, unless otherwise specified);

.3 the validity of the approval of the type item of technical supervision as certified by the RS type approval certificate, or validity of the Recognition Certificate for Manufacturer (СПИ).

4.5.2 The validity of the Agreement on Survey (CO) is extended for the next period not exceeding 5 years subject to compliance with the requirements set out in **4**.5.1.1 and **4**.5.1.**2**.

4.6 The contract or agreement on technical supervision becomes invalid in case of inadequate fulfilment of the commitments under the contract or agreement, including payments for the RS services as well as in the following cases:

.1 upon expiry of type approval for material or product manufactured by the firm (manufacturer);

.2 subject to non-compliance of the firm (manufacturer) with the requirements of survey;

.3 if the Recognition Certificate (СП), Recognition Certificate of Testing Laboratory (СПЛ), Recognition Certificate for Manufacturer (СПИ) and Certificate of Firm Conformity (ССП) become invalid in compliance with **3**.6;

.4 upon expiry of validity of the contract or agreement;

.5 cancellation of the contract or agreement.

The Agreement on Survey (CO) may be cancelled if desired by the parties who signed it.

5 TECHNICAL SUPERVISION DURING MANUFACTURE OF MATERIALS AND PRODUCTS

5.1 Materials and products used in construction of ships and floating facilities classed with the Register shall be supplied to the shipyard with the certificate of conformity or other documents confirming their compliance with the RS requirements, conventions or the IMO recommendations.

List of materials and products subject to mandatory technical supervision with indication of a type of the document issued thereon is given in the RS Nomenclature (refer to Appendix 1).

In separate cases, at the RS discretion, technical supervision may be performed of the materials and products not contained in the RS Nomenclature, which are newly developed or are the components of the products listed in the RS Nomenclature and which functionally provide the safety of the items of technical supervision (refer to 2.4).

See circular 1051c **5.2** For drawing up of results of the Register supervision during manufacture of the materials and products, use is made of three types of the certificates of conformity:

Certificate filled-in and signed by the Register (C);

Certificate filled-in and signed by a firm (manufacturer) official and drawn up (affirmed) by the Register (C3). Signing and drawing up of the Certificate are allowed to carry out by digital signature;

type approval certificate drawn up by a Surveyor and signed by the Directors/Heads of the RHO Locations or the RS Branch Offices (CTO, СТПК).

The contents of the above certificates (C, C3, CTO) shall identify the material or product, its types, main parameters, as well as the manufacturer of materials and products.

Validity period of the certificates (C, C3) is not specified.

Validity period of the Type Approval Certificate (CTO) is up to 5 years (refer to 6.5).

The EIAPP Certificate (refer to 3.9) is filled-in and signed by the Register. Validity period of the EIAPP Certificate is not specified.

5.3 In order to obtain the certificate of conformity, the firm (manufacturer) shall apply to the Register with a request.

Technical documentation on the materials or products within the scope regulated by the RS rules shall be submitted together with the request.

5.4 Upon review of the technical documentation the Register sends a conclusion letter to the firm (manufacturer). Where deemed necessary, the firm (manufacturer) shall submit the testing programme to the Register to be agreed upon.

5.5 Where in column 5 of the RS Nomenclature "C" or "C3" is indicated, then upon satisfactory results of survey of the material or product the certificates (C, C3) or a certificate of a special form for the particular type of products (if any) shall be issued.

Branding shall be made where necessary (refer to Appendix 2). See circular 1051c

5.6 Where in column 5 of the RS Nomenclature "CTO" is indicated, then the document to be issued is a copy of the Type Approval Certificate (CTO) (refer to 4.5) supplied by the firm (manufacturer) together with the material or product. In well-grounded cases, the certificates (C, C3) may be issued.

A copy of the Type Approval Certificate (CTO) may be replaced by the reference to the information on the issued Type Approval Certificate (CTO) available on the RS official website as specified in 4.5.

5.7 In case of a single approval, the material or product is surveyed to the extent of the prototype.

In case the Type Approval Certificate (CTO) for the materials and products in question is available, the examination and approval of technical documentation are not required, and the test results for the type specimen are taken into account.

Where a single approval is issued to single products, approval of technical documentation and survey results for the prototype cover only the material or product, for which the certificates of conformity have been issued.

5.8 Where the firm (manufacturer) fabricates forgings, castings, machinery and equipment components needed for its own production (further processing, assembling, construction), as well as mass-production products (ship fittings, hull fittings, etc.), technical supervision may be confirmed by the firm (manufacturer) documents affirmed by the Register.

Where the above products are fabricated by the same firm (manufacturer) for cooperation shipments or as the spare parts, supervision shall be confirmed by the certificates (C, C3, CTO) according to the RS Nomenclature.

6 APPROVAL OF TYPE MATERIALS, PRODUCTS, PRODUCTION PROCESSES AND SOFTWARE

6.1 The Type Approval Certificate (CTO) is a document of the Register, which certifies that a construction, properties, parameters, characteristics of a type material or product, found in the course of surveys and indicated in the approved technical documentation, meet the RS requirements and may be used for ships and items of technical supervision for the intended purpose.

The Type Approval Certificate (CTO) for the type production process certifies that an item of supervision manufactured according to the particular type production process and having characteristics and parameters indicated in the approved technical documentation meets the RS requirements and may be used for the intended purpose.

6.2 The Type Approval Certificate (CTO) certifies that the approval of the technical documentation and positive results of surveys of material and product prototype are accounted for by the Register in technical supervision of these materials and products manufactured under the established production conditions and intended for multiple deliveries to ships and floating facilities of various types.

6.3 In order to obtain the Type Approval Certificate (CTO) the firm (manufacturer) shall apply to the Register with a request and submit the technical documentation on the material, product, software or production process, as well as the programme and schedule of tests. When reviewing and approving this documentation, the scope of surveys during manufacture and testing of specimens shall be specified.

6.4 The Type Approval Certificate (CTO) is issued by the Register upon approval of the technical documentation and positive results of the surveys of the material, product, software or production process submitted.

For the material or product manufactured according to the established production process the Type Approval Certificate (CTO) is issued, having regard to the data on earlier tests, production and operation experience. Account may be taken of the Type Approval Certificate (CTO) of ACS or competent body or results of the tests of a type specimen conducted with participation of the above organizations. The number of documents to be submitted is in each case specified proceeding from the type of material or product.

6.5 The Type Approval Certificate (CTO) is issued for a period of up to 5 years.

6.5.1 Validity of the Type Approval Certificate (CTO) shall not exceed the period of approval of the technical documentation on the item of technical supervision.

6.5.2 After the expiry of validity, the Type Approval Certificate (CTO) is renewed on request from the firm (manufacturer). Where the Type Approval Certificate (CTO) is renewed, technical documentation is re-approved and the material, product or production process is surveyed to the extent agreed upon with the Register.

6.6 The Type Approval Certificate (CTO) is issued by RHO or the RS Branch Offices.

The Type Approval Certificate (CTO) becomes invalid if design of the product, its properties, etc. have been changed without agreement with the Register; operational suitability of the material or product is not provided, requirements of the RS rules and international conventions, which have come into force after its issuance and which prescribe mandatory compliance with the requirements, are not met.

6.7 For welding consumables the Certificate of Approval for Welding Consumables (COCM) is issued, being at the same time the document certifying recognition by the Register of the firm as the manufacturer of welding consumables in accordance with the requirements of the RS rules.

The Certificate of Approval for Welding Consumables (COCM) is issued for a period of up to 5 years subject to its annual endorsement.

6.8 The Welding Procedure Approval Test Certificate (СОТПС) is a Register document certifying that a welding procedure used at a shipyard or firm (manufacturer) of welded structures has been tested and approved by the Register for application.

The Welding Procedure Approval Test Certificate (СОТПС) shall be endorsed not less than once every 2,5 years.

6.9 For programmes for computer-aided calculations, in compliance with Section 12, Part II "Technical Documentation", the Type Approval Certificate for Computer Program (СТОП) is issued.

6.10 The manufacturers of items of the RS technical supervision with codes 06010100МК, 06020000, 07010008, 07010009, 0700600, 07020300, 07020301, 08011400МК, 08030000, 08120000МК, 09010000, 09020000, 09024000, 09025000, 09030000, 09040000, 09050000, 09060000, 09060100, 09070000, 09080000, 09100000, 09120000, 10010000, 10020000, 10030000, 11000000 (as regards insulation materials), 12090000 and other items listed in IACS UI SC 249 shall develop the procedure for purchase and control of asbestos-free materials and components applicable to all equipment, components and spare parts. This procedure shall include the following:

methods of assessment and selection of suppliers;

procedures for checking of the supplied asbestos-free products;

drawing-up of asbestos-free declarations as supporting documentation for the manufactured item of technical supervision.

7 GENERAL REQUIREMENTS FOR FIRMS

7.1 GENERAL

7.1.1 The requirements of this Section apply to all firms, which activity is associated with the items of the RS technical supervision and is subject to the RS audit or recognition.

7.1.2 Audit of conformity or recognition of the firm by the Register includes:

.1 review of the documents confirming the compliance of the firm with the RS requirements;

.2 survey of the firm, including practical demonstration of completion of the works indicated in the request, verification of the records to ascertain that the firm organization and management are in compliance with the submitted documents and that the firm is able to perform works and render services, for which the approval (recognition) is requested. During periodical or renewal survey, to comply with this requirement the results of works or services affirmed by the Register may be used instead of the practical demonstration. The works performed or services rendered after the preceding survey may be accepted for review.

7.1.3 The firm shall submit for review:

.1 documents or their copies confirming fulfillment of the requirements of **7.2.1**, **7.2.2**, **7.2.6**, **7.2.7**, **7.2.8.3** (with due regard to the requirements of the appropriate items in Sections 8 — **11**);

.2 list of the activities performed (area of activity);

.3 lists of the personnel containing information on compliance of the personnel with the requirements of **7.2.2.1** (with due regard to the requirements of the appropriate items in Sections 8 — **11**);

.4 lists of the equipment and facilities indicated in **7.2.3.1**, **7.2.4.1** (with due regard to the requirements of the appropriate items in Sections 8 — **11**);

.5 lists of the documents indicated in **7.2.4.3**, **7.2.5.1** (with due regard to the requirements of the appropriate items in Sections 8 — **11**);

.6 verification of approval/recognition by other authorities, if any;

.7 information on other activities, which may affect a conflict;

.8 list and documentation on manufacturer's licenses, where applicable;

.9 list of appointed agents;

.10 firm experience in the area of services rendered.

7.1.4 Survey of the firm aims at confirming the compliance of the firm with the requirements of **7.2**.

The requirements for the firms performing certain activities are set forth in the relevant sections.

7.2 REQUIREMENTS

7.2.1 Legal status.

7.2.1.1 Legal status of the firm shall comply with the current legislation.

7.2.1.2 The firm shall have organizational structure and the Head.

7.2.2 Personnel.

7.2.2.1 Personnel of the firm shall have an appropriate education, professional and special training, qualification and experience necessary for performance of activity in the area indicated in the request.

7.2.2.2 The firm is responsible for qualification and professional training of its personnel in compliance with the national, international and branch standards; in case of absence of these standards — in compliance with the standards of the firm. This requirement shall be established in the documents of the firm.

7.2.3 Technique.

7.2.3.1 The firm shall have the technique necessary for performance of the activity in the area indicated in the request, including appropriate equipment, premises and facilities certified in the established order.

7.2.3.2 The firm shall provide the maintenance of the equipment and facilities in compliance with their operating and maintenance documentation.

7.2.3.3 The firm shall perform the activity on the documentation corresponding to each activity in the area indicated in the request with regard to the environmental conditions.

7.2.4 Measurement assurance.

7.2.4.1 The firm shall have and apply necessary measurement assurance in compliance with the procedures for testing and checking of items of the RS technical supervision, including:

.1 measuring equipment checked (calibrated) in the established order;

.2 testing equipment certified in the established order;

.3 reference and standard specimens;

.4 appropriate consumables (chemicals, substances, etc).

7.2.4.2 The firm shall provide the maintenance of measuring and testing equipment in compliance with their operating and maintenance documentation.

7.2.4.3 The firm shall have and adhere to the current standards and certified in the established order procedures:

.1 for testing of items of technical supervision with the required accuracy;

.2 for handling of samples.

7.2.5 Files of the firm documents.

7.2.5.1 The firm shall have the valid normative and technical documents necessary to perform activity in the area indicated in the request, including:

.1 documents containing requirements for items of technical supervision, including the RS rules;

.2 technical documentation on items of technical supervision;

.3 production documentation on performance, checking and control of each kind of activity.

7.2.5.2 The documentation shall be available for the firm personnel where necessary.

7.2.6 Reporting.

7.2.6.1 Form and content of reports in the area indicated in the request shall be acceptable for RS and shall include:

.1 name and address of the firm;

.2 identification of the report, e.g. report number;

.3 name and address of the customer;

.4 reference to the documents, in compliance with which the activity has been performed;

.5 description (name) of the item, in relation to which the activity has been performed;

.6 place where the activity has been performed;

.7 date when the activity has been performed;

.8 information on conditions, under which the activity has been performed;

.9 information on deviations from the requirements of the documents, in compliance with which the activity has been performed;

.10 entry to the effect that the activity has been performed under the RS technical supervision;

.11 full name, position and signature of the person who approved the report;

.12 number of every page and the total number of pages in the report.

7.2.6.2 Reports shall be stored in the firm for not less than five years under conditions of confidentiality. This requirement shall be specified in the firm documents.

7.2.7 Checking and control.

7.2.7.1 The firm shall do the checking and exercise control specified in the documentation for each kind of activity.

7.2.7.2 The firm shall take measures on elimination and prevention of non-conformities and claims against the firm activity in the area indicated in the request. This requirement shall be specified in the firm documents.

7.2.8 Subcontractors.

7.2.8.1 Subcontractors recruited by the firm for performance of activity in the area indicated in the request shall fulfill the requirements of Section **7**.

7.2.8.2 The firm shall provide the audit of subcontractors' activity in the area indicated in the request.

7.2.8.3 The firm shall have agreements with subcontractors in the area indicated in the request.

7.2.9 Information on alterations to the certified service operation system.

7.2.9.1 In case where any alteration to the certified service operation system of the supplier is made, such alteration shall be immediately informed to the Register. Re-audit may be required when deemed necessary by the Register.

8 RECOGNITION OF SERVICE SUPPLIERS

8.1 GENERAL

8.1.1 The requirements of this Section apply to the firms involved in the activities related to the items of the RS technical supervision. Kinds of the activities are indicated in Table **8.1.1**.

8.1.1.1 For the purpose of this Section, the following definitions shall apply:

.1 Manufacturer[1] – is a firm that manufactures equipment required to be periodically serviced and/or maintained;

See circular 1051c

Table 8.1.1

Code	Kinds of activity
22001000	**Thickness measurements of ships under supervision of RS surveyor:**
22001001	Category I: thickness measurements under supervision of RS surveyor on all ships regardless of their gross tonnage
22001002	Category II: thickness measurements under supervision of the RS surveyor on fishing vessels regardless of their gross tonnage and non-ESP ships less than 500 gross tonnage
22002000	Tightness testing of hatches, doors etc. with ultrasonic equipment
22003000	In-water surveys of ships and offshore installations
22004000MK	Inspection and maintenance of fire-extinguishing equipment, systems and outfit
22005000	**Survey and maintenance of life-saving appliances:**
22005001MK	inflatable liferafts
22005002	containers for inflatable liferafts
22005003MK	hydrostatic release units
22005004	lifebuoys
22005005	position-indicating lights of life-saving appliances, self-activating smoke signals
22005006MK	inflatable lifejackets
22005007MK	inflated rescue/fast rescue boats
22005008	equipment of lifeboats and liferafts
22005009	other life-saving appliances
22005010MK	marine evacuation systems, inflatable means of rescue
22005011	weak link, automatic gas inflation system, embarkation ladders, lifelines
22005012	non-inflatable lifejackets, immersion suits, anti-exposure suits, thermal protective aids
22005013	combined rescue/fast rescue boats
22006000	**Servicing and inspection of radio and navigational equipment:**
22006001	shore-based maintenance and repair of GMDSS equipment in compliance with the requirements of regulation IV/15 of SOLAS-74 Convention, as amended and IMO resolution A.702(17)
22006002MK	servicing and testing of radio and navigational equipment on board ships or mobile offshore drilling units and fixed offshore platforms for compliance with the requirements of SOLAS-74 Convention, as amended (preliminary survey of radio equipment)
22006003	installation, commissioning, maintenance and repair of radio and navigational equipment, replacement of built-in power supply components, programming of radio equipment
22006004MK	annual performance testing of voyage data recorders (VDR) and simplified voyage data recorders (S-VDR) in accordance with regulation V/18.8 of SOLAS-74 Convention, as amended
22006006MK	annual testing of EPIRBs of the satellite system COSPAS-SARSAT
22006007MK	shore-based maintenance of EPIRBs of the satellite system COSPAS-SARSAT
22006008MK	inspection, testing and maintenance of automatic identification system (AIS)
22007000MK	Inspection and testing of centralized gas-welding and gas-cutting equipment
22008000MK	Inspection and maintenance of self-contained breathing apparatus
22012000	Examination of ro-ro ships bow, stern, side and inner doors
22015000MK	Inspections of low location lighting systems using photo luminescent materials and evacuation guidance systems used as an alternative to low-location lighting systems
22016000MK	Sound pressure level measurements of public address and general alarm systems on board ships
22021000MK	Maintenance, repair, inspection and testing of lifeboats, launching appliances, on-load release gear and davit-launched liferaft automatic release hooks
22022000	Underwater thickness measurements of ships and offshore installations under supervision of RS surveyor
22023000MK	Expertise of safe carriage of bulk cargoes by sea
22024000MK	Measurements of noise level onboard ships
22025000	Tightness testing of primary and secondary barriers of gas carriers with membrane cargo containment systems for ships in service

See circular 1120c

[1]For Sections 10 and 12, the definition "Manufacturer" given in 1.1.1 shall be used.

.2 Service supplier (a service supplier or category of service supplier may be referred to hereafter simply as "Supplier") is a person or firm not employed by the Register, who at the request of an equipment manufacturer, shipyard, shipowner or other client provides services for a ship or a mobile offshore drilling unit, such as measurements, tests or maintenance of safety systems and equipment, the results of which are used by the RS surveyors in making decisions affecting classification or statutory certification and services;

.3 Agent is a person or firm authorised to act for or to represent a manufacturer or approved/recognized service supplier;

.4 Subsidiary is a firm partly or wholly owned by a manufacturer or approved/recognized service supplier;

.5 Subcontractor is a person or firm providing services to a manufacturer or approved/recognized service supplier, with a formal contract defining the assumption of the obligations of the service supplier.

8.1.2 The firms that perform the activities listed in Table **8.1.1** shall be recognized by RS.

8.1.3 The firms that perform the activities related to the items of the RS technical supervision shall comply with the applicable general requirements listed in Section 7, the requirements in **8.2**, appropriate specific requirements in **8.3** and those of Maritime Administrations, if any.

8.1.4 Recognition is conditional on a practical demonstration of the performance of the specific service as well as satisfactory reporting being carried out.

8.1.5 Recognition of the firm by the Register shall be confirmed by the Recognition Certificate (СП) issued in compliance with **3.4** – **3.7** and with regard to specific requirements depending on the area of the firm activities. The issued Recognition Certificate (СП) shall certify that the procedure for rendering the service by the firm complies with the RS Rules in the scope prescribed by the RS Rules and that the results of rendering services prescribed by the RS Rules may be recognized and used by the Register in making decisions affecting classification or statutory certification and services, as applicable. The Recognition Certificate (СП) shall clearly indicate the type and scope of services as well as any restrictions imposed.

8.1.5.1 When any alteration to the certified service operating system of the supplier is made, such alteration is to be immediately informed to the Register. Re-audit may be required when deemed necessary by the Register.

8.1.5.2 The Register reserves the right to cancel the recognition and to inform another classification society (ACS) – IACS member accordingly.

8.1.5.3 The firm whose recognition was cancelled may apply for re-recognition, provided it has corrected the non-conformities, which resulted in cancellation, and the Register is able to confirm it has effectively implemented the corrective action.

8.2 REQUIREMENTS

8.2.1 Extent of recognition.

8.2.1.1 The firm shall demonstrate, as required by **8.2.2** – **8.2.11**, that it has the competence and control needed to perform the services for which recognition is sought.

8.2.1.2 Where several servicing stations are owned by a given firm, each station shall be assessed and approved except as specified in **8.2.12.3**.

8.2.2 Training of personnel.

The firm is responsible for the qualification and training of its personnel to a recognised national, international or industry standard as applicable. Where such standards do not exist, the firm shall define standards for the training and qualification of its personnel relevant to the functions each is authorised to perform. The personnel shall also have adequate experience and be familiar with the operation of any necessary equipment. Operators/technicians/inspectors shall have had a minimum of one year tutored on-the-job training. Where it is not possible to perform internal training, a program of external training may be considered as acceptable.

8.2.3 Supervision.

The firm shall provide supervision for all services provided. The responsible supervisor shall have had a minimum of two years of experience as an operator/technician/inspector within the activity for which the supplier is recognized. For a supplier consisting of one person, that person shall meet the requirements of a supervisor.

8.2.4 Personnel records.

The firm shall keep records of the approved operators/technicians/inspectors. The record shall contain information on age, formal education, training and experience for the services for which they are recognized.

8.2.5 Equipment and facilities.

The firm shall have the necessary equipment and facilities for the service to be supplied. A record of the equipment used shall be kept and available. The record shall contain information on maintenance and results of calibration and verifications. The Register shall assess and record the validity of previous measuring results when the equipment is found not to conform to requirements. The Register shall take appropriate action on the equipment affected.

8.2.6 Control of data.

When computers are used for the acquisition, processing, recording, reporting, storage, measurement assessment and monitoring of data, the ability of computer software to satisfy the intended application shall be documented and confirmed by the service supplier. This shall be undertaken prior to initial use and reconfirmed as necessary.

Note. Commercial off-the-shelf software (e.g. word processing, database and statistical programmes) in general use within their designed application range may be considered to be sufficiently validated and do not require any subsequent confirmation.

8.2.7 Files of the firm documents.

The firm shall have the valid normative and technical documents necessary for performance of the activity in the area indicated in the request, including:

.1 outline of firm, e.g. organization and management structure, including subsidiaries to be included in the recognition/certification;

.2 list of nominated agents, subsidiaries and subcontractors;

.3 experience of the firm in the specific service area;

.4 for categories of firms that require authorization from manufacturers, manufacturer's documentary evidence that the firm has been authorised or licensed to service the particular makes and models of equipment for which recognition is sought shall be provided;

.5 list of operators/technicians/inspectors documenting training and experience within the relevant service area, and qualifications according to recognised national, international or industry standards, as relevant;

.6 description of equipment used for the particular service for which recognition is sought;

.7 guides for operators of such equipment;

.8 training programmes for operators/technicians/ inspectors;

.9 check lists and record formats for recording results of the services;

.10 Quality Manual and/or documented procedures covering requirements in **8.2.12**;

.11 documented procedures for communication with the crew prior to commencing work, so that it is safe to decommission the equipment being maintained, and to provide a safe system of work in place;

.12 evidence of approval/recognition by other bodies, if any;

.13 information on the other activities which may present a conflict of interest;

.14 record of customer claims and corrective actions;

.15 documented procedures and instructions shall be available for the recording of damages and defects found during inspection, servicing and repair work. This documentation shall be made available upon request.

8.2.8 Procedures.

The firm shall have documented work procedures covering all services supplied.

8.2.9 Subcontractors.

The firm shall give information of agreements and arrangements if any parts of the services provided are subcontracted. Subcontractors providing anything other than equipment shall also meet the general requirements in **8.2**.

8.2.10 Verification.

The firm shall verify that the services provided are carried out in accordance with approved procedures.

8.2.11 Reporting.

Reports on the results of activity performed shall contain a copy of the Recognition Certificate (СП), in addition to the information specified in **7.2.6.1**. The reports shall detail the results of inspections, measurements, tests, maintenance and/or repairs carried out.

8.2.12 Quality System.

8.2.12.1 The firm shall have a documented system covering at least the following:

.1 the Code of Ethics to conduct the relevant activity;

.2 maintenance of equipment;

.3 measurement assurance, checking (calibration) of measuring equipment;

.4 training programmes for operators/technicians/ inspectors;

.5 supervision and verification to ensure compliance with operational procedures;

.6 recording and reporting of information;

.7 quality management of subsidiaries, agents and subcontractors;

.8 job preparation;

.9 corrective and preventive actions related to complaints;

.10 periodic review of work process procedures, complaints, corrective actions, and issuance, maintenance and control of documents.

8.2.12.2 A documented Quality System complying with the most current version of ISO 9000 series and including the above items, would be considered acceptable according to **8.2.12.1**.

8.2.12.3 If a manufacturer of equipment (and/or its service supplier) applies to the Register for inclusion of its nominated agents and/or subsidiaries in the Recognition Certificate (СП), then it shall implement a Quality System certified in accordance with the most current version of ISO 9000 series. The Quality System shall contain effective controls of the manufacturer's (and/or service supplier's) agents and/or subsidiaries. The nominated agents/subsidiaries shall also have in place an equally effective Quality System complying with the most current version of ISO 9000 series. Such recognition shall be based upon an evaluation of the Quality System implemented by the parent company against the most current version of ISO 9000 series. The Register may require follow-up audits on such agents or subsidiaries against the most current version of ISO 9000 series to confirm adherence to this quality system.

8.2.13 Service suppliers relations with the equipment manufacturer.

8.2.13.1 A firm, which works as a service station for manufacturer(s) of equipment (and as a service supplier in this field), shall be assessed by the manufacturer(s) and nominated as their agent. The manufacturer shall ensure that appropriate instruction manuals, material etc. are available for the agent as well as proper training of

the agent's technicians. Such suppliers shall be recognized either on a case by case basis, or in accordance with **8.2.12.3**.

8.3 SPECIAL REQUIREMENTS

8.3.1 Requirements for firms engaged in thickness measurements on ships (codes 22001001, 22001002).

The firms engaged in thickness measurements (hereinafter referred to as TM firms) on ships comply the following categories:

Category I: those engaged in thickness measurements under supervision of RS surveyor on all ships regardless of their gross tonnage;

Category II: those engaged in thickness measurements under supervision of the RS surveyor on fishing vessels only regardless of their gross tonnage and non-ESP ships less than **500** gross tonnage.

8.3.1.1 Requirements for Category I firms.

8.3.1.1.1 Supervisor.

The responsible supervisor shall be qualified according to the recognized national or international industrial NDT standard (e.g. ISO 9712, Level II as amended).

The supervisor shall have adequate knowledge of ship structures and be able to assess the results of measurements performed in compliance with the RS normative documents.

8.3.1.1.2 Operators.

The operators carrying out the measurements shall be certified to a recognised national or international industrial standard (e.g. ISO 9712 level I as amended) and shall have adequate knowledge of ship structures sufficient to elect a representative position for each measurement.

8.3.1.1.3 Operator/supervisor shall have appropriate qualification documents in ultrasonic testing (ultrasonic thickness) issued by the accredited body for training and certification of NDT personnel (hereinafter referred to as the NDT training and certification body) specified in **8.3.1.1.4**.

For each service provided, an operator/supervisor shall have the power of attorney duly signed and sealed by a TM firm to enable him/her carrying out thickness measurements of hull structures on a particular ship. The validity of the power of attorney shall be established by the firm management. This term shall not exceed the term of the validity of the qualification document in ultrasonic testing (ultrasonic thickness measurements) or Recognition Certificate (СП) issued for the operator/supervisor, whichever is earlier.

8.3.1.1.4 NDT training and certification bodies.

Pursuant to EN ISO 9712, NDT training and certification bodies (operators/supervisors) shall be accredited by the international or national NDT certification authority for compliance with ISO/IEC 17024.

Self-declaration of compliance is not allowed.

The list of NDT accreditation bodies – members of the following international associations for NDT, can be found by the links below:

the European Federation for Non-Destructive Testing (EFNDT): *http://www.efndt.org/Members.aspx*

the International Committee for Non-Destructive Testing (ICNDT): *http://www.icndt.org/Directory.aspx*

Asia Pacific Federation for Non Destructive Testing (APFNDT): *http://apfndt.org/apfndt3.html*

Certification bodies accredited for training and certification of NDT personnel for items of the RS technical supervision (e.g. in shipbuilding and repair sector) according to EN ISO 9712 may be additionally certified by the RS in compliance with the requirements of Section **11** upon their request on the voluntary basis.

Certification bodies that are not accredited by the NDT accreditation bodies for personnel training and certification in non-destructive testing of items of the RS technical supervision according to EN ISO 9712 shall be certified by RS on a mandatory basis.

8.3.1.1.5 Equipment.

On coated surfaces, instruments using pulsed echo technique (either with oscilloscope or digital instruments using multiple echoes, single crystal technique) are required. Single echo instruments may be used on uncoated surfaces, which have been cleaned and ground.

8.3.1.1.6 Procedures.

Documented work procedures are at least to contain information on inspection preparation, selection and identification of test locations, surface preparation, protective coating preservation, calibration checks, and report preparation and content.

8.3.1.1.7 Reporting.

In addition to **8.2.11**, the report shall be based on the requirements of Appendices 2 and 4 to the Rules for the Classification Surveys of Ships in Service.

See circular 1120c

8.3.1.1.8 Details of Category I TM firm recognition.

TM firm recognition and issuance of the Recognition Certificate (СП) (form (7.1.4.2) are conditional on a practical demonstration of thickness measurements on board the ship performed under supervision of the RS Surveyor, as well as satisfactory reporting being carried out based on the results of thickness measurement.

The Register shall issue the Certificate of Vocational Training (СПП) (form 7.1.34) to the operator/supervisor confirming his/her appropriate qualification for carrying out thickness measurements on ships in compliance with the RS normative documents.

An entry on the type of service shall be made in the Annex to the Recognition Certificate (СП) reading as follows: "Category I: thickness measurements on all ships regardless of their gross tonnage".

During survey of recognized TM firms for confirmation/renewal of the Recognition Certificate (СП), it shall be confirmed that they comply with the applicable

requirements of the RS normative documents concerning the TM firm recognition, and that the residual thickness measurements during the period of validity of the Recognition Certificate (СП) have been carried out on particular ships under supervision of the surveyors to the Register or under supervision of the surveyors to ACS – IACS member whose Recognition Certificates (СП) are also available at the TM firm, it shall be also confirmed that thickness measurements reports have been duly signed and stamped by the RS or ACS surveyors. Particular attention shall be paid to the relevance of the list of the TM firm operators/supervisors and to the availability of the necessary documents confirming the NDT personnel qualification.

8.3.1.1.9 Supervision for services rendered by a recognized TM firm.

Thickness measurements on the RS-classed ships carried out by the TM firm shall be provided under supervision of the RS surveyor or the surveyor to ACS – IACS member if the ship is submitted in location inaccessible for survey by the Register. The fact of the supervision and performance of works shall be certified by signature and stamp of the RS surveyor on the cover page of thickness measurement report (refer to **8.3.1.1**.7).

8.3.1.1.10 Information on the TM firms recognition status.

8.3.1.1.10.1 The IACS website provides links to the databases of official websites of classification societies participating in IACS PR No. 23 (hereinafter referred to as the participating society), which contain the information on the recognized TM firms (*www.iacs.org.uk* in "Ship/Company data/Thickness Measurement Firms" Section). Each participating society is responsible to provide information on alterations of the links in order to update the IACS website.

8.3.1.1.10.2 ACS – IACS member, including the Register, shall notify the other classification societies (participating societies) and the IACS Permanent Secretary on cancellation of the Recognition Certificates (СП) of the TM firms due to any reasons specified in **3**.6.2, **3**.6.7 to **3**.6.9. RHO shall send a notification of cancellation of the recognition (Recognition Certificate (СП)) in the form given in IACS PR No. 23 to classification societies via e-mails posted in the "PR23 Contact Details" Section on the IACS website as well as to the IACS Permanent Secretary via e-mail: *efs@iacs.org.uk* within five (5) working days from the date of cancellation. On receipt by the Register of notification on cancellation of the recognition (Recognition Certificate (СП)) of the TM firm from ACS or other classification societies, RHO shall request ACS or other classification societies for any additional information on the reason for cancellation of the recognition (Recognition Certificate (СП)), if required. The obtained information is subject to the RHO review, and the decision is taken with regard to the possibility of maintaining the TM recognition by the Register, if any, or the possibility of issuance of the Recognition Certificate if the TM firm applies to RS for the first time.

The RHO and participating societies shall timely advise IACS Permanent Secretary on amendments made to their contact details in order to update information in the "PR23 Contact Details" Section in the IACS website accordingly.

8.3.1.1.10.3 Prior to issuance of a new Recognition Certificate (СП) to a TM firm or renewal/confirmation of a valid one, the RS surveyor shall check the information on cancellation of the TM firm recognition by ACS on the RS internal website in Section "Information Systems/ Industry Database/Information on Supervision in Industry/List of TM Firms Recognized by Other Classification Societies, whose Certificates are Cancelled" by link *http://gur.rs-head.spb.ru/win/survey/sto/tmcan.htm* In cases where the RS surveyor reveals that the recognition of any TM firm has been cancelled by ACS, he/she (if necessary) may contact RHO for further instructions on this occasion.

8.3.1.2 Requirements for Category II TM firms – limited recognition.

8.3.1.2.1 The objective of this limited recognition is recognition programme is verify that the TM firm has qualified personnel that are able to measure thicknesses, recognize types of wear, understand hull structural drawings, have adequate knowledge of ship structures in addition to having the necessary technical equipment to render professional assistance.

The firm recognition by the Register with regard to **8.3.1**.2.6 shall include the following:

.1 review of the documents confirming the firm compliance with the RS requirements;

.2 survey of the firm.

8.3.1.2.2 Submission of documents.

The following documents shall be submitted to the Register for review:

organization and management structure;

list of operators supervisors having documented training tutorial, qualifications and experience;

description of the equipment used, including maintenance and calibration procedures;

operator's manual for such equipment.

8.3.1.2.3 NDT personnel documents.

The TM firm shall keep NDT personnel documents. These documents shall contain information on age, education, training and experience in thickness measurements.

An operator carrying out the measurements shall be certified in non-destructive testing minimum at level I, according to a recognized national and international standard for qualification and certification of NDT (i.e. ISO 9712, as amended). An operator shall have a minimum of one year tutored on-job, a program of external training may be considered as acceptable. An operator shall have adequate knowledge of ship struc-

ture, sufficient to select a representative position for each measurement.

An operator shall have relevant qualification documents in ultrasonic testing (ultrasonic thickness) issued by the accredited body (refer to **8.3**.1.1.4).

For each of service provided, an operator shall have a power of attorney duly signed and sealed by a TM firm, to enable him/her to carry out thickness measurements of hull structures on a particular ship.

8.3.1.2.4 Equipment.

Requirements for equipment are similar to those specified in **8.3**.1.1.5.

8.3.1.2.5 Reporting.

In addition to **8.2**.11, the report shall be based on Appendix **2** to the Rules for the Classification Surveys of Ships in Service and Instruction on Residual Thicknesses Measurements of Ship's Elements.

See circular 1120c **8.3.1.2.6** Details of Category II firm recognition.

Upon reviewing the submitted documents with satisfactory results, the TM firm shall be audited to ascertain that the supplier (TM firm) is duly organized and managed in accordance with the submitted documents, and is capable of rendering the services which recognition of supplier (TM firm)/issuance of the Recognition Certificate (СП) is required.

The TM firm recognition and issuance of the Recognition Certificate (СП) are conditional on a practical demonstration of thickness measurement on board the ship performed under supervision of the RS surveyor, as well as satisfactory reporting being carried out based on the NDT results. Upon satisfactory completion of survey of the TM firm, the demonstration test and proper reporting, the Register shall issue relevant reports on survey and a Recognition Certificates (СП) stating that the procedures and methods for carrying out thickness measurements used by the TM firm have been recognized by the Register and may be accepted and used by the RS surveyors in making decisions during ship surveys.

The following shall be specified in the Appendix to the Recognition Certificate (СП) (form 7.1.4.**2**): "**22**001001 – Category II: thickness measurements under supervision of the RS surveyor on fishing vessels regardless of their gross tonnage and non-**ESP** ships less than 500 gross tonnage". The Register shall issue the Certificate of Vocational Training (СПП) (form 7.1.**3**4) to the operator who has carried out thickness measurements confirming his/her training in thickness measurements on board ships as per the RS normative documents.

During survey of recognized TM firms for confirmation/renewal of the Recognition Certificate (СП), it shall be confirmed that they comply with the applicable requirements of the RS normative documents concerning the TM firm recognition, and that the residual thickness measurements during the period of validity of the Recognition Certificate (СП) have been carried out on particular ships under supervision of the surveyors to the Register or under supervision of the surveyors to ACS — IACS member whose Recognition Certificates (СП) are also available at the TM firm. It shall be verified that all thickness measurement reports are signed and sealed by the RS or ACS surveyors. Special consideration shall be given to the relevance of the list of operators employed in the TM firm and availability of required documents confirming the qualification of NDT personnel.

The Recognition Certificate (СП) shall be renewed according to Section **3**.

The Register shall be immediately notified of any amendment made to the system for service rendering by the supplier, if any. The repeated check may be required as deemed necessary by the Register.

The recognition may be cancelled in cases specified in **3.6**.

The Register reserves its right to cancel the recognition.

The supplier whose recognition was cancelled may apply for re-recognition, provided it has corrected the non-conformities, which resulted in cancellation, and the Register is able to confirm it has effectively implemented the corrective action.

8.3.1.2.7 Supervision for services provided by the recognized TM firm.

The fact of supervision and performance of works in compliance with the requirements of the RS normative documents shall be certified by signature and stamp of the RS surveyor on the cover page of thickness measurement report (refer to **8.3**.1.**2**.5).

8.3.2 Requirements for firms engaged in tightness testing of closing appliances such as hatches, doors etc. with ultrasonic equipment (code 22002000).

8.3.2.1 Extent of engagement – ultrasonic tightness testing of closing appliances such as hatches, doors etc.

8.3.2.2 Operators.

The operator shall have the following qualifications:

have knowledge of different closing appliances, including their design, functioning and sealing features;

have experience with the operation and maintenance of different closing appliances;

be able to document theoretical and practical training onboard in using the ultrasonic equipment specified.

8.3.2.3 Equipment.

It shall be demonstrated for the RS surveyor that the equipment is fit for the purpose of detecting leakages in losing appliances such as hatches, doors etc.

8.3.2.4 **P**rocedures.

The supplier shall have documented work procedures, which shall include the manual for the ultrasonic equipment specified, its adjustment, maintenance, operation and approval criteria.

8.3.3 Requirements for firms carrying out in-water surveys of ships and offshore installations (code 22003000).

8.3.3.1 Extent of engagement – in-water survey of ships and offshore installations by diver or remote operated vehicle (ROV).

8.3.3.2 Training of personnel.

The firm is responsible for the qualification of its divers and the diving equipment utilized when carrying out inspection. Knowledge of the following shall be documented:

ship's underwater structure and appendages, tail shaft, propeller, rudder and its bearings, etc.;

non-destructive testing in accordance with a recognised national or international industrial NDT standard. This requirement only applies if an in-water survey company performs non-destructive testing (e.g., visual and dimensional examination, ultrasonic testing, ultrasonic thickness measurement, etc.);

bearing clearance measurements on rudders and tail shaft;

underwater video monitoring with TV-monitors on deck, as well as still picture work; underwater communication systems;

special equipment and tools e.g. hull cleaners, grinders, cutters, etc.

8.3.3.3 A plan for training of personnel in the reporting system, minimum requirements of the Register rules for relevant ship types, ship's underwater structure, measuring of bearing clearances, the recognition of corrosion damage, buckling and deteriorated coatings, etc. shall be included.

8.3.3.4 Supervisor.

The supervisor shall be qualified according to the supplier's general requirements and shall have a minimum of two years' experience as a diver carrying out inspection.

8.3.3.5 Diver.

The diver shall have had at least one year's experience as an assistant diver carrying out inspections (including participation in a minimum of **10** different assignments).

8.3.3.6 Equipment.

The firms shall have the following:

closed circuit colour television with sufficient illumination equipment;

two-way communication between diver and surface staff;

video recording device connected to the closed circuit television;

still photography camera;

equipment for carrying out thickness gauging, non-destructive testing and measurements (e.g. clearances, indents, etc., as relevant to the work to be performed);

equipment for cleaning of the hull;

ROV, if applicable.

8.3.3.7 Procedures and guidelines.

The supplier shall have documented operational procedures and guidelines for how to carry out the inspection and how to handle the equipment. These shall include:

two-way communication between diver and surface;

video recording and closed circuit television operation;

guidance of the diver along the hull to provide complete coverage of the parts to be inspected.

8.3.3.8 Verification of services rendered by the recognized firm.

All in-water surveys of ships and offshore installations shall be performed by the firm under the supervision of the RS Surveyor. The supplier shall have the Surveyor's verification of each separate job performed in compliance with the Register normative documents, documented in the report by the attending Surveyor's signature and seal.

8.3.4 Requirements for firms engaged in inspection and maintenance of fire-extinguishing equipment and systems (code 2200400MK).

8.3.4.1 Extent of engagement.

Inspections and maintenance of fire-extinguishing equipment and systems such as fixed fire extinguishing systems, portable fire extinguishers and fire detection and alarm systems.

8.3.4.2 Legal status. See circular 1051c

The firm shall have valid documents allowing to perform the survey and maintenance of fire extinguishers issued by the state authorities competent in fire safety area according to the laws of the firm's country of residence, if required.

8.3.4.3 Files of the firm documents.

8.3.4.3.1 The firm shall have access to the following documents:

.1 manufacturer's servicing manuals, servicing bulletins, instructions and training manuals, as appropriate;

.2 Type Approval Certificates showing any conditions that may be appropriate during the servicing and/or maintenance of fire-extinguishing equipment and systems;

.3 SOLAS, MSC.1/Circular.**1318** (Guidelines for the Maintenance and Inspections of Fixed Carbon Dioxide Fire-Extinguishing Systems), International Code for Fire Safety Systems (FSS Code), ISO **6406** (Periodic inspection and testing of seamless steel gas cylinders), and any documentation specified in the authorization or license from the equipment manufacturer;

.4 MSC/Circ.67**0** (Guidelines for the Performance and Testing Criteria and Surveys of High Expansion Foam Concentrates for Fixed Fire-Extinguishing Systems);

.5 MSC/Circ.79**8** (Guidelines for the Performance and Testing Criteria and Surveys of Medium Expansion

Foam Concentrates for Fixed Fire-Extinguishing Systems);

.6 MSC/Circ.799 (Guidelines for the Performance and Testing Criteria and Surveys of Expansion Foam Concentrates for Fixed Fire-Extinguishing Systems of Chemical Tankers);

.7 MSC.1/Circ.**1312** (Revised Guidelines for the Performance and Testing Criteria and Surveys of Foam Concentrates for Fixed Fire-Extinguishing Systems as corrected by MSC/Circ.**1312**/Corr.1);

.8 MSC.1/Circ.**1432** (Revised Guidelines for the Maintenance and Inspection of Fire Protection Systems and Appliances);

.9 IMO resolution A. 951(**23**) – Improved guidelines for marine portable fire extinguishers;

.10 MSC.1/Circ.**1370** – Guidelines for the design, construction and testing of fixed hydrocarbon gas detection systems;

.11 Guidelines adopted by IMO for fire-extinguishing equipment and systems specifically intended for service by service suppliers.

8.3.4.3.2 In addition to the documents listed in **8.3.4.3.1**, the firm shall have applicable documents specified in **4.3**, Part IV "Technical Supervision during Manufacture of Products" as well as recognized international and/or national standards prescribing the requirements and test procedures for items under technical supervision.

8.3.4.4 Extent of recognition.

8.3.4.4.1 Representatives of the firm shall have professional knowledge of fire theory, fire-fighting and fire-extinguishing appliances sufficient to carry out the maintenance and/or inspections, and to make the necessary evaluations of the condition of the equipment.

8.3.4.4.2 In demonstrating professional knowledge, representatives of the firm shall have an understanding of the various types of fires and the extinguishing media to be used on them.

8.3.4.4.3 For fixed fire-extinguishing systems, representatives of the firm shall demonstrate an understanding of the principles involved with gas, foam, deluge, sprinkler and water-mist systems, as relevant for the approval being sought.

8.3.4.5 Procedures.

The firms shall have documented procedures and instructions on how to carry out the servicing of the equipment and/or system. These are to either contain or make reference to the manufacturer's servicing manuals, servicing bulletins, instructions and training manuals, as appropriate, and to international requirements. Additionally they shall make reference to valid requirements (e.g. what markings shall be appended to the equipment/system).

8.3.4.6 Equipment and facilities.

8.3.4.6.1 General requirements.

If the firms undertake shore-based inspecting and maintenance, they shall maintain and implement procedures for workshop cleanliness, ventilation and arrangement, with due cognizance of the spares and extinguishing media being stored, to ensure safe and effective working procedures. The firms undertaking

inspecting and maintenance of equipment and systems onboard shall provide the appropriate facilities to either complete the work onboard or remove the necessary items to their workshops.

8.3.4.6.2 Equipment.

Sufficient and appropriate spares and tools shall be available as applicable, which shall include:

.1 various scales to weigh items;

.2 means to hydrostatically pressure test components/systems/storage bottles;

.3 liquid/gas, flow meters, as appropriate;

.4 pressure gauges;

.5 in the cases of foam concentrates and portable fire-extinguishers, chemical analysis equipment and a testing bay, respectively; and

.6 specific equipment/spares as may be specified by the manufacturer;

.7 level measuring equipment for bottles;

.8 recharging facilities for pressurized bottles, extinguishers and cartridges.

8.3.5 Requirements for firms engaged in survey and maintenance of life-saving appliances (codes 22005001МК, 22005002, 22005003МК, 22005006МК, 22005007МК, 22005008, 22005009, 22005010МК).

8.3.5.1 Extent of engagement.

.1 servicing of inflatable liferafts, inflatable lifejackets, hydrostatic release units and/or inflated rescue boats;

.2 servicing of marine evacuation systems.

8.3.5.2 Equipment and facilities.

IMO resolution A.**761**(**18**) as amended by IMO resolution MSC.55(**66**) gives recommendations on conditions for the approval of servicing stations for inflatable liferafts which shall be observed as relevant.

Where inflatable liferafts are subject to extended service intervals, MSC.1/Circ.**1328** shall also be followed.

8.3.5.3 Procedures and instructions.

The firm shall have documented procedures and instructions for how to carry out service of equipment. Where inflatable liferafts are subject to extended service intervals in accordance with the requirements of SOLAS Regulation III/**20.8.3**, MSC.1/Circ.**1328** shall be followed in addition to IMO resolution A.**761**(**18**) as amended by IMO resolution MSC.55(**66**).

8.3.5.4 The firm shall provide evidence that it has been authorised or licensed to service the particular makes and models of equipment for which recognition is sought by the equipment's manufacturer.

8.3.5.5 Reference documents.

The firm shall have access to the following documents:

.1 IMO resolution A.761(18) "Recommendation on Conditions for the Approval of Servicing Stations for Inflatable Liferafts" (adopted on 4 November 1993), amended by IMO resolution MSC.55(66);

.2 IMO resolution MSC.55(66);

.3 MSC.1/Circ.1328 "Guidelines for the Approval of Inflatable Liferafts Subject to Extended Service Intervals Not Exceeding 30 Months";

.4 manufacturer's servicing manuals, servicing bulletins, instructions and training manuals, as appropriate;

.5 Type Approval Certificates, showing any conditions that may be appropriate during the servicing and/or maintenance of inflatable liferafts, inflatable rescue boats, inflatable lifejackets, and hydrostatic release units;

.6 LSA Code/Chapter IV, 1995 SOLAS Conference Resolution 4 regarding marine evacuation systems.

8.3.6 Requirements for firms engaged in survey and maintenance of life-saving appliances (codes 22005004, 22005005, 22005011, 22005012, 22005013).

8.3.6.1 The firms engaged in activities with codes 22005011 (weak link, automatic gas inflation system), 22005013, shall meet applicable requirements of IMO resolution A.761(18) as amended by IMO resolution MSC.55(66).

8.3.6.2 The firm shall have documented procedures and instructions on methods of equipment maintenance. The procedures shall include requirements to record the nature and dimensions of damages as well as defects revealed during maintenance and repair. The shipowner shall be notified of all revealed defects affecting e further use of this equipment. In case of differences, relevant information from the firm (service supplier) shall be forwarded to the nearest RS Branch Office to settle the differences. These data shall be made available to the Register upon request.

8.3.6.3 The firm engaged in servicing and maintenance of combined rescue/fast rescue boats (code 22005013) shall provide evidence that it has been authorised or licensed to serve the particular types and models of equipment by the equipment manufacturer.

8.3.7 Requirements for firms engaged in servicing and inspection of radio and navigational equipment with codes 22006000 (22006001 – 22006008MK).

8.3.7.1 Special requirements for firms engaged in activities with codes 22006001, 22006003, 22006004MK and 22006007MK.

8.3.7.1.1 Legal status.

The firm shall submit agreements with the equipment manufacturers entitling the firm to perform specific kinds of activities and laying down the procedure for providing the firm with spare parts.

8.3.7.1.2 Personnel.

The firm shall submit documents certifying that the firm's personnel have completed training in the equipment manufacturer's premises entitling them to perform specific kinds of activity.

8.3.7.2 Requirements for firms engaged in inspection of radio and navigational equipment (codes 22006002MK, 22006008MK).

8.3.7.2.1 Extent of engagement.

Inspection and tests of radio equipment and automatic identification system (AIS) on board ships or mobile offshore drilling units for compliance with SOLAS-74/78 Convention as amended.

8.3.7.2.2 Reference documents.

The firm shall have access to the following documents:

.1 SOLAS 1974 as amended;

.2 IMO resolution A.789(19) "Specification on the survey and certification functions of recognised organisations acting on behalf of the administration";

.3 MSC.1/Circ.1252 "Guidelines on Annual Testing of the Automatic Identification System (AIS)";

.4 SN/Circ.227, SN/Circ.227/Corr. 1 and 245 "Guidelines for the Installation of a Shipborne Automatic Identification System (AIS)" and amendments thereto;

.5 ITU Radio Regulations;

.6 IMO Performance Standards for radio communication equipment;

.7 Flag State Administration requirements;

.8 relevant parts, if any, of the Register rules and guidelines.

8.3.7.2.3 Supervisor.

The supervisor shall have a minimum two years education from a technical school, experience as inspector, and shall preferably hold a General Operator's Certificate (GOC) or a GMDSS Radioelectronic Certificate (REC), recognised by the ITU, to operate or test radio transmitters. He shall be aware of any local conditions for radio signal propagation, of regional radio stations and their facilities, and of the GMDSS infrastructure.

8.3.7.2.4 Radio inspector.

The inspector carrying out the inspection shall have passed the internal training of the supplier in Radiotelephony, GMDSS, and initial and renewal surveys, as applicable. The inspector shall also have at least one year's technical school training or as alternative hold evidence that he followed a technical course approved by the relevant Administration, at least one year's experience as an assistant radio inspector and should preferably hold an appropriate National Radio Operators Certificate, recognised by the ITU, such as a GMDSS General Operator's Certificate (GOC) or a GMDSS Radioelectronic Certificate (REC). He shall be aware of any local conditions for radio signal propagation, of regional radio stations and their facilities, and of the GMDSS infrastructure.

8.3.7.2.5 Equipment.

8.3.7.2.5.1 The firm shall have the major and auxiliary equipment required for correctly performing the inspection. A record of the equipment used shall be kept. The record shall contain information on manufac-

turer and type of equipment, and a log of maintenance and calibrations.

8.3.7.2.5.2 A standard which is relevant to the radio equipment to be tested shall be available for the equipment and shall be cited in the inspection report.

8.3.7.2.5.3 For equipment employing software in conjunction with the testing/examination, this software shall be fully described and verified.

8.3.7.2.5.4 Minimum required instruments:

.1 equipment for measuring frequency, voltage, current and resistance;

.2 equipment for measuring output and reflect effect on VHF and MF/HF;

.3 equipment for measuring modulation on MF/HF and VHF;

.4 acid tester for checking specific gravity of lead batteries;

.5 equipment for testing the performance of automatic identification system (AIS).

8.3.7.2.6 Procedures and instructions.

The firm shall have documented procedures and instructions for how to carry out testing and examination of radio equipment. Procedures and instructions for operating each item of the testing/inspection equipment shall also be kept and be available at all times.

8.3.7.3 Firms engaged in annual performance testing of Voyage Data Recorders (VDR) and simplified Voyage Data Recorders (S-VDR) in accordance with SOLAS Chapter V Regulation **18.8** (code 22006004MK).

8.3.7.3.1 Extent of engagement.

Testing and servicing of Voyage Data Recorders (VDR) and Simplified Voyage Data Recorders (S-VDR) in accordance with SOLAS Chapter V Regulation **18.8** and MSC.1/Circular.1222 "Guidelines on Annual Testing of Voyage Data Recorders (VDR) and Simplified Voyage Data Recorders (S-VDR)", as applicable.

8.3.7.3.2 The firm shall provide evidence that he has been authorised or licensed by the equipment's manufacturer to service the particular makes and models of equipment for which recognition is sought.

8.3.7.3.3 Where the firm is also the manufacturer of VDR or S-VDR and has elected to apply MSC.1/Circ.1222 in its entirety for the purpose of acting as a service supplier engaged in annual performance testing, the following shall apply:

.1 the manufacturer is responsible for appointing manufacturer's authorised service stations to carry out annual performance testing;

.2 the manufacturer is required to be a recognized service supplier and shall satisfy the requirements for the firms engaged in annual performance testing of VDR and S-VDR, as applicable;

.3 the manufacturer's authorised service station is not required to be a recognized service supplier;

.4 the manufacturer shall demonstrate that MSC.1/Circ.1222 is applied in its entirety.

8.3.7.3.4 Procedures.

8.3.7.3.4.1 The firm shall have documented procedures and instructions.

8.3.7.3.4.2 Where the firm is also the manufacturer of VDR or S-VDR and has selected to apply MSC.1/Circ.1222 in its entirety for the purpose of acting as a Service Supplier engaged in annual performance testing, the following shall apply:

.1 the manufacturer shall have documented procedures for the assessment and authorization of manufacturer's authorised service stations who carry out annual performance testing;

.2 the manufacturer shall have documented procedures for the review of manufacturer's authorised service stations annual performance test reports, analysis of the VDR/S-VDR 12-hour log and the issue of annual performance test certificates to the shipowner/operator;

.3 the manufacturer shall maintain a list of manufacturer's authorised service stations that can be accessed (by any available means, e.g. via a nominated contact point or from the manufacturer's website) upon request.

8.3.7.3.5 Reference documents.

8.3.7.3.5.1 The service supplier shall have access to the following documents:

.1 IMO – International Convention on the Safety of Life at Sea (SOLAS), **74/78**, Chapter V, Regulation **18.8** "Approval, surveys and performance standards of navigational systems and equipment and voyage data recorder";

.2 MSC.1/Circ.1222 "Guidelines on Annual Testing of Voyage Data Recorders (VDR) and Simplified Voyage Data Recorders (S-VDR)". (11 December 2006);

.3 IMO resolution A.**861**(20) as amended by IMO resolution MSC.**214**(**81**) and revised by IMO resolution MSC.**333**(90);

.4 IMO resolution MSC.**163**(**78**) "Performance Standards for Shipborne Simplified Voyage Data Recorders (S-VDRs)" (adopted on 17 May 2004) as amended by IMO resolution 21**4**(**81**).

8.3.7.3.5.2 The service supplier shall have access to applicable industry performance standards, e.g.:

.1 IEC 61996 "Maritime navigation and radio communication equipment and systems – Shipborne voyage data recorder (VDR)";

.2 IEC 61996-2 "Maritime navigation and radio communication equipment and systems – Shipborne voyage data recorder (VDR) – Part 2: Simplified voyage data recorded (S-VDR) – Performance requirements, method of testing and required test results".

8.3.7.3.5.3 The service supplier shall also have access to any documentation specified in the authorization or license from the equipment manufacturer.

8.3.7.3.6 Equipment and facilities.

The service supplier shall have equipment as specified in the authorization or license from the equipment manufacturer.

8.3.7.3.7 Reporting – Test Report.

8.3.7.3.7.1 The firm shall issue a certificate of compliance as specified in SOLAS 1974, as amended, Chapter V, Regulation 18.8.

8.3.7.3.7.2 Annual performance test of VDR and S-VDR shall be recorded in the form of the model test report given in the Appendix to MSC.1/Circular.1222, signed and stamped by the firm and attached to the annual performance test certificate.

8.3.7.3.7.3 Where the service supplier is also the manufacturer of VDR/S-VDR and has selected to apply MSC.1/Circ.1222 "Guidelines on Annual Testing of Voyage Data Recorders (VDR) and Simplified Voyage Data Recorders (S-VDR)" in its entirety for the purpose of acting as a service supplier engaged in annual performance testing, the manufacturer shall make arrangements for the following:

.1 review of the manufacturer's authorised service station annual performance test report;

.2 analysis of the recorder's 12-hour log;

.3 checking of the master record/database for the recorder.

8.3.7.3.7.4 Issue of the annual performance test certificate to the shipowner/operator within 45 days of completion of the annual performance test.

8.3.7.4 Requirements for firms engaged in shore-based servicing and testing of EPIRBs of COSPAS-SARSAT satellite system (code 22006006MK, 22006007MK).

8.3.7.4.1 Extent of engagement.

Shore-based servicing emergency radio beacons (EPIRB-406) of the COSPAS-SARSAT satellite system. Annual tests of EPIRBs of COSPAS-SARSAT satellite system.

8.3.7.4.2 Operator.

The firm personnel shall undergo the relevant training and hold the Certificate for EPIRB manufacturer confirming its right for EPIRB-406 shore-based servicing performance.

8.3.7.4.3 Equipment.

The firm shall have the following:

.1 set of calibrated equipment for servicing the EPIRB-406 in accordance with the provisions of MSC/Circ.1039;

.2 screened room or the relevant screening equipment preventing the transmission of a signal from the EPIRB-406 being checked to a satellite;

.3 set of spare parts, spare supply units approved by the manufacturer, as well as the reserve stock of EPIRB-406 in amounts agreed with the manufacturer (for a temporary EPIRB-406 replacement on a ship for a period of servicing).

8.3.7.4.4 Procedures and guidelines.

The firm shall have the following:

.1 documented operating procedures and guidelines regulating EPIRB-406 servicing performance;

.2 log of servicing with details of the scope of inspections carried out and the components replaced;

.3 set of technical documentation for those types of EPIRB-406, which the firm is authorised to service;

.4 service-bulletins distributed by the EPIRB-406 manufacturer;

.5 last version of the software provided by the EPIRB-406 manufacturer or the manufacturer of the equipment used during inspection, as well as access to the renewal of that software.

8.3.7.4.5 Confirmation of authorities.

Firms shall present the confirmation of authority, i.e. contractual relations with the manufacturer for supply of spare parts, power supply units and consumables, as well as the document authorizing shorebased servicing performance for the specific EPIRB-406 type(s) on behalf of the EPIRB-406 manufacturer.

8.3.7.4.6 Annual testing of EPIRB.

Annual tests of EPIRB shall be performed according to IMO Circular ИМО MSC.1/Circ.1040/rev.1 and/or MSC.1/Circ.1123. See circular 1120c

8.3.7.5 Recognition Certificates (СП) issued to firms engaged in activities with codes 22006000 (22006001 to 22006008MK) shall be subject to endorsement at least once a year. In specific cases, as agreed upon with RHO, the endorsement period may be extended up to 20 months.

8.3.8 Requirements for firms engaged in inspection and testing of centralized gas-welding and gas-cutting equipment (code 22007000MK).

The firm shall document and demonstrate its knowledge gas welding, associated central gas installation systems and current safety requirements applicable to such equipment by national Administrations. This knowledge shall be sufficient to carry out inspections and testing and to make the necessary evaluations of the equipment condition.

8.3.9 Requirements for firms engaged in surveys and maintenance of self-contained breathing apparatus (code 22008000MK).

8.3.9.1 Extent of engagement.

Inspections and maintenance of self-contained breathing apparatus and emergency escape breathing devices (EEBD).

8.3.9.2 The firm shall document and demonstrate that it has knowledge of the equipment and systems sufficient to carry out the inspections and testing of self-contained breathing apparatus to identify standards and to make the necessary evaluation of the condition of the equipment.

In demonstrating professional knowledge, firms shall have an understanding of the operational requirements involved with self-contained breathing apparatus and how these shall be maintained.

Additionally, the firms shall demonstrate the necessary safety requirements applicable to such equipment.

8.3.9.3 Files of the firm documents.

The firm shall have documented procedures and instructions on how to carry out the servicing of the equipment and/or system. These are to either contain or make reference to the manufacturer's servicing manuals, servicing bulletins, instructions and training manuals, as appropriate.

Additionally they shall make reference to any requirements (e.g. what markings shall be appended to the equipment/system) and how they shall be applied.

8.3.9.4 Reference documents.

The firm shall have access to the following documents:

manufacturers' servicing manuals, servicing bulletins, instructions and training manuals, as appropriate;

Type Approval Certificates showing any conditions, which may be appropriate during the servicing and/or maintenance of self-contained breathing apparatus.

8.3.9.5 Equipment and facilities.

8.3.9.5.1 General requirements.

If firms undertake shore-based inspecting and maintenance, they shall maintain and implement procedures for workshop cleanliness, ventilation and arrangement, with due cognisance of the spares and pressurised bottles being stored, to ensure safe and effective working procedures.

The firms undertaking inspecting and maintenance of equipment and systems onboard shall provide the appropriate facilities to either complete the work onboard or remove the necessary items to their workshops.

8.3.9.5.2 Equipment.

Sufficient and appropriate spares and tools shall be available for repair, maintenance and servicing of self-contained breathing apparatus in accordance with the requirements of the manufacturers.

These shall include, as required by the self-contained breathing apparatus equipment and/or systems:

.1 various scales to weigh items;

.2 means to hydrostatically pressure test components/systems/storage bottles;

.3 flow meters;

.4 pressure gauges;

.5 equipment for checking air quality;

.6 recharging facilities for breathing apparatus.

8.3.10 Requirements for firms engaged in examination of ro-ro ships bow, stern, side and inner doors (code 22012000).

8.3.10.1 Extent of engagement.

Inspection of securing and locking devices, hydraulic operating system, electric control system for the hydraulics, electric indicator systems, and supporting, securing and locking devices and tightness testing.

8.3.10.2 The firm shall be certified to the most current version of ISO **9000** series.

8.3.10.3 Reference documents.

The firm shall have access to the following reference documents:

SOLAS **74/78**, as amended;

ISO **9001** "Quality systems – Model for quality assurance in production, installation and servicing";

IACS Unified Requirement (UR) **Z24** "Survey Requirements for Shell and Inner Doors of Ro-Ro Ships";

the Register normative documents related to inner doors.

8.3.10.4 Supervisor.

In addition to **8.2.3**, a technician/supervisor shall have a minimum two years related education from a technical school.

8.3.10.5 Training of personnel.

Operators carrying out non-destructive testing shall be qualified to a recognised national or international standard for the methods used.

8.3.10.6 Required equipment.

8.3.10.6.1 For inspection of supporting securing and locking devices, hinges and bearings, the equipment for measuring clearances (i.e. feeler gauges, vernier calipers, micrometers) shall be provided.

Inspection shall be performed by non-destructive testing (i.e. dye penetrant, magnetic particle inspection).

8.3.10.6.2 For tightness testing ultrasonic leak detector or equivalent shall be provided.

8.3.10.6.3 For inspection of hydraulic operating system, the following shall be provided:

pressure gauges;

particle counter for analysing the quality of hydraulic fluid.

8.3.10.6.4 For inspection of electric control system and indication system, the following shall be provided:

digital multi-meter;

earth fault detector.

8.3.10.7 Procedures and instructions.

8.3.10.7.1 The supplier shall have access to drawings and documents, including the Operating and Inspection Manual.

8.3.10.7.2 The firm shall have access to access to the service history of the doors.

8.3.10.7.3 The supplier shall use, complete and sign a checklist which has been found acceptable by the Register.

8.3.11 Requirements for firms engaged in inspections of low location lighting systems using photo luminescent materials and evacuation guidance systems used as an alternative to low-location lighting systems (code 22015000MK).

8.3.11.1 Extent of engagement.

Luminance measurements on board ships of low location lighting systems using photo luminescent materials.

8.3.11.2 Operators.

The operator shall have the appropriate qualification, adequate knowledge of the applicable international requirements (namely SOLAS-**74/78/00** Regulation II-**2/13.3.2.5**,

IMO resolution A.752(18), ISO 15370-2010, FSSS Code Chapter 11), shall be able to document theoretical and practical training onboard in using equipment specified.

8.3.11.3 Equipment.

The measuring instrument shall incorporate a fast-response photometer head with CIE (International Commission on Illumination) photopic correction and have a measurement range of at least 10^{-4} to 10 cd/m^2.

8.3.11.4 Procedures.

Documented work procedures are at least to contain information on inspection preparation, selection and identification of test locations.

8.3.11.5 Reporting.

The report shall conform to Annex C of ISO 15370-2010.

8.3.11.6 Verification.

The supplier shall have the RS Surveyor's verification of each separate job, documented in the report by the attending Surveyor's signature.

8.3.11.7 Reference documents.

The service supplier shall have access to the following documents:

.1 IMO – International Convention on the Safety of Life at Sea (SOLAS), 74/78 Chapter II-2, Part D, Regulation 13.3.2.5 "Marking of escape routes";

.2 IMO – Fire Safety Systems (FSS Code), Chapter 11 "Low-location lighting systems";

.3 IMO resolution A.752(18) "Guidelines for the Evaluation, Testing and Application of Low-Location Lighting on Passenger Ships" (adopted on 4 November 1993);

.4 ISO 15370:2010 "Ships and marine technology – Low-location lighting on passenger ships – Arrangement";

.5 MSC/Circ.1168 "Interim guidelines for the testing, approval and maintenance of evacuation guidance systems used as an alternative to low-location lighting systems".

8.3.12 Requirements for firms engaged in sound pressure level measurements of public address and general alarm systems on board ships (code 22016000MK).

8.3.12.1 Extent of engagement.

Sound pressure level measurements of public address and general alarm systems on board ships.

8.3.12.2 Operators.

The operator shall have the appropriate qualification, have adequate knowledge of the applicable international requirements (namely, Regulations III/4 and III/6 of SOLAS 74/78, as amended, LSA Code Chapter VIII/7.2, IMO Code on alarms and indicators, 1995), shall be able to document theoretical and practical training onboard in using equipment specified.

8.3.12.3 Equipment.

The measuring instrument shall be an integrating sound level meter with frequency analyser capabilities complying with IEC 60651 and IEC 691672, type 1 precision class with, at least an A-weighting frequency response curve and 1/3 octave and 1 octave band filters, complying to IEC 61260, as appropriate for the measurements to be carried out. In addition, microphones shall be of the random incidence type, complying with IEC 60651.

8.3.12.4 Procedures.

Documented work procedures are at least to contain information on inspection preparation, calibration, selection and identification of test locations.

8.3.12.5 Reporting.

The report shall describe, as a minimum, the environmental conditions of the tests and, for each test location, the ambient noise level or the speech interference level, as appropriate for the measurements to be carried out. The report shall conform to any other specific requirement of the Register.

8.3.12.6 Verification.

The supplier must have the RS Surveyor's verification of each separate job, documented in the report by his signature.

8.3.12.7 Reference documents.

The service supplier shall have access to the following documents:

.1 SOLAS 74/78, Chapter III, Part A, Regulation 4 "Evaluation, testing and approval of life-saving appliances and arrangements";

.2 SOLAS 74/78, Chapter III, Part B, Regulation 6 "Communications";

.3 International Life-Saving Appliance (LSA) Code, Chapter VIII, Regulation 7.2 "General alarm and public address system";

.4 IMO Code on Alarms and Indicators, 1995 as amended;

.5 IEC 60651 (2001-10) "Sound level meters";

.6 IEC 61672 "Electroacoustics – Sound level meters";

.7 IEC 61260 "Electroacoustics – Octave-band and fractional-octave-band filters".

See circular 1051c

8.3.13 Requirements for firms engaged in the servicing and maintenance of lifeboats, launching appliances, on-load release gear and davit-launched liferaft automatic release hooks (code 22021000MK).

8.3.13.1 Extent of engagement.

Thorough examination, maintenance, repair and testing of lifeboats, launching appliances, on-load release gear and davit-launched liferaft automatic release hooks.

8.3.13.2 Extent of recognition.

8.3.13.2.1 The contents of this procedure apply equally to manufacturers when they are acting as service suppliers.

8.3.13.2.2 Any firm engaged in the thorough examination, operational testing, repair and overhaul of lifeboats, launching appliances, on-load release gear and davit-launched liferaft automatic release hooks carried out in accordance with SOLAS Regulation III/20 shall be

qualified in these operations for each make and type of equipment, for which they provide the service, and provide RS the manufacturer documentary evidence that they have been so authorized or they are certified in accordance with an established system for training and authorization in accordance with MSC.1/Circ.1277, as amended.

8.3.13.3 In cases where an equipment manufacturer is no longer in business or no longer provides technical support, the firm may be authorised for the equipment on the basis of prior authorization for the equipment and/or long term experience and demonstrated expertise as an authorized service provider.

8.3.13.4 Qualifications and training of personnel.

The firm personnel shall be trained and qualified in the operations, for which they are authorised, for each make and type of equipment, for which they provide the service. Such training and qualification shall include the following, as a minimum.

8.3.13.4.1 Employment and documentation of personnel certified in accordance with a recognized national, international or industry standard as applicable, or an equipment manufacturer's established certification program. In either case, the certification program shall be based on the guidelines in the appendix for each make and type of equipment, for which service shall be provided.

8.3.13.4.2 The education and training for initial certification of personnel shall be documented and address, as a minimum:

.1 causes of lifeboat accidents;

.2 relevant rules and regulations, including international conventions;

See circular 1051c **.3** design and construction of lifeboats, including on-load release gear and launching appliances, as well as on-load release gear and davit-launched liferaft automatic release hooks;

.4 education and practical training in the procedures specified in Annex **1** to MSC.1/Circ.1206/Rev.1, for which certification is sought;

.5 detailed procedures for thorough examination and inspection, maintenance, testing and repair of lifeboats, including launching appliances and on-load release gear, as well as on-load release gear and davit-launched liferaft automatic release hooks, as applicable;

.6 procedures for issuing a report of service and statement of fitness for purpose based on MSC.1/Circ.1206/Rev.1 (Annex **1**, paragraph **15**).

8.3.13.5 The education and training for the personnel shall include practical technical training on actual inspection, maintenance, repair and testing using the equipment (lifeboats, launching appliances and/or on-load release gear), for which the personnel shall be certified. The technical training shall include disassembly, reassembly, correct operation and adjustment of the equipment.

Classroom training shall be supplemented by field experience in the operations, for which certification is sought, under the supervision of an experienced senior certified person.

8.3.13.6 At the time of initial certification and at each renewal of certification, the firm shall provide documentation to verify personnel's satisfactory completion of a competency assessment using the equipment, for which the personnel are certified.

8.3.13.7 The service supplier shall require refresher training as appropriate to renew the certification.

8.3.13.8 Reference documents.

The service supplier shall have access to the following documents:

.1 MSC.1/Circ.**1**206 (Rev. **1**), as amended, "Measures to Prevent Accidents with Lifeboats";

.2 MSC.1/Circ.**1**277, as amended, "Interim Recommendation on Conditions for Authorization of Service Providers for Lifeboats, Launching Appliances and On-Load Release Gear";

.3 IMO resolution A.6**8**9(**1**7) "Recommendation on testing of life-saving appliances and, for lifesaving appliances installed on board on or after **1** July **1**999";

.4 IMO resolution MSC.**81**(70) "Revised recommendation on testing of life-saving appliances", as amended;

.5 for servicing and repair work involving disassembly or adjustment of on-load release mechanisms, availability of the equipment manufacturer's specifications and instructions;

.6 Type Approval certificate showing any conditions that may be appropriate during the servicing and/or maintenance of lifeboats, launching appliances and on-load release gear.

8.3.13.9 Equipment and facilities.

8.3.2.19.1 The firm shall have access to the following:

.1 sufficient tools, and in particular any specialized tools specified in the equipment manufacturer's instructions, including portable tools as needed for work to be carried out on board ship;

.2 sufficient materials, spare parts and accessories as specified by the equipment manufacturer for repairing lifeboats, launching appliances and on-load release gear, as applicable;

.3 for servicing and repair work involving disassembly or adjustment of on-load release mechanisms, availability of genuine replacement parts as specified or supplied by the equipment manufacturer.

8.3.13.10 Reporting.

The report shall conform to the requirements of MSC.1/Circ.**1**206 (Rev. **1**), Annex **1**, paragraph **15**. When repairs, thorough examinations and annual servicing are completed, a statement confirming that the lifeboat arrangements remain fit for purpose shall be promptly issued by the firm.

8.3.14 Requirements for firms engaged in underwater thickness measurements of ships and offshore installations under supervision of RS surveyor (code 22022000).

8.3.14.1 Firm.

The firm shall comply with requirements for firms engaged in in-water surveys of ships and offshore installations (code **22003000**) and in thickness measurements of ships under supervision of **RS** surveyor (code **22001000**).

8.3.14.2 Personnel.

8.3.14.2.1 In addition to the requirements in **8.3.1**, the personnel involved in underwater thickness measurements of ships shall be qualified both as a diver and an operator/supervisor on thickness measurements (refer to **8.3.3**).

8.3.14.2.2 In addition to applicable requirements in **8.3.1.1**, divers-operators/supervisors on thickness measurements shall have a Certificate of Vocational Training (Form 7.**1.34**), confirming that they are trained in thickness measurements on board ships.

8.3.14.2.3 For underwater thickness measurements, special-purpose instruments shall be used capable of providing at least the following:

metal thickness measurements without preliminary preparation of the surface and removal of protective coating;

option to use the equipment together with the data display and storage unit on board the ship such as digital repeater or personal computer with customized software. The thickness gauge data shall be transmitted to the ship through a connecting cable and displayed on a digital repeater or a personal computer to facilitate monitoring of thickness measurements by the **RS** Surveyor.

8.3.15 Special requirements for firms engaged in expertise of safe carriage of bulk cargoes by sea (code 22023000MK).

8.3.15.1 Legal status.

8.3.15.1.1 The firm and its personnel shall not be involved in any activities that may impair their independence and impartiality in respect of services rendered. The firm and its personnel involved in this kind of activity shall not interact with the developer, manufacturer, supplier, purchaser, owner, user or accompanying person (forwarder/agent), shipowner and underwriter or any representative thereof.

8.3.15.1.2 The firm activities on expertise of safe carriage of bulk cargoes by sea shall be independent from any other kind of commercial activities.

8.3.15.2 Personnel.

8.3.15.2.1 The firm shall have a sufficient number of technical, managing and service personnel capable of providing up-to-date expertise of safe carriage of bulk cargoes by sea, including those specialized in the following areas:

.1 cargo carriage by sea;

.2 analysis of physical and chemical properties of bulk cargoes;

.3 ship theory and design.

8.3.15.2.2 The firm personnel involved in development of Declarations of the Transportation Characteristics and Conditions for the Safe Shipment of Bulk Cargoes by Sea and Certificates of Cargo Characteristics at the Time of Loading as well as in development and implementation of the procedures for sampling, laboratory testing and water content monitoring shall have:

.1 higher education and field-specific continuing professional education corresponding to the area of recognition;

.2 appropriate skills and competence with regard to the expertise of safe bulk cargo carriage by sea and monitoring of safety precautions during the cargo carriage by sea;

.3 confirmed work experience in expertise of safe bulk cargo carriage by sea and development of Declarations on Transportation Characteristics and Conditions for the Safe Carriage of Bulk Cargoes by Sea and Certificates of Cargo Characteristics at the Time of Loading not less than **3** years.

8.3.15.2.3 The firm shall have at least five employees involved in full-time activities complying with **8.3.8.2.2**.

8.3.15.2.4 Employees not complying with **8.3.8.2.2** may be involved in activities, provided that they perform these activities under supervision of the employees complying with these requirements.

8.3.15.2.5 The firm shall submit the following documents confirming fulfilment of the established requirements:

.1 employment agreements or their copies;

.2 civil law agreements or their copies;

.3 certificates on higher education, secondary vocational education or continuing professional education or their copies;

.4 employment record books or their copies.

8.3.15.3 Measurement assurance.

The firm shall incorporate a testing laboratory accredited by the Federal Accreditation Service complying with 9.3.9.

8.3.15.4 Files of the firm documents.

8.3.15.4.1 The firm shall develop and keep its own register and information files of national and international rules and regulations applicable to the expertise of safe bulk cargo carriage by sea including cargo handling operations in ports.

8.3.15.4.2 The firm shall have valid normative and technical documents required for performance of activities in the expertise of safe bulk cargo carriage by sea including the following:

.1 national and international normative documents regulating carriage of bulk cargoes by sea;

.2 technical regulations, interstate, state and industry standards, technical specifications, safely data sheets for materials to be declared and certified;

.3 international and national standards regulating sampling, sample preparation and laboratory tests of materials to be declared and certified.

8.3.15.4.3 The firm shall maintain, keep within 10 years and submit to the Register the following report documents both in Russian and English:

.1 list of the personnel authorized to perform bulk cargo sampling with specimen signatures;

.2 training record books for the personnel involved in sampling and sample preparation;

.3 reports on internal audit of procedures for sampling and sample preparation;

.4 records of spot samples and representative sample preparation;

.5 maintenance record books for sampling and sample preparation devices;

.6 reports on deviations from approved sampling and sample preparation procedures and amendments thereto.

8.3.15.5 Quality System.

8.3.15.5.1 The firm shall develop, implement and maintain as well as certify the Quality System for compliance with the effective version of ISO 9001 by the certification authority accredited in compliance with the effective version of ISO/IEC 17021 or its national equivalent.

8.3.15.5.2 The firm shall develop and implement the procedures prescribing the following:

.1 development of Declaration on Transportation Characteristics and Conditions for the Safe Carriage of Bulk Cargoes by Sea and Certificates of Cargo Characteristics at the Time of Loading with regard to international and national normative documents as well as the Register procedures;

.2 development and implementation of procedures for sampling, laboratory testing and water content monitoring as per International Maritime Solid Bulk Cargoes (IMSBC) Code, IMO resolution MSC.354(92) and MSC.1/Circ.1454;

.3 sampling, sample recording and preparation of bulk cargo samples. The procedures shall be approved by the Register, comply with the effective edition of the IMSBC Code and provide for liability of a person, involved in sampling and sample preparation, for compliance with applicable procedures and liability of the head of the firm for fulfilment of the sampling and sample preparation procedures by the personnel and assignment of only qualified personnel for the sampling. The sampling documents (reports, certificates) shall be signed by a person having directly performed the sampling;

.4 liability of the firm management and personnel for failure to comply with international and national documents and the Register procedures when carrying out the activities on the expertise of safe bulk cargo carriage by sea;

.5 development and implementation of measures to prevent and settle the conflict of interest;

.6 guarantees of the firm independence from commercial, financial, administrative or other pressures that may affect the quality of the activities performed;

.7 responsibility for impartial decision-making of the firm when performing works/rendering services as well as methods to provide impartiality;

.8 disclosure of information on affiliates of the recognized firm as per antitrust laws of the Russian Federation;

.9 identification of risks related to impartiality during work, elimination and minimization of the specified risks;

.10 assurance of the firm independence from the manufacturers, sellers, executors and purchasers including consumers;

.11 requirements to firm employees regarding the obligation to notify the firm on the previous and actual relations with designers, developers, manufacturers, sellers, product (work/service) operators, or other circumstances, which may result in a potential conflict of interest.

8.3.16 Special requirements for firms engaged in measurements of noise level onboard ships (code 22024000МК).

8.3.16.1 Extent of engagement.

Sound pressure level measurements onboard ships.

8.3.16.2 Supervisor.

The supervisor shall have a minimum of 2 years of experience as an operator in sound pressure level measurements.

8.3.16.3 Operators.

The operator shall have the following qualifications:

.1 knowledge in the field of noise, sound measurements and handling of measurement equipment;

.2 adequate knowledge of the applicable international requirements (SOLAS Regulation II-1/3-12, as amended, and IMO Code on Noise Levels onboard Ships, as amended);

.3 at least 1 year's experience, including participation in a minimum of 5 measurement campaigns as an assistant operator;

.4 training concerning the procedures specified in IMO Code on Noise Levels onboard Ships;

.5 be able to document theoretical and practical training onboard in using a sound level meter.

8.3.16.4 Equipment.

8.3.16.4.1 Sound level meters.

Measurement of sound pressure levels shall be carried out using precision integrating sound level meters. Such meters shall be manufactured to IEC 61672-1(2002-05) "Recommendation for sound level meters", as amended, type/class 1 standard as

applicable, or to an equivalent standard acceptable to the Administration. At that sound level meters class/type 1 manufactured according to IEC 651/IEC 804 may be used until 1 July 2016.

8.3.16.4.2 Octave filter set.

When used alone, or in conjunction with a sound level meter, as appropriate, an octave filter set shall conform to IEC 61260 (1995) "Octave-band and fractional-octave-band filters", as amended, or an equivalent standard acceptable to the Administration.

8.3.16.4.3 Sound calibrator.

Sound calibrators shall comply with IEC 60942 (2003-01), as amended, and shall be approved by the manufacturer of the sound level meter used.

8.3.16.4.4 Calibration.

Sound calibrator and sound level meter shall be verified at least every two years by a national Standard laboratory or a competent laboratory accredited according to ISO 17025 (2005), as amended. A record with a complete description of the equipment used shall be kept, including a calibration log.

8.3.16.4.5 Microphone wind screen.

A microphone wind screen shall be used when taking readings outside, e.g. on navigating bridge wings or on deck, and below deck where there is any substantial air movement. The wind screen shall not affect the measurement level of similar sounds by more than 0,5 dB(A) in "no wind" conditions.

8.3.16.5 Procedures and instructions.

8.3.16.5.1 The firm shall have documented procedures and instructions to carry out service of the equipment. Documented work procedures shall at least contain information on inspection preparation, selection and identification of sound level measurement locations, calibration checks and report preparation.

8.3.16.5.2 The supplier shall have access to the following documents:

.1 SOLAS 1988, as amended (Regulation II-1/3-12);

.2 IMO resolution A.468(XII) and IMO resolution MSC.337(91) "Code on Noise Levels onboard Ships";

.3 IMO resolution A.343(IX) "Recommendation on methods of measuring noise levels at listening posts";

.4 the Register rules and guidelines.

8.3.16.6 Reporting.

A noise inspection report shall be made for each ship. The report shall comprise information on the noise levels in the various spaces on board. The report shall show the reading at each specified measuring point. The points shall be marked on a general arrangement plan, or on accommodation drawings attached to the report, or shall otherwise be identified.

The format for noise inspection reports is set out in Appendix 1 of IMO Code on Noise Levels onboard Ships and may conform to any other specific requirement of the society (refer to IMO Circular MSC.337(91)).

8.3.16.7 Verification.

The supplier shall have the surveyor's verification of each separate job, documented in the report by his signature.

8.3.17 Requirements for firms engaged in tightness testing of primary and secondary barriers of gas carriers with membrane cargo containment systems for ships in service (code 22025000MK).

8.3.17.1 Extent of engagement.

.1 global vacuum testing of primary and secondary barriers;

.2 acoustic emission (AE) testing;

.3 thermographic testing.

8.3.17.2 Requirements for firms engaged in global testing of primary and secondary barriers.

8.3.17.2.1 Testing procedures.

Testing shall be carried out in accordance with cargo containment system designer's procedures as approved by the Register.

8.3.17.2.2 Authorization.

The supplier shall be authorized by the system designer to carry out the testing.

8.3.17.2.3 Equipment.

Equipment shall be maintained and calibrated in accordance with recognized national or international industrial standards.

8.3.17.2.4 Reporting.

The report shall contain the following:

.1 date of testing;

.2 identity of test personnel;

.3 vacuum decay data for each tank;

.4 summary of test results.

8.3.17.3 Requirements for firms engaged in AE testing.

8.3.17.3.1 Testing procedures.

The firm shall have documented procedures based upon recognized national or international industrial standards to perform ultrasonic leak test using AE sensors for the secondary barrier of membrane cargo containment systems. The procedures shall include details of personnel responsibilities and qualification, instrumentation, test preparation, test method, signal processing, evaluation and reporting.

Note. The differential pressure during testing shall not exceed the containment system designer's limitations.

8.3.17.3.2 Supervisor.

The responsible supervisor shall be certified to a recognized national or international industrial standard (e.g. Level II, ISO-9712 as amended or SNT-TC-1A as amended) and have one year experience at Level II.

8.3.17.3.3 Operators.

The operators carrying out the AE testing shall be certified to a recognized national or international industrial standard (e.g. Level I, ISO-9712 as amended

or SNT-TC-1A as amended) and shall have adequate knowledge of ship structures sufficient to determine sensor placement.

8.3.17.3.4 Equipment.

Equipment shall be maintained and calibrated in accordance with recognized national or international industrial standards or equipment manufacturer's recommendations.

8.3.17.3.5 Evaluation of AE testing.

Evaluation of AE testing shall be carried out by the supervisor or individuals certified to a recognized national or international industrial standard (e.g. Level II, ISO-9712 as amended or SNT-TC-1A as amended) and have one year experience at Level II.

8.3.17.3.6 Reporting.

The report shall contain the following:

.1 date of testing;

.2 supervisor and operator(s) certifications;

.3 description of time and pressure of each cycle of test;

.4 list and sketch detailing location of possible defects.

8.3.17.4 Requirements for firms engaged in thermographic testing.

8.3.17.4.1 Testing procedures.

Testing shall be carried out in accordance with the cargo containment system designer's procedures as approved by the Register.

8.3.17.4.2 Authorization – The firm shall be authorized by the system designer to carry out the testing.

8.3.17.4.3 Supervisor.

The responsible supervisor shall be certified to a recognized national or international industrial standard (e.g. Level II, ISO-9712 as amended or SNT-TC-1A as amended) with additional certification in infrared/thermal testing. SNT-TC-1A certified personnel shall provide evidence that training on Level II or above has been administrated by an independent training body centrally certified to ASNT or comparable nationally recognized certification scheme.

8.3.17.4.4 Operators.

The operators carrying out the imaging shall be certified to a recognized national or international industrial standard (e.g. Level I, ISO-9712 as amended or SNT-TC-1A as amended) with additional certification in infrared/thermal testing and shall have adequate knowledge of ship structures sufficient to determine position for each identified image, and of the containment system to understand the basis of the testing. SNT-TC-1A certified personnel shall provide evidence that training on Level I or above has been administered by an independent training body centrally certified to ASNT or a comparable nationally recognized certification scheme.

8.3.17.4.5 Equipment.

Thermal cameras and sensors shall be in accordance with the system designer's procedures with regards to sensitivity, accuracy and resolution.

Equipment shall be in accordance with recognized standard (IEC, etc.) with regard to their safety characteristics for the use in hazardous areas (in gas explosive atmosphere), maintained and calibrated in accordance with the manufacturer's recommendations. See circular 1051c

8.3.17.4.6 Evaluation of thermographic images shall be carried out by the supervisor or individuals certified to a recognized national or international industrial standard (e.g. Level II, ISO-9712 as amended or SNT-TC-1A as amended) with additional certification in infrared/thermal testing. Certification by the supplier is not allowed and shall be obtained through an independent certification body.

8.3.17.4.7 Reporting.

The report shall contain the following:

.1 date of testing;

.2 supervisor and operator(s) certifications;

.3 differential pressures of all phases;

.4 list and sketch detailing location of thermal indications;

.5 thermographic images of all phases of testing for thermal indications;

.6 evaluation of thermal images indicating possible leaks.

9 RECOGNITION OF TESTING LABORATORIES

9.1 GENERAL

9.1.1 The requirements of this Section apply to the testing laboratories conducting tests and measurements specified in Table **9.1.1**.

9.1.2 Tests of items of the RS technical supervision shall be conducted by the testing laboratories recognized by RS.

9.1.3 The testing laboratory shall meet general requirements listed in Section 7, requirements of **9.2**, relevant special requirements of **9.3** and the requirements of Administrations (if any).

9.1.4 Recognition of the testing laboratories by the Register shall be confirmed by the Recognition Certificate of Testing Laboratory (CIIJI) issued in accordance with 3.**4** to 3.7.

9.1.5 In individual cases, at the RS discretion, tests may be conducted in the testing laboratories not recognized by RS. At that prior to performance of tests, compliance of the testing laboratory with the requirements of Section 7 and requirements of **9.2.1.1**, **9.2.2.1**, **9.2.2.2**, **9.2.4.1**, **9.2.4.2**, **9.2.5**, **9.2.6** shall be verified.

9.1.6 The testing laboratories carrying out activities with code **21003000MK** shall comply with the requirements of Section 7, Part I "General Provisions" of the Rules for the Classification Surveys of Ships in Service.

9.2 REQUIREMENTS

9.2.1 Personnel.

9.2.1.1 Personnel of testing laboratory shall have not less than two years of practical training.

9.2.1.2 The testing laboratory shall have documents on its personnel containing the following information:

.1 functional duties;

.2 education;

.3 experience;

.4 re-training and terms of its validity;

.5 certification and terms of its performance.

9.2.1.3 The testing laboratory shall have the regular staff of specialists.

9.2.1.4 The testing laboratory shall have and adhere to the plans (schedules) of the following:

.1 training and re-training;

.2 refresher training;

.3 certification of the personnel with respect to performance of certain tests.

9.2.2 Technique.

9.2.2.1 The technique of testing laboratories shall comply with the testing procedures, according to which tests specified in the RS requirements are conducted for items of technical supervision.

See circular 1051c

Table 9.1.1

Codes	Tests and measurements
21001000	Vibroacoustic measurements and tests
21001100	Physical and chemical measurements and tests
21001101MK	Sampling and check tests (analysis) of anti-fouling system in accordance with AFS Convention
21001200	Fire tests of products and materials
21001300	Electromagnetic measurements and tests:
21001301	electrical measurements and tests
21001302	electromagnetic compatibility (EMC) tests
21001400	Ionizing measurements
21001500	Mechanical measurements and tests
21001600	Radio measurements
21001700	Non-destructive tests
21001800	Optical measurements
21001900	Heat engineering measurements and tests
21002000	Equipment protection tests
21002100	Climatic tests
21002200	Oily water analysis
21002300	Fuel and oil analysis
21002400	Analysis of gaseous emissions from marine diesel engines
21002500	Checking of software and/or performance algorithms of radio and navigational equipment
21002600	Tests of fire-fighting systems and fire-fighting outfit
21002700	Tests and periodical checks of foam concentrates
21002800	Oil product cargo analysis
21002900MK	Sampling and check test (analysis) of ballast water in compliance with the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 (BWM Convention)
21003000MK	Testing of coating systems in accordance with IMO resolution MSC.215(82) and / or MSC.288(87)
21003100	Full-scale tests during survey of onshore facilities: GMDSS sea areas A1 and A2; NAVTEX service; vessel traffic service (VTS)
21004000MK	Testing of bulk cargoes to determine transport performance

9.2.2.2 Tests shall be conducted in accordance with the relevant testing procedures, including those having regard to the environmental conditions, corresponding to each type of tests in the area indicated in the request. Use shall be made of the following:

.1 measuring equipment checked (calibrated) in the established order;

.2 certified testing equipment;

.3 ancillary equipment;

.4 references and standard specimens for technical support and measurement assurance of measuring equipment;

.5 appropriate consumables (chemicals, substances, etc.).

9.2.2.3 The testing laboratory shall have valid contracts for rented measuring and testing equipment.

9.2.2.4 The testing laboratory shall have the lists of the following:

.1 measuring equipment, including those used for certification of the testing equipment;

.2 testing and ancillary equipment;

.3 references and standard equipment.

9.2.2.5 The testing laboratory shall have and adhere to the schedules of the following:

.1 maintenance of measuring and testing equipment;

.2 checking (calibration) of measuring equipment;

.3 certification of testing equipment.

9.2.3 Files of the testing laboratory documents.

9.2.3.1 The testing laboratory shall have the valid normative and technical documents necessary for performance of tests in the area of recognition indicated in the request, including:

.1 list of activities performed (area of recognition);

.2 the Quality Manual or another similar document;

.3 duty regulations;

.4 operating and maintenance instructions on measuring and testing equipment;

.5 documents on records keeping and archives maintenance.

9.2.4 Reporting.

9.2.4.1 In addition to the information specified in **7.2.6.1**, test reports shall contain the following:

.1 designation: "Test Report" or "Conclusion";

.2 name and address of the testing laboratory;

.3 designation of the testing method with reference to the documents, in accordance with which the tests have been conducted;

.4 reference to the Sampling Report;

.5 test results with indication of units of measurements in accordance with the testing procedures;

.6 indication that the test results are valid only for the products tested;

.7 entry that the tests have been witnessed by the RS representative.

9.2.4.2 Sampling reports, where applicable, shall contain:

.1 date of the specimen selection (sampling);

.2 information that allows for unambiguous identification of specimens (samples) taken;

.3 place of the specimen selection (sampling);

.4 information on conditions of the specimen selection (sampling);

.5 reference to the documents, in accordance with which the specimens have been taken (sampling has been done).

9.2.4.3 Data (documents) confirming performance of tests (sampling reports, test reports, etc.) shall be kept in the testing laboratory for not less than five years under conditions of confidentiality. This requirement shall be established in the documents of the testing laboratory.

9.2.5 Checking and control.

9.2.5.1 The testing laboratory shall do the checking and exercise control over the performance of tests and their results.

9.2.5.2 The personnel of the testing laboratory responsible for checking (control) shall have not less than two years of experience as a performer in the area of activity indicated in the request.

9.2.5.3 The testing laboratory shall conduct check tests in compliance with the area of recognition indicated in the request witnessed by the RS representative.

9.2.6 Conditions of taking, transport and storage of samples.

9.2.6.1 Conditions of taking, transport and storage of samples shall meet the requirements of the testing procedures.

9.2.6.2 The testing laboratory shall identify the samples.

9.3 SPECIAL REQUIREMENTS

See circular 1120c

9.3.1 Special requirements for testing laboratories engaged in dye penetrant examination, radiographic examination, ultrasonic examination, magnetic particle examination of welds quality (code 21001700).

9.3.1.1 Reporting.

9.3.1.1.1 The testing laboratory shall have and maintain examination results logs.

9.3.1.1.2 A Statement (Test Report), in addition to the information specified in **9.2.4.1**, and examination results logs shall contain:

.1 a reference to the RS rules or other normative document as agreed with RHO regarding the use of criteria for assessing the quality of welds at radiographic examination;

.2 a reference to normative documents regarding the use of criteria for assessing the quality of welds at ultrasonic examination, dye penetrant examination, and magnetic particle examination;

.3 thickness of components at ultrasonic examination and radiographic examination (refer to Part XIV "Welding" of the Rules for the Classification and Construction of Sea-Going Ships);

.4 description of defects in accordance with applicable national or international standards.

9.3.1.1.3 Designation of checked lengths for duplicating radiographic examination shall correspond to the designation of the checked lengths used at ultrasonic examination.

9.3.1.2 Files of the testing laboratory documents.

9.3.1.2.1 The testing laboratory shall have instructions on performing assessment of the quality of welds taking into account the RS requirements.

9.3.1.3 The recognition certificates of testing laboratory (СПЛ) are subject to endorsement not less than once a year.

9.3.2 Special requirements for testing laboratories carrying out fire tests of products and materials (code 21001200).

9.3.2.1 In general, the testing laboratory shall be recognized by the Register. The Recognition Certificate of Testing Laboratory (СПЛ) is issued to the testing laboratory, carrying out fire tests, by RHO or the RS Branch Offices on behalf of RHO.

Fire tests carried out by the testing laboratories not recognized by RS shall be witnessed by the RS Surveyor.

9.3.2.2 Legal status.

9.3.2.2.1 The testing laboratory, as its routine activity, carries out checks and tests identical to those in the relevant parts of the Fire Test Procedures Code (refer to **1.2**, Part VI "Fire Protection" of the Rules for the Classification and Construction of Sea-Going Ships) or similar to them.

9.3.2.2.2 The testing laboratory shall not belong to the manufacturer, seller or supplier of the product/material to be tested and shall not be under their control.

9.3.2.3 Facilities.

9.3.2.3.1 The testing laboratory has access to arrangements, equipment, personnel and calibrated instrumentation needed for checks and tests performance.

9.3.2.4 Checking and control.

9.3.2.4.1 The testing laboratory shall use the quality control system being audited by competent bodies.

9.3.3 Special requirements for testing laboratories carrying out tests of fire-fighting systems and fire-fighting outfit (code 21002600).

9.3.3.1 Facilities.

9.3.3.1.1 The testing laboratory facilities shall be consistent with the test procedures specified in applicable documents mentioned in Chapter **4.3**, Part IV "Technical Supervision during Manufacture of Products".

9.3.4 Special requirements for testing laboratories carrying out tests and periodical checks of foam concentrates (code 21002700).

9.3.4.1 Facilities.

9.3.4.1.1 The testing laboratory facilities shall be consistent with the test procedures specified in the guidelines for performance and testing criteria and surveys of foam concentrates (refer to IMO circulars MSC.1/Circ.**1312**, MSC/Circ.**670**, MSC/Circ.**798**).

9.3.5 Special requirements for the testing laboratories carrying out sampling and check tests (analysis) of anti-fouling system in accordance with AFS Convention (code 21001101МК).

9.3.5.1 Facilities.

9.3.5.1.1 The testing laboratory facilities shall be consistent with the procedures for sampling and check tests (analysis) of anti-fouling system specified in IMO resolution MEPC.**104(49)** "Guidelines for Brief Sampling of Anti-Fouling Systems on Ships".

9.3.6 Special requirements for the testing laboratories carrying out oily water analysis (code 21002200).

9.3.6.1 Legal status.

9.3.6.1.1 While carrying out oily water analysis the testing laboratory with the status of the legal entity shall be independent of the parties interested in the analysis results.

9.3.6.1.2 The testing laboratory carrying out analysis during tests of equipment, systems and arrangements for the prevention of pollution by oily water shall not belong to the manufacturer, seller or supplier and shall not be under their control.

9.3.6.1.3 The testing laboratory shall bear responsibility for the impartiality and objectivity of the oily water analysis results.

9.3.6.2 Technique.

9.3.6.2.1 The testing laboratory technique shall comply with the methods of oily water analysis prescribed by the international and national documents regarding the environment pollution prevention (IMO resolutions MEPC.60(33), MEPC.**107(49)**, etc.).

In some cases on agreement with RS provisional application of other time-tested methods and relevant measuring and testing equipment is allowed. Meanwhile, the analysis results shall comply with the requirements of the international documents in respect of the reliability and accuracy.

9.3.6.2.2 Measuring and testing equipment belonging to other firms, organizations or individuals as well as being the property of the testing laboratory shall be identified and registered in the documents of the testing laboratory (passport, record sheet or card).

9.3.6.3 Files of the testing laboratory documents.

9.3.6.3.1 The testing laboratory shall have instructions on the procedure of sampling, testing, issue of testing results and normative documentation on oily water analysis (bilge water, dirty ballast and flushing water).

9.3.7 Special requirements for the testing laboratories carrying out fuel and oil analysis (code 21002300), oil product cargo analysis (code 21002800).

9.3.7.1 Legal status.

9.3.7.1.1 While carrying out fuel, oil and oil product cargo analysis the testing laboratory with the status of the legal entity shall be independent of the parties interested in the analysis results.

9.3.7.1.2 The testing laboratory shall bear responsibility for the impartiality and objectivity of the results of fuel, oil and oil product cargo analysis.

9.3.7.2 Personnel.

9.3.7.2.1 Besides the relevant qualification, training, experience and satisfactory knowledge in respect of the analysis carried out, the personnel responsible for the contents of the protocols (reports, conclusions) on the analysis results shall have necessary knowledge as regards:

.1 possible consequences of the onboard use of fuel and oil of degraded quality (not complying with the relevant technical specifications, standards) and of the transport of oil product cargo with inappropriate characteristics;

.2 possible reasons for change of physical and chemical properties of the oil used in machinery and equipment in operation.

9.3.7.3 Technique.

9.3.7.3.1 The testing laboratory technique shall provide for laboratory testing and quick analysis to monitor quality characteristics of oil products within the area of recognition indicated in the request.

The testing laboratory shall be equipped with its own measuring and testing equipment providing for the required types of fuel, oil and oil product cargo analysis:

.1 bunker oil;

.2 new oil loaded onboard;

.3 oil used in machinery and equipment in operation, to evaluate their fitness for use against defect criteria and to assess technical condition of the ship items within survey systems on the basis of condition monitoring.

9.3.7.3.2 The testing laboratory technique shall provide for evaluation of at least the following quality characteristics of oil products.

9.3.7.3.2.1 For bunker oil:

.1 density;

.2 viscosity;

.3 sulphur fraction of total mass;

.4 water content;

.5 ash content;

.6 flashpoint;

.7 chilling point;

.8 coking ability;

.9 mechanical impurities content;

.10 vanadium, aluminium, silicium contents.

9.3.7.3.2.2 For new lubricating oil:

.1 flashpoint;

.2 viscosity;

.3 water content;

.4 alkali neutralization number;

.5 insoluble residue content.

9.3.7.3.2.3 For new hydraulic oil:

.1 viscosity;

.2 water content;

.3 acid number.

9.3.7.3.2.4 For lubricating and hydraulic oil used in machinery and equipment in operation:

.1 physical and chemical properties indicating change of the quality of analysed oils and technical condition of the ship technical means (usually measured by the monitoring system);

.2 wear debris.

9.3.7.3.2.5 For lubricating oil used in propeller and sterntube shafts in operation:

.1 water content;

.2 chlorides content;

.3 content of bearing metal particles;

.4 oil aging (resistance to oxidation).

9.3.7.3.3 Measuring and testing equipment belonging to other firms, organizations or individuals as well as being the property of the testing laboratory shall be identified and registered in the documents of the testing laboratory (passport, record sheet or card).

9.3.7.4 Files of the testing laboratory documents.

9.3.7.4.1 The testing laboratory shall have instructions on the procedure of sampling, testing, issue of testing results and normative documentation on fuel, oil and oil product cargo analysis.

9.3.7.5 Reporting.

9.3.7.5.1 The testing laboratory shall have and maintain the analysis results logs.

9.3.7.5.2 Records (conclusions, test protocols and results logs) on analysis of test samples of bunker oil and new oil loaded onboard shall contain values of the physical and chemical properties specified in passports (delivery notes) for ordered fuel and oil.

9.3.7.5.3 The testing laboratory shall immediately notify the customer of each case of the bunker oil properties non-compliance with the requirements of regulations **14** and **18** of Annex VI to MARPOL **73/78** identified within the scope of the analysis carried out.

9.3.8 Special requirements for testing laboratories carrying out sampling and check test (analysis) of ballast water in accordance with International Convention for the Control and Management of Ship's Ballast Water and Sediments, 2004 (BWM Convention) (code 21002900MK).

9.3.8.1 Technique.

9.3.8.1.1 The testing laboratories shall be consistent with methods for sampling and analysis of ballast water, as specified in IMO resolution MEPC.**173**(**58**) and MEPC.**174**(**58**).

9.3.8.1.2 The analysis results shall comply with the requirements of the **B**WM **C**onvention.

9.3.8.1.3 The testing laboratories technique shall enable evaluation of the following quality characteristics of the ballast water at least.

9.3.8.1.3.1 Quantity of viable organisms:

.1 per cubic meter;

.2 per milliliter.

9.3.8.1.3.2 Indicator microbes content:

.1 toxicogenic Vibrio cholerae;

.2 escherichia coli;

.3 intestinal Enterococci.

9.3.9 Special requirements for testing laboratories carrying out testing of bulk cargoes to determine transport performance (code 21004000MK).

See circular 1051c **9.3.9.1** Sampling and sample preparation procedures shall comply with the requirements of IMSBC Code, IMO resolution MSC.354(92), and IMO circulars MSC.1/Circ.1453 and MSC.1/Circ.1454 as well as they shall be approved by the Register.

9.3.9.2 A testing laboratory shall keep, store for 10 years and submit to the Register the following records drawn up both in Russian and English:

.1 training record books for the personnel involved in sample preparation and testing;

See circular 1120c **.2** reports on internal testing of sample preparation procedure and testing;

.3 record books of point sampling and representative samples preparation;

.4 test reports;

.5 calibration and maintenance logs for instrumentation and test equipment;

.6 reports on deviations from the approved sample preparation procedures as well as testing and amendments to be introduced thereto.

9.3.10 Special requirements for testing laboratories carrying out full-scale tests during survey of onshore facilities: GMDSS sea areas A1 and A2; NAVTEX service; vessel traffic service (VTS) (code 21003100).

9.3.10.1 Testing procedure shall be submitted for the Register approval as part of the testing laboratory documentation.

9.3.10.2 Testing procedure shall include, at least, the following information:

.1 appropriate identification;

.2 scope of application;

.3 description of an item subject to testing or calibration;

.4 parameters and quantitative indices and ranges to be specified;

.5 facilities and equipment, including requirements to technical specifications;

.6 required environmental conditions and stabilization time;

.7 procedures, including:

checks prior to commencement of works;

checks of proper functioning and, where required, calibration and adjustment of the equipment prior to use;

method of observations and results recording;

safety measures to be met;

.8 criteria and/or requirements for acceptance or rejection of results;

.9 data to be recorded, method of analysis and data reporting form.

9.3.10.3 Prior to test, the testing laboratory shall develop the program of onshore facility tests. The test program shall comply with the approved testing procedure and consider the technical specification requirements for full-scale tests and environmental conditions, in which the tests are carried out. The test program shall be approved by an authorized body and agreed with the customer.

9.3.10.4 The testing laboratory shall have the facilities necessary for testing in accordance with the approved testing procedure.

9.3.10.5 Measuring and testing equipment being the property of the testing laboratory as well as belonging to other firms, organizations or individuals, shall be calibrated in the established order, identified and registered in the testing laboratory passport.

9.3.10.6 In case the software is used to control measuring and testing equipment, to accumulate, process, recording and storage of the test data, it shall be detailed, identified and submitted for the Register approval as part of the testing laboratory documentation. The software for the data storage shall be backed up and protected against an unauthorized access.

9.3.10.7 Possible adjustment of the testing and calibration equipment, including the hardware and software, which may invalidate the test results, shall be eliminated.

9.3.10.8. The testing laboratory personnel shall consist of, at least, 3 specialists with higher professional education proved by a nationally recognized document, having, at least, 3 years of practical experience in testing specified by the applicant.

9.3.10.9 In case the testing laboratory subcontracts another laboratory, the latter shall have the Recognition Certificate issued by the Register. The area of recognition of the testing laboratory-subcontractor shall correspond to code 21003100. The contract with the laboratory-subcontractor shall be concluded on a long-term basis and included in the testing laboratory documentation.

9.3.10.10 The testing laboratory shall not belong to the firms-owners of onshore facilities as well as to the manufacturers, suppliers of the equipment used in construction of onshore facilities, and shall not be under their control. The testing laboratory being part of the organization carrying out, in addition, the activities other than testing, shall demonstrate that the duties of the organization top management, participating or influencing the testing laboratory activities, shall be clearly defined to eliminate the potential conflicts of interest. The testing laboratory shall be capable of demonstrating its impartiality and that neither the testing laboratory itself, nor its employees do not experience commercial or other pressures to compromise their technical solutions.

9.3.10.11 The Test Report shall comply with the approved testing program and contain the list of the measuring and testing equipment applied during the tests.

9.3.11 Special requirements for firms engaged in testing of coating systems in accordance with IMO resolution MSC.215(82), as amended, and IACS UI SC223 and/or IMO resolution MSC.288(87), as amended (code 21003000МК).

9.3.11.1 Extent of engagement – testing of coatings systems according to IMO resolution MSC.215(82), as corrected by MSC.1/Circ.1381 and amended by IMO resolution 341(91) and IACS UI SC223 and/or IMO resolution MSC.288(87), as corrected by MSC.1/Circ.1381 and amended by IMO resolution 341(91).

9.3.11.2 The testing laboratory shall provide to the Register the following information:

.1 a detailed list of the laboratory test equipment for the coating approval according to IMO resolution MSC.215(82) as amended and/or MSC.288(87) as amended;

.2 a detailed list of reference documents comprising a minimum those referred to in IMO resolution MSC.215(82) as amended and/or MSC.288(87) as amended for the coating approval;

.3 details of test panel preparation, procedure of test panel identification, coating application, test procedures and a sample test report;

.4 details of exposure method and site for weathering primed test panels;

.5 a sample daily or weekly log/form for recording test conditions and observations including unforeseen interruption of the exposure cycle with corrective actions;

.6 details of any sub-contracting agreements, if applicable;

.7 comparison test reports with an approved coating system or laboratory if available.

9.3.11.3 Reporting.

Reference shall be made to the following IACS recommendations:

Recommendation 101 – Model Report for IMO resolution MSC.215(82) Annex 1 "Test Procedures for Coating Qualification";

Recommendation 102 – IACS Model Report for IMO resolution MSC.215(82) Annex 1 "Test Procedures for Coating Qualification", Section 1.7 – Crossover Test.

9.3.11.4 Audit of the test laboratory shall be based on the requirements of this Section and the standards listed in IMO resolution MSC.215(82) as amended and/or IMO resolution MSC.288(87) as amended for the coating approval.

9.3.11.5 For the testing laboratories engaged in testing of coating systems in accordance with IMO resolution MSC.215(82), as amended, and IACS UI SC223 and/or IMO resolution MSC.288(87), as amended, the definitions given in 8.1.1.1 shall be used.

See circular 1051c

See circular 1120c

10 RECOGNITION OF MANUFACTURERS

10.1 GENERAL

10.1.1 The requirements of this Section apply to the manufacturers of materials and products listed in the RS Nomenclature.

10.1.2 The firms (manufacturers) manufacturing materials and products in compliance with the requirements of **1.3.1.3**, Part X "Boilers, Heat Exchangers and Pressure vessels" and Part XIII "Materials" of the Rules for the Classification and Construction of Sea-Going Ships shall be recognized by the Register. In other cases, manufacturers may be recognized on the voluntary basis.

10.1.3 The manufacturer shall meet general requirements listed in Section 7, requirements of **10.2** and requirements of the Administrations (if any).

10.1.4 Recognition of the manufacturer by the Register is confirmed by the Recognition Certificate for Manufacturer (СПИ), which is issued in compliance with **3.4** to **3.7**.

10.2 REQUIREMENTS

10.2.1 Personnel.

10.2.1.1 The manufacturer shall have documents on the personnel containing the following information:

.1 functional duties;

.2 re-training and its terms of validity;

.3 certification and terms of its performance.

10.2.1.2 The manufacturer shall have the regular staff of specialists.

10.2.1.3 The manufacturer shall have and adhere to the plans (schedules) of the following:

.1 training and re-training of the personnel;

.2 refresher training of the personnel;

.3 certification of the personnel with respect to performance of certain activities.

10.2.2 Technique.

10.2.2.1 The manufacturer shall have the lists of equipment, premises and facilities necessary for performance of activity in the area indicated in the request.

10.2.2.2 The manufacturer shall have and adhere to the schedules of maintenance of equipment and instrumentation.

10.2.3 Measurement assurance.

10.2.3.1 When tests of materials and products shall be conducted in a testing laboratory, this laboratory shall meet the requirements of Section 9.

10.2.4 Files of the manufacturer's documents.

10.2.4.1 The manufacturer shall have the valid norma-tive and technical documents necessary for performance of activities in the area indicated in the request, including:

.1 list of activities performed (area of activity);

.2 operating and maintenance documentation on equipment;

.3 operating and maintenance documentation on measuring and testing equipment;

.4 duty regulations;

.5 documents on records keeping and archives maintenance.

11 AUDITS OF FIRMS

11.1 GENERAL

See circular 1051c **11.1.1** The requirements of this Section apply to the firms performing the activity in connection with items of the RS technical supervision, the kinds of which are specified in Table **11.1.1**.

11.1.2 Where technical supervision is conducted in the firms engaged in the activity with codes 22009000, 22013000, 22014000, 22014001, 22014002, 22014004, 22017000, 22017010, 22017020, 22020000, 22024000, these firms shall be audited by RS for compliance with the requirements in Section 7, relevant special requirements in **11**.3, and requirements of the Administration (if any).

In future, the Register reserves the right to audit the firm for compliance with the requirements in Section 7, relevant special requirements in **11**.3, where necessary.

In addition to requirements in Section 7, the firm may be audited on a voluntary basis against the requirements in **11**.2.

See circular 1120c **11.1.2.1** The firms that perform activity with code 22021000**МК** shall be audited by RS for compliance with the requirements of Section 7, requirements of **11**.2, relevant special requirements of **11**.3 and the requirements of Administrations (if any). Compliance of the firm shall be confirmed in accordance with **11**.1.4.

11.1.3 Audits of design offices engaged in the activity with code 22018000 are only conducted on a voluntary basis. In this case, the design office shall meet the general requirements listed in Section 7 (except for 7.2.4, 7.2.5.1.2, 7.2.6.1.8, 7.2.6.1.10, 7.2.6.1.12), the requirements of **11**.2 (except for **11**.2.3, **11**.2.4.1.3), special requirements and the Administrations' requirements (if any).

11.1.4 Compliance of the firm with the requirements of Section 7, requirements of **11**.2, relevant special requirements and Administrations' requirements (if any) is confirmed by the Certificate of Firm Conformity (ССП), which is issued in accordance with 3.4 to 3.7. In case the Certificate of Firm Conformity (ССП) is available, the audits are conducted in accordance with the conditions for its issue.

11.1.5 The firm shall demonstrate that its activity is performed in the area indicated in the request.

11.2 REQUIREMENTS

11.2.1 Personnel.

11.2.1.1 The firm shall have documents on the personnel containing the following information:

.1 functional duties;

.2 professional and special training and its terms of validity;

.3 certification and terms of its performance (if necessary).

11.2.1.2 The firm shall have the regular staff of specialists.

11.2.1.3 The firm shall have and adhere to the plans (schedules) of the following:

.1 training and re-training of the personnel;

.2 refresher training of the personnel;

.3 certification of the personnel with respect to certain activities.

11.2.2 Technique.

11.2.2.1 The firm shall have the lists of equipment, premises and facilities necessary for performance of activity in the area indicated in the request.

11.2.2.2 The firm shall have and adhere to the schedules of maintenance of equipment and facilities.

11.2.3 Measurement assurance.

11.2.3.1 The firm shall have the lists of the following:

.1 measuring equipment, including those for certification of testing equipment;

.2 testing and ancillary equipment;

.3 references and standard specimens.

11.2.3.2 The firm shall have and adhere to the schedules of the following:

Table 11.1.1

Code	Kinds of activity
22009000	Diagnostics of devices, installations, machinery, equipment, hull structures and other items of technical supervision
22013000	Measurement assurance of items of technical supervision
22014000	Conversion, modernization and repair of items of technical supervision (ships, hull structures, ship equipment, products, etc.)
22014001	Installation and commissioning of electrical and automation equipment
22014002	Maintenance and repair of electrical and automation equipment
22014004	Constructions of ships, including mobile offshore drilling units (MODU) and fixed offshore platforms (FOP)
22017000	Theoretical training and welders' practical qualification tests (at certification centers)
22017010	Training and certification of personnel for thickness measurement on ships (ultrasonic examination) in shipbuilding and shiprepair sector
22017020	Training and examination of coating inspectors
22018000	Design
22020000	Inclining test and light-weight check of ships
22024000	Manufacture of NSSS equipment of 1, 2 and 3 safety classes

.1 maintenance of measuring and testing equipment;

.2 testing (calibration) of measuring equipment;

.3 certification of testing equipment.

11.2.4 Files of the firm documents.

11.2.4.1 The firm shall have the valid normative and technical documents necessary for performance of activity in the area indicated in the request, including:

.1 list of activities performed (area of activity);

.2 operating and maintenance documentation on equipment;

.3 operating and maintenance documentation on measuring and testing equipment;

.4 duty regulations;

.5 documents on records keeping and archives maintenance.

11.3 SPECIAL REQUIREMENTS

See circular 1120c

11.3.1 Special requirements for the firms that perform activity with code 22021000МК.

11.3.1.1 The firms shall comply with the requirements of IMO circulars MSC.1/Circ.1206/Rev.1, MSC.1/Circ.1277 and the requirements of Administrations (if any).

11.3.2 Special requirements for the firms that perform activity "Training and examination of coating inspectors" (code 22017020) are specified in **3.2.9.3.1.1** to **3.2.9.3.1.3**, Part III "Technical Supervision during Manufacture of Materials".

11.3.3 Special requirements for the firms that perform activity "Training and certification of personnel for thickness measurement on ships (ultrasonic examination) in shipbuilding and shiprepair sector" (code 22017010).

11.3.3.1 Legal status.

11.3.3.1.1 The firm shall have documents confirming its competence in the kind of activity indicated in the request, issued by an organization authorized in accordance with the current legislation.

11.3.3.1.2 The firm shall be guided in its activity by the requirements of ISO/IIIC **17024** "Conformity assessment — General requirements for bodies operating certification of persons".

11.3.3.2 Personnel.

11.3.3.2.1 The firm shall have documents on the personnel containing the following information:

.1 full name;

.2 education;

.3 qualification level according to EN **473** or ISO 9**7**12 or a corresponding level in the national system;

.4 number and date of issue of a certificate according to EN **473** or ISO 9**7**12 or to a corresponding document in the national system;

.5 non-destructive examination sector(s);

.6 functional duties;

.7 working experience in methods and sectors of non-destructive examination.

11.3.3.2.2 The members of the examination board shall have qualification level III according to EN **473** or ISO 9**7**12 or a corresponding level in the national system.

11.3.3.2.3 Place of work of members of the examination board shall be specified in addition to information given in **11.3.4.2.1**.

11.3.3.2.4 The firm shall have and adhere to the personnel training, re-training and certification programmes.

11.3.3.2.5 The firm shall have and adhere to plans (schedules) of:

.1 training and re-training of the personnel;

.2 refresher training of the personnel;

.3 certification of the personnel with respect to performance of certain activities.

11.3.3.3 Technique.

11.3.3.3.1 The firm shall have examination samples as regards non-destructive examination, in accordance with items of the firm area of activity.

11.3.3.4 Measurement assurance.

11.3.3.4.1 Measurements shall be performed in the testing laboratory complying with the requirements of Section 9.

11.3.3.4.2 The testing laboratory shall be authorized to perform measurements in accordance with the current legislation.

11.3.3.5 Files of the firm documents.

11.3.4.5.1 The firm shall have programs for training and certification of personnel for thickness measurement on ships (ultrasonic examination) in shipbuilding and shiprepair sector and sets of examination questions by the following topics:

.1 main information on the items of examination, their production technology, repair, operating conditions (cargo handling gear, MODU, FOP, sea-going ships, ships of river-sea navigation, river ships, pipelines, heat exchangers, welded joint connections of structural elements, welding materials);

.2 materials applied in items, non-destructive examination methods;

.3 requirements of the RS rules for the hull structure of ships, MODU, FOP etc. (ship types and their structural particulars, name and designation of ship's hull members etc.);

.4 RS requirements for use and interpretation of results of thickness measurement on ships (ultrasonic examination) (normative base, types of wear and methods of their identification, norms of wear, preparation of reports on thickness measurement, preparation of items for the examination, safety precautions during works).

11.3.3.5.2 The firm shall have examination samples list as regards thickness measurement on ships (ultrasonic examination) with passports issued for every

examination sample in accordance with EN 473 or a corresponding document in the national system.

11.3.3.5.3 The firm shall have the valid normative and technical documents necessary for performance of activity in the area indicated in the request, including:

.1 list of activities performed (area of activity);

.2 the Quality Manual or a similar document;

.3 description of process for the training and certification of personnel for non-destructive examination;

.4 operating and maintenance documentation on technical equipment;

.5 operating and maintenance documentation on measuring and testing equipment;

.6 duty regulations;

.7 documents on records keeping and archives maintenance.

11.3.3.6 Reporting.

11.3.3.6.1 In addition to the information specified in 7.2.6.1, reports on the results of activity performed, shall contain:

.1 information on trainers;

.2 information on members of the examination board;

.3 the programs for training of personnel for thickness measurement on ships (ultrasonic examination) in shipbuilding and shiprepair sector;

.4 list of sets of examination questions including shipbuilding and shiprepair sector;

.5 the examination samples list for shipbuilding and shiprepair sector;

.6 information on trainees.

11.3.3.7 Checking and control.

11.3.3.7.1 Personnel of the firm responsible for the checking (control) shall have qualification level II or III according to EN 473 or ISO 9712 or a corresponding level in the national system.

11.3.3.7.2 The firm shall conduct control checks in the area indicated in the request witnessed by the RS representative.

11.3.4 Special requirements for the firms that perform activity "Manufacture of NSSS equipment of 1, 2 and 3 safety classes" (code 22024000).

11.3.4.1 Legal status.

11.3.4.1.1 The firm shall have a license of the state safety regulatory body in the field of nuclear energy use to perform the activity "Design and manufacture of nuclear plant equipment" as provided by applicable law.

11.3.4.2 File of the firm documents.

11.3.4.2.1 The firm shall have and maintain the procedures for development and agreement of the quality plans. The recommended content of the quality plan is given in Appendix 1 to federal codes and rules NP-071-06 "Regulations for Assessment of Conformity of Equipment, Materials and Semi-Finished Products to be Delivered to Nuclear Facilities".

12 TECHNICAL SUPERVISION AT THE FIRM (MANUFACTURER)

12.1 The Register performs technical supervision at the firm (manufacturer) on the basis of the contract or request on technical supervision (refer to Section 4).

When concluding the contract the firm (manufacturer) shall be audited for conformity with the requirements of Sections 10 or 11. Where deemed necessary, check tests of the firm (manufacturer) products may be required.

In performing technical supervision on a single request at the firm (manufacturer), fulfillment of the requirements of 7.2.2.1, 7.2.3, 7.2.4, 7.2.5, 7.2.7, 7.2.8 regarding the production process of the item of technical supervision shall be preliminarily verified.

In compliance with the provisions of Sections 10 or 11, the Recognition Certificate for Manufacturer (СПИ) or the Certificate of Firm Conformity (ССП) may be issued to the firm (manufacturer). The firm (manufacturer) shall be regularly audited for compliance with the requirements of Sections 10 or 11 within the terms agreed upon with the Register, which are established when the contract is concluded; in case the Recognition Certificate for Manufacturer (СПИ) or Certificate of Firm Conformity (ССП) is available, the audits are carried out in accordance with the conditions of their issuance.

12.2 Before commencement of the technical supervision the firm (manufacturer) shall draw up a list of the items of technical supervision in order to specify the scope and procedure of the item surveys and tests of the items of the Register technical supervision. The list shall be based on the requirements of the RS rules and these Rules and shall be agreed upon with the RS Branch Office. The items of technical supervision, detailed technical documentation on manufacture of the material or product, or construction of the ship, surveys and tests to be performed in the course of technical supervision, their procedure, as well as the documents to be issued and a necessity for branding shall be indicated therein.

12.3 The items of technical supervision are generally surveyed by the Register at the final stage of production (finished products) after acceptance of the products by the firm (manufacturer) technical control body and issue of the appropriate documents.

In separate cases, where it is motivated by the production process and/or design of the product, at the discretion of the Register, surveys may be performed on a step-by-step basis and simultaneously with the manufacturer's control.

Surveys at the intermediate stages of production of the items of technical supervision are carried out in the cases prescribed by the Register after completion of manufacturer's functional control or at the discretion of the Register, if motivated by the particular conditions of production.

12.4 The Register may require incoming check of materials and component parts at the firm (manufacturer), if it is found that they do not meet the RS requirements, or, if they are used, the items of technical supervision will not meet those requirements. In case of unsatisfactory results of the incoming check use of such materials is not allowed, regardless of availability of the certificates and other documents certifying their conformity with the RS requirements.

12.5 In the course of technical supervision at the firm (manufacturer) the Register checks the maintenance of the conditions, under which firms (manufacturers) and laboratories have been recognized and/or the contract on technical supervision concluded.

12.6 In carrying out technical supervision the Register may allow deviations from the approved technical documentation only within its authorities.

12.7 The firm (manufacturer) shall provide all the conditions necessary for the Register to carry out the technical supervision at the firm (manufacturer), namely:

to present the required technical documentation, in particular, manufacturer's documents on quality control of the products;

to prepare the items of technical supervision for survey in the scope required;

to provide for safety of surveys;

to provide for availability of the officials authorized to present the items of technical supervision for surveys and tests;

to timely inform the Register of the time and place of surveys and tests of the items of technical supervision.

Where the conditions required for performance of surveys are not fulfilled by the firm (manufacturer), the Register has the right to refuse to carry out surveys or to witness tests.

12.8 Upon satisfactory results of surveys and tests, the Register issues the appropriate documents for the items of technical supervision and puts the brands in the prescribed cases (refer to Sections 3, 4 and Appendices 1, 2).

13 TECHNICAL SUPERVISION AT THE SHIPYARD DURING CONSTRUCTION OF SHIPS[1]

13.1 Technical supervision during construction of ships is performed on the basis of the contract signed between the Register and the shipyard (refer to Section 4).

For the purpose of technical supervision the shipyard is audited for conformity with the requirements of Section **11**. Based on the audit results, the Certificate of Firm Conformity (CCП) (refer to Section **11**) may be issued to the shipyard. In case the Certificate of Firm Conformity (CCП) is available, the audits are conducted in accordance with the conditions of its issuance.

The shipyard building capacity (construction facilities) where technical supervision shall be introduced during construction of ships/series of ships specified in **3.1** of Appendix **3** to Part I "General Regulations for Technical Supervision" shall be reviewed in accordance with Section 6 of the above Appendix with issue of Shipyard Construction Facilities' Review Record. This requirement applies to the shipyard subcontractor company performing manufacture of hull structures and coating application at their own facilities or at other remote locations as well.

13.2 Scope and procedure of the technical supervision, types of checks, tests and control are indicated in the List of Items of Technical Supervision[2].

Along with the surveys performed under the List, additional patrols shall be conducted (refer to **13.4** and **13.5**).

The List is the basic working document used in the course of technical supervision at the shipyard.

13.3 The List shall be elaborated by the shipyard and agreed upon with the RS Branch Office[3]. The List is compiled on the basis of the RS Nomenclature for each prototype (single) ship, as well as ships of a series.

13.3.1 To be indicated in the List are hull structure items of technical supervision and hull construction processes, machinery, equipment and outfit, electrical and radio equipment.

Referred to the items of technical supervision are also production processes and individual works subject to technical supervision by the Register.

Scope of surveys, numbers of drawings, layouts, procedures and programmes of tests, production processes, etc. shall be indicated in the List for each item of technical supervision.

One presentation to the Surveyor, covering one or several items of technical supervision or works completed in the particular production workshop or at the particular stage of ship construction shall be made for each item of the List. Account shall be taken of construction sequence and other conditions of building a ship. The shipyard and the RS Branch Office shall take measures for minimum number of presentations.

13.3.2 On agreement with the RS Branch Office, use may be made as the List of one or several documents elaborated by the shipyard in accordance with its existing practice, such as the shipyard standard on presentation to the Register of structures and works performed or a list of presentation of sections, or the book of presentation of spaces for structural integrity, watertightness, etc. Shipyard's documents shall contain the data indicated in the List.

The RS Branch Office has the right, based on the experience of construction of ships and data on their operation, to introduce necessary improvements and additions into the List. The shipyard shall update the agreed documents, if required by the Surveyor.

13.3.3 Surveys under the List[4] are performed by the Surveyor upon presentation by the technical control body of the item of technical supervision or completed works together with the documents issued, finally verified by the shipyard and prepared for submission to the Register.

The main target of surveys under the List is verifying the compliance of item of technical supervision with the requirements of the RS rules. If deviation from the RS requirements, defects or deficiencies, which shall be eliminated, are found, the Surveyor shall require repeated presentation of the item of technical supervision for survey.

In case defects are found at some stage of construction, the Surveyor shall, irrespective of the List, require checking of the preceding operations to find out the cause of defects and to prevent their re-occurrence.

13.3.3.1 The shipyard's documents on the availability of the item of supervision (work scope) to be submitted to the Register for survey according to the List (application form, notification, book of presentation, etc.) shall contain:

number or name of a ship's design;

hull number;

name of the item of supervision submitted for survey or of the work scope according to the List;

numbers of drawings and other technical documentation related to the item of supervision;

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[1] The requirements of the present Section apply to technical supervision over construction of ships at the shipyard facilities, sub-contractors at the shipyard facilities, sub-contractors at their own facilities or at other remote locations.

[2] Hereinafter referred to as "the List".

[3] Hereinafter by the RS Branch Office is also meant a Survey Station of the RS Branch Office at the shipyard in accordance with the regulations for Survey Station.

[4] Hereinafter by the List are also meant the shipyard's documents referred to in 13.3.2.

conclusion of the shipyard's technical control body on the item quality and its availability for the Register survey;

time and place of the survey.

The above documents shall be signed by a representative of the shipyard's technical control body and handed over to the Surveyor for each presentation to the Surveyor in accordance with the List. Upon results of survey:

the remarks, if any, are recorded by the Surveyor in the document on survey;

the document on survey is signed and stamped by the Surveyor.

13.3.4 The Surveyor shall keep the records of scopes of surveys carried out under the List including the results of inspection of welds. Recording shall be made in such a way to provide traceability of scopes of works accepted by the Register.

13.4 Along with the surveys performed according to the List, the Surveyor carries out the following (patrols) not associated with the official presentation by the shipyard's technical control body: quality of check operations performed by the shipyard and production of individual parts and components of constructions, being parts of the items of technical supervision, which are presented under the List, as well as the sequence of production processes used for the manufacture of the item of technical supervision and providing quality thereof.

In so doing, special attention shall be given to detection of the faults and defects, which cannot be revealed in the course of surveys under the List upon completion of the appropriate works.

Inspections (patrols) may relate to the certain items of technical supervision indicated in the List, to the ship, as well as to the production workshop, laboratory, production process, etc. The interval between the inspections (patrols) is decided by the Surveyor depending on the nature of the item of technical supervision, quality of works performed by the shipyard and production conditions. Inspections (patrols) of the particular item of technical supervision shall be (as far as it is practicable) in the sequence of the processes used in construction of the ship and shall precede the appropriate inspections (patrols) under the List.

13.4.1 The results of patrols and a shipyard's notifications of their results are executed as established in RS or at the shipyard on agreement with the RS Branch Office.

13.5 The Surveyor may perform surveys not associated with the technical supervision during construction of the particular ships, but emerging from functions of the Register on technical supervision at the manufacturer or prescribed by the rules, guidelines and other normative documents of the Register, as well as arising from the contract on technical supervision with the Register.

13.6 Where inspections are associated with the particular norms, which are not contained in the applicable rules, the Surveyor shall use the approved technical documentation, including standards, specifications, instructions on the production processes.

13.7 The shipyard shall immediately inform the Surveyor of all cases where fractures, deformations, exceeding the permissible limits, fires resulting in damage of hull structures (deformations, fusing, burn of the metal, etc.), machinery, equipment, floodings and other (mostly emergency) cases occur, which can cause diminution of quality or danger of such diminution, replacement of machinery, equipment and outfit.

The Surveyor performs the survey and requires from the shipyard to eliminate the defects (or their causes) and specifies the scope and methods of elimination.

13.8 Prior to installation of machinery, arrangements, equipment and outfit the Surveyor shall check that all items of technical supervision are provided with the documents confirming their production under technical supervision of the Register.

13.9 The documents on all RS amendments allowable to the RS previously approved (agreed) technical documentation as well as on fulfilment of remarks of the Surveyor made at the previous stages of the technical supervision shall be submitted to the Surveyor.

13.10 Technical supervision of the Register in the course of tests of equipment and trials of the ship aims at checking their conformity with the approved (agreed) technical documentation, the RS rules and standards as well as with the provisions of international conventions applicable to the ship during construction.

13.10.1 Scope of trials of ships includes:

.1 preparation for trials;

.2 mooring trials;

.3 sea trials;

.4 inspection;

.5 trial voyage, check tests;

.6 operational trials (for a prototype ship).

The ship trials shall be performed in the presence of the Surveyors of the RS Branch Office in charge of technical supervision during construction of the ship at all stages, other than those referred to in **13.10.1.1** and **13.10.1.6**. Technical supervision at the stages indicated in **13.10.1.1** and **13.10.1.6** consists in checking and review of the technical documentation.

13.10.2 Preparation for trials is carried out by the shipyard engaged in the particular ship construction. The results of the work, namely: entries in the forms, dealing with deslushing of the equipment, measurement tables concerning adjustment and alignment works shall be submitted to the Surveyor to the Register in advance of commencement of mooring trials of the particular equipment.

13.10.3 Technical supervision in the course of mooring and sea trials of ships, machinery, arrangements, equipment and outfit provided in the RS Nomenclature is performed by the Surveyors of the RS Branch Office in charge of technical supervision during construction of

the ship or another RS Branch Office authorized by RHO.

13.10.4 The programme of mooring and sea trials is elaborated, agreed upon and approved in compliance with the requirements in force of the applicable rules and approved technical documentation.

13.10.5 Mooring and sea trials are carried out in accordance with the programme of mooring and sea trials, approved by the Register. Testing programmes for non-conventional ships in terms of their purpose or type and for ships being built in the countries where there is no RS Branch Office are reviewed by RHO. In all other cases, test programmes are reviewed by the RS Branch Office performing technical supervision during construction of ships.

The programme of mooring and sea trials shall include the stages listed in **13.10.1.1** to **13.10.1.5**.

13.10.6 To be specified in the test programme for every type of machinery, arrangements, systems and equipment are technical requirements, to be indicated also are necessary explanations, descriptions and procedures, namely:

.1 conditions, under which the tests shall be performed;

.2 scope of tests;

.3 duration of modes of operation;

.4 list of parameters to be measured;

.5 frequency of measurements;

.6 sequence of tests;

.7 instruments and equipment to be used;

.8 loading devices;

.9 other auxiliary equipment necessary for performance of the tests.

13.10.7 Provision shall be made in the programme of mooring and sea trials for technological instructions on combined tests of machinery, arrangements, systems, equipment, on application of simulation and instrument methods of checks, on use of outside sources of power, etc. Expediency and methods of simulation tests shall be determined by the shipyard and designer. When testing the ship equipment, which consists of a number of items of machinery, arrangements, systems and apparatus (e.g. ship main propulsion plants)[1], the programme shall provide simultaneous testing under specified conditions of all items of machinery, systems, arrangements and apparatus, which are parts of the system.

13.10.8 Account shall be taken in the programme of mooring and sea trials of the requirements of standards and technical documentation on delivery as well as the requirements of suppliers' programmes for tests of the equipment they supply.

Where testing procedures agreed upon with the Register are used, reference shall be made thereto in the programme of mooring and sea trials.

The shipyard documents issued after mooring and sea trials shall include the measurements indicated in the RS requirements.

13.10.9 The programme of mooring and sea trials shall provide for the inspection with subsequent check tests of machinery, arrangements, equipment or their assemblies after completion of sea trials. The scope of the inspection as well as duration and scope of the check tests are set up on agreement with the Surveyor.

13.10.10 Operational tests of the prototype ship are carried out by the customer (shipowner) in accordance with the special programme after commissioning the ship.

Test reports for seaworthiness and ice tests of ships as well as for vibration tests (if they are transferred to the period of operational tests) shall be submitted to the RS Branch Office in due time upon the completion of the trials.

13.10.11 Unless other terms of delivery are specified, the shipyard in charge of the ship construction is responsible for safety in the course of trials and safety of the ship.

The shipyard building the ship organizes performance of trials and conditions preventing any influence on test results as well as provides for the requirements for safe navigation.

13.10.12 The shipyard building the ship creates all the conditions for technical supervision by the Surveyor in the course of mooring and sea trials of the ship in compliance with the requirements of the rules and provides with:

.1 shipborne and shipyard communication facilities;

.2 transport means.

The equipment provided by the shipyard for use during the tests shall be operated in conformity with the regulations for their operation and maintenance instructions.

The Surveyor to the Register is not authorized to operate the equipment with his own hands or interfere with the actions of attending personnel. In case actions of the personnel might cause an accident or damage to the equipment, the Surveyor to the Register has the right to require, via representatives of the technical control body or a person who is in charge of delivery of the ship, elimination of breaches (including refusal from further participation in the trials conducted).

13.10.13 When testing the equipment, all works, which interfere with proper performance of the tests or endanger people involved in the tests, shall be stopped. The equipment tested and the space around shall be clean, free from foreign objects; provision shall be made of proper illumination and ventilation of the spaces.

Simultaneously with presentation of the item of supervision, technical documentation required for survey shall be submitted.

[1]Referred to them are main engines, shaftings and propellers with transmissions, bearings and couplings as well as their auxiliary machinery, systems, arrangements, boilers, pressure vessels and similar equipment.

13.10.14 Mooring and sea trials are performed under the approved programme according to the schedule agreed upon with the Surveyor. Justified deviations from the schedule likely to occur shall not interfere with the test process.

13.10.15 The items of technical supervision, which test results do not meet the requirements of the applicable rules or the approved documentation, shall be re-tested upon elimination of causes of unsatisfactory test results.

13.10.16 Elimination of deficiencies and re-testing shall be agreed upon with the Surveyor. Re-testing shall not affect further tests or interfere with their safety.

13.10.17 Measurements, which are taken by the technical control body and ascertain that the item of technical supervision is in good working order, shall be processed by the body upon completion of the tests of the item of technical supervision and submitted to the Surveyor.

In case of satisfactory results the Surveyor signs the shipyard document on completion of tests of the items of technical supervision, to which the tables of measurements are appended, where necessary.

13.10.18 A break in testing items of technical supervision under continuous operating conditions shall be indicated in the test report, and an issue of continuation of the tests and the conditions of their performance (extension of time period and scope) shall be agreed upon with the Surveyor, having regard to the causes of interruption of the tests.

13.10.19 In case of the second forced interruption of the same continuous mode of testing, the tests shall be stopped and the causes eliminated. Then re-testing shall be carried out in full or extended scope, where necessary. The time for test performance shall be agreed upon with the Surveyor.

13.10.20 The tests of items of technical supervision shall be stopped in the following cases:

.1 where faults or defects are found, the elimination of which requires a longer break than is specified by the programme (refer to **13.10.14**);

.2 where the item of technical supervision is in an emergency condition;

.3 in case the weather gets worse and it interferes with further performance of the tests, distorts the test results, affects safety of test performance and safety of the ship.

Depending on the causes, the decision to stop the tests is made by the Surveyor, shipyard or customer (on agreement with the Surveyor).

Whoever took the decision to stop the tests, the item of technical supervision shall be re-tested, the duration and scope of the tests shall be agreed upon with the Register.

13.10.21 In case tests of the item of technical supervision are stopped on demand of the Surveyor or by the shipyard on agreement with the Surveyor, a report is prepared, in which reasons why the tests have been stopped, requirements for elimination of those reasons before repeated tests will commence and conditions of performance of repeated tests are indicated.

13.10.22 The items of technical supervision may be installed on board the ship, which have not been totally tested by the shipyard engaged in the particular ship construction, provided the tests have been carried out under a special programme agreed upon with the Register with subsequent tests according to the programme of mooring and sea trials.

This requirement applies to prototype ships of a series.

13.10.23 The Surveyor to the Register does not participate in the work of the customer's acceptance commission.

13.11 The mooring trials are conducted to check:

.1 arrangement, completeness, quality of installation, adjustment and serviceability of main and auxiliary machinery, arrangements, systems, equipment and outfit as well as conformity of the parameters with the requirements of the RS rules, these Rules and approved technical documentation;

.2 readiness of the ship, its main and auxiliary machinery, arrangements, systems and equipment for sea trials.

13.12 Prior to mooring trials the shipyard shall submit the following documentation to the Surveyor:

.1 documents of the technical control body certifying the completion of installation works;

.2 programme of mooring trials approved by the Register;

.3 schedule of mooring trials (to be agreed upon with the Surveyor);

.4 contract specification;

.5 list of deviations from the RS rules and approved technical documentation with justification of the necessity to do so;

.6 lists of ship outfit and spare parts;

.7 certificates for the items of technical supervision;

.8 passports for the items of technical supervision with data on installation works;

.9 documents on the instruments, showing their fitness for application in tests;

.10 descriptions of the items of technical supervision and instructions on their maintenance;

.11 testing procedure (including simulation tests with layouts of simulating devices);

.12 additional technical documentation necessary for carrying out surveys, tests and preparation of the Register documents (specifications, standards, etc.).

13.13 The commencement of the mooring trials is decided by the shipyard management on agreement with the Surveyor, provided the requirements referred to in **13.12** are met.

13.13.1 The items of technical supervision shall be presented for mooring trials upon completion of all installation works and completion of main construction

works, which are likely to affect the testing of the item, and this shall be confirmed by the appropriate documents of the technical control body.

13.13.2 The technical control body, irrespective of the programme and schedule available, shall timely inform the Surveyor of the readiness of the items of technical supervision for tests and of the time of their performance.

13.13.3 Surveys and tests of the item of technical supervision are carried out by the Surveyor upon acceptance of the item by the technical control body.

13.13.4 Where poor quality installation or adjustment as well as other deficiencies or deviations from the approved documentation and applicable rules are revealed in the course of survey or tests, a document on poor quality products is prepared according to the form adopted at the shipyard. The repeated presentation of the item of technical supervision for the survey or test is made upon a request of the managers of the technical control body and engineering service of the shipyard.

13.13.5 Fulfilment of the requirements for certain items of technical supervision on agreement with the Register (in exceptional cases) may be transferred to the period of the sea trials or some other time, provided these requirements do not interfere with the sea trials or affect the safety of ship navigation and people on board.

13.13.6 In case the ship is not ready for sea trials according to the RS Branch Office, the RS Branch Office, prior to sea trials, shall send an application addressed to the shipyard which contains the impartial justifications for such an opinion.

13.14 The sea trials aim at the following:

checking of the main parameters of the main propulsion plant and of their conformity with the specification characteristics;

checking of operation of the main propulsion plant in manoeuvring under ahead and astern movement of the ship;

checking of reversing qualities of the main propulsion plant;

checking of serviceability of the main propulsion plant under conditions close to those of actual operation;

checking of serviceability of deck and other machinery and arrangements;

checking of automation equipment of the ships, if any, under conditions close to those of actual operation;

final tests of the items of technical supervision, except for those, which shall be inspected and subjected to subsequent check tests;

checking of serviceability of navigational, radio and electrical equipment under conditions close to those in actual operation;

measurements of torsional vibration of the main engine-shafting-propeller system, vibration measurements;

confirmation of a possibility to assign the Register class provided in the design to the ship according to its intended purpose and of a possibility to issue the Register documents.

13.14.1 In case the RS confirmation of the ship readiness for sea trials is required by port authorities to issue a sea trial permit, the Register may issue an appropriate confirmation, on the shipyard's request, in which preparation the following shall be considered:

.1 confirmation shall be drawn up in an arbitrary form on the RS official letter form (using Form **6.3.10** or **3.1.11**, or on the letter form upon agreement with the shipyard);

.2 confirmation shall include the statement that in accordance with a specific contract on technical supervision, RS has performed all the due surveys of a ship under construction and, according to the Register, the ship may be considered ready for sea trials in compliance with the RS requirements.

13.14.2 Prior to sea trials the shipyard shall submit the following documentation to the Surveyor:

.1 documents of the technical control body, which confirm the completion of the mooring trials;

.2 programme of sea trials approved by the Register;

.3 schedule of sea trials (to be agreed upon with the Surveyor);

.4 testing procedure;

.5 technical documentation necessary for surveys and tests;

.6 for sister ship, the Information on Damage Trim and Stability, Information on the Effect of Flooding updated according to the results of the previous inclining test, where necessary;

.7 for prototype ship, preliminary Information on Damage Trim and Stability, Information on the Effect of Flooding, Inclining Test Report and stability calculations;

.8 where necessary, documentation referred to in **13.12.4**, **13.12.5**, **13.12.7** to **13.12.10** shall be presented in addition to the above.

13.14.3 A possibility to go to sea trials is decided by the shipyard, on agreement with the Surveyor, provided the requirements of **13.14.**2 and **13.14.6** are met.

13.14.4 The area for sea trials shall be agreed upon with the Surveyor in terms of its conformity with the conditions specified by the requirements of the RS rules, these Rules and approved technical documentation. The suggested area for sea trials shall provide:

safety of performance of the sea trials;

no influence on the test results;

a possibility to carry out all the required surveys.

13.14.5 Upon completion of the sea trials or tests under operating conditions without ship movement, using simulation methods, the Surveyor communicates his remarks to the shipyard, which shall be eliminated before the Register issues the ship's documents, as well as a list of the items of technical supervision to be opened up and the scope of inspection.

13.14.6 In the course of the inspection individual assemblies are disassembled to identify their condition and a necessity in check tests after the inspection.

13.14.7 The list of the items of technical supervision to be inspected and the scope of the inspection are decided on the basis of mooring and sea trials having regard to the experience of technical supervision of the similar items.

13.14.8 Inspection results are stated in the technical control body's report which shall contain:

.1 list of the items of technical supervision to be inspected;

.2 description of the defects found;

.3 cause of defect;

.4 measures to eliminate the defects.

The Report shall be signed by the Surveyor as applied only to the items of the Register technical supervision.

13.14.9 Before the trial voyage all the defects found in the course of mooring and sea trials and the inspection shall be eliminated, all the remarks made by the Surveyor shall be taken into account.

13.14.10 A necessity in the trial voyage shall be agreed upon with the Surveyor and is generally governed by the following conditions:

.1 where the item of technical supervision needs to be inspected and the check tests thereof cannot be carried out without the trial voyage;

.2 where parameters characterizing proper operation of the item of technical supervision can be obtained only in the trial voyage;

.3 where, based on the results of mooring and sea trials and/or inspection, a need appeared in total replacement of the item of technical supervision or in replacement of vital assemblies, which serviceability can be confirmed only in the course of the trial voyage;

.4 where simulation means do not allow to obtain the required conditions or such means are not available.

13.14.11 Satisfactory results of the surveys performed under the list, no violation of the RS rules upon results of the patrols, mooring and sea trials as well as the trial voyage (if performed) shall be the basis for issuing the RS documents to the constructed ship.

13.15 In technical supervision of the prototype ship tests account shall be taken of the following.

13.15.1 The prototype ship tests are carried out under a comprehensive programme, including checking of the ship characteristics and determination of the parameters, which can be used for series ships without this checking.

13.15.2 The comprehensive programme for prototype ship tests shall include the following:

.1 torsional vibration measurements of the main engine — intermediate link (shafting, reduction gear, couplings) — propeller system;

.2 vibration measurements of individual items of machinery and hull structures;

.3 inclining test;

.4 sea trials under conditions as close to those of actual operation as possible;

.5 broadened scope of inspection;

.6 longer testing modes;

.7 trial voyage (if necessary, considering the provisions of **13.14.10**).

13.5.3 In case a list of arrangements to be made or recommended for use in the following ships of the series is elaborated upon completion of the prototype ship tests, such list shall be agreed upon with the Register.

13.15.4 Where deemed necessary, having regard to the purpose of the ship and in case of using prototypes of materials, machinery and equipment, the Register documents shall specify operational tests thereof according to the programme approved by the Register.

13.16 The technical supervision performed in the course of construction finishes with issue of the report (act) on survey, on which basis the documents to be issued by the Register to the ship are prepared.

14 TECHNICAL SUPERVISION ON BEHALF OF THE REGISTER

14.1 The Register can authorize ACS or another competent body to carry out technical supervision on its behalf.

14.2 Technical supervision on behalf of the Register is performed on the basis of the agreement on mutual substitution and under a particular authorization of the Register or an agreement made between the Register and the organization.

14.3 Where an authorization is given by the Register, items and scope of technical supervision, the procedure of the technical documentation approval, documents to be issued shall be specified. Besides, the procedure of payment for technical supervision services can also be indicated.

14.4 Unless provided otherwise, certificates and other documents issued by the organization in charge of technical supervision on behalf of the Register shall have the following notice: "Under authorization of the Register, No. _____ of _____ 20 ___".

14.5 Unless expressly provided otherwise, technical supervision is performed according to the procedures used by the authorized organization.

14.6 The authorizations for technical supervision are issued by RHO.

14.7 The Register reserves the right to cancel the authorization for technical supervision issued.

15 TECHNICAL SUPERVISION ON BEHALF OF ANOTHER CLASSIFICATION SOCIETY

15.1 Technical supervision on behalf of another classification society is performed by the Register on the basis of the agreement on mutual substitution and under a particular authorization of another classification society or an agreement made between the Register and another classification society.

15.2 When the Register is authorized by another classification society, items and scope of technical supervision, procedure of the technical documentation approval, documents to be issued shall be specified. Besides, the procedure of payment for supervision services can also be indicated.

15.3 Unless expressly provided otherwise, certificates or other documents issued by the Register on behalf of another classification society shall have the following notice: "Under authorization of (name of another classification society)".

15.4 Unless expressly provided otherwise, technical supervision is performed according to the Register practice.

15.5 Authorization for technical supervision from ACS shall be forwarded to RHO. The RS Branch Offices may render services on behalf of another classification society only upon written confirmation by RHO.

15.6 ACS has the right to cancel authorization for technical supervision issued.

16 ALTERNATIVE CERTIFICATION SCHEME

16.1 DEFINITIONS

16.1.1 The Alternative Certification Scheme is a certification scheme involving a manufacturer (and associated sub-suppliers, if needed) in the inspection, testing and certification of the manufacturer's products.

16.1.2 The Alternative Certification Scheme shall clarify:

the extent of the required inspection and testing;

to which extent and under which conditions the manufacturer may perform all or parts of the required inspection and testing without the presence of the RS Surveyor when the RS Certificate (C3) is required.

16.1.3 The extent to which the manufacturer is given permission to carry out inspections and testing without the presence of the RS Surveyor shall be agreed on a case by case basis, e.g. for a specific product production line or for specific parts.

16.2 SCOPE

16.2.1 The Alternative Certification Scheme may be arranged with product manufacturers and/or sub-suppliers.

16.2.2 The Alternative Certification Scheme with a manufacturer shall define the handling of subcontracted parts (those that require the RS or work Certificates or in any other way are addressed in the RS rules). The sub-supplier may be included in the Alternative Certification Scheme of the manufacturer or have his own Alternative Certification Scheme or deliver parts that are inspected and certified by the Register.

16.2.3 The Alternative Certification Scheme that permits the manufacturer to carry out all or parts of required inspection and testing without the presence of a Surveyor may be arranged in two versions with regard to traceability):

the Alternative Certification Scheme describes inspection, testing and certification additional to the manufacturer's standard quality control in order to meet the RS rules. The components shall be stamped with a special stamp supplied by the Register or identified as required by the Register;

the manufacturer has a standard quality control that covers all required inspection, testing and certification in compliance with the RS rules. Traceability and the required type of product document for components or products shall be defined in the Alternative Certification Scheme.

16.3 CONDITIONS

16.3.1 The conditions for the manufacturer to be granted the permission to carry out inspection and testing without the presence of a Surveyor are that:

.1 the manufacturer has an implemented Quality Management System according to a national or international standard approved by an accredited certification body or recognized by the Register. The availability of the Quality Management System certified for compliance with the current version of ISO 9001 is sufficient to meet this condition;

.2 the manufacturer has a quality control system, current drawings, and rules and standards that cover the materials and product to be certified;

.3 the inspection and testing required by the RS rules are either standard procedures in the Quality Management System or those that are specified in detail in the Alternative Certification Scheme;

.4 RS shall initially ascertain the manufacturer's compliance with the requirements of the Alternative Certification Scheme by verifying the required product and process approvals and performing an initial survey. Follow-up and renewal audits are conducted by the Register on a regular basis to verify that conditions of the Alternative Certification Scheme are continuously maintained by the manufacturer;

.5 if work certificates (W) or test reports (TR) are found not to fulfil the standards agreed with the Register, the component may not be accepted;

.6 the Register may carry out unscheduled inspections at the manufacturer and/or subcontractor at its own discretion;

.7 the manufacturers commit themselves to involve the Register when changes to the design, manufacturing process or testing are made as well as when any major production problems or any major product delivery problems have occurred;

.8 the Agreement on Survey (CO) issued in compliance with the Alternative Certification Scheme may be renewed subject to the survey. The scope of the renewal survey shall:

verify the conditions of the Alternative Certification Scheme are still met;

verify that the current products and processes are appropriately controlled.

16.4 INFORMATION TO BE SUBMITTED

16.4.1 For admission to the Alternative Certification Scheme for a product, the manufacturer shall submit an application enclosing the following documentation:

.1 product details;

.2 existing RS approvals of the manufacturer's products as far as required;

.3 the procedures relevant to the manufacturing process;

.4 a list of material suppliers with an indication of their approval by the Register (as far as required by the RS rules) and the type of technical supervision in each case;

.5 quality control plans relevant to the products and relevant components to be certified through the Alternative Certification Scheme. Said plans shall detail the inspections and tests required by the RS rules with an indication of which inspections and tests are delegated to the manufacturer and which shall be done in the presence of the RS Surveyor;

.6 the procedures relevant to the quality control and inspections, their methods, frequency and certification;

.7 the Quality Management System details;

.8 list of nominated personnel:

for marking/stamping of products;

for tests and inspection (responsible persons);

for provision of data and information (e.g. declaration of conformity, test reports etc.);

.9 any other additional documents that the Register may require in order to evaluate the manufacturing processes and product quality control.

16.5 PROCEDURE FOR THE MANUFACTURER SURVEY

16.5.1 Upon satisfactory examination of the complete documentation for application an initial audit shall be carried out at the manufacturer's works. This audit shall verify that the manufacture of the product and the relevant controls are performed in accordance with the documents submitted and are in compliance with the requirements laid down in the Alternative Certification Scheme documentation and the RS rules.

16.5.2 Upon satisfactory outcome of the audits, the extent, duration and conditions of the Alternative Certification Scheme are documented.

See circular 1120c See circular 1051c See circular 1050c

APPENDIX 1

NOMENCLATURE OF ITEMS OF THE REGISTER TECHNICAL SUPERVISION

1. Nomenclature of Items of the Register Technical Supervision is a list of materials, products, production processes and software regulated by the RS rules.

2. Definitions and abbreviations given in Section 1 of Part I "General Regulations for Technical Supervision" of these Rules are used in the RS Nomenclature, as well as:

P — technical supervision performed directly by the Surveyor;

CTO* (Type Approval Certificate), C* (Certificate filled-in and signed by the Register) or C3* (Certificate filled-in and signed by an official of a manufacturer and drawn up (affirmed) by the Register) – only upon the RHO authorization;

K — branding of items of technical supervision;

K* — branding of each rolled product;

MK — item subject to technical supervision in compliance with the requirements of international conventions.

3. The RS Nomenclature is presented in the form of the table comprising nine columns.

Column 1: "Code of item of technical supervision" — identification code of the material, product, production process or software is indicated, which consists of eight characters grouped in the following groups, each group consisting of two characters:

1st group — part of the RS rules, serial number;

2nd group — groups of machinery, systems, constructions, materials, production processes, software;

3rd group — types of machinery, systems, constructions, materials;

4th group — parts, assemblies;

5th group ("letter group") items of technical supervision covered by the international conventions.

Column 2 "Item of technical supervision" — name of the material, product, production process or software according to the RS rules is indicated.

Columns 3 to 9 "Technical supervision of the Register" — types of technical supervision are indicated:

supervision performed by the Surveyor (P), the Certificate (C) is issued;

supervision performed by the firm (manufacturer) technical personnel and RS in accordance with the Agreement on Survey (CO) (refer to 4.5 of the present Part), the Certificate (C3) is issued;

supervision performed through type approval of the item of technical supervision, Type Approval Certificate (CTO), Type Approval Certificate for Fire-Proof Division (СТПК), Certificate of Approval for Welding Consumables (COCM), Type Approval Certificate for Computer Program (СТОП), Welding Procedure Approval Test Certificate (СОТПС) are issued.

Column 3 "of the prototype" — necessity of supervision of the prototype performed directly by the Surveyor (P) is indicated.

Column 4 "type approval/recognition of manufacturer" — obligation of type approval of the item of technical supervision is indicated to be confirmed by Type Approval Certificate (CTO), Type Approval Certificate for Fire-Proof Division (СТПК), Certificate of Approval for Welding Consumables (COCM), Type Approval Certificate for Computer Program (СТОП), Welding Procedure Approval Test Certificate (СОТПС) as well as necessity of recognition of manufacturer to be confirmed by Recognition Certificate for Manufacturer (СПИ). In separate cases, at the discretion of the Register, where a single approval is given for the material or product, the Certificate (C) may be issued without issuing the document on type approval, as well on recognition of the manufacturer.

Column 5 "document issued" — the RS document is indicated, which is issued in case of the particular type of supervision providing the minimum permissible control for the particular material or product over fulfillment of the RS requirements.

In separate cases, at the RS discretion, types of supervision may be changed by RS.

Column 6 "branding" — obligation of branding of items of technical supervision in compliance with the Instructions on Branding of Items of the Register Technical Supervision (refer to Appendix 2) is indicated.

Columns 7, 8, 9 "installation, application", "mooring trials", "sea trials" — necessity of technical supervision during construction of ships performed directly by the Surveyor is indicated.

4. RS Nomenclature contains the following sections:

01000000 Hull
02000000MK Life-saving appliances
03000000 Arrangements, equipment, outfit
03000000MK Signal means
04000000MK Radio equipment
05000000MK Navigational equipment
06000000 Fire protection
07000000 Machinery installations
08000000 Systems and piping
09000000 Machinery
10000000 Boilers, heat exchangers and pressure vessels
11000000 Electrical equipment
12000000 Refrigerating plants
13000000 Materials
14000000 Welding consumables
14000000MK Cargo-handling gear
15000000 Automation

16000000 Glass-reinforced plastic ships and boats

17000000 Ships carrying liquified gases in bulk (LG carriers)

18000000 Nuclear ships and nuclear support vessels

19000000MK Equipment and appliances for prevention of pollution from ships

20000000 Computer software (computer calculation programs)

5. Firms (manufacturers) supply materials or products with the originals of the certificates (C, C3) or Type Approval Certificate (CTO), Certificate of Approval for Welding Consumables (COCM), certificates of type approval (COTO), certificates of type test (СОТИ), Type Approval Certificate for Computer Program (СТОП), Type Approval Certificate for Fire-Proof Division (СТПК) as indicated in column 5.

Shipboard internal combustion engines covered by regulation 13 of Annex VI to MARPOL 73/78 shall be supplied with EIAPP Certificate and approved NO_x Technical File.

NOMENCLATURE OF ITEMS OF THE REGISTER TECHNICAL SUPERVISION

Code of item of technical supervision	Item of technical supervision	Technical supervision of the Register						
		of prototype	type approval/ recognition of manufacturer	at the firm (manufacturer)		during construction of ship		
				document issued	branding	installation, application	mooring trials	sea trials
1	2	3	4	5	6	7	8	9
01000000	**HULL**							
01010000	Hull structures	P	—	C	—	P	—	—
01020000	Structures of superstructures and deckhouses	P	—	C	—	P	—	—
01030000	Seatings of machinery and arrangements	P	—	C	—	P	—	—
02000000MK	**LIFE-SAVING APPLIANCES**							
02010000MK	**Lifeboats and launching appliances:**							
02010002MK	release mechanisms and free-fall launching appliances for lifeboats	P	CTO*	C	K	P	—	—
02010100MK	**Launching appliances for lifeboats, rescue boats, fast rescue boats and liferafts:**							
02010101MK	launching appliances using falls and winches for lifeboats	P	CTO*	C	K	P	P	—
02010102MK	free-fall launching appliances for lifeboats	P	CTO*	C	K	P	P	—
02010103MK	launching appliances for rescue boats	P	CTO*	C	K	P	P	—
02010104MK	launching appliances for fast rescue boats	P	CTO*	C	K	P	P	—
02010105MK	launching appliances for liferafts	P	CTO*	C	K	P	P	—
02010200MK	**Lifeboats:**							
02010201MK	partially enclosed lifeboats	P	CTO*	C	K	P	P	—
02010202MK	totally enclosed lifeboats	P	CTO*	C	K	P	P	—
02010203MK	totally enclosed lifeboats with a self-contained air support system	P	CTO*	C	K	P	P	—
02010204MK	fire-protected totally enclosed lifeboats	P	CTO*	C	K	P	P	—
02010305MK	free-fall lifeboats	P	CTO*	C	K	P	P	—
02010306MK	free-fall lifeboats with a self-contained air support system	P	CTO*	C	K	P	P	—
02010307MK	fire-protected free-fall lifeboats	P	CTO*	C	K	P	P	—
02020000MK	**Liferafts, rescue boats, fast rescue boats:**							
02020100MK	Containers for inflatable liferafts	P	CTO*	C3	—	P	—	—
02020200MK	Arrangements for launching and raising for liferafts, lifeboats and rescue/fast rescue boats	P	CTO*	C	K	P	P	—
02020300MK	Hydrostatic release units	P	CTO*	C3	—	P	—	—
02020400MK	Weak link of life raft	P	CTO*	C3	—	P	—	—
02020500MK	Automatic gas inflation system for inflatable liferafts, marine evacuation systems, means of rescue, inflatable lifejackets	P	CTO*	C3	K	P	—	—
02020600MK	**Liferafts:**							
02020601MK	inflatable liferafts	P	CTO*	C, C3[7]	K	P	—	—
02020602MK	rigid liferafts	P	CTO*	C, C3[7]	K	P	—	—
02020603MK	self-righting liferafts	P	CTO*	C, C3[7]	K	P	—	—
02020604MK	canopied reversible liferafts (with two canopies)	P	CTO*	C, C3[7]	K	P	—	—
02020700MK	**Rescue boats:**							
02020701MK	rigid rescue boats	P	CTO*	C	K	P	P	—
02020702MK	inflated rescue boats	P	CTO*	C	K	P	P	—
02020703MK	combined rescue boats	P	CTO*	C	K	P	P	—

1	2	3	4	5	6	7	8	9
02020800MK	**Fast rescue boats:**							
02020801MK	rigid fast rescue boats	P	CTO*	C	K	P	P	—
02020802MK	inflated fast rescue boats	P	CTO*	C	K	P	P	—
02020803MK	combined fast rescue boats	P	CTO*	C	K	P	P	—
02030000MK	Means for bringing lifeboats and liferafts against ship's side and holding them alongside, skates	—	—	—	—	P	P	—
02040000MK	Embarkation ladders, lifelines	P	CTO*	C3	—	P	—	—
02050000MK	Lifebuoys	P	CTO*	C3	K	P	—	—
02050100MK	Self-igniting lights	P	CTO*	C3	—	P	—	—
02050200MK	Self-activating smoke signals	P	CTO*	C3	—	P	—	—
02050300MK	Buoyant lifelines	—	CTO*	CTO	—	P	—	—
02060000MK	**Lifejackets, immersion suits, anti-exposure suits and thermal protective aids**							
02060100MK	**Lifejackets:**							
02060101MK	non-inflatable lifejackets	P	CTO*	C3	K	P	—	—
02060102MK	inflatable lifejackets	P	CTO*	C3	K	P	—	—
02060200MK	**Immersion suits:**							
02060201MK	immersion suits with thermal insulation	P	CTO*	C3	K	P	—	—
02060202MK	immersion suits without thermal insulation	P	CTO*	C3	K	P	—	—
02060300MK	**Anti-exposure suits**	P	CTO*	C3	K	P	—	—
02060400MK	**Thermal protective aids**	P	CTO*	C3	—	P	—	—
02070000MK	Lifejacket lights	P	CTO*	C3	—	P	—	—
02080000MK	Line-throwing appliances	P	CTO*	C	—	P	—	—
02090000MK	**Equipment of survival craft, rescue boats/fast rescue boats:**							
02090001MK	lifeboat steering gears	—	—	—	—	P	—	—
02090002MK	masts with sails and stays	—	—	—	—	P	—	—
02090003MK	oars, thole pins or crutches, buoyant oars	—	—	—	—	P	—	—
02090004MK	cap or plag of drain valves of lifeboats	—	—	—	—	P	—	—
02090005MK	lifelines, handrails	—	—	—	—	P	—	—
02090006MK	boarding ladder of lifeboat and boarding ramp of liferaft	—	—	—	—	P	—	—
02090007MK	buoyant rescue quoit of liferafts with buoyant line	P	—	C3	—	P	—	—
02090008MK	lifeboat manual draining pumps	P	—	C3	—	P	—	—
02090009MK	protective covers	P	—	—	—	P	—	—
02090010MK	searchlights of lifeboats and rescue boats	P	CTO*	C3	—	P	—	—
02090011MK	life-saving signals table	—	—	—	—	P	—	—
02090012MK	signal whistles	P	CTO*	C3	—	P	—	—
02090013MK	boat compasses	P	CTO*	C3	—	P	—	—
02090014MK	internal and external lights of liferafts and lifeboats, lights of rescue/fast rescue boats	P	CTO*	C3	—	P	—	—
02090015MK	repair outfit (with instructions) for inflatable liferafts	—	—	—	—	P	—	—
02090016MK	waterproof electric torch	P	—	C3	—	P	—	—
02090017MK	food ration	P	CTO*	C3	—	P	—	—
02090018MK	fresh water	P	CTO*	C3	—	P	—	—
02090019MK	valves for inflatable liferafts and inflated rescue/fast rescue boats	P	CTO*	C3	—	P	—	—
02090020MK	first-aid outfit	P	CTO*	C	—	P	—	—
02110000MK	Sea activated power sources for lifejacket and liferaft lights and lifebuoy self-igniting lights	P	CTO*	C3	—	P	—	—
02120000MK	Marine evacuation systems	P	CTO*	C	K	P	—	—
02130000MK	Symbols for use in accordance with SOLAS-74 as amended	P	CTO*	C3	—	P	—	—
02140000MK	Means of rescue	P	CTO*	C, C3[7]	K	P	P	—
02150000MK	Type production processes	—	—	—	—	—	—	—
03000000	**ARRANGEMENTS, EQUIPMENT, OUTFIT**							
03010000	**Rudder and steering gear:**	—	—	—	—	P	P	P
03010100	rudder stocks including their flanges	P	—	C	K	P	—	—
03010101	rudder stock bearings	P	—	C3	—	P	—	—
03010102	parts of roller laying of steering gears	P	—	CTO	—	P	—	—
03010103	chains of steering ropes	P	—	CTO	—	P	—	—
03010200	rudder axles including their flanges	P	—	C	K	P	—	—
03010201	parts of connections of rudder axles with sternframe	P	—	C3	—	P	—	—

1	2	3	4	5	6	7	8	9
03010300	**Nozzle rudder in assembly:**	P	—	C	K	P	P	P
03010301	pintles	P	—	C3	K	P	—	—
03010302	pintle bushes	—	—	C3	—	P	—	—
03010303	parts for coupling rudder stock with nozzle rudder	P	—	C3	—	P	—	—
03010304	limiters of putting nozzle rudder over either side	P	—	—	—	P	—	—
03010400	rudder blade	P	—	C	K	P	—	—
03010401	pintles	P	—	C3	K	P	—	—
03010402	pintle bushes	P	—	C3	—	P	—	—
03010403	couplings	—	—	C3	—	P	—	—
03010404	limiters of putting rudder blade over either side	—	—	—	—	P	—	—
03010500	tillers	P	—	C3	—	P	—	—
03010501	parts of coupling tiller with rudder stock	—	—	C3	—	P	—	—
03010600	rudder quadrants	P	—	C3	—	P	—	—
03010601	parts for coupling quadrant with rudder stock	—	—	C3	—	P	—	—
03010700	**Hull and foundation of main steerable podded electrical propulsion units:**	—	—	—	—	P	P	P
03010701	parts of hull and propulsion block hull	P	—	C	K	—	—	—
03010702	parts of mounting block	P	—	C	K	—	—	—
03020000	**Anchor arrangement:**	—	—	—	—	P	P	P
03020005	anchor hawses	—	—	C3	—	P	—	—
03020100	anchors	P	СПИ	C3	K	P	—	—
03020300	anchor stoppers	P	—	C3	—	P	P	—
03020400	device for securing and releasing the inboard end of the chain cable or rope	P	—	C3	—	P	P	—
03030000	**Mooring arrangement:**	—	—	—	—	P	P	—
03030001	bollards, cleats, fairleaders, hawses, rollers and stoppers	—	—	C3	—	P	P	—
03040000	**Towing arrangements:**	—	—	—	—	P	P	P
03040001	bitts, bollards, fairleaders, rollers and stoppers	—	—	C3	—	P	—	—
03040002	tow hooks, tow line releasing devices	P	—	C3	—	P	—	—
03040003	snatch-blocks	—	—	C3	—	P	—	—
03040004	towing rails	—	—	—	—	P	—	—
03040100МК	**Emergency towing arrangement:**	P	—	C	—	P	P	—
03040101	chain devices	P	—	C3	—	P	—	—
03040102	tow lines	P	—	C3	—	P	—	—
03040103	tow securing arrangements	P	—	C3	—	P	—	—
03050000	**Signal masts:**	P	—	C3	—	P	—	—
03050001	metal, wooden and glass-reinforced plastic rigging fixed gear of masts and their standing rigging	P	—	C3	—	P	—	—
03050002	loose gear of standing rigging	P	—	C3	—	P	—	—
03060000	**Openings in hull, 1st and 2nd tiers of superstructures and deckhouses and their closing appliances:**	—	—	—	—	P	P	—
03060100	side and flush deck scuttles round and square, wheelhouse windows (refer also to code 06010006МК)	P	СТО	С3	—	P	P	—
03060101	glasses for side and flush deck scuttles, round and square, wheelhouse windows	—	СТО	СТО	—	—	—	—
03060200	in bottom side shell plating doors	P	—	C3	—	P	P	—
03060300	outside doors in superstructures and deckhouses	P	СТО	C3	—	P	P	—
03060400	covers of companion hatches, skylights and ventilation trunks	P	СТО	C3	—	P	P	—
03060500	ventilation pipes	P	—	C3	—	P	P	—
03060700	doors in watertight bulkheads	P	СТО	C3	—	P	P	—
03060800	hatch covers of dry cargo holds, holds fitted for alternate carriage of bulk liquid and dry cargoes, tweendecks, cargo tanks	P	—	C3	—	P	P	—
03060801	tank manhole covers	P	—	СТО	—	P	P	—
03070000	**Equipment of spaces:**							
03070001	plating, hold battens, linings in cargo holds	—	—	—	—	P	—	—
03070005	cellular guide members in holds of container carriers	—	—	—	—	P	—	—
03070200	doors in ship's spaces on escape routes	—	—	C3	—	P	—	—
03070300	stairways and vertical ladders	—	—	—	—	P	—	—
03070400	guard rails, bulwark and catwalk bridges	—	—	—	—	P	—	—
03070600	devices for securing movable decks, platforms, ramps and similar structures	P	—	C3	—	P	P	P
03070700	low-location lighting systems (photoluminiscent, electrically powered)	P	—	C3	—	P	—	—

1	2	3	4	5	6	7	8	9
03080000	**Grain fittings:**							
03080001	removable metal bulkheads	—	—	C3	—	—	—	—
03080003	shroud wire ropes	—	—	C3	—	—	—	—
03080004	gears of shrouds	—	—	C3	—	P	—	—
03090000	**Arrangement for attachement of timber deck cargo**	—	—	C3	—	P	—	—
03100000	**Items made of ropes for all applications**	P	—	C3	—	P	P	—
03110000	**Emergency outfit:**	—	—	—	—	P	—	—
03110001	thrummed mats, armoured mats with outfit	—	—	C3	—	P	—	—
03110002	tools	—	—	—	—	P	—	—
03110003	materials	—	—	—	—	P	—	—
03120000	**MODU jacking frame of self-elevating system:**	—	—	—	—	P	P	P
03120001	sliders and their guides	P	—	C	K	P	—	—
03120002	catches and their bearers	P	—	C	K	P	—	—
03120003	yokes and their latches	P	—	C	K	P	—	—
03120004	securing plates of hydraulic cylinders	P	—	C	—	P	—	—
03120005	support screws with nuts	P	—	C	K	P	—	—
03120006	jack frames	P	—	C	—	P	—	—
03120007	rack-and-pinion shafts	P	—	C	—	P	—	—
03120008	pinions and wheels	P	—	C	K	P	—	—
03120009	shafts	P	—	C	K	P	—	—
03120010	fastenings	P	—	C3	—	P	—	—
03130000	**MODU arrangements for lifting and lowering columns of submersible sea water pumps:**	—	—	—	—	P	P	—
03130001	columns and guides	P	—	C3	—	P	—	—
03130002	column support	P	—	C3	—	P	—	—
03130003	stoppers	P	—	C3	—	P	—	—
03140000	**MODU fixing arrangements:**	—	—	—	—	P	P	P
03140001	plates	P	—	C3	—	P	—	—
03140002	sliders	P	—	C3	—	P	—	—
03140003	screws and nuts	P	—	C3	—	P	—	—
03150000	Parts of lifting appliances for shipborne barges (lugs, eye plates, eyes, shackles, grips)	—	—	—	—	P	P	—
03160000	**Securing devices of general cargo on board the ships:**							
03160100	lashings (rope, chain, bar, belt, wire)	P	CTO	C3	K	P	—	—
03160200	tension devices (turnbuckles, bridge fittings)	P	CTO	C3	K	P	—	—
03160300	burtresses and shores	P	CTO	C3	K	P	—	—
03160400	locks (automatic and semi-automatic stoppers, stacking cones with locking pin)	P	CTO	C3	K	P	—	—
03160500	stacking cones (single, double, etc.)	P	CTO	C3	K	P	—	—
03160600	penguin hooks	P	CTO	C3	—	P	—	—
03160700	joint rings, lashing plates	P	CTO	C3	—	P	—	—
03160800	pedestal and flush sockets, dove-tail type sockets	P	CTO	C3	—	P	—	—
03170000MK	**Pilot transfer arrangements:**							
03170001MK	pilot ladders	—	—	C3	—	P	—	—
03170002MK	mechanical pilot hoists	—	—	C3	—	P	—	—
03180000MK	**Means of embarkation and disembarkation:**							
03180001MK	accommodation ladders and gangways	P	—	C	K	P	P	—
03200000	Type production processes	—	—	—	—	—	—	—
03000000MK	**SIGNAL MEANS**							
03010000MK	Navigation lights	P	CTO	C3	K	P	P	P
03020000MK	Flashing lights	P	CTO	C3	K	P	P	P
03030000MK	Sound signal means	P	CTO	C3	K	P	P	P
03040000MK	Pyrotechnic signal means	P	CTO	C3	—	P	—	—
03050000MK	Signal shapes	—	CTO	CTO	—	P	P	—
03100000MK	Type production processes	—	—	—	—	—	—	—
04000000MK	**RADIO EQUIPMENT**							
04020000	**Radiotelephone communication facilities:**							
04020900	VHF radiotelephone station	P	CTO*	CTO	—	P	P	P
04021100	UHF radiotelephone station	P	CTO*	CTO	—	P	P	P
04021200MK	two-way VHF radiotelephone apparatus for communications with aircraft	P	CTO*	C3*	—	P	P	P
04030500	portable two-way radiotelephone station	P	CTO*	CTO	—	P	P	P

1	2	3	4	5	6	7	8	9
04040000MK	Command broadcast facilities (command broadcast apparatus of public address system, microphone posts)	P	CTO*	C3	—	P	P	P
04070000	Aerial	P	CTO*	CTO	—	P	P	P
04080000	Marine clocks for radio rooms	P	CTO*	CTO	—	P	P	P
04090000	Satellite radio communication equipment	P	CTO*	C3	—	P	P	P
04110000MK	**GMDSS** radio equipment:							
04110100MK	digital selective calling (DSC) encoder	P	CTO*	C3	—	P	P	P
04110200	facsimile device	P	CTO*	CTO	—	P	P	P
04110300MK	terminal printing device	P	CTO*	C3	—	P	P	P
04110400MK	telephony and NBDP receiver	P	CTO*	C3	—	P	P	P
04110500MK	telephony, DSC and NBDP transmitter	P	CTO*	C3	—	P	P	P
04110600MK	VHF radiotelephone station	P	CTO*	C3	—	P	P	P
04110700MK	MF radiotelephone station	P	CTO*	C3	—	P	P	P
04110800MK	MF/HF radiotelephone station	P	CTO*	C3	—	P	P	P
04110900MK	direct-printing apparatus of improved fidelity	P	CTO*	C3	—	P	P	P
04111100MK	radio equipment power supply device, automatic battery charger	P	CTO*	C3	—	P	P	P
04111200	GMDSS workstations	P	CTO*	C3	—	P	P	P
04120000MK	VHF radio installation (set)	P	CTO*	C3	—	P	P	P
04130000MK	MF radio installation (set)	P	CTO*	C3	—	P	P	P
04140000MK	MF/HF radio installation (set)	P	CTO*	C3	—	P	P	P
04150000MK	INMARSAT ship earth station	P	CTO*	C3	—	P	P	P
04150100MK	INMARSAT ship earth station with EGC receiver	P	CTO*	C3	—	P	P	P
04150200MK	ship security alert system (SSAS)	P	CTO*	CTO	—	P	P	P
04160000MK	COSPAS-SARSAT satellite EPIRB	P	CTO*	C3	—	P	P	P
04170000MK	VHF EPIRB using DSC on channel 70	P	CTO*	C3	—	P	P	P
04180000MK	NAVTEX service receiver	P	CTO*	C3	—	P	P	P
04190000MK	enhanced group calling (EGC) receiver	P	CTO*	C3	—	P	P	P
04200000MK	DSC watch receiver	P	CTO*	C3	—	P	P	P
04210000MK	HF direct-printing radiotelegraph receiver	P	CTO*	C3	—	P	P	P
04220000MK	radar transponder	P	CTO*	C3	—	P	P	P
04220100MK	ship's and survival craft AIS search and rescue transmitter (AIS-SART)	P	CTO*	C3	—	P	P	—
04230000MK	two-way VHF radiotelephone apparatus	P	CTO*	C3	—	P	P	P
04240000	diagnosis and checking systems for GMDSS equipment	P	CTO*	CTO	—	—	—	—
04250000MK	integrated GMDSS radio communication system	P	CTO*	C3	—	P	P	P
04400000	radio equipment not mentioned above	P	CTO*	—[1]	—	P	—[1]	—[1]
04410000	Ship security surveillance TV system	P	CTO*	CTO	—	—	P	P
05000000MK	**NAVIGATIONAL EQUIPMENT**							
05010000MK	Magnetic compasses (standard, spare, lifeboat)	P	CTO*	C3	—	P	P	P
05010100MK	transmitting heading devices (THD)	P	CTO*	C3	—	P	P	P
05020000MK	Gyrocompasses	P	CTO*	C3	—	P	P	P
05030000MK	Logs (speed and distance measuring devices)	P	CTO*	C3	—	P	P	P
05040000MK	Deck logs	P	CTO*	CTO	—	P	P	P
05050000MK	Echo sounders	P	CTO*	C3	—	P	P	P
05060000MK	Heading control systems/track control systems	P	CTO*	C3	—	P	P	P
05070000MK	Integrated navigation systems	P	CTO*	C3	—	P	P	P
05080000	Combined ship's workstation	P	—	C	—	P	P	P
05090000	Horizontal sonar navigational systems	P	CTO*	CTO	—	P	P	P
05100000MK	Gyro-magnetic compasses and gyro-azimuths	P	CTO*	C3	—	P	P	P
05110000	Unified timing systems	P	CTO*	CTO	—	P	P	P
05120000MK	Rate-of-turn indicators	P	CTO*	C3	—	P	P	P
05130000MK	Electronic chart display and information system (ECDIS)	P	CTO*	C3	—	P	P	P
05140000MK	Radionavigation equipment:							
05140210MK	radar equipment intended for ships below 500 gross tonnage	P	CTO*	C3	—	P	P	P
05140220MK	radar equipment intended for ships below 10000 gross tonnage	P	CTO*	C3	—	P	P	P
05140230MK	radar equipment intended for ships of 10000 gross tonnage and upwards	P	CTO*	C3	—	P	P	P
05140240MK	radar ice display	P	CTO*	C3	—	P	P	P
05140250	radar equipment intended for ships below 300 gross tonnage	P	CTO*	C3	—	P	P	P
05140300MK	radionavigation system receivers	P	CTO*	C3	—	P	P	P
05140400MK	Ship's radar reflectors (shipborne and for life-saving appliances)	P	CTO*	C3	—	P	P	P

1	2	3	4	5	6	7	8	9
05150000MK	Equipment of the universal automatic identification system (UAIS), class "A"	P	CTO*	C3	—	P	P	P
05150000	Equipment of the automatic identification system (AIS), class "B"	P	CTO*	C3	—	P	P	P
05160100MK	Voyage data recorders (VDR)	P	CTO*	C3	—	P	P	P
05160200MK	Simplified voyage data recorders (S-VDR)	P	CTO*	C3	—	P	P	P
05170000MK	Sound reception systems	P	CTO*	C3	—	P	P	P
05180000	Alarm and communication systems (for OMBO ships)	P	CTO*	C3	—	P	P	P
05190000MK	Bridge navigational watch alarm systems (BNWAS)	P	CTO*	C3	—	P	P	P
05200000MK	Equipment for long-range identification and tracking of ships (LRIT)	P	CTO*	C3	—	P	P	P
05210000	Remote camera systems	P	CTO*	CTO	—	P	P	P
05220000	Hydrometeorological complexes	P	CTO*	C3	—	P	P	P
05220100MK	HSC night vision equipment	P	CTO	C3	—	P	P	—
05220100	Night vision equipment	P	CTO	C3	—	P	P	—
05300000	Navigational equipment not mentioned above	P	CTO*	—[1]	—	P	—[1]	—[1]
06000000	**FIRE PROTECTION**							
06010000MK	**Structural fire protection:**							
06010100MK	fire-proof bulkheads, decks and ceilings bulkheads:							
06010101MK	A-60 class	P	СТПК	СТПК	—	P	—	—
06010102MK	A-30 class	P	СТПК	СТПК	—	P	—	—
06010103MK	A-15 class	P	СТПК	СТПК	—	P	—	—
06010105MK	B-15 class	P	СТПК	СТПК	—	P	—	—
06010106MK	B-0 class	P	СТПК	СТПК	—	P	—	—
	decks:							
06010107MK	A-60 class	P	СТПК	СТПК	—	P	—	—
06010108MK	A-30 class	P	СТПК	СТПК	—	P	—	—
06010109MK	A-15 class	P	СТПК	СТПК	—	P	—	—
	ceilings:							
06010111MK	B-15 class	P	СТПК	СТПК	—	P	—	—
06010112MK	B-0 class	P	СТПК	СТПК	—	P	—	—
06010200MK	fire-proof doors:							
06010201MK	A-60 class	P	СТПК	СТПК	—	P	—	—
06010202MK	A-30 class	P	СТПК	СТПК	—	P	—	—
06010203MK	A-15 class	P	СТПК	СТПК	—	P	—	—
06010204MK	A-0 class	P	СТПК	СТПК	—	P	—	—
06010205MK	B-15 class	P	СТПК	СТПК	—	P	—	—
06010206MK	B-0 class	P	СТПК	СТПК	—	P	—	—
06010300MK	C class bulkheads, doors	P	СТПК	СТПК	—	P	—	—
06010400	H class structures:							
06010401	H-120	P	СТПК	СТПК	—	P	—	—
06010402	H-60	P	СТПК	СТПК	—	P	—	—
06010403	H-0	P	СТПК	СТПК	—	P	—	—
06010005MK	Cable transit, pipe and duct penetrations	P	СТПК	СТПК	—	P	P	—
06010006MK	Windows and sidescutdes (see Regulations II-2/4.5.2.3 and II-2/9.4.1.3 of SOLAS-74)	P	СТПК	C3	—	P	P	—
06010207MK	Arrangements for automatic closing of fire doors	P	CTO	CTO	—	P	P	—
06020000MK	**Materials, deck coverings, paints, varnishes**							
06020100MK	**Materials:**							
06020101MK	insulation (plates, panels, mats, cords, etc.)	P	CTO	CTO	—	P	—	—
06020102MK	facing	P	CTO	CTO	—	P	—	—
06020103MK	furniture, curtains, etc.	P	CTO	CTO	—	P	—	—
06020104MK	bedclothes	P	CTO	CTO	—	P	—	—
06020200MK	Deck coverings (linoleum, carpets, mastics)	P	CTO	CTO	—	P	—	—
06020300MK	Paints, varnishes for exposed surfaces inside spaces	P	CTO	CTO	—	P	—	—
06020400MK	Primary deck coating	P	CTO	CTO	—	P	—	—
06030000MK	**Fire extinguishing systems:**							
06030100MK	water fire main system	P	—	—	—	P	P	—
06030200MK	sprinkler system	P	CTO	CTO	—	P	P	—
06030300MK	pressure water-spraying system	P	—	—	—	P	P	—
06030400	water-screen system	P	—	—	—	P	P	—
06030500MK	water fog system	P	CTO	CTO	—	P	P	—
06030600MK	foam fire extinguishing system	P	CTO	C3	—	P	P	—
06030700MK	fixed local application fire extinguishing system for use in machinery spaces	P	CTO	C3	—	P	P	—

1	2	3	4	5	6	7	8	9
06030800MK	Carbon dioxide system as well as systems containing fire extinguishing gas in cylinders	P	CTO	C3	—	P	P	—
06031100MK	Powder system	P	CTO	C3	—	P	P	—
06031200MK	Aerosol system	P	CTO	C3	—	P	P	—
06050000MK	**Items of fire extinguishing systems:**							
06050200MK	sprinkler heads and control detection devices	P	CTO	C3	—	—	—	—
06050300MK	spray nozzles, monitors	P	CTO	CTO	—	—	—	—
06050600MK	high-expansion foam generators	P	CTO	C	—	—	—	—
06050800	mixers of foam systems, tanks for the storage of foam-generating liquid	P	CTO	CTO	—	—	—	—
06060000	**Fire-fighting outfit:**							
06060100MK	fire hoses complete with couplings	P	CTO	C3	—	P	—	—
06060101MK	fire hoses without couplings	—	CTO	CTO	—	P	—	—
06060200MK	fire hoses nozzles	P	CTO	CTO	—	P	—	—
06060300MK	air-foam nozzles	P	CTO	CTO	—	P	—	—
06060400MK	portable foam generators	P	CTO	CTO	—	P	—	—
06060500MK	portable foam sets	P	CTO	CTO	—	P	P	—
06060800MK	water fog applicators	—	—	—	—	P	—	—
06060900MK	portable fire extinguishers	P	CTO	CTO	—	P	—	—
06061000	45 l and 136 l foam fire extinguishers	—	CTO	C3	—	P	—	—
06061100	16 kg and 45 kg CO_2 or powder fire extinguishers	—	CTO	C3	—	P	—	—
06061200	sand receptacles, fire hose cabinets	—	—	—	—	P	—	—
06061300	blanket	—	—	—	—	P	—	—
06061400MK	fireman's outfit (clothing, boats, gloves, helmet)	—	CTO	C3	—	P	—	—
06061500MK	portable safety lamp	P	CTO	CTO	—	P	—	—
06061600MK	self-contained breathing apparatus, emergency escape breathing device	—	CTO	C3	—	P	—	—
06061700MK	flexible fireproof lifeline	P	CTO	CTO	—	P	—	—
06061800MK	protective clothing for work with dangerous goods	—	CTO	C3	—	P	—	—
06061900	portable fire motor pumps	P	CTO	C3	K	P	P	—
06062000MK	international shore connection	—	—	—	—	P	—	—
06062100MK	foam concentrate, powder, special gas and other fire-extinguishing substances	P	CTO	CTO	—	P	—	—
06062300MK	gas analyser for vapours of flammable liquids, gases and oxygen content	—	CTO	C3	—	P	—	—
06070000	Water intake system from sea water storage tanks of self-elevating MODU	—	—	—	—	P	P	—
06080000	MODU gas detection and alarm system	P	CTO	CTO	—	P	P	—
06090000MK	Smoke detection system operating on the principle of air sampling from spaces	P	CTO	C3	—	P	P	—
06150000	Type production processes	—	—	—	—	—	—	—
07000000	**MACHINERY INSTALLATIONS**							
07010000	**Shafting:**	—	—	—	—	P	P	P
07010007	shafting connecting bolts	—	—	C3	—	P	—	—
07010008	propeller shaft cone sealings	—	—	—	—	P	—	—
07010009	CPP-shaft flange connection sealings	—	—	—	—	P	—	—
07010100	thrust shafts	P	—	C	K	P	—	—
07010200	intermediate shafts	P	—	C	K	P	—	—
07010300	propeller and sterntube shafts	P	—	C	K	P	—	—
07010301	propeller shaft liners	P	—	C	—	P	—	—
07010400	thrust bearings	P	—	C3	—	P	P	P
07010500	journal bearings	P	—	C3	—	P	P	P
07010600	shaft couplings	P	—	C3	—	P	P	P
07020000	**Stern tubes:**	—	—	—	—	P	P	P
07020100	tubes	P	—	C3	K	P	—	—
07020200	stern bearings, including strut bearings	P	—	C3	—	P	—	—
07020300	seals	P	—	C3	—	P	P	P
07020301	sealing components (collars, rings)	P	—	C3	—	—	—	—
07020302	packing gland	P	CTO	CTO	—	—	—	—
07020303	pneumatic stop	P	—	C3	—	—	—	—
07030000	**Propellers:**							
07030100	fixed-pitch propellers:	P	—	C	K	P	P	P
07030101	bosses	P	—	C3	K	P	—	—
07030102	blades	P	—	C3	K	P	—	—
07030103	blade securing items	P	—	C3	K	P	—	—
07030200	controllable pitch propellers:	P	—	C	K	P	P	P

1	2	3	4	5	6	7	8	9
07030201	boss	P	—	C3	K	P	—	—
07030202	blades	P	—	C3	K	P	—	—
07030203	blade securing items	P	—	C3	K	P	—	—
07030204	crankpin rings	P	—	C3	K	—	—	—
07030205	crosshead	P	—	C3	K	—	—	—
07030206	slide block	—	—	—	—	—	—	—
07030207	hydraulic cylinder	P	—	C3	K	—	—	—
07030208	CPP blade sealing	P	—	C3	—	—	—	—
07030210	power hydraulic system	P	—	C3	—	P	—	—
07030212	CPP control system	P	—	C3	—	P	P	P
07030220	pitch changing mechanism:	P	—	C3	K	P	P	P
07030221	pitch changing mechanism shaft, oil transfer block shaft	P	—	C3	K	—	—	—
07030222	hydraulic cylinder	P	—	C3	K	—	—	—
07030223	piston and securig items	P	—	C3	K	—	—	—
07030224	push-pull rods	P	—	C3	K	—	—	—
07030225	pitch changing mechanism control equipment (actuating)	P	—	C3	—	P	P	P
07030300	voith-schneider propellers:	P	—	C	K	P	P	P
07030301	propeller housing	—	—	—	—	—	—	—
07030302	rotor casing	—	—	—	—	—	—	—
07030303	rotor shaft	P	—	C3	K	—	—	—
07030304	blade	P	——	C3	K	—	—	—
07030305	central support	P	—	C3	K	—	—	—
07030306	control lever	P	—	C3	K	—	—	—
07030307	gears and pinions	P	—	C3	K	—	—	—
07030308	driving shaft	P	—	C3	K	—	—	—
07030400	**Steerable propellers:**	P	CTO[2]	C	K	P	P	P
07030401	propeller	P	—	C	K	P	—	—
07030402	shafts	P	—	C3	K	—	—	—
07030403	pinions	P	—	C3	K	—	—	—
07030404	housings	P	—	C3	—	—	—	—
07030406	couplings	P	—	—	—	—	—	—
07030407	propeller shaft seals	P	—	C3	—	—	—	—
07030408	steerable propeller housing sealing	P	—	C3	—	—	—	—
07030409	thrust bearings	P	CTO[2]	C3	—	—	—	—
07030410	journal bearings	P	CTO[2]	C3	—	—	—	—
07030411	control system	P	—	C3	—	—	—	—
07030412	steering gear wheel and pinion	P	—	C3	K	—	—	—
07030413	steering gear bearing	P	—	C3	K	—	—	—
07030414	motors and pumps of hydraulic systems of steering gear	P	CTO	C3	K	P	P	P
07030415	flexible hoses of hydraulic and lubricating systems	P	CTO	C3	—	—	—	—
07030500	Thrusters	P	—	C3	K	P	P	P
07030600	**Main steerable podded electrical propulsion units:**	P	CTO	C	K	P	P	P
07030601	propulsion unit	P	CTO	C3	K	P	P	P
07030602	propeller	P	—	C	K	P	P	P
07030603	shaft	P	—	C	K	—	—	—
07030604	thrust bearing	P	CTO	CTO	—	—	—	—
07030605	journal bearing	P	CTO	CTO	—	—	—	—
07030606	propeller shaft seals	P	CTO	C3	—	—	—	—
07030607	hull sealing of propulsion unit	P	CTO	C3	—	—	—	—
07030608	hydraulic steering systems	—	—	—	—	P	P	P
07030609	machinery of hydraulic steering system	P	CTO	C3	K	P	P	P
07030610	hydraulic systems of steering brake gear	—	—	—	—	P	P	P
07030611	machinery of hydraulic systems of steering brake gear	P	CTO	C3	K	P	P	P
07030612	hydraulic systems of shaft brake gear	—	—	—	—	P	P	P
07030613	machinery of hydraulic systems of shaft brake gear	P	CTO	C3	K	P	P	P
07030614	cooling air unit	P	CTO	C3	K	P	P	P
07030615	machinery of cooling air unit	P	CTO	C3	K	—	—	—
07030616	lubricating oil treatment (cleaning and control) unit	—	—	—	—	P	P	P
07030617	machinery of lubricating oil treatment (cleaning and control) unit	P	CTO	C3	K	—	—	—
07030618	steering gear wheel	P	—	C	K	—	—	—

1	2	3	4	5	6	7	8	9
07030619	steering gear bearing	P	—	C	K	—	—	—
07030620	swivel of lubricating and drainage systems	P	—	C	K	—	—	—
07030621	flexible hoses of hydraulic and lubricating system	P	CTO	C3	—	—	—	—
07030622	connecting bolts of hull, shafts and steering gear wheel	—	CTO	C3	—	—	—	—
07030623	technical condition monitoring system for thrust and journal bearings	P	CTO	CTO	—	P	P	P
07030624	hydraulic emergency control system	P	CTO	C3	—	P	P	P
07030700	Water jets	P	CTO*[2]	C	K	P	P	P
07040000	Shock absorbers	P	CTO	CTO	—	P	—	—
07050000	Glands in bulkheads or decks of cargo pump rooms for pump and fan drive shafts	P	—	C3	—	P	P	—
07150000	Type production processes	—	—	—	—	—	—	—
08000000	**SYSTEMS AND PIPING**							
08010000	**Ship's systems:**							
08010100	bilge system	—	—	—	—	P	P	—
08010200	ballast system	—	—	—	—	P	P	—
08010300	heel and trim systems	—	—	—	—	P	P	—
08010400	sewage water system	—	—	—	—	P	P	—
08010500	scupper pipe system	—	—	—	—	P	P	—
08010600	heating systems of fuel and lubrication oil tanks, ballast water tanks, cargo heating systems for oil tankers, side fittings above the waterline on icebreakers and ships with ice strengthening	—	—	—	—	P	P	—
08010610	chemical carrier cargo temperature control	—	—	—	—	P	P	—
08010620	gas carrier cargo pressure and temperature control	—	—	—	—	P	P	—
08010700	ventilation system	—	—	—	—	P	P	—
08010800	air, overflow and sounding pipes	—	—	—	—	P	P	—
08010850	venting and cargo vapour emission	—	—	—	—	P	P	—
08010900	hydraulic drives of machinery and equipment	—	—	—	—	P	P	—
08011000	voice pipes	—	—	—	—	P	—	—
08011100	cargo systems of chemical carriers, gas carriers and oil tankers	—	—	—	—	P	P	—
08011150	oil skimming system on oil skimming ships	—	—	—	—	P	P	—
08011200	compressed air for tyfon, bottom and side fitting blowing, instruments and fittings of air-controlled automation systems	—	—	—	—	P	P	—
08011300	fuel oil system for domestic purposes:	—	—	—	—	P	P	—
08011310	equipment of the fuel oil system for domestic purposes	P	CTO	C3	—	P	P	—
08011400MK	inert gas system:	—	—	—	—	P	P	—
08011410MK	inert gas generator	P	CTO	C3	—	P	P	—
08011420MK	water seal of the inert gas system	P	—	C3	—	P	P	—
08011430MK	scrubber of the inert gas system	P	CTO	C3	—	P	P	—
08011440MK	instruments and alarms of the inert gas system	P	CTO	C3	—	P	P	—
08011450MK	nitrogen generator of the inert gas system	P	CTO	C3	—	P	P	—
08011460MK	air compressor for the nitrogen generator	P	—	C3	—	P	P	—
08011470MK	nitrogen receiver	P	—	C3	—	P	P	—
08020000	**Systems of machinery installations:**							
08020100	oil fuel system	—	—	—	—	P	P	P
08020110	fuel treatment	P	—	C3	—	P	P	P
08020200	lubricating oil system	—	—	—	—	P	P	P
08020300	cooling water system	—	—	—	—	P	P	P
08020400	compressed air system	—	—	—	—	P	P	—
08020500	exhaust system	—	—	—	—	P	P	P
08020600	steam piping and blow-off system	—	—	—	—	P	P	—
08020700	condensate and feed water system	—	—	—	—	P	P	—
08020800	thermal oil system	—	—	—	—	P	P	—
08030000	**Valves:**							
08030100	Class I and Class II pipes valves	P	—	C3	—	—	—	—
08030200	Class III pipes valves:							
08030210	class III pipes valves, $D_y > 100$ mm	P	—	C3	—	—	—	—
08030220	class III pipes valves, $D_y \leqslant 100$ mm	P	—	CTO	—	—	—	—
08030230	bottom and side valves	P	—	C3	—	P	—	—
08030240	remote-controlled valves	P	—	C3	—	—	—	—

1	2	3	4	5	6	7	8	9
08030300	formed components of pipes and pipelines	P	—	CTO	—	—	—	—
08030400MK	type A ventilation fire dampers	P	CTO	CTO	—	P	P	—
08030410	ventilation fire dampers	—	—	CTO	—	P	P	—
08030420	type H ventilation fire dampers	P	CTO	CTO	—	P	P	—
08030500MK	tank venting and cargo vapour emission systems	P	CTO	C3	—	—	—	—
08030510MK	automatic closing devices for air pipes	P	CTO	CTO	—	P	P	—
08030600	Flexible joints	P	CTO	C3	—	—	—	—
08030700	Expansions pieces and mechanical connections of pipes:							
08030710	mechanical connections of pipes	P	CTO	CTO	—	P	—	—
08030720	expansion pieces	P	—	CTO	—	P	—	—
08030800MK	Cargo hoses of chemical and gas carriers	P	CTO	C3	—	P	—	—
08030900	Cargo hoses of oil tankers	P	CTO	C3	—	P	—	—
08031000	Oil fuel and lubricating oil receiving/transfer hoses	P	CTO	C3	—	—	—	—
08031100	Appliances and systems for oil product transfer afloat and from a point berth	P	—	C3	—	P	P	—
08031110	Cargo vapour transfer hoses	P	CTO	C3	—	P	—	—
08031200	Gauges:							
08031240	thermometers	P	—	CTO	—	P	P	—
08031250	manometers	—	—	—	—	P	P	—
08031260	level gauges	P	—	CTO	—	P	P	—
08031270	discharge gages and flowmeters	P	—	CTO	—	P	P	—
08031300	Sleeves for hoses according to codes 08030800, 08030900, 08031000 and 08031100	P	CTO	CTO	—	—	—	—
08040000	Spark arresters (spark extinguishers), dampers of exhaust gas systems, boiler and incinerator uptakes	P	—	C3	—	P	P	P
08050000	Sea water system of self-elevating MODU	—	—	—	—	P	P	P
08060000	Purging and water filling system of MODU leg tanks	—	—	—	—	P	P	P
08070000	MODU marine riser tightening and rolling compensation system	—	—	—	—	P	P	P
08080000	Hydraulic drive system of jacking arrangements of self-elevating MODU	—	—	—	—	P	P	P
08090000	Hydraulic drive system of arrangement for lifting and lowering columns of submersible sea water pumps of MODU	—	—	—	—	P	P	P
08100000	MODU ventilation system of enclosed spaces maintained in overpressure	—	—	—	—	P	P	—
08110000	MODU drilling mud emergency discharge system	—	—	—	—	P	P	—
08120000MK	Flange gasket material	P	—	CTO	—	P	—	—
08150000	Type production processes	—	CTO	—	—	—	—	—
09000000	MACHINERY							
09010000	Internal combustion engines of power output 55 kW and over (main, auxiliary and emergency):[8]	P	CTO*	C[3]	K	P	P	P
09010001	bed plates	P	—	C3, W[8]	K	—	—	—
09010002	welded crankcases	P	—	C3, W[8]	K	—	—	—
09010003	cylinder blocks (gray cast iron (GJL)/spheroidal graphite cast iron (GJS)) of cross head engines	P	—	W[8]	—	—	—	—
09010004	welded cylinder blocks of crosshead engines	P	—	C3, W[8]	K	—	—	—
09010005	cylinder liners (jackets), D_{cyl} > 300 mm	P	—	W[8]	—	—	—	—
09010006	cylinder covers (GJL/GJS) D_{cyl} > 300 mm	P	—	W[8]	—	—	—	—
09010007	cylinder covers (forged/cast steel) D_{cyl} > 300 mm	P	—	C3, W[8]	K	—	—	—
09010008	tie rods of cross head engines	P	—	C3, W[8]	K	—	—	—
09010009	piston crown (cast steel, forged steel)	P	—	C3, W[8]	K	—	—	—
09010011	piston rods, D_{cyl} > 400 mm	P	—	C3, W[8]	K	—	—	—
09010012	connecting rods	P	—	C3, W[8]	K	—	—	—
09010013	crossheads	P	—	C3, W[8]	K	—	—	—
09010014	crankshaft: made in one piece, semi-built	P	—	C3, W[8]	K	—	—	—
09010015	crankcases (GJL/GJS), power > 400 kW/cyl	P	—	W[8]	—	—	—	—
09010016	crankcase safety valves	P	CTO*	W[8]	—	—	P	P
09010021	Hydraulic power drive for outlet valves assembly, for crosshead engines	P	—	W[8]	K	—	—	—
09010022	Hydraulic accumulators (of common rail fuel or servo oil system), with a capacity of > 0,5 l	P	—	W[8]	—	—	—	—
09010023	High pressure servo oil system	P	—	W[8]	—	—	—	—
09010024	Engine-driven hydraulic pumps > 800 kW/cyl	P	—	W[8]	—	—	—	—
09010025	Electrically-driven hydraulic pumps	P	—	W[8]	—	—	—	—

1	2	3	4	5	6	7	8	9
09010026	Hydraulic pipes and high pressure flexible joints*	P	—	W[8]	—	—	—	—
09010032	Air coolers (D_{cyl} > 300 mm)	P	—	W[8]	—	—	—	—
09011600	Bearings:							
09011601	main bearings (power > 400 kW/cyl.)	P	—	W[8]	—	—	—	—
09011602	bottom-end bearings (power > 400 kW/cyl)	P	—	W[8]	—	—	—	—
09011604	crosshead bearings (power > 400 kW/cyl)	P	—	W[8]	—	—	—	—
09011606	Thrust bearing bedplate	P	—	C3, W[8]	—	—	—	—
09011700	Securing items:							
09011701	bolts and studs of main bearings (D_{cyl} > 300 mm)	P	—	W[8]	K	P	—	—
09011702	bolts and studs of bottom-end bearings (D_{cyl} > 300 mm)	P	—	W[8]	K	P	—	—
09011703	bolts and studs of cylinder covers (D_{cyl} > 300 mm)	P	—	W[8]	K	P	—	—
09011704	Coupling bolts for crankshaft	P	—	C3, W[8]	K	P	—	—
09011900	Oil fuel equipment:							
09011901	casings and covers of high pressure fuel injection pumps	P	—	W[8]	—	—	P	P
09011902	fuel valves*	P	—	C3, W[8]	—	—	P	P
09011903MK	high pressure oil fuel injection pipes	P	—	C3, W[8]	—	—	P	P
09011906	Common rail system:[8] high pressure oil fuel injection pump, fuel valves, high pressure oil fuel injection pipes for the accumulator fuel oil system	P	—	W[8]	—	—	P	P
09013000MK	Rescue boat engines	P	CTO*	C3	K	—	P	P
09014000MK	Lifeboat engines	P	CTO*	C3	K	P	P	P
09015000	Diesel-generators[4]	P	CTO*[2]	C3	K	P	P	P
09016000	Diesel-engine geared set[4]	P	CTO*[2]	C3	K	P	P	P
09017000MK	Diesel engines complying with Regulation 13 of Annex VI to MARPOL 73/78 and the requirements of Technical Code on control of emissions of nitrogen oxides from marine diesel engines	P	—	EIAPP	—	P	—	—
09017001MK	Diesel engines complying with Regulation 13 of Annex VI to MARPOL-73/78 and the requirements of Technical Code on control of emissions of nitrogen oxides from marine diesel engines fitted with SCR system to reduce NO_x emissions in Scheme A (IMO resolution MEPC. 198(62))	P	—	EIAPP	—	P	—	—
09017002MK	Diesel engines complying with Regulation 13 of Annex VI to MARPOL 73/78 and the requirements of Technical Code on control of emissions of nitrogen oxides from marine diesel engines fitted with SCR system to reduce NO_x emissions in Scheme B (IMO resolution MEPC. 198(62))	P	—	EIAPP	—	P	P	P
09017003MK	SCR system to reduce NO_x emissions, (IMO resolution MEPC.098(62))	P	—	W	—	—	—	—
09020000	**Internal combustion engines of power output below 55 kW (drives of generators, fire pumps, compressors, engines of lifeboats and rescue boats):**							
09020100	auxiliary engines, emergency	P	CTO	W	—	P	P	P
09020200MK	lifeboat engines	P	CTO*	C3	K	P	P	P
09023000MK	rescue boat engines	P	CTO*	C3	K	—	P	P
09024000	diesel-generators[4]	P	CTO[2]	W	—	—	P	P
09025000	diesel-engine geared set[4]	P	CTO[2]	W	—	—	P	P
09030000	**Main steam turbines and electric generator turbines:**	P	CTO	C	K	P	P	P
09030001	turbine casings	P	—	C3	K	—	—	—
09030002	nozzle boxes	P	—	C3	K	—	—	—
09030003	manoeuvring gear casings	P	—	C3	K	—	—	—
09030004	nozzles	P	—	C3	—	—	—	—
09030005	diaphragms	P	—	C3	K	—	—	—
09030006	discs	P	—	C3	K	—	—	—
09030007	blades	P	—	C3	—	—	—	—
09030008	gland seals	P	—	C3	—	—	—	—
09030009	rotors and shafts	P	—	C3	K	—	—	—
09030010	bearings	P	—	C3	—	—	—	—
09030011	couplings	P	—	C3	—	—	—	—
09030012	shrouds and lashing wire	P	—	C3	—	—	—	—
09030013	bolts for split casing joints	P	—	C3	—	—	—	—
09040000	**Steam auxiliary turbines:**	P	CTO	C3	—	P	P	P
09040001	turbine casings	P	—	C3	—	—	—	—
09040002	nozzle boxes	P	—	C3	—	—	—	—

1	2	3	4	5	6	7	8	9
09040003	nozzles	P	—	C3	—	—	—	—
09040004	discs	P	—	C3	—	—	—	—
09040005	blades	P	—	C3	—	—	—	—
09040006	rotors and shafts	P	—	C3	—	—	—	—
09040007	bearings	P	—	C3	—	—	—	—
09050000	**Main gas turbines and electric generator gas turbines:**	P	CTO	C3	K	P	P	P
09050001	turbine casings	P	—	C3	K	—	—	—
09050002	compressor housings	P	—	C3	K	—	—	—
09050003	combustion chamber casings	P	—	C3	K	—	—	—
09050004	diaphragms	P	—	C3	—	—	—	—
09050005	turbine rotors	P	—	C3	K	—	—	—
09050006	turbine discs	P	—	C3	—	—	—	—
09050007	compressor rotors	P	—	C3	K	—	—	—
09050008	compressor discs	P	—	C3	—	—	—	—
09050009	turbine blades	P	—	C3	—	—	—	—
09050010	compressor blades	P	—	C3	—	—	—	—
09050011	shrouds, lashing wire	P	—	C3	—	—	—	—
09050012	flame tube of combustion chambers	P	—	C3	—	—	—	—
09050013	regenerators	P	—	C3	—	—	—	—
09050014	gland seals	P	—	C3	—	—	—	—
09050015	bearings	P	—	C3	—	—	—	—
09050016	couplings	P	—	C3	—	—	—	—
09050017	bolts for turbine split casing joints	P	—	C3	—	—	—	—
09050018	bolts for compressors split casing joints	P	—	C3	—	—	—	—
09060000	**Main machinery reduction gear:**	P	CTO[2]	C3	K	P	P	P
09060001	reduction gear casing	P	—	C3	K	—	—	—
09060002	wheels and pinions	P	—	C3	K	—	—	—
09060003	reduction gear shafts	P	—	C3	K	—	—	—
09060004	detachable half-couplings of shafts	P	—	C3	—	—	—	—
09060005	bolts	P	—	C3	—	—	—	—
09060006	sliding bearings	P	—	C3	—	—	—	—
09060100	**Disengaging, flexible couplings and other:**	P	CTO	C3	K	P	P	P
09060101	coupling casing	P	—	C3	K	—	—	—
09060102	coupling shafts	P	—	C3	K	—	—	—
09060103	driving parts of couplings	P	—	C3	—	—	—	—
09060104	driven parts of couplings	P	—	C3	—	—	—	—
09060105	components of flexible couplings	—	—	C3	—	—	—	—
09060106	sliding bearings	P	—	C3	—	—	—	—
09070000	**Auxiliary machinery reduction gear:**	P	CTO[2]	C3	—	P	P	P
09070001	casings of reduction gear and couplings	P	—	C3	—	—	—	—
09070002	wheels and pinions	P	—	C3	—	—	—	—
09070003	shafts of reduction gears and couplings	P	—	C3	—	—	—	—
09080000	**Auxiliary machinery:**							
09080100	starting air compressors	P	CTO	C3	—	P	P	P
09080200	turbochargers	P	CTO*	C3	—	P	P	P
09080300	main and auxiliary boiler blowers	P	CTO[2]	C3	—	P	P	P
09080400	cooling water pumps of main engines and auxiliary machinery	P	CTO	C3	—	P	P	P
09080500	circulating pumps of main condensers	P	CTO	C3	—	P	P	P
09080600	lubricating oil pumps of main engines and turbines	P	CTO	C3	—	P	P	P
09080700	boiler feed water pumps	P	CTO	C3	—	P	P	P
09080800	condensate pumps	P	CTO	C3	—	P	P	P
09080900	boiler burner pumps	P	CTO	C3	—	P	P	P
09081000	fuel oil transfer pumps and fuel-feed pumps of main engines	P	CTO	C3	—	P	P	—
09081100	bilge pumps	P	CTO	C3	—	P	P	—
09081200	fire pumps	P	CTO	C3	—	P	P	—
09081300	fire motor-pumps	P	CTO	C3	—	P	P	—
09081400	ballast pumps	P	CTO	C3	—	P	P	—
09081500	cargo pumps	P	CTO	C3	—	P	—	—
09081600	steam-jet ejectors of condensers	P	CTO	C3	—	P	P	P
09081700	circulating pumps of waste-heat boilers	P	CTO	C3	—	P	P	P
09081800	oil fuel and lubricating oil separators	P	CTO	C3	—	P	P	P
09081900	bilge ejectors	P	CTO	C3	—	P	P	—
09090000	**Parts of machinery listed under 09080000:**							
09090100	piston pumps and compressors:							
09090101	cylinder blocks	—	—	C3	—	—	—	—

1	2	3	4	5	6	7	8	9
09090102	cilynder liners	—	—	C3	—	—	—	—
09090103	pistons	—	—	C3	—	—	—	—
09090104	piston rods	—	—	C3	—	—	—	—
09090105	connecting rods	—	—	C3	—	—	—	—
09090106	crankshafts	—	—	C3	—	—	—	—
09090200	centrifugal and rotary pumps and compressors:							
09090201	shafts	—	—	C3	—	—	—	—
09090202	impellers, rotors	—	—	C3	—	—	—	—
09090203	casings	—	—	C3	—	—	—	—
09090300	screw and gear pumps and compressors:							
09090301	shafts, screws	P	—	C3	—	—	P	P
09090302	casings	P	—	C3	—	—	P	P
09090303	screw pump housing	P	—	C3	—	—	P	P
09090304	pinions	P	—	C3	—	—	P	P
09090400	oil fuel and lubricating oil separators:							
09090401	bowl bodies, shafts	P	—	C3	—	—	P	P
09090402	bowl discs	P	—	C3	—	—	P	P
09090403	pinions	P	—	C3	—	—	P	P
09090500	gas turbochargers and blowers:							
09090501	shafts and rotors	—	—	C3	—	—	—	—
09090502	gland seals	—	—	C3	—	—	—	—
09090503	casings	—	—	C3	—	—	—	—
09090504	bearings	—	—	C3	—	—	—	—
09090505	supercharging air coolers	P	CTO[2]	C3	—	P	P	P
09100000	**Deck machinery:**							
09100100MK	steering gear (engines):	P	CTO	C3	K	P	P	P
09100101	rudder stock yoke	P	—	C3	—	—	—	—
09100102	cylinders	P	—	C3	—	—	—	—
09100103	driven shafts	P	—	C3	—	—	—	—
09100104	pinions, wheels, tooth rims	—	—	C3	—	—	—	—
09100105	pistons with rods	P	—	C3	—	—	—	—
09100106	safety valves	P	—	C3	—	—	P	P
09100200	windlass and anchor capstans:	P	CTO	C3	K	P	P	P
09100201	intermediate and output shafts and spindles	P	—	C3	—	—	—	—
09100202	chain sprockets	—	—	C3	—	—	—	—
09100203	pinions, gears of power drives	—	—	C3	—	—	—	—
09100204	disengaging and safety clutches	—	—	C3	—	—	—	—
09100205	band and automatic brakes	—	—	C3	—	—	—	—
09100300	mooring capstans and winches:	P	CTO	C3	—	P	P	—
09100301	spindles, output shafts	P	—	C3	—	—	P	P
09100302	pinions, gears of power drives	P	—	C3	—	—	P	P
09100303	safety clutches	P	—	C3	—	—	P	P
09100304	automatic brakes	P	—	C3	—	—	P	P
09100400	towing winches:	P	CTO	C3	—	P	P	P
09100401	output and intermediate shafts	—	—	C3	—	—	—	—
09100402	pinions, gears of power drives	—	—	C3	—	—	—	—
09100403	rope tightening control devices, rope layers	—	—	C3	—	—	—	—
09100404	brakes	—	—	C3	—	—	—	—
09100500MK	boat winches:	P	CTO	C3	K	P	P	P
09100501	output and intermediate shafts	—	—	C3	—	—	—	—
09100502	pinions, gears of power drives	—	—	C3	—	—	—	—
09100503	automatic and hand brakes	—	—	C3	—	—	—	—
09100504	stoppers	—	—	C3	—	—	—	—
09110000	Mechanical telegraphs	P	CTO	C3	—	P	P	P
09120000	**Fans:**							
09120010	machinery spaces, foam and smothering fire extinction stations, refrigerated spaces	—	—	CTO	—	P	P	—
09120020	cargo pump rooms, holds for carriage of dangerous goods and motor vehicles, helicopters shelds	P	CTO	C3	—	P	P	—
09120030	portable gas freeing fans for enclosed spaces on oil and chemical tankers	P	CTO	C3	—	P	P	—
09120040	dangerous spaces and spaces with overpressure of MODU, oil and chemical tankers	P	CTO	C3	—	P	P	—
09130000	Motors and pumps of hydraulic systems:	P	CTO	C3	K	P	P	P
09130001	shafts, rotors, pinions	—	—	C3	—	—	—	—
09130002	rods	—	—	C3	—	—	—	—

1	2	3	4	5	6	7	8	9
09130003	pistons, plungers	—	—	С3	—	—	—	—
09130004	casings	—	—	С3	—	—	—	—
09130005	hydraulic cylinders	—	—	С3	—	—	—	—
09140000	Thruster machinery	Р	СТО	С3	К	Р	Р	Р
09150000	Sea water submersible pumps	Р	СТО	С3	К	Р	Р	—
09160000	**Drives of MODU jacking arrangements:**	Р	—	С3	К	Р	Р	Р
09160100	hydraulic cylinders in assembly	Р	—	С3	К	—	—	—
09160101	cylinders and covers	Р	—	С3	К	—	—	—
09160102	pistons with rods	Р	—	С3	К	—	—	—
09160103	yokes for securing hydraulic cylinders	Р	—	С3	К	—	—	—
09160104	securing items	—	—	С3	—	Р	—	—
09170000	**Winches of MODU lifting and lowering columns of submersible sea water pumps:**	Р	—	С3	К	Р	Р	—
09170001	output and intermediate shafts	Р	—	С3	—	—	—	—
09170002	wheels and pinions	Р	—	С3	—	—	—	—
09170003	brakes	Р	—	С3	—	—	—	—
09200000	Type production processes	—	—	—	—	—	—	—
10000000	**BOILERS, HEAT EXCHANGERS AND PRESSURE VESSELS**							
10000100	Steam generating units	Р	—	С3	К	Р	Р	Р
10010000	**Boilers, including waste-heat and water heating boilers:**	Р	СТО/ СПИ	С3	К	Р	Р	Р
10010003	shells	Р	—	С3	—	—	—	—
10010004	end plates	Р	—	С3	—	—	—	—
10010006	water chambers	Р	—	С3	—	—	—	—
10010007	combustion chambers	Р	—	С3	—	—	—	—
10010008	furnaces	Р	—	С3	—	—	—	—
10010009	boiler stays	Р	—	С3	—	—	—	—
10010011	economizers	Р	—	С3	—	—	—	—
10010012	steam accumulators (steam separators)	Р	—	С3	К	Р	Р	Р
10010100	shells	Р	—	С3	—	—	—	—
10010200	drums	Р	—	С3	—	—	—	—
10010500	headers	Р	—	С3	—	—	—	—
10011000	oil burning equipment	Р	—	С3	—	Р	Р	Р
10011300	steam superheaters	Р	—	С3	—	—	—	—
10011400	air heaters	—	—	С3	—	—	—	—
10020000	**Heat exchangers and pressure vessels:**							
10020100	boiler feed water heaters	Р	—	С3	—	Р	Р	Р
10020101	deaerators	Р	—	С3	—	Р	Р	Р
10020200	condensers of main turbines	Р	—	С	—	Р	Р	Р
10020201	condensers of electric generator turbines	Р	—	С3	—	Р	Р	Р
10020300	condensers of auxiliary steam turbines	Р	—	С3	—	Р	Р	—
10020400	distillers	Р	—	С3	—	Р	—	Р
10020500	heaters:							
10020501	oil fuel heaters	Р	—	С3	—	Р	Р	—
10020502	lubricating oil heaters	Р	—	С3	—	Р	Р	—
10020503	water heaters	Р	—	С3	—	Р	Р	—
10020600	coolers:							
10020601	lubricating oil coolers of main machinery	Р	—	С3	—	Р	Р	Р
10020602	water coolers of main machinery	Р	—	С3	—	Р	Р	Р
10020603	lubricating oil coolers of auxiliary machinery	Р	—	С3	—	Р	Р	Р
10020604	water coolers of auxiliary machinery	Р	—	С3	—	Р	Р	Р
10020700	filters:							
10020701	oil fuel filters	Р	—	С3	—	Р	Р	—
10020702	lubricating oil filters	Р	—	С3	—	Р	Р	—
10020703	water filters	Р	—	С3	—	Р	Р	—
10020800	air bottles	Р	—	С3	К	Р	Р	—
10020900	hydraulic accumulators	Р	—	С3	—	Р	Р	—
10021000	hydrophores	—	—	—	—	—	Р	—
10021100	pressure vessels and apparatus of fire-fighting systems	Р	—	С3	К	Р	Р	—
10021200	pressure vessels and apparatus of domestic, production, research and other applications	—	—	С3	—	Р	—	—
10030000	**Valves:**							
10030100	valves for boilers equal to or over 0,07 MPa	Р	—	С3	—	—	—	—
10030200	valves for pressure vessels and heat exchangers equal to or over 0,07 MPa, $D_y \geqslant 50$ mm	Р	—	С3	—	—	—	—
10030300	safety valves	Р	СТО	С3	—	Р	Р	—

1	2	3	4	5	6	7	8	9
10030400	pressure gauges	—	—	—	—	P	P	—
10040000	Pressure vessels for MODU marine riser tightening and rolling compensation system	—	—	C3	K	P	P	P
10050000	**Gas fuel tanks:**							
10050100	liquefied gas fuel tanks	P	CTO	C	K	P	P	P
10050200	compressed gas fuel tanks	P	CTO	C	K	P	P	P
10050300	gas fuel treatment installation	P	—	C3	K	P	P	—
10050400	LNG fuel forcing vaporizer	P	CTO	C3	K	P	P	—
10100000	Type production processes	P	CTO	CTO	—	P	—	—
11000000	**ELECTRICAL EQUIPMENT**							
11010000	**Electrical propulsion plant:**	—	—	—	—	P	P	P
11010100	propulsion generators or main power plant generators, if combined	P	—	C*	K	—	—	—
11010200	propulsion electrical motors (PEM)	P	—	C*	K	—	—	—
11010300	podded azimuth drive's propulsion electrical motors	P	—	C*	K	—	—	—
11010400	propulsion switchboards	P	—	C*	—	—	—	—
11010410	standard unit/card of switchboard	P	CTO*	—	—	—	—	—
11010500	propulsion transformers, reactors	P	—	C*	—	—	—	—
11010600	propulsion semiconductor converters	P	—	C*	—	—	—	—
11010700	electrical machine converters	P	—	C*	—	—	—	—
11010800	control systems, monitoring and protection systems	P	CTO*	C	—	—	—	—
11010900	slip rings devices for podded azimuth propulsion	P	—	C*	—	—	—	—
11011000	azimuth drives for podded propulsion electrical motors	P	—	C*	—	—	—	—
11020000	**Main and emergency sources of electrical power:**	—	—	—	—	P	P	P
11020100	generators:							
11020101	power of 100 kVA and over	P	CTO*	C	K	—	—	—
11020102	power less than 100 kVA	P	CTO*	C3	—	—	—	—
11020200	accumulators and accumulator batteries	P	CTO*	CTO	—	—	—	—
11020300	uninterrupted power supply:	—	—	—	—	—	—	—
11020301	power of 25 kVA and over	P	CTO	C	—	—	—	—
11020302	power less than 25 kVA	P	CTO	C3	—	—	—	—
11020400	other sources of electrical power	P	CTO*	C3	—	—	—	—
11030000	**Transformers and converters:**	—	—	—	—	P	P	P
11030100	power transformers	P	CTO*	C	—	—	—	—
11030101	lighting transformers	P	CTO*	C	—	—	—	—
11030200	measuring and other transformers	P	CTO*	CTO	—	—	—	—
11030300	rotary converters:	—	—	—	—	—	—	—
11030301	power of 100 kVA and over	P	CTO*	C	—	—	—	—
11030302	power less than 100 kVA	P	CTO	C3	—	—	—	—
11030400	rotary amplifiers:	—	—	—	—	—	—	—
11030401	power of 100 kVA and over	P	CTO	C	—	—	—	—
11030402	power less than 100 kVA	P	CTO	C3	—	—	—	—
11030500	static and semi-conductor converters (rectifiers, inverters, frequency converters) with rated current:	—	—	—	—	—	—	—
11030501	rated current over 25 A	P	CTO*	C	—	—	—	—
11030502	rated current 25 A and less	P	CTO	C3	—	—	—	—
11040000	**Switchboards and conrtol and monitoring desks:**	—	—	—	—	P	P	P
11040100	main switchboards	P	—	C	—	—	—	—
11040101	emergency switchboards	P	—	C	—	—	—	—
11040110	standard unit/card of switchboard	P	CTO*	—	—	—	—	—
11040200	distribution and other switchboards	P	CTO	C3	—	—	—	—
11040300	navigation light switchboards	P	CTO	C3	—	—	—	—
11040400	desks:	—	—	—	—	P	P	P
11040401	control desks	P	CTO	C	—	—	—	—
11040402	monitoring desks	P	CTO	C	—	—	—	—
11040403	signalling desks	P	CTO	C	—	—	—	—
11040500	switchgear and control gear, alarm and indicating devices							
11040502	switches	P	CTO	CTO	—	—	—	—
11040503	contactors, relays	P	CTO*	CTO	—	—	—	—
11040504	tripping devices	P	CTO	CTO	—	—	—	—
11040505	switches, limit switches	P	CTO	CTO	—	—	—	—
11040506	resistors and rheoststs	P	CTO	CTO	—	—	—	—

1	2	3	4	5	6	7	8	9
11040507	semiconductor switching devices for non-motor loads	P	CTO	CTO	—	—	—	—
11040509	pilot devices (push buttons, switchers, joysticks, etc.)	P	CTO	CTO	—	—	—	—
11040600	protective devices:							
11040601	relays I > 25 A	P	CTO*	C3	—	—	—	—
11040602	relays I ⩽ 25 A	P	CTO	CTO	—	—	—	—
11040603	fuses I > 25 A	P	CTO	C3	—	—	—	—
11040604	fuses I ⩽ 25 A	P	CTO	CTO	—	—	—	—
11040605	complex protective devices	P	CTO*	C3	—	—	—	—
11040606	protective barriers of intrinsically safe circuits of *Exi* type	P	CTO*	CTO	—	—	—	—
11040607	circuit breakers I⩾25 A	P	CTO*	C3	—	—	—	—
11040608	circuit breakers I<25 A	P	CTO*	CTO	—	—	—	—
11040700	controllers:							
11040701	regulators I > 25 A	P	CTO*	C3	—	—	—	—
11040702	regulators I⩽25 A	P	CTO	CTO	—	—	—	—
11040703	reactors	P	CTO*	CTO	—	—	—	—
11040704	power coefficient increase capacitors	P	CTO	CTO	—	—	—	—
11040800	stationary electrical measuring instruments	P	CTO	CTO	—	—	—	—
11040900	busbars	—	—	—	—	P	P	P
11050000	**Electric drives for machinery referred to in 07000000, 09000000, 12000000, 14000000MK, 18050000 19000000MK as well as fishing vessel machinery and ships engaged in processing of living recources of the sea and not engaged in catching:**							
11050100	electric motors:							
11050101	electric motors with power output 100 kW and over	P	CTO*	C	K	—	—	—
11050102	electric motors with power output more than 20 kW and less 100 kW	P	CTO	C3	—	—	—	—
11050103	electric motors with power output up to 20 kW	P	CTO	CTO	—	—	—	—
11050200	starting devices:	—	—	—	—	—	—	—
11050201	starters	P	CTO	C3	—	—	—	—
11050202	suppressors of breaking power, resistances and rheostats	P	CTO	CTO	—	—	—	—
11050204	controllers	P	CTO	C3	—	—	—	—
11050205	soft starters rated at 20 kW and more	P	CTO*	C3	—	—	—	—
11050206	control systems for electric drives	P	CTO	C3	—	P	P	P
11050207	soft starters rated up to 20 kW	P	CTO*	CTO	—	—	—	—
11050208	electronic power units for valve control for primary and secondary essential services	P	CTO	CTO	—	—	—	—
11050209	electronic power units for valve control for non-essential services	P	CTO	CTO	—	—	—	—
11050300	electromagnetic brakes	P	CTO	CTO	—	—	—	—
11050400	electromagnetic clutches	P	CTO	CTO	K	—	—	—
11060000	Main and emergency lighting:	—	—	—	—	P	P	P
11060001	stationary lighting fixtures, flood-light projectors	P	CTO	CTO	—	—	—	—
11060002	lighting fitting and accessories	P	CTO	CTO	—	—	—	—
11070000	Control and monitoring devices:							
11070100	electrical engine telegraphs	P	CTO*	C3	—	P	P	P
11070200	rudder angle indicators	P	CTO	CTO	—	P	P	P
11070300	CPP position indicator	P	CTO	CTO	—	P	P	P
11070400	tachometers	P	CTO	CTO	—	P	P	P
11070500	other monitoring devices (static electricity insulation, intrinsically-safe circuits, etc)	P	CTO	C3	—	P	P	P
11080000	Telephone service communication:	—	—	—	—	P	P	P
11080100	commutators and telephone communication sets	P	CTO	CTO	—	—	—	—
11090000	General alarm system:	—	—	—	—	P	P	P
11090001	visual and sound devices and switches	P	CTO	CTO	—	—	—	—
11100000	Fire detection system and warning alarm on fire smothering system release:	P	CTO*	C3	—	P	P	P
11100100	indicating units of fire detection system	P	CTO*	C3	—	—	—	—
11100102	manual fire alarm buttons and detectors of fire detection system	P	CTO*	CTO	—	—	—	—
11100103	system components of warning alarm on fire smothering system release	P	CTO*	CTO	—	—	—	—

1	2	3	4	5	6	7	8	9
11100200	Warning systems of local fire extinguishing system release for machinery space machinery:	P	CTO*	C3	–	P	P	P
11100201	switchboards, control and alarm panels	P	CTO*	C3	—	—	—	—
11100202	detectors and other components	P	CTO*	CTO	—	—	—	—
11100300	Alarm system of high-level of bilge water:	P	CTO	C3	—	P	P	P
11100301	switchboards, control and alarm panels	P	—	C3	—	—	—	—
11100302	detectors and other components	P	CTO	CTO	—	—	—	—
11100400	Engineer's alarm:	P	CTO	C3	—	P	P	P
11100401	switchboards, control and alarm panels	P	—	C3	—	—	—	—
11100402	detectors and other components	P	CTO	CTO	—	—	—	—
11100500	Alarm system of people presence inside refrigerated holds:	P	CTO	C3	—	P	P	P
11100501	switchboards, control and alarm panels	P	—	C3	—	—	—	—
11100502	detectors and other components	P	CTO	CTO	—	—	—	—
11100600	Alarm system of side port closures condition:	P	CTO*	C3	—	P	P	P
11100601	switchboards, control and alarm panels	P	CTO[2]	C3*	—	—	—	—
11100602	detectors and other components	P	CTO*	CTO	—	—	—	—
11100700	Exterior/inner video monitoring system:	P	CTO*	C3	—	P	P	P
11100701	video cameras	P	CTO*	CTO	—	—	—	—
11100702	video terminals	P	CTO*	CTO	—	—	—	—
11100703	switchboards, control and alarm panels	P	CTO[2]	C3*	—	—	—	—
11100704	detectors and other components	P	CTO*	CTO	—	—	—	—
11100800	Alarm system of explosive gas concentration increase in spaces and areas:	P	CTO*	C3	—	P	P	P
11100801	switchboards, control and alarm panels	P	CTO[2]	C3*	—	—	—	—
11100802	detectors and other components	P	CTO*	CTO	—	—	—	—
11100900	Cargo holds and dry cargo ships water ingress detection system:	P	CTO*	C3	—	P	P	P
11100901	switchboards, control and alarm panels	P	CTO[2]	C3*	—	—	—	—
11100902	detectors and other components	P	CTO*	CTO	—	—	—	—
11110000	Fire and watertight door signalling system:	P	CTO*	C3	—	P	P	P
11110001	components of fire and watertight door signalling system	P	CTO*	CTO	—	—	—	—
11110100	Warning alarm system for automatic sprinkler fire-extinguishing system	P	CTO*	C	—	P	P	P
11110101	Central alarm panel	P	CTO*	C3	—	—	—	—
11110102	Detectors and other components	P	CTO*	CTO	—	—	—	—
11120000	Machinery personnel alarm system	—	—	C3	—	P	P	P
11120001	Components of machinery personnel alarm system	P	CTO	CTO	—	—	—	—
11130000	Cabling:	—	—	—	—	P	P	P
11130100	cables and wires:	P	CTO*	C3	—	—	—	—
11130101	cables of supply circuits for voltage over 1000 V	P	CTO*	C3	—	—	—	—
11130102	cables of supply circuits for voltage up to 1000 V	P	CTO*	C3	—	—	—	—
11130103	cables of control circuits and information transfer circuits	P	CTO*	C3	—	—	—	—
11130104	coaxial cables	P	CTO*	C3	—	—	—	—
11130105	optical-fiber cables	P	CTO*	C3	—	—	—	—
11130200	items and devices for installation, splicing and connection of cables and wires	P	CTO*	CTO	—	—	—	—
11140000	Lightening and earthing conductors, impressed current protection	P	CTO	CTO	—	P	—	—
11150000	Heating and cooking appliances, stationary appliances:	—	—	—	—	P	P	P
11150001	oil fuel and lubricating oil heating appliances	P	CTO	C3	—	—	—	—
11150002	heating radiators for air-conditioning system	P	CTO	CTO	—	—	—	—
11150003	water heaters of 0,025 m^3 in capacity and pressure equal to or more than 0,07 MPa	P	CTO	C3	—	—	—	—
11150004	other stationary heating appliances	P	CTO	CTO	—	—	—	—
11150005	heating cables	P	CTO*	CTO	—	P	P	P
11160000	Electrical filters of different purpose:							
11160001	electrical filters of different purpose, $I < 25$ A	P	CTO	CTO	—	P	P	P
11160002	electrical filters of different purpose, $I \geqslant 25$ A	P	CTO	C3	—	P	P	P
11170000	Special systems of oil tankers and gas carriers:							
11170100	Alarm system of temperature increase of bulkhead bearings of cargo and ballast pumps:	P	CTO*	C3	—	P	P	P
11170101	switchboards, control and alarm panels	P	CTO*	C3	—	—	—	—

1	2	3	4	5	6	7	8	9
11170102	detectors and other components	P	СТО*	СТО	—	—	—	—
11170200	**Alarm system of cargo high and limiting level:**	P	СТО*	С3	—	P	P	P
11170201	switchboards, control and alarm panels	P	СТО[2]	С3*	—	—	—	—
11170202	detectors and other components	P	СТО*	СТО	—	—	—	—
11180000	Signalling on failures in MODU jacking system:	—	СТО*	С3	—	P	P	P
11180001	switchboards, control and alarm panels	P	СТО[2]	С3*	—	—	—	—
11180002	detectors and other components	P	СТО*	СТО	—	—	—	—
11190000	Housings for electrical items	P	СТО	СТО	—	—	—	—
11210000	Other electrical equipment	P	СТО	СТО	—	—	—	—
11220000	Type production processes	—	—	—	—	—	—	—
12000000	**REFRIGERATING PLANTS**							
12010000	**Refrigerating units and machinery:**							
12010005	Parts of products specified in 12010000	P	—	С3	К	—	—	—
12010100	Compressors:							
12010110	screw type	P	—	С3	К	P	P	—
12010120	piston type	P	—	С3	К	P	P	—
12010130	centrifugal and axial-flow type	P	—	С3	К	P	P	—
12010200	Refrigerant pumps	P	—	С3	К	P	P	—
12010300	Secondary refrigerant pumps	P	—	СТО	—	P	P	—
12010400	Compressing and condensating units	P	—	С3	К	P	P	—
12010500	Ice generators	P	—	С3	К	P	P	—
12010600	Freezing units	P	—	С3	К	P	P	—
12020000	**Refrigerant pressure vessels:**							
12020100	Refrigerant condensators	P	—	С3	—	P	P	—
12020200	Direct evaporation air coolers	P	—	С3	—	P	P	—
12020300	Brine air coolers	P	—	СТО	—	P	P	—
12020400	Refrigerant evaporators	P	—	С3	—	P	P	—
12020500	Refrigerant filters	P	—	С3	—	P	P	—
12020600	Oil separators	P	—	С3	—	P	P	—
12020700	Refrigerant receiver	P	—	С3	—	P	P	—
12020800	Refrigerant separator	P	—	С3	—	P	P	—
12050000	**Piping and valves:**							
12050004	Valves designed for pressure 1,0 MPa and more	P	—	СТО	—	P	P	—
12050100	Pipes of refrigerant, liquid secondary refrigerant and cooling water	—	—	—	—	P	P	—
12050200	Air pipes of cooling system	—	—	—	—	P	P	—
12050300	Safety devices and valves	P	—	С3	—	P	P	—
12050400	Solenoid valves	P	—	СТО	—	P	P	—
12050500	Manually operated valves	P	—	СТО	—	P	P	—
12060000	Safety devices	P	—	СТО	—	P	P	—
12070000	Automatic control devices	P	—	СТО	—	P	P	—
12070100	Thermostatic expansion valves	P	—	СТО	—	P	P	—
12070200	Thermostats	P	—	СТО	—	P	P	—
12070300	Bellows-actuated pressure switches	P	—	СТО	—	P	P	—
12080000	Atmosphere control devices	P	—	СТО	—	P	P	—
12090000	Materials for insulation of refrigerated spaces and pipes	P	—	СТО	—	P	P	—
12100000	Refrigerant	P	—	СТО	—	P	P	—
12110000	Refrigerant leak detectors	P	—	СТО	—	P	P	—
13000000	**MATERIALS**							
13100000	**Steel and iron**							
13110000	**Rolled products:**							
13110100	rolled products for ship and MODU structures as well as ship arrangements:							
13110101	plates and sheets	P	СПИ	С3	К*	—	—	—
13110102	strips	P	СПИ	С3	К*	—	—	—
13110103	sections	P	СПИ	С3	К	—	—	—
13110104	bars	P	СПИ	С3	К	—	—	—
13110105	welded sections	P	СПИ	С3	К	—	—	—
13110200	rolled steel for boilers, heat exchangers and pressure vessels	P	СПИ	С3	К	—	—	—
13110400	rolled stock for MODU gears and machinery	P	СПИ	С3	К	—	—	—
13110500	clad steel	P	—	СПИ+С3	К	—	—	—

1	2	3	4	5	6	7	8	9
13120000	**Tubes and pipes:**							
13120100	tubes and pipes for Class I and Class II machinery, boilers, heat exchangers and pressure vessels:	P	СПИ	С3	—	—	—	—
13120101	seamless	P	СПИ	С3	—	—	—	—
13120102	welded							
13120200	tubes and pipes for Class I and II piping and MODU special systems:	P	СПИ	С3	—	—	—	—
13120201	seamless	P	СПИ	С3	—	—	—	—
13120202	welded							
13120400	constructional tubes and pipes of MODU gears and machinery:							
13120401	seamless	P	СПИ	С	К	—	—	—
13120402	welded	P	СПИ	С	К	—	—	—
13130000	**Forgings:**							
13130100	forgings for ship hull and MODU structures as well as ship arrangements:							
13130101	stems, bar keels, shafting struts	P	СПИ	С3	К	—	—	—
13130102	rudder stocks and rudder nozzles	P	СПИ	С3	К	—	—	—
13130200	forgings for boilers, heat exchangers, pressure vessels and for pipes of pipeline systems	P	СПИ	С3	К	—	—	—
13130300	forgings for NSSS	P	СПИ	С3	К	—	—	—
13130400	forgings for MODU gears and machinery	P	СПИ	С3	К	—	—	—
13130500	forgings for ship machinery and machinery installations:							
13130501	forgings for propellers and CPP (bosses and blades)	P	СПИ	С3	К	—	—	—
13130502	forgings for crankshafts of internal combustion engines of power output 55 kW and over	P	СПИ	С3	К	—	—	—
13130503	forgings for propeller, intermediate and thrust shafts	P	СПИ	С3	К	—	—	—
13130504	forgings for connecting rods, rods, pistons, crossheads of internal combustion engines of power output 55 kW and over	P	СПИ	С3	К	—	—	—
13130505	forgings for casings, disks, rotors and shafts of main turbines and compressors	P	СПИ	С3	К	—	—	—
13130506	forgings for gears, pinions and shafts of main machinery transmissions	P	СПИ	С3	К	—	—	—
13130507	forgings for tillers, quadrants, part of rudders and rudder nozzles	P	СПИ	С3	К	—	—	—
13130508	forgings for propulsion motors shafts, generators and slip couplings built into the shafting	P	СПИ	С3	К	—	—	—
13130600	forgings for anchors and accessories	P	СПИ	С3	К	—	—	—
13140000	**Castings:**							
13140100	castings for ship hull and MODU structures as well as ship arrangements:							
13140101	castings for stems, bar keels, shafting struts	P	СПИ	С3	К	—	—	—
13140102	castings for rudder stocks and rudder nozzles	P	СПИ	С3	К	—	—	—
13140200	castings for boilers, heat exchangers, pressure vessels and for pipes of pipeline systems	P	СПИ	С	К	—	—	—
13140300	castings for NSSS	P	СПИ	С3	К	—	—	—
13140400	castings for MODU gears and machinery	P	СПИ	С3	К	—	—	—
13140500	castings of machinery and machinery installations:							
13140501	castings for propellers and CPP (bosses and blades)	P	СПИ	С3	К	—	—	—
13140502	castings for crankshafts of internal combustion engines of power output 55 kW and over	P	СПИ	С3	К	—	—	—
13140503	castings for propeller, intermediate and thrust shafts	P	СПИ	С3	К	—	—	—
13140504	castings for connecting rods, rods, pistons, crossheads of internal combustion engines of power output 55 kW and over	P	СПИ	С3	К	—	—	—
13140505	castings for casings and shafts of main turbines and compressors	P	СПИ	С3	К	—	—	—

1	2	3	4	5	6	7	8	9
13140506	castings for gears, pinions and shafts of main machinery transmissions	P	СПИ	СЗ	К	—	—	—
13140507	castings for tillers, quadrants, parts of rudders and rudder nozzles	P	СПИ	СЗ	К	—	—	—
13140600	castings for anchors and accessories	P	СПИ	СЗ	К	—	—	—
13150000	steel for chains	P	СПИ	СЗ	—	—	—	—
13160000	**Semi-finished products:**							
13160100	ingot	P	—	СПИ+СЗ	К	—	—	—
13160200	blum	P	—	СПИ+СЗ	К	—	—	—
13160300	slab	P	—	СПИ+СЗ	К	—	—	—
13160400	billet	P	—	СПИ+СЗ	К	—	—	—
13200000	**Aluminium, titanium and cooper alloys:**							
13210000	rolled products for ship hull and MODU structures and ship arrangements	P	СПИ	СЗ	К	—	—	—
13220000	pipes and tubes	P	СПИ	СЗ	—	—	—	—
13230000	forgings	P	СПИ	СЗ	К	—	—	—
13240000	castings	P	СПИ	СЗ	К	—	—	—
13240100	castings for propellers and CPP	P	СПИ	СЗ	К	—	—	—
13300000	**Non-metal materials:**							
13310000	materials for reinforced plastic structures:							
13310100	reinforcing materials	P	СТО	СТО	—	—	—	—
13310200	binders	P	СТО	СТО	—	—	—	—
13320000	laminated textiles	P	СТО	СТО	—	—	—	—
13330000	retro-reflective materials	P	СТО	СТО	—	—	—	—
13340000	foam plastics	P	СТО	СТО	—	—	—	—
13350000	polymeric compositions	P	СТО*	СТО	—	—	—	—
13360000	anticorrosive coating of hull structures	P	СТО*	СТО	—	P	—	—
13361000МК	protective coating for dedicated sea water ballast tanks (IMO resolution MSC.215(82))	P	СТО*	СТО	—	P	P	P
13362000МК	protective coatings for cargo oil tanks of crude oil tankers (IMO resolution MSC.288(87))	P	СТО*	СТО	—	P	P	P
13370000МК	antifouling coatings of ship's hulls	P	СТО*	СТО	—	P	—	—
13380000	ice-resistant coatings	P	СТО*	СТО	—	P	—	—
13400000	Anchor and mooring chain cables and accessories	P	СПИ	СЗ	К	P	P	P
13500000	**Ropes:**							
13510000	wire ropes	P	СПИ	СЗ	К	—	—	—
13520000	ropes of natural and synthetic fibre	P	СПИ	СЗ	—	—	—	—
13600000	Plastic pipes and accessories	P	СПИ	СЗ	—	—	—	—
13600100	Pipes and shape pieces of class III	—	—	СТО	—	—	—	—
13800000	**Stainless steel:**							
13810000	rolled plates and bars	P	—	СПИ+СЗ	К	—	—	—
13820000	pipes	P	—	СПИ+СЗ	К	—	—	—
13830000	forgings	P	—	СПИ+СЗ	К	—	—	—
13840000	castings	P	—	СПИ+СЗ	К	—	—	—
13850000	semi-finished products	—	—	СПИ+СЗ	—	—	—	—
14000000	**WELDING CONSUMABLES**							
14100000	**Electrodes:**							
14100100	electrodes for ships hull and MODU structures	P	СОСМ	СОСМ	—	—	—	—
14100200	electrodes for boilers, heat exchangers and pressure vessels	P	СОСМ	СОСМ	—	—	—	—
14100300	electrodes for Class I, Class II and Class III piping	P	СОСМ	СОСМ	—	—	—	—
14100400	electrodes for nuclear steam supply systems	P	СОСМ	СОСМ	—	—	—	—
14100500	electrodes for machinery, devices, equipment and welded parts of internal combustion engines	P	СОСМ	СОСМ	—	—	—	—
14200000	**Wire/flux:**							
14200100	wire/flux for ship hull MODU structures	P	СОСМ	СОСМ	—	—	—	—
14200200	wire/flux for boilers, heat exchangers and pressure vessels	P	СОСМ	СОСМ	—	—	—	—
14200300	wire/flux for Class I, Class II and Class III piping	P	СОСМ	СОСМ	—	—	—	—
14200400	wire/flux for nuclear steam supply systems	P	СОСМ	СОСМ	—	—	—	—
14200500	wire/flux for machinery, equipment and weldded parts of internal combustion engines	P	СОСМ	СОСМ	—	—	—	—
14300000	**Wire/gas:**							
14300100	wire/gas for hull structures of ships and MODU	P	СОСМ	СОСМ	—	—	—	—
14300200	wire/gas for boilers, heat exchangers and pressure vessels	P	СОСМ	СОСМ	—	—	—	—

1	2	3	4	5	6	7	8	9
14300300	wire/gas for Class I, II and Class III piping	P	COCM	COCM	—	—	—	—
14300400	wire/gas for nuclear steam supply systems	P	COCM	COCM	—	—	—	—
14300500	wire/gas for machinery, equipment and welded parts of internal combustion engines	P	COCM	COCM	—	—	—	—
14400000	Protective primers allowing to weld without their removal	P	CTO	CTO	—	—	—	—
14500000	Type production processes	P	COTTIC	COTTIC	—	—	—	—
14000000MK	**CARGO HANDLING GEAR**							
14010000MK	**Ship derricks:**							
14010100MK	structures with fixed gear (masts, columns, gantries, etc.)	—	—	—	—	P	P	—
14010200MK	derrick booms	P	—	C	K	P	P	—
14010300MK	cargo winches, span winches and slewing guy winches; span rope reels and preventer guy reels with drive:	P	—	C	K	P	P	—
14010301	main shafts	P	—	C3	—	—	—	—
14010302	couplings	P	—	C3	—	—	—	—
14010303	frames and casings	P	—	C3	—	—	—	—
14010304	brakes	P	—	C3	—	—	—	—
14010305	ratchets	P	—	C3	—	—	—	—
14010400MK	span rope reels and preventer guy reels without independent drive	P	—	C3	—	—	—	—
14030000MK	**Cranes and hoists, upper structures:**	P	CTO	C	K	P	P	—
14030100MK	structures of cranes and hoists with permanently attached fixed gear (masts, posts, bell-shaped structures, bridges, gantries, understructures, rocking arms and pull rods of adjustable counterweights, etc.)	—	—	—	—	P	P	—
14030200MK	jibs	P	—	C	K	P	P	—
14030300MK	cargo lifting, luffing, slewing, travelling motion or counterbalance machinery:	P	—	C	—	P	P	—
14030301	main shafts	P	—	C3	—	—	—	—
14030302	couplings	P	—	C3	—	—	—	—
14030303	frames and casings	P	—	C3	—	—	—	—
14030304	brakes	P	—	C3	—	—	—	—
14030305	wheels, rollers	P	—	C3	—	—	—	—
14030306MK	adjustable counterbalances	P	—	C3	—	—	—	—
14030307	hydraulic cylinders	P	—	C3	—	—	—	—
14030308	power hydraulic cylinders	P	—	C3	—	—	—	—
14030309	flexible joints	P	—	C3	—	—	—	—
14030400MK	safety devices (SWL indicators, limit-load switches, hi-jacking devices, limit switches, jib-radius indicators, safety switches, signal devices)	P	CTO	C3	—	P	P	—
14030500MK	metal upper structurers: posts, frames, suppor-ting assemblies (jib and axles, etc.), trolleys, jibs, counterbalance attachements and other structures	—	—	—	—	P	P	—
14030600MK	fastenings and supports of derrick when stowed for sea	P	—	—	—	P	P	—
14030700MK	devices damping dynamic loads, stability of derrick against jack-knifing with the ship rolling or load drop	P	—	C	—	P	P	—
14040000MK	**Passenger and cargo lifts with lifting capacity 250 kg and over:**	P	CTO	C	K	P	P	P
14040100MK	metal structures with all loose gear	—	—	—	—	P	—	—
14040200MK	lift winches:	P	CTO	C	K	P	P	P
14040201	main shafts	P	—	C3	—	—	—	—
14040202	couplings	P	—	C3	—	—	—	—
14040203	frames and casings	P	—	C3	—	—	—	—
14040204	brakes	P	—	C3	—	—	—	—
14040300MK	lift equipment (trunk doors, counterbalances, buffers, safety devices, etc.)	P	—	C3	—	P	P	—
14050000MK	**Parts and ropes of cargo handling gear:**							
14050100MK	interchangeable components:							
14050101MK	blocks, pulleys, hooks, chains, swivels, shackles, turnbuckles, triangle plates, boom and suspensions, etc.	P	CTO	C3	K	P	P	—
14050102MK	thimbles, ropes sockets and pressed clips	P	CTO	C3	—	—	P	—

1	2	3	4	5	6	7	8	9
14050200MK	fixed gear:							
14050201MK	cargo runner and span eye plantes, guy eye plates on boom ends	P	CTO	C3	—	P	P	—
14050202MK	deck eye plates on ship hull structures	P	CTO	C3	—	P	P	—
14050203MK	derrick hel fork lugs	P	CTO	C3	—	P	P	—
14050204MK	span eye plates with shoes	P	CTO	C3	—	P	P	—
14050205MK	heel goosenecks with shoes	P	CTO	C3	—	P	P	—
14050206MK	built in sheaves with strops	P	CTO	C3	—	P	P	—
14050208MK	journals, bearing axles	P	CTO	C3	—	—	P	—
14050300MK	loose gear being part of the ship (slings, spreaders, hoisting crossbars, frames, etc.)	P	—	C3	K	P	P	—
14050301	appliances to convey the personnel (nets, baskets, cradles or other products specially designed for this purpose)	P	—	C	K	P	P	—
14050400MK	ropes (shrouds, stays, cargo runners, span ropes, tackles and slewing guy pendants, preventer guys and boom head guys in union purchase, etc.)	P	—	C3	—	P	P	—
14060000MK	Ship elevating platforms:	P	CTO	C	K	P	P	—
14060100MK	platforms	P	—	C3	—	P	P	—
14060200MK	equipment of platforms (guides, shoes, blocking devices, buffers, fencing and locking mechanisms, mechanical or hydraulic drives)	P	—	C3	—	P	P	—
14060300MK	load-carriyng means (ropes and chains with guides and attachments, leverpool system, hydraulic drives, gear racks, spindles)	P	—	C3	—	P	P	—
14060400MK	safety devices	P	—	C3	—	P	P	—
14100000MK	Type production processes	—	—	—	—	—	—	—
15000000	AUTOMATION							
15010000	Integrated automation systems of machinery installations	P	CTO*	C	—	P	P	P
15020000	Centralized alarm and monitoring systems, including computer-based systems	P	CTO	C	—	P	P	P
15030000	Main machinery automated remote control systems:							
15030100	remote control systems of main internal combustion engines	P	—	C	—	P	P	P
15030200	remote control systems of main machinery with CPP	P	—	C	—	P	P	P
15030300	remote control systems of main steam turbine installations	P	—	C	—	P	P	P
15030400	remote control systems of azimuth propulsion thrusters	P	—	C	—	P	P	P
15030500	control systems of ship and MODU dynamic positioning systems	P	—	C	—	P	P	P
15030510	computer-based systems, associated software and interfaces used for automated control systems of the thrusters with the use of the single control device (joystick) or several control devices	P	CTO*	C	—	P	P	P
15030520	operator panel system with controls and data displays	P	CTO*	C	—	P	P	P
15030530	position reference systems	P	CTO*	CTO	—	P	P	P
15030600	control systems of azimuth podded electrical propulsion plant	P	CTO	C	—	P	P	P
15030700	automated control systems of self-elevating MODU jacking mechanisms	P	CTO	C	—	P	P	P
15030800	remote control and monitoring systems of semi-submersible MODU ballast systems	P	CTO	C	—	P	P	P
15030900	remote control systems of azimuth and tunnel thrusters	P	—	C	—	P	P	P
15031000	stabilization and hull-position control systems of high-speed craft	P	CTO	C	—	P	P	P
15040000	Power plant control systems:	—	—	—	—	—	—	—
15040100	remote automated starting and stopping systems of diesel generators	P	—	C3	—	P	P	P
15040200	remote automated starting and stopping systems of turbo-generators	P	CTO	C3	—	P	P	P
15040300	remote automated starting and stopping systems of shaft generators (where coupling control system is provided)	P	—	C3	—	P	P	P
15040400	automated electric power plant systems	P	CTO	C3	—	P	P	P

1	2	3	4	5	6	7	8	9
15050000	**Boiler installation control systems:**	—	—	—	—	—	—	—
15050100	automated control systems of main boiler installations	P	—	C3	—	P	P	P
15050200	automated control systems of auxiliary steam boiler installations	P	—	C3	—	P	P	P
15050300	automated control systems of exhaust boiler installations	P	—	C3	—	P	P	P
15050400	automated control systems of hot-water boiler installations	P	—	C3	—	P	P	P
15060000	**Control systems of auxiliary machinery:**	—	—	—	—	—	—	—
15060100	automated control systems of compressors	P	—	C3	—	P	P	P
15060200	automated control systems of separators	P	—	C3	—	P	P	P
15060300	automated control systems of filters	P	—	C3	—	P	P	P
15060400	automated control systems of pumps (oil, fuel, cooling, etc.)	P	—	C3	—	P	P	P
15060500	automated control systems of fuel preparation (temperature, viscosity)	P	—	C3	—	P	P	P
15070000	**Remote control of ship systems and remote level gauges:**	—	—	—	—	—	—	—
15070100	remote control systems of pumps and valves of ballast and bilge systems and remote level gauges	P	CTO	C	—	P	P	—
15070200	remote control systems of heel and trim systems	P	CTO	C	—	P	P	—
15070300	remote control systems of oil tankers cargo systems	P	CTO	C	—	P	P	—
15070400	remote control systems of gas carriers cargo system	P	CTO*	C	—	P	P	—
15070500	remote control systems of chemical tankers cargo system	P	CTO*	C	—	P	P	—
15080000	**Control systems of deck machinery**	P	—	C3	—	P	P	P
15090000	**Devices:**	—	—	—	—	—	—	—
15090100	regulating devices as parts of control systems listed in 15010000 to 15080000	P	CTO	CTO	—	P	P	P
15090200	alarm and monitoring devices as parts of integrated and centralized control and monitoring systems listed in 15010000 to 15080000	P	CTO	CTO	—	P	P	P
15090300	safety devices as parts of the systems listed in 15010000 to 15080000	P	CTO	CTO	—	P	P	P
15090400	recording devices as parts of the systems listed in 15010000 to 15080000	P	CTO	CTO	—	P	P	P
15090500	oil mist detectors in crankcases of internal combustion engines (as well as internal combustion engines bearing temperature monitors or equivalent devices for the prevention of explosion in the crankcase)	P	CTO	C3	—	P	P	P
15090600	computers and programmable logic controllers	P	CTO	CTO	—	P	P	—
15090700	electronic fuel injection and exhaust gas expulsion processes control devices for internal combustion engines	P	CTO	CTO	—	P	P	P
15100000	**Regulators of:**	—	—	—	—	—	—	—
15100101	level	P	CTO	CTO	—	P	P	—
15100102	pressure	P	CTO	CTO	—	P	P	—
15100103	temperature	P	CTO	CTO	—	P	P	—
15100104	viscosity	P	CTO	CTO	—	P	P	—
15100105	speed	P	CTO	C3	—	P	P	—
15110000	**Sensors and indicators of:**	—	—	—	—	—	—	—
15110101	level	P	CTO	CTO	—	P	P	—
15110102	pressure	P	CTO	CTO	—	P	P	—
15110103	temperature	P	CTO	CTO	—	P	P	—
15110104	flow	P	CTO	CTO	—	P	P	—
15110105	salinity	P	CTO	CTO	—	P	P	—
15110106	vibration	P	CTO	CTO	—	P	P	—
15110107	position	P	CTO	CTO	—	P	P	—
15110108	external force sensors	P	CTO*	CTO	—	P	P	P
15110110	gas concentration	P	CTO	CTO	—	P	P	—
15119999	others	P	CTO	CTO	—	P	P	—
15120000	**Panels, cabinets and other enclosures for:**	—	—	—	—	—	—	—
15120100	control systems	P	CTO	CTO	—	P	P	—
15120200	monitoring (alarm and indication) systems	P	CTO	CTO	—	P	P	—
15120300	recording system	P	CTO	CTO	—	P	P	—
15130000	**Remote instrumentation**	P	CTO	CTO	—	P	P	—

1	2	3	4	5	6	7	8	9
15130100	Equipment diagnostic facilities	P	СТО	СТО	—	—	—	—
15200000	Type production processes	P	СТО	СТО	—	P	P	—
16000000	**SHIPS AND BOATS OF GLASS-REINFORCED PLASTIC**							
16010000	Glass-reinforced plastic for hull and lifeboats	P	СТО	СТО	—	—	—	—
16020000	Hull	P	—	С	—	P	—	—
16100000	Type production processes	—	—	—	—	—	—	—
17000000	**SHIPS CARRYING LIQUIFIED GASES IN BULK (LG CARRIERS)**							
17010000	**Materials**							
17011000	**Membrane Cargo Containment System - Mark III:**							
17011100	metal for membranes							
17011110	stainless steel plates (thickness < 3 mm) (thickness ⩾ 3 mm)	P	СПИ	С	К	P	—	—
17011111	stainless steel studs, nuts and washers[6]	—	—	—	—	P	—	—
17011112	inner hull studs, nuts and washers[6]	—	—	—	—	P	—	—
17011113	stainless steel /angles	P	СПИ	СЗ	К	P	—	—
17011114	anchor strips	P	СПИ	СЗ	К	P	—	—
17011200	non-metallic materials							
17011210	plywood	P	СТО*	СТО	—	P	—	—
17011220	laminate	P	СТО*	СТО	—	P	—	—
17011221	fibrous materials[6]	—	—	—	—	—	—	—
17011222	glass wool[6]	—	—	—	—	P	—	—
17011223	glass-fiber materials[6]	—	—	—	—	P	—	—
17011230	polymeric materials	P	СТО*	СТО	—	P	—	—
17011231	reinforced polyurethane foam (R-PUF)	P	СТО*	СТО	—	P	—	—
17011232	low density foam (LDF)	P	СТО*	СТО	—	P	—	—
17011240	adhesive materials	P	СТО*	СТО	—	P	—	—
17011241	load bearing mastic	P	СТО*	СТО	—	P	—	—
17011242	adhesive, is used for the insulation panel assembly	P	СТО*	СТО	—	P	—	—
17011243	adhesive for secondary barrier	P	СТО*	СТО	—	P	—	—
17011244	adhesive, is used for bonding the secondary barrier to the pump tower base support (PTBS)	P	СТО*	СТО	—	P	—	—
17011250	protective and interlayer materials	P	СТО*	СТО	—	P	—	—
17011251	paint for inner hull protection	P	СТО*	СТО	—	P	—	—
17011260	heat insulation blocks	P	СТО*	СТО	—	P	—	—
17011261	thermal protection6	—	—	—	—	P	—	—
17011262	secondary barrier, rigid secondary barrier material (RSB) and flexible secondary barrier material (FSB)[6]	—	—	—	—	P	—	—
17011263	top bridge pads[6]	—	—	—	—	P	—	—
17011264	flat wall panels[6]	—	—	—	—	P	—	—
17011265	corner panels[6]	—	—	—	—	P	—	—
17012000	**Membrane Cargo Containment System - NO96:**							
17012100	metal for membranes							
17012110	Fe-36%Ni alloy strips	P	СПИ	С	К	P	—	—
17012111	staples[6]	—	—	—	—	P	—	—
17012112	collar studs (forged)[6]	—	—	—	—	P	—	—
17012113	self-locked nuts[6]	—	—	—	—	P	—	—
17012114	spring washers[6]	—	—	—	—	P	—	—
17012200	non-metallic materials							
17012210	plywood (NO96)	P	СТО*	СТО	—	P	—	—
17012220	wood screws[6]	—	—	—	—	P	—	—
17012230	fibrous materials[6]	—	—	—	—	—	—	—
17012231	glass wool[6]	P	—	—	—	P	—	—
17012232	glass-fibre materials[6]	P	—	—	—	P	—	—
17012240	adhesive materials	P	СТО*	СТО	—	P	—	—
17012241	load bearing mastic[6]	—	—	—	—	—	—	—
17012242	glue[6]	—	—	—	—	—	—	—
17012250	protective and interlayer materials	P	СТО*	СТО	—	P	—	—
17012251	anti-sticking film	P	СТО*	СТО	—	P	—	—
17012260	heat insulation blocks	P	СТО*	СТО	—	P	—	—
17012261	thermal protection[6]	P	—	—	—	P	—	—
17012262	insulating boxes[6]	P	—	—	—	P	—	—

1	2	3	4	5	6	7	8	9
17012263	insulating material[6]	P	—	—	—	P	—	—
17012270	perlite[6]	P	—	—	—	P	—	—
17020000	**Valves:**						—	—
17020110MK	cargo system valves (working temperature below −55 °C)	P	CTO	C3	K	P	P	P
17020120	pressure relief valves of cargo pipelines	P	CTO	C3	K	P	P	—
17020130MK	pressure relief valves of cargo tank vent system (working temperature below −55 °C)	P	CTO	C3	K	P	P	P
17020140MK	vacuum relief valves of cargo tanks (working temperature below −55 °C)	P	CTO	C3	K	P	P	—
17020210MK	expansion bellows for cargo systems (working temperature below −55 °C)	P	CTO	C3	K	P	P	P
17020310MK	cargo vapour hoses (working temperature below −55 °C)	P	CTO	C3	K	P	P	—
17030000	**Auxiliary machinery of cargo systems:**	—	—	—	—	—	—	—
17030100	cargo transfer pumps (working temperature below −55 °C)	P	—	C3	K	P	P	P
17030200MK	main cargo pumps (working temperature below −55 °C)	P	CTO	C	K	P	P	P
17030210MK	cargo stripping pumps (working temperature below −55 °C)	P	CTO	C	K	P	P	P
17030300MK	portable emergency cargo pumps (working temperature below −55 °C)	P	CTO	C3	K	P	P	P
17030400MK	high duty compressors	P	—	C		P	P	—
17030500MK	low duty compressors	P	—	C		P	P	—
17040000	**Cargo vapour utilization system:**	—	—	—	—	—	—	—
17040100	gas combustion unit (GCU)	P	—	C3	K	P	P	P
17040200	steam dumping arrangement	P	—	C3	K	P	P	P
17050000	cargo pressure and temperature control system	—	—	—	—	—	—	—
17050100	cargo refrigeration plant	P	—	C	K	P	P	P
17050200	cargo reliquefaction plant	P	—	C	K	P	P	P
18000000	**NUCLEAR SHIPS AND NUCLEAR SUPPORT VESSELS**							
18010000	**Ship hull (additionally to non-nuclear ships):**	P	—	—	—	P	P	P
18010100	collision structural protection	P	—	—	—	P	—	—
18010200	stranding structural protection	P	—	—	—	P	—	—
18010300	supporting structures and foundations in the reactor compartment	P	—	—	—	P	—	—
18010400	containment structures	P	—	—	—	P	P	—
18010500	safety enclosure	P	—	—	—	P	P	—
18020000	**Nuclear reactors:**	P	—	C	K	P	P	P
18020100	hulls	P	—	C	K	P	—	—
18020200	roofs with their securing items	P	—	C	K	P	—	—
18020300	removable and non-removable internals	P	—	C	K	P	—	—
18030000	**Cores:**	P	—	C	—	P	P	P
18030100	fuel elements	P	—	C	—	P	—	—
18030200	fuel assembly	P	—	C	—	P	—	—
18030300	protective covers	P	—	C	—	P	—	—
18030400	rods:	P	—	C	—	P	—	—
18030401	emergency shutdown rods	P	—	C	—	P	—	—
18030402	burnable poison rods	P	—	C	—	P	—	—
18030403	shim rods	P	—	C	—	P	—	—
18030500	working neutron sources	P	—	C	—	P	—	—
18040100	automatic and remote control and protective systems of nuclear reactors	P	—	C	—	P	—	—
18040200	automatic monitoring and alarm systems of nuclear reactors	P	—	C	—	P	P	P
18040300	automatic and remote control, protection, monitoring and alarm systems of **NSSS**	P	—	C	—	P	P	P
18040400	control, protection, monitoring and alarm devices of **NSSS**	P	—	—	—	P	P	P
18040401	drives and actuating mechanisms of automatic and remote controls	P	—	C	K	P	P	P
18040402	drives and actuating mechanisms of emergency protection of automatic and remote control	P	—	C	K	P	P	P
18040403	measuring equipment of nuclear reactor power	P	—	C	K	P	P	P

1	2	3	4	5	6	7	8	9
18040404	level gauges	P	—	C	K	P	P	P
18040405	thermocouples and resistance thermometers	P	—	C	K	P	P	P
18040406	NSSS parameter transducers	P	—	C	K	P	P	P
18050000	**NSSS machinery:**							
18050100	primary coolant circulating pumps	P	—	C	K	P	P	P
18050200	fresh water pumps for equipment cooling and protection	P	—	C	K	P	P	P
18050300	sea water pumps for equipment cooling	P	—	C	—	P	P	P
18050500	pumps and ejectors of NSSS space drainage system	P	—	C	—	P	P	P
18050600	pumps of primary coolant make-up system	P	—	C	K	P	P	—
18050700	pumps of emergency core cooling system	P	—	C	K	P	P	—
18050800	pumps of automation hydraulic system	P	—	C	K	P	P	P
18050900	pumps of residual heat removal system	P	—	C	K	P	P	P
18051000	sorbent transfer pumps	P	—	C	—	P	P	—
18051100	high-pressure gas compressors	P	—	C	K	P	P	P
18051200	controlled area fans	P	—	C	—	P	P	P
18051300	high pressure air compressors	P	—	C	K	P	P	—
18051400	medium pressure air compressors	P	—	C	K	P	P	—
18051500	vacuum compressors	P	—	C	K	P	P	P
18060000	**Heat exchangers and pressure vessels:**							
18060100	steam generators:	P	—	C	K	P	P	P
18060101	housings	P	—	C	K	P	—	—
18060102	tube systems	P	—	C	K	P	—	—
18060106	fittings	P	—	C	K	P	P	—
18060200	pressure compensators	P	—	C	K	P	P	P
18060300	filters: primary circuit, primary coolant filling and make-up system, fresh water cooling system, radioactive drainage and process water treatment systems	P	—	C	K	P	P	P
18060400	heat exchangers of fresh water cooling and protection circuit	P	—	C	—	P	P	P
18060500	air coolers	P	—	C	—	P	P	P
18060600	sludge collecting tanks of primary circuit and fresh water cooling and protection system filters	P	—	C	—	P	—	—
18060700	coolers of primary circuit filters	P	—	C	K	P	P	P
18060800	drainage and collecting tanks	P	—	C	K	P	P	—
18060900	gas and air bottles	P	—	C	K	P	P	—
18061000	pneumatic and hydraulic receivers	P	—	C	—	P	P	—
18061100	steel-water protection tanks	P	—	C	K	P	P	—
18061200	first circuit recuperative heat exchangers	P	—	C	K	P	P	P
18070000	**NSSS systems:**							
18070100	primary coolant circulation system	P	—	—	—	P	P	P
18070200	primary coolant purification system	P	—	—	—	P	P	P
18070300	primary coolant make-up system	P	—	—	—	P	P	P
18070400	residual heat removal system	P	—	—	—	P	P	P
18070500	core emergency cooling system	P	—	—	—	P	P	—
18070600	primary coolant sampling system	P	—	—	—	P	P	P
18070700	deaeration system	P	—	—	—	P	P	—
18070800	primary coolant drainage system	P	—	—	—	P	P	—
18070900	pressure compensation system	P	—	—	—	P	P	P
18071000	secondary circuit	P	—	—	—	P	P	—
18071100	fresh water system for equipment and protection drives cooling	P	—	—	—	P	P	P
18071200	sea water cooling system	P	—	—	—	P	P	P
18071300	ventilation and air filtering system	P	—	—	—	P	P	P
18071400	radioactive liquid and solid collection, storage and handling system	P	—	—	—	P	P	P
18071500	NSSS space drainage system	P	—	—	—	P	P	—
18071600	sorbent handling system	P	—	—	—	P	P	—
18071700	explosive mixture removal system	P	—	—	—	P	P	P
18071800	fitting automation and control hydraulic system	P	—	—	—	P	P	P
18071900	radioactive drainage and process water purification system	P	—	—	—	P	P	—
18072000	pressure reduction in containment	P	—	—	—	P	P	—
18080000	NSSS fittings	P	—	C	K	P	P	P
18090000	Radiation monitoring system and means	P	—	C	—	P	P	P

1	2	3	4	5	6	7	8	9
18100000	Protection means against radioactive radiation and radioactive substance spreading	Р	—	С	—	Р	Р	Р
18110000	Liquid radioactive waste treatment equipment	Р	—	С	К	Р	Р	—
18110100	Shielding	Р	—	—	—	Р	Р	Р
18110200	Fuel assembly storage facilities	Р	—	С	К	Р	Р	—
18110300	Core handling equipment	Р	—	С	К	Р	Р	—
18120000	Complex of engineering and technical means of physical protection	Р	—	С	—	Р	Р	Р
18130000	Rolled products, forgings, castings, pipes for equipment and systems of 1, 2 and 3 safety classes[9]	Р	СПИ	С	К	—	—	—
19000000МК	**EQUIPMENT AND ARRANGEMENTS FOR THE PREVENTION OF POLLUTION FROM SHIPS**							
19020200МК	15 ppm bilge separators (resolution MEPC.107(49))	Р	СОТО	С3	—	Р	Р	Р
19030100МК	Oil discharge monitoring and control systems for oil tankers (resolution MEPC.108(49) as amended)	Р	СОТО	С3	—	Р	Р	Р
19030202МК	15 ppm bilge alarms (resolution MEPC.107(49))	Р	СОТО	С3	—	Р	Р	Р
19040000МК	Oil/water interface detectors in slop tanks	Р	СОТИ	С3	—	Р	Р	Р
19050000МК	Pumping, piping and discharge arrangements for oily water	—	—	—	—	Р	Р	—
19060000МК	Tanks:							
19060100МК	segregated ballast tanks	—	—	—	—	Р	—	—
19060200МК	slop tanks	—	—	—	—	Р	—	—
19060300МК	cargo tanks	—	—	—	—	Р	—	—
19060400МК	holding tanks	—	—	—	—	Р	—	—
19070000МК	Washing systems:	—	—	—	—	Р	Р	—
19070100МК	washing machines	—	—	С3	—	Р	Р	—
19070200МК	washing machine drive units	—	—	С3	—	Р	Р	—
19080000МК	Incinerators	Р	СОТО	С3	—	Р	Р	Р
19080100МК	Spark-arresters in exhaust-gas systems and uptakes of incinerators	—	—	С3	—	Р	Р	Р
19080200МК	Supply and exhaust ventilation facilities	Р	—	С3	—	Р	Р	Р
19080300МК	Oil residues processing system (tank for mixing oil residues with fuel oil, oil residues preheating system, homogenization system)	—	—	—	—	Р	Р	—
19090000МК	Sewage treatment plants (resolution MEPC.227(64))	Р	СОТО	С3	—	Р	Р	Р
19090001МК	Sewage treatment plants (resolution MEPC.159(55))	Р	СОТО	С3	—	Р	Р	Р
19100000МК	Sewage comminution and disinfection systems	Р	—	С3	—	Р	Р	—
19110000МК	Sewage holding tanks	—	—	—	—	Р	—	—
19120000МК	Sewage pumps (ejectors)	—	—	С3	—	Р	Р	—
19130000МК	Sewage disposal and discharge systems	—	—	—	—	Р	Р	—
19140000МК	Garbage treatment plants	Р	—	С3	—	Р	Р	—
19150000МК	Garbage containers	—	—	—	—	Р	—	—
19160000МК	Equipment and arrangements for prevention of pollution by noxious liquid substances	Р	—	С3	—	Р	Р	—
19170000МК	**Equipment and arrangements for prevention of air pollution**							
19170100МК	Diesel engine exhaust gas cleaning systems in accordance with the requirements of IMO resolution MEPC.184(59), the survey under Scheme А.	Р	—	SECC, С3	—	Р	—	—
19170300МК	Sampling equipment	Р	СТО	С3	—	Р	Р	—
19210000МК	Oily waters deep purification plants including 5 ppm bilge separator, 5 ppm bilge alarm and automatic stopping device	Р	СТО	С3	—	—	—	—
19220000МК	Ballast water management systems (resolution MEPC.174(58))	Р	СОТО	С3	—	Р	Р	Р
20000000	COMPUTER SOFTWARE (PROGRAMMES FOR COMPUTER-AIDED CALCULATIONS)							
20100000	Ship theory and strength programmes for computer-aided calculations	Р	СТОП	СТОП	—	—	—	—
20200000	Mashinery programmes for computer-aided calculations	Р	СТОП	СТОП	—	—	—	—
20300000	Electrical equipment and automation programmes for computer-aided calculations	Р	СТОП	СТОП	—	—	—	—

[1]Type of technical supervision is subject to special review by the Register.

[2]For type items only.

[3]"C3" is acceptable for internal combustion engines with a cylinder diameter of 300 mm and under.

[4]In case the set is delivered in assembly.

[5]In case of delivery apart from the set.

[6]Delivery of materials with the manufacturer's certificates. Technical supervision shall be carried out in compliance with the technical documentation approved by the Register.

[7]When a documented quality system covering the process of manufacture, testing, and quality control of the items of technical supervision approved by the Register or recognised competent organization is available at the manufacturer.

[8]Refer to Appendix 8 to Section 5 of Part IV "Technical Supervision during Manufacture of Products".

[9]Division into safety classes – refer to Section 5, Part VIII "Nuclear-Powered Steam Generating Plants" of the Rules for the Classification and Construction of Nuclear Ships and Floating Facilities.

APPENDIX 2

INSTRUCTIONS ON BRANDING OF ITEMS OF THE REGISTER TECHNICAL SUPERVISION

1 GENERAL

1.1 These Instructions supplement and explain the RS Nomenclature (refer to Appendix **1**).

1.2 In the course of manufacture of certain materials, products and their parts under technical supervision of the Surveyor to the Register and the firm (manufacturer) technical personnel in accordance with the Agreement on Survey (CO) (refer to 4.5 of the present Part), these materials, products and parts as well as samples taken therefrom shall be branded at certain stages of their manufacture with appropriate brands of the Register.

1.3 Materials, products and parts subject to branding by the Register are identified in the RS Nomenclature.

1.4 The purpose of branding materials, products and parts shall make sure in the course of subsequent surveys that they were properly checked by the Register.

1.5 All the provisions of these Instructions equally refer to all spare parts, irrespective of the fact whether they have been produced for a newbuilding constructed under the Register standards or to renew the products and parts on ships in service.

1.6 In case it is found in the course of further processing, assembly or installation at the shipyard that the material, product or part is defective or does not comply with the RS rules or other RS normative documents, as well as with the technical documentation approved by the Register, it may be rejected, irrespective of the presence of the Register brand. In this case, the Register brand shall be cancelled.

The cancellation of the brands shall be done in the presence of the Surveyor to the Register, the firm (manufacturer) technical personnel authorized under the Agreement on Survey (CO) to do branding.

1.7 All the provisions of these Instructions equally refer to Surveyors to the Register and the firm (manufacturer) technical personnel in accordance with the Agreement on Survey (CO) (refer to 4.5 of the present Part), as well as to officials of the firms (manufactures).

2 TYPES OF THE REGISTER BRANDS

2.1 The Register brands are subdivided into the brands of Surveyor to the Register and those of the firm (manufacturer) technical personnel in accordance with the Agreement on Survey (CO) (refer to 4.5 of the present Part). The appearance of the brands is the same with a difference that brands of the firm (manufacturer) technical personnel in accordance with the Agreement on Survey (CO) (refer to 4.5 of the present Part) have a line under the brand.

Brands of the Surveyor to the Register shall be used for branding by the Surveyors to the Register, brands of the firm (manufacturer) technical personnel in accordance with the Agreement on Survey (CO) (refer to 4.5 of the present Part) — by the firm (manufacturer) technical personnel in accordance with the Agreement on Survey (CO) (refer to 4.5 of the present Part).

2.2 For branding materials, products and parts, use is made of brands, stamps and punches.

2.3 Brands are used for branding materials, products and parts made of metal or material enabling to put a durable brand imprint.

2.4 The brands may be of preliminary or final nature. The imprints of brands are shown in Figs. **2.4-1** and **2.4-2**.

2.5 The preliminary brands of the Surveyor to the Register and the firm (manufacturer) technical personnel

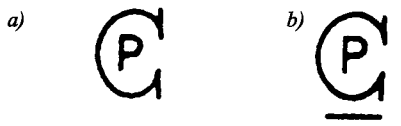


Fig. 2.4-1 Imprint specimens of preliminary brands:
a) — Surveyor to the Register;
b) — the firm (manufacturer) technical personnel in accordance with the Agreement on Survey (CO) (refer to 4.5 of the present Part)



Fig. 2.4-2 Imprint specimens of final brands and punches:
a) — Surveyor to the Register;
b) — the firm (manufacturer) technical personnel in accordance with the Agreement on Survey (CO) (refer to 4.5 of the present Part)

in accordance with the Agreement on Survey (CO) (refer to 4.5 of the present Part) are put on:

.1 test specimens and products, from which these specimens are taken for mechanical tests and examinations;

.2 products and parts, which production process has not been completed, subject to further treatment.

2.6 The final brand of the Surveyor to the Register and the firm (manufacturer) technical personnel in accordance with the Agreement on Survey (CO) (refer to 4.5 of the present Part) is put on finished materials, products or parts, manufactured, surveyed and tested in compliance with the RS rules and other RS normative documents and technical documentation approved by the Register.

2.7 In case materials, products or parts bearing brands are rejected, the brand imprint shall be destroyed.

2.8 The Surveyor's stamp is used for branding with indelible paint of non-metal products made of materials where the brand impression cannot be preserved for a long time, but the area available is enough to put a stamp (lifebuoys, lifejackets, inflatable liferafts, etc.).



Fig. 2.9
Imprint specimen of Surveyor's stamp

2.9 The Register stamp imprint is shown in Fig. 2.9.

2.10 In case the product is rejected after a stamp has been put thereon, the whole imprint shall be filled with the indelible paint.

2.11 The Register seals are intended for such products and parts where a brand or stamp cannot be directly placed as well as for sealing safety devices.

2.12 Brand and punch imprints are shown in Fig. 2.4-2.

2.13 In case a product after sealing is rejected, the seal shall be removed.

3 GENERAL INSTRUCTIONS ON BRANDS AND BRANDING

3.1 Presence of brands of the Surveyor to the Register or the firm (manufacturer) technical personnel in accordance with the Agreement on Survey (CO) (refer to 4.5 of the present Part) on the materials and products does not relieve the supplier from presentation of the documents required by the Register.

3.2 The Register does not put its brand on the parts after repair.

3.3 Brands, stamps and sealer punches shall be kept by the Surveyors to the Register and the firm (manufacturer) technical personnel in accordance with the Agreement on Survey (CO) (refer to 4.5 of the present Part) under coinditions preventing them from an authorized use.

3.4 Brands, stamps and sealer punches shall be handed in to the Surveyors to the Register by the Head of the RS Branch Office or his Deputy against receipt. In so doing, an imprint of the handed in stamp or punch is made in the statement for their handing. The firm (manufacturer) technical personnel in accordance with the Agreement on Survey (CO) (refer to 4.5 of the present Part) receive brands, stamps and sealer punches from RHO or the RS Branch Office according to the concluded Agreements on Survey (CO).

3.5 The decision on ordering new brands, stamps and sealer punches is taken by RHO.

3.6 Branding of materials, products and parts shall be done in the presence and upon instructions of the Surveyor to the Register, the firm (manufacturer) technical personnel in accordance with the Agreement on Survey (CO) (refer to 4.5 of the present Part).

3.7 In case a technical control body is available at the firm (manufacturer), finished materials, products and parts shall be checked and then branded by this technical control body before submission to the Surveyor to the Register.

3.8 The number of cast, ordinal number of the specimen, brand of the technical control body and preliminary brand of the Surveyor to the Register or the firm (manufacturer) technical personnel in accordance with the Agreement on Survey (CO) (refer to 4.5 of the present Part) shall be punched on the test specimens produced for testing mechanical properties of materials and samples.

3.9 Brands shall be generally put on materials, products and parts in readily accessible places in such a way that they can be easily found after installation on board the ship.

3.10 All finished products shall be provided with manufacturer's marking, which shall consist of a serial number and the year of manufacture.

The details of manufacturer's marking of some products are given in Section 5.

Marking may be applied on identification plates or directly on the products. The final brand of the Register shall be located underneath the marking on the right-hand side.

Where it is difficult to find the places of marking and brands (plates, rolled products, forgings, castings, etc.), the brand shall be put in the frame made with a contrast paint.

3.11 In branding the products to undergo further machining the brand shall be put in spots, which will not be machined later. If it is impracticable, the brand shall be transferred in the course of machining as stated in Section **4**.

3.12 Finished products and products, which manufacturing process has not been completed and which shall undergo further machining at other firms (manufacturers), in case the products bear the Register brand, shall be provided with a certificate or another appropriate document.

Such documents shall bear an imprint of the brand (stamp), which has been put on the product. If there is no place specially provided for the imprint, the latter shall be put in the bottom part of the form above the Surveyor's signature.

4 TRANSFER OF BRANDS

4.1 The Register brands shall be preserved in any treatment or assembly of the parts. Where brands shall be cut because of the processing conditions, they shall be transferred to another place. For this purpose manufacturer's marking shall be transferred to a new place, and then the part shall be presented to the Surveyor to the Register for transference of the brand.

4.2 In case the brand shall be transferred in the process of treatment of the part in non-working time of the Surveyor, the manufacturer shall inform the Surveyor in advance, indicating the part and manufacturer's marking.

4.3 In particular cases, the Surveyor may allow to cut the brand and to transfer manufacturer's marking of the part to a new place under supervision of a firm (manufacturer) supervisor. In such cases, the supervisor shall make an entry in the workshop's log, draw up a report and put his brand on the part.

Based on log entry or report and the firm (manufacturer) supervisor brand, the Surveyor to the Register puts a new Register brand on the part.

5 BRANDING AND MARKING PLACES

5.1 MATERIALS

5.1.1 Marking of the materials shall be done in accordance with the firm (manufacturer) current regulations with a mandatory account of the requirements of the RS rules.

5.1.2 Steel plates, every one of which requires to be tested according to the RS rules, are subject to mandatory branding.

Branding of other steels is done in cases specially provided by the Register or on customer's request.

5.2 CASTINGS

5.2.1 Gated samples or castings in places where specimens are taken shall be marked with the Register preliminary brand.

5.2.2 In case of separately cast samples, poured together with the specimens are steel tags, on which the numbers of the cast and pouring wherefrom specimens are taken, shall be punched by the technical control body of the firm (manufacturer). Upon extraction of the samples out of the mould the Register preliminary brand shall be put thereupon.

5.2.3 Upon satisfactory results of the specimen tests and survey a preliminary brand of the Register is put on one of the casting ends, next to the number of the cast.

5.3 STEEL FORGINGS

5.3.1 Upon satisfactory results of the specimen tests and survey, a preliminary brand of the Register is put on one of the forging ends, next to the number of the cast.

5.4 SHIP'S ARRANGEMENTS

5.4.1 Steering gear.

5.4.1.1 Upon completion of bench tests of the gear (engine) at the firm (manufacturer) the final brand of the Register is put on the manufacturer's plate of the steering gear.

The rudder stock moment value shall be mandatorily indicated on the manufacturer's plate.

5.4.1.2 The final brand of the Register is put on the following places of finally processed rudder stocks, rudder spindles of "Simplex" type and pintles: upper butt surface of rudder stocks, flange surface of rudder spindles of "Simplex" type and upper butt surface of the pintles.

5.4.2 Anchor arrangement.

Upon completion of bench tests of windlasses and anchor capstans at the firm (manufacturer), the final brand of the Register is put on the manufacturer's plate of windlasses and anchor capstans.

The chain cable diameter shall be mandatorily indicated on the manufacturer's plate.

5.4.3 Anchors.

5.4.3.1 The following data shall be punched or cast on every anchor in places specially provided for marking (of circular or square shape): the firm (manufacturer) trademark, mass of the anchor in assembly, manufacturer's number, final brand of the Register — in circle; year of test and final brand of the Register — in square.

5.4.3.2 On Hall's anchors, the circle for marking shall be provided on one of the anchor flukes, the square — on the other fluke and in the upper part of the anchor shank. The mass of the assembled anchor shall be additionally cast or punched on the shank.

5.4.3.3 On admiralty anchors, all the marking shall be punched in place where the shank is attached to the flukes; on welded anchors — on the fluke below the welding line. The mass of the anchor shall be punched on the stock.

5.4.4 Anchor chain cables.

The marking of chain cable shall be done on end links of every length and shall include the certificate number, chain cable grade and the Register brand. The location of marking shall be as shown in Fig. 5.4.4.

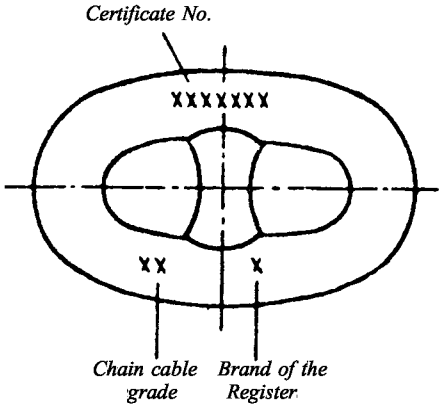


Fig. 5.4.4

Every part of the chain cable shall be marked, the marking shall include the certificate number, chain cable grade and the Register brand.

5.5 LIFE-SAVING APPLIANCES

5.5.1 Launching appliances.

5.5.1.1 Upon testing and survey of davits or other launching appliances the following shall be marked thereupon:

permissible working load;

date of test;

final brand of the Register.

5.5.1.2 Upon completion of all the required tests and surveys all life-saving appliances shall be marked in order as set forth under 5.5.2 to 5.5.6.

5.5.2 Lifeboats.

5.5.2.1 On each side of the lifeboat's bow the following information shall be marked:

the number of persons, for which the lifeboat is approved (in clear permanent characters with the indelible paint);

the name and port of registry of the ship, to which the lifeboat belongs (in block capitals of the Roman alphabet).

Marking permitting to identify the ship, to which the lifeboat belongs, and the lifeboat number shall be made in such a way that it is visible from above.

5.5.2.2 On exterior of every lifeboat in accessible place above the waterline a metal plate made of anti-corrosive material shall be secured containing the following data:

manufacturer's name or trademark;

number of Type Approval Certificate (CTO) with "RS" letters and number of the certificate issued by the Register to the lifeboat;

serial number;

number of persons permitted to be accommodated;

date of survey;

final brand of the Register.

5.5.3 Rigid and inflatable liferafts.

5.5.3.1 On the exterior of every liferaft the following information shall be permanently marked with the indelible paint:

name and port of registry of the ship, to which the liferaft belongs (for inflatable liferafts, name and port of registry of the ship shall be marked in such a form that the ship identification can be changed anytime without opening the container);

number of persons permitted to be accommodated over each entrance in characters not less than 100 mm in height of a colour contrasting with that of the liferaft;

word "SOLAS" and type of emergency pack enclosed (for rigid liferafts);

launching instructions (for rigid liferafts);

length of painter (for rigid liferafts);

maximum permitted height of stowage above waterline (for rigid liferafts).

5.5.3.2 On the inner side of every liferaft the plate made of the material, which does not become unfit for use throughout the service life of the liferaft, shall be secured, containing the following information marked with the indelible paint or in some other suitable way:

manufacturer's name or trademark;

serial number;

number of the certificate issued by the Register to the liferaft with "RS" letters;

date of manufacture (month and year);

final brand or stamp of the Register;

name and place of serving station where it was last surveyed (for inflatable liferafts).

5.5.4 Containers for inflatable liferafts.

In the area of a pocket of a soft container or next to a lock of a rigid container the following information shall be marked with the indelible black or other contrasting colour paint:

manufacturer's name or trademark;

serial number;

"RS" letters and number of Type Approval Certificate (CTO);

number of persons permitted to be accommodated;

word "SOLAS";

type of emergency pack enclosed;

date and place of the latest servicing;

length of painter;

maximum permitted height of stowage above waterline;

stamp of the Register.

5.5.5 Lifebuoys.

On the flat part of lifebuoys the manufacturer's name or its trademark, the date of manufacture, number of Type Approval Certificate (CTO) with "RS" letters and the Register stamp shall be marked with the indelible paint.

5.5.6 Lifejackets, immersion suits, antiexposure suits and thermal protective aids.

In conspicuous places of lifejackets, immersion suits, antiexposure suits and thermal protective aids manufacturer's name or its trademark the date of manufacture, number of Type Approval Certificate (CTO) with "RS" letters and the Register stamp shall be marked with the indelible paint.

5.5.7 Rescue/fast rescue boats (rigid, inflated and combined).

Marking and branding of rescue/fast rescue boats shall comply with the requirements of 5.5.2, except that the metal plate mentioned in 5.5.2.2 shall be secured on the inner side of the upper part of the boat transom.

5.5.8 Hydrostatic release units.

Hydrostatic release unit shall be permanently marked on its exterior or have identification plate made of anti-corrosive material, which does not become unfit for use throughout the service life of the unit, securely attached to the unit, with the following data:

manufacturer's name or trademark;

type of the unit;

serial number;

number of Type Approval Certificate (CTO) with "RS" letters;

date of manufacture:

whether the unit is suitable for use with a liferaft with a capacity of more than 25 persons;

if disposable, exact expiry date shall be marked.

5.5.9 Automatic gas inflation system for inflatable liferafts, marine evacuation systems, means of rescue.

5.5.9.1 Automatic gas inflation system shall be permanently marked on a securely attached identification plate made of anti-corrosive material, which does not become unfit for use throughout the service life of the system, with the following data:

manufacturer's name or trademark;

type of the system;

serial number;

number of Type Approval Certificate (CTO) with "RS" letters;

date of manufacture.

5.5.9.2 On the upper spherical or cylindrical part of the pressure vessels upon completion of hydraulic tests the following information shall be clearly marked:

firm (manufacturer) trademark;

manufacturer's number;

capacity or working pressure;

date of last testing;

final brand of the Register.

5.5.10 Means of rescue.

5.5.10.1 An inflatable means of rescue shall be marked as set forth under 5.5.3.2. The marking shall contain also the number of persons permitted to be accommodated. Provision shall be made for marking the inflatable means of rescue with the name and port of registry of the ship, to which it belongs, so that the ship identification can be changed anytime without opening the container.

5.5.10.2 A rigid means of rescue shall be marked with the following data:

manufacturer's name or trademark;

serial number;

number of the certificate issued by the Register to the raft with "RS" letters;

word "SOLAS";

number of persons permitted to be accommodated;

maximum permitted height of stowage above waterline;

launching instructions.

5.5.11 Marine evacuation system.

5.5.11.1 In addition to the data set forth under 5.5.3.2, the capacity of marine evacuation system shall be marked.

5.5.11.2 The container for marine evacuation system shall be indelibly marked with the data set forth under 5.5.4, except that in lieu of the number of persons permitted to carry, the capacity of the marine evacuation system and the date of manufacture are marked, while the type of emergency pack enclosed and the length of painter are not marked.

5.5.12 Lifebuoy self-igniting lights and self-activating smoke signals, lifejacket lights, external and internal lights of lifeboats and liferafts, lights of rescue/fast rescue boats, sea-water-activated sources of energy, food ration, water in receptacles, searchlights of life- and rescue boats, boat's compasses, line-throwing appliances.

The following information shall be marked on the above products or packing thereof:

manufacturer's name or trademark;

type of product;

number of Type Approval Certificate (CTO) with "RS" letters;

date of manufacture;

if disposable, exact expiry date shall be marked or date when it shall be renewed.

5.6 MAIN DIESEL ENGINES, AUXILIARY DIESEL ENGINES WITH POWER OUTPUT 55 kW AND OVER

5.6.1 Upon completion of bench tests of the engines at the firm (manufacturer), elimination of all faults found and check tests, the final brand of the Register is put on the manufacturer's plate.

5.6.2 Crankshafts.

5.6.2.1 Forgings intended for manufacture of crankshafts shall be delivered for machining with the preliminary brand of the Register and a certificate (if forgings are produced by another firm (manufacturer));

5.6.2.2 Where the crankshaft is adequately big, manufacturer's marking and final brand of the Register on the machined crankshafts shall be put on the cylindrical surface of the crankshaft coupling flange.

Where the surface area is not enough, the marking shall be made on the outer side of the crank web first after the coupling flange.

Each section of built-up crankshafts shall be branded using the same principle from the side nearest to the coupling flange.

5.6.2.3 Each pin or journal in built-up crankshafts shall be checked and marked with the Register preliminary brand on the butt; the webs — on the outer side in the area of boring for the journal.

5.6.2.4 On every junction of built-up crankshafts, on webs and journals or pins, along with common manufacturer's marking, numbers of junctions shall be marked.

5.6.3 Connecting rods.

The manufacturer's marking and final Register brand on adequately big connecting rods shall be put on the front part of connecting rod foot, in case the area is not enough — on the side of the foot.

5.6.4 Piston rods.

The Register final brand shall be put on the flange or below the taper part of the piston rod in the area where it is attached to the piston.

5.6.5 Crossheads.

The Register final brand shall be put next to the manufacturer's marking.

5.6.6 Pistons.

The Register final brand shall be put next to the manufacturer's marking.

5.6.7 Cylinder liners.

The Register final brand shall be put on the top butt part of the cylinder shoulder.

On big engine liners where the shoulder is not sunken in the block, the brand may be put on the side surface of the shoulder.

5.6.8 Cylinder blocks.

The Register final brand shall be put on the side surfaces of blocks on the areas specially allocated for the manufacturer's marking, and in case no special area is provided, on the machined side surface of the cylinder block, nearest to the coupling flange (coupling) of the crankshaft.

5.6.9 Cylinder covers.

Where the total surface of the cover is machined, the manufacturer's marking and the Register final brand shall be put on that surface.

5.6.10 Bedplates, crankcases, columns.

The Register final brand shall be put on specially allocated areas, and in case no provision is made for such areas, on a readily visible place next to the manufacturer's marking.

5.7 MAIN STEAM TURBINES AND ELECTRIC GENERATOR TURBINES

5.7.1 Upon completion of bench tests at the firm (manufacturer), elimination of all faults found, the Register final brand is put on the manufacturer's plate of the geared turbine installation or a turbine.

5.7.2 Rotors and shafts.

5.7.2.1 Forgings intended for manufacture of rotors and shafts shall be delivered for machining with the preliminary brand of the Register and a certificate (if forgings are produced by another firm (manufacturer));

5.7.2.2 After final assembly of all blading stages and balancing the Register final brand shall be put on the rotor flange generatrix.

5.7.3 Turbine casings.

The Register final brand shall be put on the generatrix of the horizontal joint flange after assembly of the casing with the rotor.

5.7.4 Manoeuvring gear casings, nozzle boxes.

The Register final brand shall be put on the generatrix of the horizontal joint flange.

5.8 MAIN GAS TURBINE PLANTS AND GAS TURBINES OF ELECTRIC GENERATORS

5.8.1 Upon completion of bench tests at the firm (manufacturer), elimination of all faults found, the Register final brand is put on the manufacturer's plate of the gas turbine installation (turbine).

5.8.2 In the course of production of the gas turbine installation, after final assembly and checking casings of turbines, compressors and combustion chambers, rotors, shafts, discs shall be branded by the Register.

The brand shall be put next to the manufacturer's branding.

5.9 GEARS AND DISENGAGING COUPLINGS OF MAIN MACHINERY

5.9.1 Upon completion of the bench tests at the firm (manufacturer) and satisfactory results thereof, the Register final brand is put on the manufacturer's plate of the gear.

5.9.2 Pinions and wheels.

The Register final brand is put on the generatrix of the pinion and wheel flange, and if there is no flange — on the shaft butt. Such branding is done upon completion of assembly of the whole gear and checking the teeth by blueing. The preliminary brand is put in case of intermediate checkings.

5.9.3 Shafts of reduction gears and couplings.

The Register final brand is put on the cylindrical surface of the coupling flange.

5.9.4 Casings of reduction gears and couplings.

The Register final brand is put on the horizontal flange of the casing joints of reduction gears and couplings.

5.10 SHAFTING AND PROPELLERS

5.10.1 Forgings intended for manufacture of thrust, intermediate and propeller shafts shall be branded with the Register preliminary brand.

5.10.2 Finally machined thrust, intermediate and propeller shafts (including CPP shafts) shall be marked with the Register final brand on the cylindrical surface of the flanges. Where there are no flanges, the brand shall be put on the shaft butt.

5.10.3 The Register final brand on solid propellers shall be put on the side surface of the hub under the manufacturer's marking, which includes the firm (manufacturer) trademark, pitch and diameter of the propeller, direction of rotation.

5.10.4 The Register final brand on built-up propellers shall be put on the hub and outside surface of each blade flange or on the hub root in the area of the shank (for CPP). The manufacturer's marking of the hub is similar to that referred to in 5.**10.3**. The whole CPP shall be branded with the Register final brand on the manufacturer's plate of the machinery pitch control gear.

5.11 BOILERS

5.11.1 On the non-removable parts of the boiler front, in a conspicuous place readily accessible for inspections the manufacturer's plate shall be secured containing the following data:

firm (manufacturer) trademark;
year of manufacture;
manufacturer's number;
boiler index;
working steam pressure in the boiler;
superheated steam temperature;
steaming capacity, for fire-tube boilers — heating surface area;
final brand of the Register.

5.11.2 The Register final brand is put after hydraulic tests at the firm (manufacturer).

5.11.3 Main parts of the boiler, namely: shells, headers (chambers) after completion of hydraulic tests as well as combustion chambers, furnaces, stays before assembly shall be surveyed and marked with the Register preliminary brand.

In case the boiler components are produced at the same firm (manufacturer) where a boiler is assembled, branding of the above components is not mandatory.

5.11.4 Safety valves of the boilers shall be finally tested on board, one of them shall be sealed by the Register.

5.12 AIR RECEIVERS

5.12.1 On the upper spherical or cylindrical (depending on the bottle size) part of the air receiver casing the following data shall be clearly marked:

firm (manufacturer) trademark;
year of manufacture;
manufacturer's number;
air receiver index;
working pressure;
capacity;
final brand of the Register.

5.12.2 The Register final brand is put on the air receiver upon completion of hydraulic tests at the firm (manufacturer).

5.12.3 In case end plates or cylindrical parts of air receivers are produced at another manufacturer, they shall be branded with the Register preliminary brand.

5.12.4 Safety valves installed on air receivers shall be tested and sealed by the Register.

5.13 MACHINERY, PRESSURE VESSELS AND APPARATUS OF REFRIGERATING PLANTS

5.13.1 The Register final brand is put on the manufacturer's plate of compressors and refrigerant pumps upon completion of bench tests at the firm (manufacturer).

5.13.2 The Register final brand is put on the manufacturer's plate of pressure vessels and apparatus working under a refrigerant pressure upon completion of

hydraulic and air tests with satisfactory results at the firm (manufacturer).

5.13.3 Safety valves installed on the pressure vessels and apparatus working under a refrigerant pressure shall be tested and sealed by the Register.

5.14 ELECTRICAL EQUIPMENT

5.14.1 The Register final brand is put on the plates of generators, motors, electromagnetic couplings upon completion of the required surveys and tests at the firm (manufacturer).

5.15 SIGNAL MEANS

5.15.1 In a conspicuous place on each navigation and flashing lantern the Register final brand is put and manufacturer's plate shall be secured containing the following data:

firm (manufacturer) trademark;
lantern designation;
lantern index;
sequence number;
year of manufacture.

5.15.2 Directly on every sound signal means, such as whistle, typhon, horn, hong, bell the following shall be marked:

firm (manufacturer) trademark;
sequence number;
year of manufacture;
final brand of the Register.

5.15.3 Pyrotechnic signal means (rocket parachute flares, signal rockets, hand flares).

Every pyrotechnic signal means shall be marked with the following data in Russian and English:

manufacturer's name or trademark;
name of the product;
brief instructions or diagrams clearly illustrating how it shall be operated;
number of Type Approval Certificate (CTO) with "RS" letters;
date of manufacture;
date of its expiry or date when it shall be renewed.

5.16 CARGO HANDLING GEAR

5.16.1 Cargo handling gear shall be marked in compliance with the provisions of Sections 7 and **11** of the Rules for the Cargo Handling Gear of Sea-Going Ships.

APPENDIX 3

HULL SURVEY FOR NEW CONSTRUCTION

1 SCOPE[1]

The scope of these requirements includes the following main activities:

1.1 Examination of the parts of the ship covered by classification rules and by applicable statutory regulations for hull construction, to obtain appropriate evidence that they have been built in compliance with the rules and regulations, taking account of the relevant approved drawings.

1.2 Appraisal of the manufacturing, construction, control and qualification procedures, including welding consumables, weld procedures, weld connections and assemblies, with indication of relevant approval tests.

1.3 Witnessing inspections and tests as required in the classification rules used for ship construction including materials, welding and assembling, specifying the items to be examined and/or tested and how (e.g. by hydrostatic, hose or leak testing, non-destructive examination (testing), verification of geometry) and by whom.

1.4 Appraisal of material and equipment used for ship construction and their inspection at the firm (manufacturer) is not included in these requirements. Details of requirements for hull and machinery steel forgings and castings and for normal and higher strength hull structural steel are given in **3.2**, **3.7** and **3.8**, Part XIII "Materials" of the Rules for the Classification and Construction of Sea-Going Ships respectively. Acceptance of these items is verified through the survey process carried out at the firm (manufacturer) and the issuing of the appropriate certificates.

1.5[2] In addition to above, for oil tankers and bulk carriers subject to SOLAS Chapter II-1 Part A-1 Regulation **3-10** (Goal-based ship construction standards for bulk carriers and oil tankers), refer also to Appendix 5.

2 DEFINITIONS[3]

2.1 The hull structure is defined as follows:

.1 hull envelope including all internal and external structures;

.2 superstructures, deckhouses and casings;

.3 welded foundations, e.g. main engine seatings;

.4 hatch coamings, bulwarks;

.5 all penetrations fitted and welded into bulkheads, decks and shell;

.6 the fittings of all connections to decks, bulkheads and shell, such as air pipes and ship side valves — all items covered by the International Convention on Load Lines, 1966 as amended (ILLC 1966);

.7 welded attachments to shell, decks and primary members, e.g. crane pedestals, bitts and bollards, but only as regards their interaction on the hull structure.

2.2 Reference to documents also includes electronic transmission or storage.

2.3 Definition of survey methods which the surveyor is directly involved in: patrol, review, witness.

2.3.1 Patrol is the act of checking on an independent and unscheduled basis that the applicable processes, activities and associated documentation of the shipbuilding functions identified in the Table "Survey Requirements" (hereinafter, the Table) continue to conform to the RS and statutory requirements.

2.3.2 Review, is the act of examining documents in order to determine traceability, identification and to confirm that processes continue to conform to the RS and statutory requirements.

2.3.3 Witness is the attendance at scheduled inspections in accordance with the agreed Inspection and Test Plans or equivalent to the extent necessary to check compliance with the survey requirements.

3 APPLICATIONS

3.1 These requirements cover the survey of all new construction of steel ships intended for classification and for international voyages except for:

.1 those defined in regulation **1/3** of SOLAS-74 Convention (i.e. ships of war and troopships; cargo ships of less than 500 gross tonnage; ships not propelled by mechanical means; wooden ships of primitive build; pleasure yachts not engaged in trade, and fishing vessels);

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[1]These requirements, unless expressly provided otherwise, shall be implemented on ships contracted for construction on or after 1 January 2008.
"The contracted for construction date" means the date on which the contract to build the ship is signed between the prospective owner and the shipyard. For further details regarding "the date of contract for construction", refer to 1.1.2, **Part I** "Classification" of the Rules for the Classification and Construction of Sea-Going Ships.

[2]These requirements shall be implemented on ships contracted for construction on or after 1 July 2016.

[3]Terms and definitions for hull and hull survey are given in the RS rules.

.2 high speed craft as defined in 1.3.1 of Chapter 1 of the International Code for the Safety of High-Speed Craft (2000 HSC Code);

.3 mobile offshore drilling units as defined in 1.2.1 of Chapter 1 of the Code for the Construction and Equipment of Mobile Offshore Drilling Units, 2009 (2009 MODU Code).

3.2 These requirements cover all statutory items relevant to the hull structure and coating, i.e. Load Line and SOLAS Safety Construction.

3.3 Theses requirements do not cover the manufacture of equipment, fittings and appendages regardless whether they are made inside or outside of the shipyard, examples being as follows:

.1 hatch covers;

.2 doors and ramps integral with the shell and bulkheads;

.3 rudders and rudder stock;

.4 all forgings and castings integral to the hull.

Evidence of acceptance shall be provided by accompanying documentation from surveyor at the firm (manufacturer) and verified at the shipyard

3.4 These requirements apply to the installation into the ship, welding and testing of the following:

.1 items listed in 3.3 above;

.2 equipment forming part of the watertight and weather tight integrity of the ship.

3.5 These requirements apply to the hull structures and coating constructed at any of the following:

.1 shipyard facilities;

.2 sub-contractors at the shipyard facilities;

.3 sub-contractors at their own facilities or at other remote locations.

4 QUALIFICATION AND MONITORING OF PERSONNEL

4.1 RS exclusive surveyors shall confirm through patrol, review and witness as defined in 2.3, that the ships are built using approved plans in accordance with the relevant rules and statutory requirements. The surveyors shall be qualified to be able to carry out the tasks and procedures shall be in place to ensure that their activities are monitored. Details are specified in Instruction for Activity Monitoring of RS Surveyors and RHO Experts and Procedure for Training and Qualification Maintenance of RS Engineering-Technical Personnel.

5 SURVEY OF THE HULL STRUCTURE

5.1 The Table provides a list of surveyable items for the hull structure and coating covered by these requirements, including:

.1 description of the shipbuilding functions;

.2 classification and statutory survey requirements;

.3 survey method required for classification;

.4 relevant RS and statutory requirement references;

.5 documentation to be available for the classification surveyor during construction.

.5.1 the shipyard shall provide the classification surveyors access to documentation required by classification, this includes documentation retained by the shipyard or other third parties;

.5.2 the list of documents approved or reviewed by the classification society for the specific new construction are as follows:

plans and supporting documents;

examination and testing plans;

NDE plans;

welding consumable details;

welding procedure specifications;

welding plan or details;

welder's qualification records;

NDE operator's qualification records;

.6 documents to be inserted into the ship construction file. Refer to paragraph 10 for details;

.7 a list of specific activities which are relevant to the shipbuilding functions. This list is not exhaustive and may be modified to reflect the construction facilities or specific ship type.

5.2 Evidence is also to be made available, as required, by the shipyard, to the surveyor whilst the construction process proceeds to prove that the material and equipment supplied to the ship has been built or manufactured under survey relevant to the RS rules and statutory requirements.

6 REVIEW OF THE CONSTRUCTION FACILITY[1]

6.1 The Register shall familiarize with the yard's production facilities, management processes, and Safety for review in compliance with the requirements of the Table prior to any steelwork or construction taking place in the following circumstances:

[1]The form of Shipyard Construction Facilities' Review Record is given in Appendix 4.

.1 where the society has none or no recent experience of the construction facilities — typically after a one year lapse — or when significant new infrastructure has been added;

.2 where there has been a significant management or personnel re-structuring having an impact on the ship construction process; or

.3 where the shipyard contracts to construct a ship of a different type or substantially different in design.

7 NEWBUILDING SURVEY PLANNING

7.1 Prior to commencement of surveys for any newbuilding project, the Register shall discuss with the shipyard at a kick off meeting the items listed in the Table. The purpose of the meeting is to review and agree how the list of specific RS activities relating to the ship construction process and shown in the Table shall be addressed. The meeting shall take into account the shipyard construction facilities and ship type including the list of proposed subcontractors. A record (the minutes) of the meeting shall be made, based upon the contents of the Table (the Table may be used as the record with comments made into the appropriate column). If the Register has nominated a surveyor for a specific newbuilding project then the surveyor shall attend the kick off meeting.

The shipyard shall agree to undertake ad hoc investigations during construction as may be requested by the Register where areas of concern arise and the shipyard shall agree to keep the Register advised of the progress of any investigation. Whenever an investigation is undertaken, the shipyard shall be requested, in principle, to agree to suspend relevant construction activities if warranted by the severity of the problem.

7.2 The records shall take note of specific published Administration requirements and interpretations of statutory requirements.

7.3 The shipyard shall be requested to advise of any changes to the activities agreed at the kick off meeting and these shall be documented in the survey plan. E.g. if the shipyard chooses to use or change sub-contractors, or to incorporate any modifications necessitated by changes in production or inspection methods, rules and regulations, structural modifications, or in the event where increased inspection requirements are deemed necessary as a result of a substantial non-conformance or otherwise.

7.4 Shipbuilding quality standards for the hull structure during new construction shall be reviewed and agreed during the kick-off meeting. Structural fabrication shall be carried out in accordance with IACS Recommendation 47, "Shipbuilding and Repair Quality Standard"[1], or a recognized fabrication standard which has been accepted by the Register prior to the commencement of fabrication/construction. Provisions of the particular fabrication standard submitted to the Register for review and acceptance shall be at least equivalent to that of IACS Recommendation No. 47 or shall establish more stringent performance criteria. When a contradiction between shipyard fabrication standard and IACS Recommendation No. 47 is identified during review of the standard, more stringent performance criteria for the hull construction shall be applied. The work shall be carried out in accordance with the RS rules and under survey (technical supervision) of the Register.

7.5 The kick-off meeting may be attended by other parties as defined in the Procedure for Supply of Information to Customers (owner, Administrations, etc.) subject to agreement by the shipyard.

7.6 In the event of series ship production[2], the requirement for a kick off meeting in paragraph **7.1** may be waived for the second and subsequent ships provided that no changes to the specific activities agreed in the kick off meeting for the first ship are introduced. If any changes are introduced, these are to be agreed in a new dedicated meeting and documented in a record of such meeting.

8 EXAMINATION AND TEST PLAN FOR NEWBUILDING ACTIVITIES

8.1 The shipyard shall provide plans of the items which are intended to be examined and tested. These plans need not be submitted for approval and examination at the time of the kick off meeting. They shall include:

.1 proposals for the examination of completed steelwork — generally referred to as the block plan and shall include details of joining blocks together at the pre-erection and erection stages or at other relevant stages;

.2 proposals for fit up examinations where necessary;

.3 proposals for testing of the structure (leak and hydrostatic) as well as for all watertight and weathertight closing appliances;

.4 proposals for non-destructive examination (testing);

.5 any other proposals specific to the ship type or to the statutory requirements.

8.2 The plans and any modifications to them shall be submitted to the surveyors in sufficient time to allow review before the relevant survey activity commences.

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[1] IACS Recommendation No. 47 "Shipbuilding and Repair Quality Standard" shall be found in the Supplement to Rules of Russian Maritime Register of Shipping "IACS Unified Interpretations" (published in electronic form as a separate edition).

[2] Series ship production: ships in the series subsequent to the first one (prototype), i.e. sister ships built in the same shipyard.

8.3[1] In addition to above, for oil tankers and bulk carriers subject to SOLAS Chapter II-1 Part A-1 Regulation 3-**10** refer also to Appendix 5.

9 PROOF OF THE CONSISTENCY OF SURVEYS

9.1 The Register shall be able to provide evidence, e.g. through records, check lists, inspection and test records, etc. that its surveyors have complied with the requirements of the newbuilding survey planning and duly participated in the relevant activities shown in the shipyard examination and test plans.

9.2 In addition, the Register shall maintain records of deficiencies found during the patrolling activities required in the Table and described in 2.3.1.

Records shall include the date when deficiency was found, description of the deficiency and the date when the deficiency was cleared.

10 SHIP CONSTRUCTION FILE

The requirements of this Section are applicable to all ships except for oil tankers and bulk carriers subject to SOLAS Chapter II-1 Part A-1 Regulation 3-**10** for which the requirements of Section 3 in Appendix 5 shall be applied[2].

10.1 The shipyard shall deliver documents for the Ship Construction File. In the event that items have been provided by another party such as the shipowner and where separate arrangements have been made for document delivery which excludes the shipyard, that party has the responsibility.

The Ship Construction File shall be reviewed for content in accordance with the requirements of **10**.2.

10.2 It is recognised that the purpose of documents held in the Ship Construction File on board the ship, shall facilitate inspection (survey) and repair and maintenance, and, therefore, shall include in addition to documents listed in the Table, but not be limited to:

.1 as-built structural drawings including scantling details, material details, and, as applicable, wastage allowances, location of butts and seams, cross section details and locations of all partial and full penetration welds, areas identified for close attention and rudders (refer to Part III "Additional Surveys of Ships Depending on Their Purpose and Hull Material" of the Rules for the Classification Surveys of Ships in Service);

.2 manuals required for classification and statutory requirements, e.g. loading and stability, bow doors and inner doors and side shell doors and stem doors — operations and maintenance manuals (refer to 7.**4** and 7.15, Part III "Equipment, Arrangements and Outfit" of the Rules for the Classification and Construction of Sea-Going Ships);

.3 Ship Structure Access Manual, as applicable;

.4 copies of the RS certificates on forgings and castings welded into the hull (refer to 3.7 and 3.**8**, Part XIII "Materials" of the Rules for the Classification and Construction of Sea-Going Ships);

.5 details of equipment forming part of the watertight and weathertight integrity of the ship;

.6 tank testing plan including details of the test requirements (refer to Appendix 1 to Part II "Hull" of the Rules for the Classification and Construction of Sea-Going Ships);

.7 corrosion protection specifications (refer to 1.2.5.1 and 3.3.5.1, Part II "Hull" of the Rules for the Classification and Construction of Sea-Going Ships; 5.2.2.3.2 of Part III "Additional Surveys of Ships Depending on Their Purpose and Hull Material" of the Rules for the Classification Surveys of Ships in Service);

.8 details for the in-water survey, if applicable, information for divers, clearances measurements instructions, etc. tank and compartment boundaries;

.9 docking plan and details of all penetrations normally examined at drydocking;

.10 Coating Technical File, for ships subject to compliance with the IMO Performance Standard for Protective Coatings (PSPC) (MSC.215(**82**)) as the RS requirement under the Part XVIII "Common Structural Rules for Double Hull Oil Tankers" and Part XIX "Common Structural Rules for Bulk Carriers" of the Rules for the Classification and Construction of Sea-Going Ships.

[1]These requirements shall be implemented on ships contracted for construction on or after 1 July 2016.
[2]These requirements shall be implemented on ships contracted for construction on or after 1 July 2016.

Table

Survey Requirements

No. Item	Shipbuilding function	Survey Requirements for Classification	Survey Method required for Classification	Reference*	Statutory requirements and relevant reference	Documentation available to RS surveyor during construction	Documentation for ship construction file	Specific activities	RS proposals for the project
1	**Welding:**								
1.1	**welding consumables**	classification approved separately at the manufacturer. (i.e. RS tested and approved at the firm (manufacturer))	review approval status and patrol, verify storage, handling and treatment in accordance with the firm (manufacturer's) requirements	IACS UR No. W17. Section 4.1 IACS Rec. No. 47. Section 4 of Part XIV of the Rules**		consumable specification, and approval status, copies of Certificate of Approval for Welding Consumables (COCM), delivery notes, certificates for ancillary materials, packing for materials. Handling and delivery records of welding consumables	not required	identify consumables against approved list	
								verify temporary and permanent storage facilities	e.g. kept dry, covered, where applicable heated. Perform drying of electrodes and welding fluxes according to the manufacturer's specification. Results for control of materials' handling, treatment and use shall be recorded in accordance with the shipyard's established order
								verify traceability	e.g. random batch number checking
1.2	**welders' qualification**	qualified welders welding of hull structures shall be carried out by the qualified welders certified with the Welder Approval Test Certificate (СДС)	review of welder certification and patrol	Section 3.1 IACS Rec. No. 47. Section 5, Part XIV of the Rules. Section 4, Part III of the Rules for Technical Supervision***		shipyard`s records with individual's identification	not required	verify welder qualification standard, (availability of СДС, validity terms, welder approval range as per welding positions, welders' identification)	

Table — continued

No. Item	Shipbuilding function	Survey Requirements for Classification	Survey Method required for Classification	Reference*	Statutory requirements and relevant reference	Documentation available to RS surveyor during construction	Documentation for ship construction file	Specific activities	RS proposals for the project
1.3	**welding — mechanical properties (welding procedures)**	all weld joint configurations, positions and materials to be covered by weld procedures (TTIC), approved by RS or by another IACS member available	documentation review and patrol	IACS UR No.W28. Section 3.2 Rec. IACS Rec. No. 47. Section 6 of Part III of the Rules for Technical Supervision		approved Table of the ship's hull welding, approved hull structural drawings, Welding Procedure Approval Test Certificate (COTTIC), welding procedure specifications (WPS)	not required	verify that WPS are available at relevant workstations	
		RS witnesses all new weld procedure qualification tests carried out in the shipyard	witness					review of technical documentation on manufacture of hull structures aimed at identification of welding procedure and their correlation with the approved CTIC and COTTIC at the shipyard	
								CTIC review and approval developed during implementation of new welding procedures	
								participation in tests of the welded joints test pieces and sample tests with approval of weld procedures	
1.3*a*	**welding equipment**	correctly calibrated and maintained	patrol and review			plans, schedules of machinery and equipment maintenance and calibration, records	not required	verify in cooperation with the committed personnel of the shipyard condition of welding equipment and machinery	
								verify competence of the personnel performing calibration	
								verify calibration carried out in accordance with the firm (manufacturer's) recommendations	
								verify calibration in accordance with maintenance schedule	
1.3*b*	**welding environment**	satisfactory environment	patrol	Section 2 IACS Rec. No. 47. Chapter 2.1, Part XIV of the Rules		operational instructions on performing welding works	not required	verify welding areas clean, dry, well lit	
								confirm relevant measures taken for any pre or post heat treatment, drying of surfaces prior to welding	
								verify welding consumables used and fluxes are protected against adverse environmental conditions and adequately prepared prior to use	

Table — continued

No. Item	Shipbuilding function	Survey Requirements for Classification	Survey Method required for Classification	Reference*	Statutory requirements and relevant reference	Documentation available to RS surveyor during construction	Documentation for ship construction file	Specific activities	RS proposals for the project
1.3*c*	**welding supervision**	sufficient number of skilled personnel available at the shipyard, trained and certified by the competent body to carry out welded joint inspection and their quality assessment	review and patrol	Section 2.3, 3.3, IACS Rec. No. 47, IACS Rec. No. 20, Section 3 of Part XIV, Rules				verify supervision is effective (patrols of weld procedures and weld joint testing efficiency by the shipbuilder)	
1.4	**welding — surface discontinuities**	substantially free from significant indications, satisfactory profile and size	visual examination, surface detection techniques, review of documents and patrol of operator	IACS Rec. No. 47, IACS Rec. No. 20, Part XIV of the Rules		shipbuilder`s and agreed standards containing criteria for weld joint quality assessment: _____, and Rules, as applicable, welding and NDT plans, NDT reports, operator qualifications	not required	identify workstations where NDT is carried out, e.g. panel line butt welds, castings into hull structure verify that NDT is carried out in accordance with approved plans, where applicable verify suitability of NDT methods verify that operators suitably qualified particularly where sub-contractors have been employed verify that NDT is carried out according to the acceptable process review of NDT records	
1.5	**welding — embedded discontinuities**	NDT is to be carried out by qualified operators capable of ensuring that welds are substantially free from significant indications	radiography and ultrasonic testing, review of documents and patrol of operator, examination of films	IACS Rec. No.47, IACS Rec. No. 20 Chapters 3.2 and 3.3 of Part XIV of the Rules		shipbuilders and agreed standards, cpntaining criteria for weld quality assessment: _____, and Rules as applicable, welding and NDT plans, NDT reports, Operator qualifications. Approved plan of weld control and table of hull welding No._____	not required	Identify of workstations where NDT is carried out, e.g. panel line butt welds, castings into hull structure verify NDT carried out in accordance with approved plans, where applicable verify suitability of NDT methods verify that operators are suitably qualified particularly where sub-contractors have been empldyed verify that records have been completed and are in accordance with recognized standards, e.g. IQI and sensitivity recorded	

Table — continued

No. Item	Shipbuilding function	Survey Requirements for Classification	Survey Method required for Classification	Reference*	Statutory requirements and relevant reference	Documentation available to RS surveyor during construction	Documentation for ship construction file	Specific activities	RS proposals for the project
								verify that reports and radiographs have been evaluated correctly by the shipbuilder. Systematic review of radiographs carried out by the Surveyor	
								verify equipment calibration satisfactory and in accordance with (firm) manufacturer's and agreed standards requirements	
								verify NDT is carried out according to the acceptable process (according to agreed standards)	
2	**Steel preparation and fit up:**								
2.1	**surface preparation, marking and cutting**	traceability and acceptability of material, check of steel plates & profiles, materials type, scantling identification, testing marks	patrol	Sections 4, 5 IACS Rec. No. 47		material certificates, shipbuilder's marking/cutting production documents at the workstage — documents retained at the facility	not required	verify stockyard storage satisfactory	
								verify material traceability, e.g. stamping identification against material certification, archiving of records	
								verify transfer marking to new piece parts after treatment line	
								verify shotblasting and primer coating for compliance with the shipbuilder's standard	
								verify suitability of primer	
								verify that steel grades can be identified	
								verify machinery adjusted to maintain within IACS or firm (manufacturer's) recommendations	
								verify accuracy of marking and cutting	
								verify storage of piece parts	
2.2	**straightening**	approval of straightening methods/procedures against deformation	patrol and review	Section 6 IACS Rec. No. 47 2.1.15, Part XIV of the Rules		shipbuilder's standards agreed with RS, procedures/ technological processes approved by/agreed with RS	not required	verify that straightening processes are approved for the grade and type of steel, e.g. tmcp, z plate applied during construction	
								verify that plates and sections are within approved tolerances	

Table — continued

No. Item	Shipbuilding function	Survey Requirements for Classification	Survey Method required for Classification	Reference*	Statutory requirements and relevant reference	Documentation available to RS surveyor during construction	Documentation for ship construction file	Specific activities	RS proposals for the project
2.3	**forming**	maintain material properties acceptance of forming method against improper deformations	patrol	IACS Rec. No. 47		RS agreed shipbuilder's procedure for hot forming	not required	verify that temperature control is exercised by the operator during hot forming verify that suitable methods of temperature control are available when forming special steels and materials verify that forming processes are acceptable	
2.4	**conformity with aligoment/fit up/ gap criteria**	verify mutual positioning and edge preparation of details to be connected for compliance with the agreed standards, CIIC and approved drawings	patrol	Sections 7, 8, 9 IACS Rec. No. 47, 2.2.1 Part XIV of the Rules, The shipbuilder's standards agreed with RS		shipbuilder's standards agreed with RS, CIIC, approved drawings, Table of welding	not required	verify the processes to ensure satisfactory fit up and alignment at all workstations verify that edge preparations are reinstated where lost during fitting operations verify remedial procedures are in place to compensate for wide gaps and alignment deviations	
2.5	**conformity for critical areas, when defined, with alignment/fit up or weld configuration**	verify mutual positioning and edge preparation of details to be connected for compliance with the agreed standards, CIIC and approved drawings	witness and review	Sections 7, 8, 9 IACS Rec. No. 47, 2.2.1 Part XIV of the Rules, the shipbuilder's standards agreed with RS, Special instructions in the approved drawings		shipbuilder's standards agreed with RS, CIIC, approved drawings or a standard, Table of welding, shipyard's records	approved plans of critical areas if applicable	verify that the information relevant to the latest approved drawings is available at the workstations (yard facilities) verify the processes to ensure satisfactory fit op and alignment at all workstations (yard facilities) verify that edge preparations are reinstated where lost during fitting operations verify remedial procedures are in place to compensate for wide gaps and alignment deviations	
3	**Steelwork process, e.g. subassembly, block, grand and mega block assembly, preerection and erection, closing plates**	compliance with approved drawings, visual examination of welding and material, check alignment and deformations	patrol of the steelwork process and witness of the completed item	Sections 6, 7, 8 IACS Rec. No. 47 Part II, XIV of the Rules	1.1.6 Part II of the Rules	approved plans, shipbuilders inspection records, Shipbuilders and recognized standards and Rules as applicable, construction plan (steelwork subdivision)		verify that the information relevant to the latest versions of approved drawings are available at the workstations (yard facilities), working drawings comply with the latest version of approved drawings verify that correct weld sizes have been adopted verify operation of the welding processes at the different work stages is satisfactory verify that piece parts are identifiable verify that fit ups are within recognised tolerances	

Table — continued

No. Item	Shipbuilding function	Survey Requirements for Classification	Survey Method required for Classification	Reference*	Statutory requirements and relevant reference	Documentation available to RS surveyor during construction	Documentation for ship construction file	Specific activities	RS proposals for the project
								verify that correct welding requirereents specified in reference 1 of this Table have been adopted	
								verify processes for closing plates etc. are acceptable	
								confirm that steelwork is in accordance with the approved plan	
4	**Remedial work and alteration**	welding, check against deformation, alignment	review shipbuilder's records and witness	Section 9 IACS Rec. No. 47		permanent record of shipyard surveyable items (notices, flow-chart of deviations, bearer's notices, etc. on effects elimination and hanges to ship configuration)		verify that records have been maintained on recording of significant deviations from the approved documentation (miscut openings/trimming of framing members for pipe tunnels/cable runs, equipment installation, etc.)	
								verify that all deviations brought to the attention of the RS by the shipbuilder and pertaining to the classification are approved by RS	
5	**Tightness testing, including leak and hose testing, hydro-pneumatic testing**	absence of leaks	patrols of preparation and testing ppocesses, witness	UR IACS S14 Appendix 1 to Part II of the Rules	Regulation II-1/11 of SOLAS, as amended	approved plan of testing the hull for watertightness, shipbuildcr's inspection records	approved plan of testing the hull for watertightness	confirm that tank testing is carried out in accordance with the approved plan	
								confirm the acceptability of methods used to carry out leak testing	
								confirm that correct test pressures maintained for leak, hose and hydro and hydropneumatic testing and the testing results are satisfactory	
								verify that adequate records of the testing results have been maintained	
6	**Structural testing**	structural adequacy of the compartments and tanks design	review and witness of the test	UR IACS S14 Appendix 1 to Part II of the Rules	Regulation II-1/11 of SOLAS, as amended	approved plan of testing the hull for watertightness, shipbuilder's inspection records on testing performed	anproved plan of testing the hull for watertightness	confirm that tank testing is carried out in accordance with the approved plan	
								confirm that correct test pressures maintained for testing are satisfactory (with the approved plan testing the hull for watertightness)	
								verify that adequate records of the tank testing results have been maintained	

Table — continued

No. Item	Shipbuilding function	Survey Requirements for Classification	Survey Method required for Classification	Reference*	Statutory requirements and relevant reference	Documentation available to RS surveyor during construction	Documentation for ship construction file	Specific activities	RS proposals for the project
7	**Corrosion protection system (coatings, cathodic protection, cathodic protection systems with impressed current except for coating system subject to PSPC)**	salt water ballast tanks with boundaries formed by the hull envelope, and also bulk carrier hold internal surfaces, coamings and hatch covers shall have an efficient protective coating. Safety aspects of cathodic protection systems to be dealt with separately	review and report on builder`s & manufacturer`s documentation	UR IACS Z8, UR IACS Z9, UI IACS SC122, UR IACS F1 1.2.5.1 and 3.3.5.1 of Part II of the Rules	Regulation II-1/3-2 of SOLAS, as amended	firm (manufacturer's) and builder's specification	corrosion protection specifications	verify that applied coatings are approved and review records of application verify that adequate records have been maintained and copied to the ship construction file	
	application antifouling systems		review		AFS-Convention	painting specification	coating specification and manufacturer's declaration	verify that adequate records have been maintained and copied to the ship construction file	
7.1	**application of protective coatings for dedicated seawater ballast tanks in all types of ships and double-side skin spaces of bulk carriers subject to PSPC**	monitor implementation of the coating inspection requirements	documentation toview and patrolling	UI IACS SC223 Chapter 3.2 of Part III and Chapter 2.15, Part V of the Rules for Technical Supervision	Regulation II-1/3-2 of International Convention SOLAS-74, as amended	surface preparation and coating processes agreement signed by the shipyard, shipowner and coating manufacturer (the Tripartite Agreement)	Coating Technical File (CTF)	verify that applied coatings are approved and review records of application in accordance with Chapter 7 of Annex to IMO MSC.215(82).	

Table — continued

No. Item	Shipbuilding function	Survey Requirements for Classification	Survey Method required for Classification	Reference*	Statutory requirements and relevant reference	Documentation available to RS surveyor during construction	Documentation for ship construction file	Specific activities	RS proposals for the project
8	**Installation, welding and testing of the following:**								
8.1	hatch covers	tightness and securing	witness	IACS Rec. 14, UR IACS S14 Appendix 1 to Part II, including 7.10, Part iII of the Rules	Reg. 13, 14, 15 and 16 of the International Convention on Load Lines 1966	approved drawing with proper information on covers. approved plan of testing the hull for watertightness. Shipbuilder's testing reports	details of equipment forming part of the watertight and weathertight integrity of the ship, structural drawings	confirm leak test of hatch covers confirm feasible cover operation and proper securing test	
8.2	doors and ramps integral with the shell and bulkheads	tightness and securing	witness	UR IACS S14 Appendix 1 to Part II of the Rules	Regulation II - 1/18 International Convention SOLAS-74, as amended, Regulations 12 and 21 of International Convention on Load Lines 1966	approved plan of testing the hull for watertightness, shipbuilder's inspection records on testing performed	details of equipment forming part of the watertight and weathertight integrity of the ship, structural drawings	confirm leak tests confirm feasible cover operation and proper securing test confirm safety device proper operation ensure correct maintenance logs/manuals supplied with the ship construction file	

Table — continued

No. Item	Shipbuilding function	Survey Requirements for Classification	Survey Method required for Classification	Reference*	Statutory requirements and relevant reference	Documentation available to RS surveyor during construction	Documentation for ship construction file	Specific activities	RS proposals for the project
8.3	**rudders**	fitting	witness	UR IACS S14 Appendix 1 to Part II of the Rules		approved drawings, shipbuilder's inspection records	details required, structural drawings	confirm alignment and mounting and fitting up to the connection to the tiller	
								confirm function tests	
								verify fitting of pintles and all securing bolts	
								verify all fit up records including all clearances maintained and placed into ship construction file	
8.4	**forgings and castings**	compliance with approved drawings, visual examination of welding and material, check alignment and deformations	patrol of the process and witness of the completed item	IACS UR No. W7, W8 3.7 and 3, Part XIII of the Rules		approved plans, shipbuilder's inspection records, shipbuilder's and recognised standards, and Rules as applicable, construction plan (steelwork sub-division)	copies of certificates of forgings and castings	verify casting and forgings against material certificate	
								verify that correct welding and fit up requirements specified in reference 1, 2.4 and 2.5 of this Table have been adopted	
								verify that material certificates are included in the ship construction file	
	appendages							verify that correct welding and fit up requirements specified in reference 1, 2.4 and 2.5 of this Table have been adopted	
8.5	**equipment forming the watertight and weathertight integrity of the ship, e.g. (overboard discharges, air pipes, ventilators, etc.)**	tightness and securing	witness	4.4 and 21.4, Part VIII of the Rules	Regulation II-1/16 and II-1/16-1 of International Convention SOLAS-74, as amended; Regulations 17, 18, 19, 20, 22, 23 of ILLC'66 International Convention on Load Lines 1966	approved plan of testing the hull for watertightness, shipbuilder's inspeetion records	details required	verify that correct welding and fit up requirements specified in reference 1, 2.4 and 2.5 of this Table have been adopted	
								verify compliance with Convention on Load Lines 1966 as amended — i.e. all fittings in accordance with the record of freeboard assignment	
				UR IACS P3				verify air pipes, vents etc closing device are approved type	
								verify material certificates for overboard discharges where applicable	
								verify record of freeboard assignment and all material certificates included in the ship construction file	

Table — continued

No. Item	Shipbuilding function	Survey Requirements for Classification	Survey Method required for Classification	Reference*	Statutory requirements and relevant reference	Documentation available to RS surveyor during construction	Documentation for ship construction file	Specific activities	RS proposals for the project
	freeboard marks and draft marks	within allowable tolerances and in accordance with the freeboard assignment	witness	UI IACS LL4 2.3.3 Rules on Load Lines for the Sea-Going Ships	Regulations 4, 5, 6, 7 and 8 of International Convention on Load Lines 1966	approved load line drawings, shipbuilder's records	details required	verify freeboard marks in accordance with load line assignment verify draft marks in accordance with the agreed tolerances specified by the builder unless more onerous flag state requirements	
	principal dimensions	within allowable tolerances	review and witness	IACS Rec. No. 47		shipbuilder's records	details required	verify principal dimensions in accordance with recognised standard verify dimensions included in ship construction file	
	safety construction certification	no outstanding imperfections or defects	witness		Regulation I/7 or I/10 Internal Convention SOI AS-74, as amended, as appropriate			verify that Administration requirements have been incorporated into the hull structure	

* IACS recommendations are not mandatory requirements.
** Rules for the Classification and Construction of Sea-Going Ships.
*** Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships.

Shipbuilder's name	
Project	
Project duration	
Kick off meeting date	
Representing builder	
Representing RS	

APPENDIX 4

РОССИЙСКИЙ МОРСКОЙ РЕГИСТР СУДОХОДСТВА
RUSSIAN MARITIME REGISTER OF SHIPPING

ОТЧЕТ ОБ ОЦЕНКЕ ПОСТРОЕЧНЫХ МОЩНОСТЕЙ ВЕРФИ
SHIPYARD CONSTRUCTION FACILITIES' REVIEW RECORDS

№_____

Название и адрес верфи Name and address of shipyard	Дата Date

1. Сведения о любых системах менеджмента
Details of any management systems

Полученное одобрение **Obtained Approval**	**Сертифицирована** **Certified by**	**Дата истечения срока действия** **Expiry Date**	**Замечания (объем, и др.)** **Remarks (scope, etc.)**
ИСО-9001 ISO-9001			
ИСО 14001 ISO 14001			
ИСО 18001 ISO 18001			
Другое: Other:			

2. Техническое оснащение: (вместо заполнения данного раздела могут быть приложены документы, такие как брошюра верфи)
Construction facilities: (Documents such as a brochure of shipyard can be attached in lieu of completing this section.)

2.1 Стапель (С) или док (Д) / Building Berth (B) or Dock (D)

С/Д B/D	Название Name	Длина (м) Length (m)	Ширина (м) Width (m)	Высота* (м) Depth* (m)	Построечные мощности (грузоподъемность, Тонн) Building Capacity (lifting capacity, Ton)	Кран (тонна х количество) Crane (Ton x No.)

* В случае стапеля высота не применяется.
In case of berth, Depth is not applicable.

2.2 Достроечные причалы / Outfitting Quays

Название Name	Длина (м) Length (m)	Ширина (м) Width (m)	Глубина (м) Depth (m)	Пропускная способность причалов (в единицах валовой вместимости) Berthing Capacity (Gross tonnage)	Кран (тонна х количество) Crane (Ton x No.)

2.3 Основное производственное и монтажное оборудование
Main Fabrication and erection facilities

(1) Маркировка и резка листовой стали (включая внутренние элементы) **Marking and cutting of steel plates (including internal members)**				
Способ маркировки Marking method				
Вручную Manual	Да/Yes Нет/No	x	шт./pcs -	
Фото Photo	Да/Yes Нет/No	x	шт./pcs -	
Электрическим способом EPM	Да/Yes Нет/No	x	шт./pcs -	
ЧПУ NC	Да/Yes Нет/No	x	шт./pcs -	
Другое Others	Да/Yes Нет/No	*Указать* *To be specified*		
Станок с ЧПУ для резки стали NC cutting machine				
Газовый Gas	Да/Yes Нет/No	x	шт./pcs -	
Плазменный Plasma	Да/Yes Нет/No	x	шт./pcs -	
Лазерный Laser	Да/Yes Нет/No	x	шт./pcs -	
Способ управления станком с ЧПУ Control procedure of NC				
Оперативно On-line	Да/Yes Нет/No			
Другое Others	Да/Yes Нет/No	*Указать* *To be specified*		
Оборудование для резки Cutting equipment				
Кромкообрабатывающий станок Edge planer	Да/Yes Нет/No	x	шт./pcs -	
Ножницы для резки стали Roll-shear	Да/Yes Нет/No	x	шт./pcs -	

(2) Маркировка и резка сортового профиля **Marking and cutting of section bar**				
Способ маркировки Marking method				
Вручную Manual				Да/Yes Нет/No
Станок с ЧПУ NC				Да/Yes Нет/No
Маркировка контрольной кривой Marking of reference curved line				
Вручную Manual				Да/Yes Нет/No
Станок с ЧПУ NC				Да/Yes Нет/No
Способ резки Cutting method				
Вручную Manual				Да/Yes Нет/No
Станок с ЧПУ NC				Да/Yes Нет/No
Использование станка с ЧПУ In case of NC				
Газовый Gas	Да/Yes Нет/No	x	шт./pcs -	
Плазменный Plasma	Да/Yes Нет/No	x	шт./pcs -	
(3) Сварочный автомат для односторонней сварки **One-side automatic welding machine**				Да/Yes Нет/No
Тип сварочной машины Type of welding machine				
На флюсовой подушке Flux Backing	Да/Yes Нет/No	x	шт./pcs -	
Сварка под флюсом на медной подкладке Flux and Copper Backing	Да/Yes Нет/No	x	шт./pcs -	
Другое Other	Да/Yes Нет/No	*Указать* *To be specified*		
Наличие специальной разметочной плиты для сварки листов Existence of special surface plate for plate welding				Да/Yes Нет/No
(4) Машина для сварки угловых швов **Fillet welding machine**				Да/Yes Нет/No
Гравитационная Gravity				Да/Yes Нет/No
Автоматическая Automatic				Да/Yes Нет/No
Процентное отношение автоматизации, за исключением гравитационных машин:	около about			%

Percentage of automatization except gravity:											
Специализированный стенд Line welder										Да/Yes Нет/No	
Наплавка под слоем флюса Submerged arc								Да/Yes Нет/No	x	головок heads -	
CO2 CO2								Да/Yes Нет/No	x	головок heads -	
Сварочный автомат небольшого размера для сварки угловых швов Small automatic fillet welding machine			Да/Yes Нет/No		*Название* *Name*				x	шт./pcs -	
Сварочный робот Welding robot										Yes No	
Портальный Portal								Да/Yes Нет/No	x	шт./pcs -	
Работающий в прямоугольной системе координат Rectangular								Да/Yes Нет/No	x	шт./pcs -	
Шарнирно- сочлененный Articulated								Да/Yes Нет/No	x	шт./pcs -	
(5) Оборудование для нанесения покрытия **Painting equipment**											
Машина для дробометной очистки листа/ нанесения грунтового покрытия Plate shot blasting/ primer coating machine										Да/Yes Нет/No	
Макс. ширина Max. width	*Указать* *To be specified*	м m									
Длина Length	*Указать* *To be specified*	м m									
Машина для дробометной очистки сортового профиля/ нанесения грунтового покрытия Section bar shot blasting/ primer coating machine										Да/Yes Нет/No	
Макс. длина Max. length	*Указать* *To be specified*	м m									
Участок для нанесения специальных покрытий Special coating factory										Да/Yes Нет/No	
	Указать *To be*	м m	x	*Указать* *To be specified*	м m	x	*Указать* *To be specified*	профили sections			
(6) Сварочный автомат для вертикальной сварки **Vertical automatic welding machine**										Да/Yes Нет/No	
Электрогазовая Electrogas								Да/Yes Нет/No	x	шт./pcs -	
Упрощенная электрогазовая Simplified Electrogas								Да/Yes Нет/No	x	шт./pcs -	
Электрошлаковая Electroslag								Да/Yes Нет/No	x	шт./pcs -	
(7) Другое основное производственное оборудование **Other main fabrication facilities**											
	Указать *To be specified*										

3. Контроль квалифицированных сварщиков, осуществляемый верфью
Shipyard control of qualified welders

(1) Сталь нормальной прочности
Normal steel

		Сертификация Certification	Прослеживаемость Traceability	Наблюдение Supervision	Поддержание квалификации Maintenance of qualification
Рабочие верфи Shipyard workers	Подтвердить наличие системы Confirm system in place	Да/Yes	Да/Yes	Да/Yes	Да/Yes
		Нет/No	Нет/No	Нет/No	Нет/No
Субподрядные рабочие Subcontracted workers	Подтвердить наличие системы Confirm system in place	Да/Yes	Да/Yes	Да/Yes	Да/Yes
		Нет/No	Нет/No	Нет/No	Нет/No

4. Характеристики процесса постройки
Feature of Construction Procedure

(1) Субподряд на корпусные блоки Subcontract of hull blocks				Да/Yes Нет/No	Вес Weight	-
Подэлементы: Sub members:	Соотношение субподрядных работ Ratio of subcontracted works		%	Кол-во субподрядчиков No., of subcontractors		шт.
Блоки Blocks	Соотношение субподрядных работ Ratio of subcontracted works		%	Кол-во субподрядчиков No., of subcontractors		шт.

(2) Способ сборки блока из листов Method of plate block assembly	
Способ установки и сварки продольных и поперечных рамных балок на соединенных панелях Method fitting and welding longitudinals and transverse webs on jointed panels	Да/Yes Нет/No
Способ сварки продольных связей на соединенных панелях до установки и сварки поперечных рамных балок Method welding longitudinals on jointed panels prior to fitting and welding transverse webs	Да/Yes Нет/No
Способ установки и сварки шпангоута включает продольные и поперечные рамные балки на соединенных панелях Method fitting and welding a frame consists of longitudinals and transverse webs on jointed panels	Да/Yes Нет/No
Способ соединения панелей при помощи предварительно собранных продольных связей путем сварки до установки и сварки поперечных рамных балок Method jointing panels with pre-assembled longitudinals by welding prior to fitting and welding transverse webs	Да/Yes Нет/No
Другое (указывать ниже в пункте (5)) Other (please specify in (5) below)	Да/Yes Нет/No
(3) Выполнен предварительный монтаж оборудования Pre-erection outfitting carried out	
Принятые в расчетах большие и сверхкрупные блоки Grand block/mega block adopted	Да/Yes Нет/No
Способ монтажа на стапеле/ в доке Method of erection at building berth/dock	
Максимальный вес поднимаемого блока: Max. weight of loading block:	т t
Способ постройки в доке/ на стапеле/ на берегу и т.д. Construction method in building dock/berth/land construction etc.	
- 1 судно - 1 ship	Да/Yes Нет/No

- 1,5 судна	Да/Yes Нет/No	полутандем semi-tandem	Да/Yes Нет/No	двухостровной способ dual entrance	Да/Yes Нет/No		

Процесс погрузки блоков Block loading process	
единичный закладной блок single starting block	Да/Yes Нет/No
закладные блоки multi starting blocks	Да/Yes Нет/No
забойная секция inserting block	Да/Yes Нет/No
(4) Окончание работ в доке Final dock	Да/Yes Нет/No
в компании in house	Да/Yes Нет/No
в другом месте этой же компании other place of the same company	Да/Yes Нет/No
выбрана другая компания use other company	Да/Yes Нет/No
(5) Другие характеристики процесса постройки **Other feature of construction procedure**	
Указать *To be specified*	

5. Система контроля качества: (см. Руководство по качеству, если имеется)
Quality Control System: (Refer to Quality Manual, if available)

Вопрос и описание Item and description	Результат Result	Замечания Remarks
(1) Наличие организационной структуры, включая отделы, занимающиеся проектированием, закупками, производством и обеспечением качества Existence of the organization chart including the departments of design, purchasing, manufacturing and quality assurance	Да/Yes Нет/No	
-Понятны ли функции, ответственность и компетенция организации? - Are the function, responsibility and competence of the organization clear?	Да/Yes Нет/No	
(2) Отдел контроля качества Quality control organization		
-Наличие отдела контроля качества - Existence of quality control organization	Да/Yes Нет/No	
-Количество сотрудников данного отдела (включая руководителя) - Number of employees in this organization (including the cheif)	человек persons	
-Наличие процедур или планов, относящихся к проведению испытаний и проверок - Existence of procedures or plans related to tests and inspections	Да/Yes Нет/No	

(3) Система предварительной проверки верфи Pre-inspection system of shipyard			
-Проводится ли предварительная проверка до освидетельствований РС? - Is pre-inspection carried out prior to the RS inspection?	Да/Yes Нет/No		
в том числе применительно к субподрядным объектам including subcontracted items	Да/Yes Нет/No N/A		
-Назначаются ли инспекторы, проводящие предварительные проверки? (Проверить список) - Are pre-inspectors assigned? (Check the list.)	Да/Yes Нет/No		
в том числе применительно к субподрядным объектам including subcontracted items	Да/Yes Нет/No N/A		
- Количество инспекторов, проводящих предварительные проверки (только применительно к корпусу) - Number of pre-inspectors (related to hull only)		человек persons	
в том числе применительно к субподрядным объектам including subcontracted items	- -	человек persons	
- Наносятся ли результаты проверок на объект и /или заносятся ли в чек-лист? - Are inspection results marked on the object and/or recorded in the checklist?	Да/Yes Нет/No		
в том числе применительно к субподрядным объектам including subcontracted items	Да/Yes Нет/No N/A		
(4) Отчетные документы по проверкам и испытаниям Records of inspections and tests			
- Составляются и хранятся ли отчетные документы должным образом? - Are records made and kept properly?	Да/Yes Нет/No		
в том числе применительно к субподрядным объектам including subcontracted items	Да/Yes Нет/No N/A		
- Проверяет ли ответственное лицо отчетные документы? - Does the responsible person verify the records?	Да/Yes Нет/No		
в том числе применительно к субподрядным объектам including subcontracted items	Да/Yes Нет/No N/A		
- Может ли быть проверено принятие необходимых корректирующих действий по выявленному несоответствию? - Can the adoption of necessary corrective actions against non-conformity happened be checked?	Да/Yes Нет/No		
в том числе применительно к субподрядным объектам including subcontracted items	Да/Yes Нет/No N/A		

(5) Условия во время освидетельствований, проводимых в присутствии инспекторов РС Condition at the time of the surveys in the presence of RS surveyors		
- Часто ли меняются сроки освидетельствований? - Is the schedule of the surveys changed often?	Да/Yes Нет/No	
- Завершаются ли досрочно предварительная проверка, проверка верфи и ремонт? - Are pre-inspection, shipyard inspection and repairs completed beforehand?	Да/Yes Нет/No	
- Проведена ли достаточная подготовка к освидетельствованиям, как, например, установка лесов, освещения, уборка? - Are the sufficient preparations for surveys such as scaffoldings, lighting, cleaning made?	Да/Yes Нет/No	

6. Мероприятия по обеспечению охраны труда и здоровья

Measures for Safety and Health

Вопрос и описание Item and description	Результат Result	Замечания Remarks
(1) В удовлетворительном ли состоянии находятся леса, страховка, предохранительные пояса, освещение и вентиляция? Are conditions of scaffolding, nets, safety belt, lighting and ventilation good?	Да/Yes Нет/No	
(2) Уделяется ли должное внимание радиографическому контролю и работе автоподъемника с люлькой? Does sufficient attention paid for radiographic examination and operation of cherry picker?	Да/Yes Нет/No	
Примечание: Note:		

7. Система испытаний методами неразрушающего контроля

Control System of Non-Destructive Examination (NDE)

Вопрос и описание Item and description	Результат Result		Замечания Remarks
(1) Количество специалистов по методам неразрушающего контроля на верфи (включая лиц, ответственных за оценку результатов) Number of NDE supervisors in shipyard (including persons responsible for judging results)		человек persons	
(2) Зависимость от субподрядных работ по методам неразрушающего контроля Dependence on subcontracted NDE work			
- Количество работников верфи - Number of shipyard employees		человек persons	
- Количество субподрядчиков - Number of sub-contractors		человек persons	
(3) Название субподрядной организации, занимающейся методами неразрушающего контроля, и официальные квалификационные сертификаты технических специалистов NDE sub-contractor company's name and official technical qualifications			

(4) Категория и количество технических специалистов на верфи, занимающихся методами неразрушающего контроля, которые имеют официальные квалификационные сертификаты Grade and number of NDE employees with official technical qualifications in shipyard					
- Специализирующиеся в области радиографического контроля - Specialized in radiography		Кат. grade		Чел. persons	
- Специализирующиеся в области ультразвукового контроля - Specialized in ultrasonic		Кат. grade		Чел. persons	
- Специализирующиеся в области поверхностных методов контроля - Specialised in surface detection		Кат. grade		Чел. persons	
(5) Если испытания методами неразрушающего контроля проводятся субподрядчиками, категория и количество технических специалистов, имеющих официальные квалифицированные сертификаты If non-destructive examinations are subcontracted, the grade and number of officially qualified persons					
- Специализирующиеся в области радиографического контроля - Specialized in radiography		Кат. grade		Чел. persons	
- Специализирующиеся в области ультразвукового контроля - Specialized in ultrasonic		Кат. grade		Чел. persons	
- Специализирующиеся в области поверхностных методов контроля - Specialised in surface detection		Кат. grade		Чел. persons	
(6) Оборудование для осуществления неразрушающего контроля (на верфи) Non-destructive examination equipment (in-house)					
- Количество радиографического оборудования - Number of radiographic equipment			шт. pieces		
- Количество ультразвукового оборудования - Number of ultrasonic equipment			шт. pieces		
Примечание: Даже если работы выполняются субподрядчиками, рекомендуется привлечь квалифицированное(ые) лицо(а), которое(ые) сможет(гут) проверить работу. Note: Even if all works are subcontracted, it is recommendable to attach the qualified person(s) who can verify the works.					

8. Контроль качества на производственной линии

Quality Control on Production Line

Вопрос и описание Item and description	Результат Result	Замечания Remarks
8.1 Предупреждающие действия по предотвращению неправильного применения материалов **Preventive measures for misuse of materials**		
(1) Должности инспектора и лица, ответственного за сверку заказанной и полученной стали и за проверку сертификатов качества предприятия (изготовителя) Job title of supervisor and person in charge of collating ordered steel and received steel, and checking of mill sheet		
Должность инспектора: Title of supervisor:		
Должность ответственного лица: Title of person in charge:		

(2) Установлены ли средства контроля имеющегося материала для сталей высокой категории? Are means for checking the material grade in hand prescribed for high-grade steels?	Да/Yes Нет/No	
(3) Разработаны ли правила проверки категории материала для стали повышенной прочности и стали, предназначенной для применения в условиях низких температур? Are regulations prescribed for checking the material grade for high-tensile steel and steel for low-temperature applications?	Да/Yes Нет/No	
Имеются ли правила по нанесению надписи «сталь повышенной прочности» на поверхности стали повышенной прочности и специальному обозначению стали, предназначенной для применения в условиях низких температур? Are there regulations for inscribing high tensile steel on the surface of the high tensile steel and special indication for steel for low temperature applications?	Да/Yes Нет/No	
(4) Имеются ли процедуры по повторному использованию остатков низкоуглеродистой стали, полученных после резки? Are there procedures for re-using of remaining cut-off mild steel?	Да/Yes Нет/No	
(5) Имеются ли процедуры по повторному использованию остатков стали повышенной прочности, полученных после резки? Are there procedures for re-using of remaining cut-off high-tensile steel?	Да/Yes Нет/No	
(6) В отношении вышеупомянутых пунктов (4) и (5) можно ли проводить сверку с сертификатами качества предприятия (изготовителя)? In the case of (4) and (5) above, can a collation be made with the mill sheet?	Да/Yes Нет/No	
(7) Отдел по контролю ведомости остатков стали, полученных после резки (указать наименование отдела) Section of controlling the lists of remaining cut-off steel (specify the name of the Section)		
Примечание: в отношении стали повышенной прочности, существуют ли средства различения категорий? Note: in case of high tensile steel, are means identifying different grades	Да/Yes Нет/No	
Примечание: в отношении вышеупомянутых пунктов (3) и (4), контролируются ли материалы, одобренные другим классификационным обществом, подобным образом? Note: in the case of (3) and (4) above, are the materials approved by other classes controlled similarly?	Да/Yes Нет/No	

8.2 Дробеметная очистка/ нанесение грунтового покрытия **Shot blasting /Primer coating**		
(1) Наличие технических требований по подготовке поверхности Existence of surface preparation standards		
(2) Наличие технических требований по контролю толщин покрытия Existence of coating thickness control standards		
- Наличие отчетных документов по замерам толщин - Existence of thickness measurement records		
Примечание: Техническое требование должно содержать полные данные о прослеживаемости материала после дробеструйной очистки и нанесения грунтового покрытия. Note: The standard is to include the description related traceability after shot blasting and primer coating.		
8.3 Маркировка и резка (сборка) **Marking and cutting (Assembly work)**		
(1) Наличие технических требований по обеспечению точности и проведению периодических проверок рулеток, лент, трафаретов и т.д. Existence of standards for accuracy and periodical inspection of tape measures, tapes, stencils, etc.		
(2) Наличие технических требований по обеспечению точности размеров среза и разделки кромок: Existence of standards for accuracy of cut dimensions and edge preparation:		
проверка должна включать подтверждение того, что разделка кромок не содержит сквозных отверстий. check items are to include confirmation of edge preparations free from piercing hole.	Да/Yes Нет/No	
то же для станков с ЧПУ для сортового профиля the same is for NC for section bars	Да/Yes Нет/No	
(3) Наличие технических требований по зачистке обрабатываемого торца Existence of standards for finish of cutting face		
проверка должна включать подтверждение того, что разделка кромок не содержит сквозных отверстий. check items are to include confirmation of edge preparations free from piercing hole.	Да/Yes Нет/No	
то же для станков с ЧПУ для сортового профиля the same is for NC for section bars	Да/Yes Нет/No	
(4) Каковы периодичность и объем техобслуживания и проверок, выполняемых для обеспечения точности станка с ЧПУ для резки и/или станка для кислородной строжки? What is the frequency and extent of maintenance and inspection carried out for ensuring accuracy of NC cutter and/or flame planer?		
(5) В отношении станка с ЧПУ содержатся ли диски, ленты и т.д. в хорошем состоянии? In case of NC, are the disks, tapes etc. maintained in good condition?	Да/Yes Нет/No	
(6) Какие приняты меры и даны указания по подробному ознакомлению рабочих с техническими требованиями по выполнению резки для обеспечения точности?		

What are the measures adopted and guidance given to make the worker fully conversant with cutting work standards for maintaining accuracy?		
8.4 Гибка и устранение деформаций **Bending and strain free**		
(1) Наличие технических требований в отношении максимальных значений температуры нагрева в процессе охлаждения водой и в процессе гибки и устранения деформаций стали путем быстрого нагрева и охлаждения Existence of standards for maximum heating temperatures during water cooling and at the time of bending and distortion removal of steel by quick heating and cooling		
(2) Наличие технических норм в отношении толщины листа и радиуса погиба в процессе обработки фланца Existence of regulations for plate thickness and bending radius for flange processing		
(3) Какие приняты меры и даны указания по подробному ознакомлению рабочих с техническими требованиями по обеспечению качества и точности в процессе гибки? What are the measures adopted and guidance given to make the worker fully conversant with maintaining quality and accuracy during the bending process?		
Примечание: Note:		
8.5 Контроль технологического процесса сварки **Control of Welding Procedure**		
(1) Одобряются ли все применяемые к судам технологические процессы сварки РС или другими обществами-членами МАКО? Are all welding procedures applied to the ships approved by the RS or other IACS members?	Да/Yes Нет/No	
Примечание: Note:		
8.6 Устранение значительных несоответствий **Treatment of serious non-conformities**		
(1) Предоставляются ли РС планы ремонта при выявлении значительных несоответствий? Are repair plans submitted to the RS when serious non-conformities happened?	Да/Yes Нет/No	
(2) Были ли предоставлены планы осуществления неразрушающего контроля (радиографического и ультразвукового контроля) в надлежащее время? Were the NDE(RT/UT) plans submitted at appropriate timing?	Да/Yes Нет/No	
(3) Был ли увеличен объем испытаний с учетом их результатов? Was the extent of tests extended considering the results of the test?	Да/Yes Нет/No	
Примечание: Note:		

8.7 Гидростатические испытания и испытания на водонепроницаемость **Hydrostatic and Watertight Tests**		
(1) Представлен ли план испытаний РС? Is the test plan submitted to the RS?	Да/Yes Нет/No	
(2) Применяются ли вакуумные испытания? Are vacuum tests applied to?	Да/Yes Нет/No	
Одобрены ли процедуры испытаний РС? Are the test procedures approved by the RS?	Да/Yes Нет/No	
(3) Применяются ли испытания местным надувом воздуха в процессе монтажно-сборочных работ? Are local air injection tests during sub-assembly works applied to?	Да/Yes Нет/No	
Одобрены ли процедуры испытаний РС? Are the test procedures approved by the RS?	Да/Yes Нет/No	
Примечание: Note:		

Инженер(ы)-инспектор(ы)
Surveyor(s) _____ _____

подпись(и) фамилия(и), инициалы
signature(s) name(s)

М.П.
L.S.

APPENDIX 5

REQUIREMENTS FOR OIL TANKERS AND BULK CARRIERS SUBJECT TO SOLAS CHAPTER II-1 PART A-1 REGULATION 3-10[1]
GOAL-BASED SHIP CONSTRUCTION STANDARDS FOR BULK CARRIERS AND OIL TANKERS

1 EXAMINATION AND TEST PLAN FOR NEWBUILDING ACTIVITIES

1.1 The shipbuilder shall provide plans of the items which are intended to be examined and tested in accordance with the RS rules in a document known as the Survey Plan, taking into account the ship type and design. This Survey Plan shall be reviewed at the time of the kick-off meeting, and shall include:

.1 a set of requirements, including specifying the extent and scope of the construction survey(s) and identifying areas that need special attention during the survey(s), to ensure compliance of construction with mandatory ship construction standards including:

.1.1 types of surveys (visual, non-destructive examination, etc.) depending on location, materials, welding, casting, coatings, etc.;

.1.2 establishment of a construction survey schedule for all assembly stages from the kick-off meeting, through all major construction phases, up to delivery;

.1.3 inspection/survey plan, including provisions for critical areas identified during design approval;

.1.4 inspection criteria for acceptance;

.1.5 interaction with shipyard, including notification and documentation of survey results;

.1.6 correction procedures to remedy construction defects;

.1.7 list of items that would require scheduling or formal surveys;

.1.8 determination and documentation of areas that need special attention throughout ship's life, including criteria used in making the determination;

.2 a description of the requirements for all types of testing during survey, including test criteria.

2 DESIGN TRANSPARENCY

2.1 For ships subject to compliance with IMO resolutions MSC.**287**(87), MSC.**290**(87), MSC.**296**(87) and IMO circular MSC.1/Circ.**1343**, readily available documentation shall include the main goal-based parameters and all relevant design parameters that may limit the operation of the ship.

3 SHIP CONSTRUCTION FILE (SCF)

3.1 A Ship Construction File (SCF) with specific information on how the functional requirements of the Goal-Based Ship Construction Standards for Bulk Carriers and Oil Tankers have been applied in the ship design and construction shall be provided upon delivery of a new ship, and kept on board the ship and/or ashore and updated as appropriate throughout the ship's service. The contents of the Ship Construction File shall conform to the requirements below.

3.1.1 The following design specific information shall be included in the Ship Construction File (SCF):

.1 areas requiring special attention throughout the ship's life (including critical structural areas);

.2 all design parameters limiting the operation of a ship;

.3 any alternatives to the rules, including structural details and equivalency calculations;

.4 "as built" drawings and information which are verified to incorporate all alterations approved by the Register or Administration during the construction process including scantling details, material details, location of butts and seams, cross section details and locations of all partial and full penetration welds;

.5 net (renewal) scantlings for all the structural constituent parts, as built scantlings and voluntary addition thicknesses;

.6 minimum hull girder section modulus along the length of the ship which shall be maintained throughout the ship's life, including cross section details such as the value of the area of the deck zone and bottom zone, the renewal value for the neutral axis zone;

.7 a listing of materials used for the construction of the hull structure, and provisions for documenting changes to any of the above during the ship's service life;

.8 copies of the RS certificates on forgings and castings welded into the hull (refer to **3**.7 and **3**.8,

[1] These requirements shall be implemented on ships contracted for construction on or after 1 July 2016. "The contracted for construction date" means the date, on which the contract to build the ship is signed between the prospective owner and the shipbuilder. For further details regarding "the date of contracted for construction", refer to 1.1.2, Part I "Classification" of the Rules for the Classification and Construction of Sea-Going Ships.

Part XIII "Materials" of the Rules for the Classification and Construction of Sea-Going Ships);

.9 details of equipment forming part of the watertight and weathertight integrity of the ship;

.10 tank testing plan including details of the test requirements (refer to Appendix **1** to Part II "Hull" of the Rules for the Classification and Construction of Sea-Going Ships);

.11 details for the in-water survey, when applicable, information for divers, clearances measurements instructions, etc. tank and compartment boundaries;

.12 docking plan and details of all penetrations normally examined at drydocking;

.13 Coating Technical File (CTF), for ships subject to compliance with the IMO Performance Standard for Protective Coatings (PSPC[1]).

3.1.2 Refer to the Table "List of Information to be Included in the Ship Construction File (SCF)" (hereinafter — the Table) for details of information to be further included. This information shall be kept on board the ship and/or ashore and updated as appropriate throughout the ship's life in order to facilitate safe operation, maintenance, survey, repair and emergency measures.

3.1.3 It shall be noted that parts of the content of the SCF may be subject to various degrees of restricted access and that such documentation may be appropriately kept ashore.

3.1.4 The SCF shall include the list of documents constituting the SCF and all information listed in the Table, which is required for a ship's safe operation, maintenance, survey, repair and in emergency situations. Details of specific information that is not considered to be critical to safety might be included directly or by reference to other documents.

3.1.5 When developing an SCF, all of the columns in the Table shall be reviewed to ensure that all necessary information has been provided.

3.1.6 It may be possible to provide information listed in IMO resolution MSC.287(87) under more than one Tier II[2] functional requirement as a single item within the SCF, for example, the Coating Technical File required by the PSPC[1] is relevant for both "Coating life" and "Survey during construction".

3.1.7 The SCF shall remain with the ship and, in addition, be available to the Register and Administration throughout the ship's life. Where information not considered necessary to be on board is stored ashore, procedures to access this information shall be specified in the onboard SCF. The intellectual property provisions within the SCF shall be duly complied with.

3.1.8 The SCF shall be updated throughout the ship's life at any major event, including, but not limited to, substantial repair and conversion, or any modification to the ship structure.

3.2 The Ship Construction File (SCF) shall be reviewed[3], at the time of new building, in accordance with the requirements of **3.1.1** and **3.1.2**, and the normal storage location shall be distinguished.

3.2.1 For SCF stored on board the ship, the RS Surveyor shall verify that the information is placed on board the ship, upon completion of the ship construction.

3.2.2 For SCF stored in the shore archive, the RS Surveyor shall verify that the information is stored in the shore archive by examining the list of information included in the shore archive, upon completion of the ship construction.

4 DETERMINATION OF NUMBER OF SURVEYOR(S)

RS shall assign adequate number of suitable qualified surveyor(s) for newbuilding projects according to the construction progress of each ship to meet appropriate coverage of the examination and testing activities as agreed in the Survey Plan.

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[1]Performance Standard for Protective Coatings for Dedicated Seawater Ballast Tanks in all Types of Ships and Double-Side Skin Spaces of Bulk Carriers, adopted by IMO resolution MSC.215(82), as amended and Performance Standard for Protective Coatings for Cargo Oil Tanks of Crude Oil Tankers, adopted by IMO resolution MSC.288(87), as amended.

[2]"Tier II items" means the functional requirements included in the International Goal-Based Ship Construction Standards for Bulk Carriers and Oil Tankers (GBS), adopted by IMO resolution MSC.287(87).

[3]"Review" means the examination of SCF that is carried out by the RS Surveyor, at the end of the newbuilding process, in order to confirm that: drawings/documents required under para 3 of Appendix 2 to IACS UR Z23, and the possible additional drawings/documents provided by the shipyard as per the SCF list of drawings/documents are present in the copies of SCF stored on board the ship and in the shore archive.

The "review" shall not be intended as an assessment of the drawings/documents in order to verify their compliances with the applicable rules/regulations.

List of Information to be Included in the Ship Construction File (SCF)

Table

Nos.	Tier II items	Information to be included	Further explanation of the content	Example documents	Normal storage location
DESIGN					
1	**Design life**	assumed design life in years	statement or note on midship section	SCF-specific	on board ship
				midship section plan	on board ship
2	**Environmental conditions**	assumed environmental conditions	statement referencing data source or RS rules (specific rule and data) or; in accordance with the RS rules (date and revision)	SCF-specific	on board ship
3	**Structural strength**				
3.1	General design	applied RS rules (date and revision)	applied design method alternative to the RS rules and subject structure(s)	SCF-specific	on board ship
		applied alternative to the RS rules		capacity plan	on board ship
3.2	Deformation and failure modes	calculating conditions and results;	allowable loading pattern	loading manual	on board ship
		assumed loading conditions	maximum allowable hull girder bending moment and shear force	trim and stability booklet	on board ship
3.3	Ultimate strength	operational restrictions due to structural strength	maximum allowable cargo density or storage factor	loading instrument instruction manual	on board ship
				operation and maintenance manuals	on board ship
				strength calculation	on shore archive
3.4	Safety margins	strength calculation results	bulky output of strength calculation		
			plan showing highly stressed areas (e.g. critical structural areas) prone to yielding and/or buckling	areas prone to yielding and/or buckling	on board ship
		gross hull girder section modulus			
		minimum hull girder section modulus along the length of the ship to be maintained throughout the ship's life, including cross section details such as the value of the area of the deck zone and bottom zone, the renewal value for the neutral axis zone		general arrangement plan	on board ship
		gross scantlings of structural constituent parts	structural drawings	key construction plans	on board ship
		net scantlings of structural constituent parts, as built scantlings and voluntary addition thicknesses	rudder and stern frame		
			structural details of typical members	rudder and rudder stock plans	on board ship
				structural details	on board ship
				yard plans	on shore archive
				dangerous area plan	on board ship
		hull form	hull form information indicated in key construction plans	lines plan	on shore archive
			hull form data stored within an onboard computer necessary for trim and stability	or	

Table — continued

Nos.	Tier II items	Information to be included	Further explanation of the content	Example documents	Normal storage location
			and longitudinal strength calculations	equivalent	on board ship
4	**Fatigue life**	applied RS rules (date and revision) applied alternative to the RS rules	applied design method alternative to the RS rules and subject structures	SCF-specific	on board ship
		calculating conditions and results	assumed loading conditions and rates	structural details	on board ship
		assumed loading conditions			
		fatigue life calculation results	bulky output of fatigue life calculation	fatigue life calculation	on shore archive
			plan showing areas (e.g. critical structural areas) prone to fatigue	areas prone to fatigue	on board ship
5	Residual strength	applied RS rules (date and revision)		SCF-specific	on board ship
6	Protection against corrosion				
6.1	Coating life	coated areas and target coating life and other measures for corrosion protection in holds, cargo and ballast tanks, other structure-integrated deep tanks and void spaces	plans showing areas (e.g. critical structural areas) prone to excessive corrosion	SCF-specific	on board ship
6.2	Corrosion addition			Coating Technical File required by PSPC	on board ship
		specification for coating and other measures for corrosion protection in holds, cargo and ballast tanks, other structure-integrated deep tanks and void spaces		areas prone to excessive corrosion	on board ship
		gross scantlings of structural constituent parts		key construction plans	on board ship
		net scantlings of structural constituent parts, as built scantlings and voluntary addition thicknesses			
7	Structural redundancy	applied RS rules (date and revision)		SCF-specific	on board ship
8	Watertight and weathertight integrity	applied RS rules (date and revision)		SCF-specific	on board ship
		key factors for watertight and weathertight integrity	details of equipment forming part of the watertight and weathertight integrity	structural details of hatch covers, doors and other closings integral with the shell and bulkheads	on board ship
9	Human element considerations	list of ergonomic design principles applied to ship structure design to enhance safety during operations, inspections and maintenance of ship		SCF-specific	on board ship
10	Design transparency	applied RS rules (date and revision)		intellectual property provisions	on board ship
		applicable industry standards for design transparency and IP protection			
		reference to part of SCF information kept ashore		summary, location and access procedure for part of SCF information on shore	on board ship

Table — continued

Nos.	Tier II items	Information to be included	Further explanation of the content	Example documents	Normal storage location
CONSTRUCTION					
11	Construction quality procedures	applied construction quality standard	recognized national or international construction quality standard	SCF-specific	on board ship
12	Survey during construction	survey regime applied during construction (to include all owner and class scheduled inspections during construction)	applied RS rules (date and revision)	SCF-specific	on board ship
			copies of certificates of forgings and castings welded into the hull	tank testing plan	on board ship
		information on non-destructive examination		non-destructive testing plan	on board ship
				Coating Technical File required by PSPC	on board ship
IN-SERVICE CONSIDERATIONS					
13	Survey and maintenance	maintenance plans specific to the structure of the ship where higher attention is called for	plan showing highly stressed areas (e.g. critical structural areas) prone to yielding, buckling, fatigue and/or excessive corrosion	SCF-specific	on board ship
				operation and maintenance manuals (e.g. hatch covers and doors)	on board ship
		preparations for survey	arrangement (docking plan) and details of all penetrations normally examined at drydocking	docking plan	on board ship
		gross hull girder section modulus	details for dry-docking	dangerous area plan	on board ship
		minimum hull girder section modulus along the length of the ship to be maintained throughout the ship's life, including cross section details such as the value of the area of the deck zone and bottom zone, the renewal value for the neutral axis zone	details for in-water survey	Ship Structure Access Manual	on board ship
				Means of access to other structure-integrated deep tanks	on board ship
				Coating Technical File required by PSPC	on board ship
		gross scantlings of structural constituent parts		key construction plans	on board ship
		net scantlings of structural constituent parts, as built scantlings and voluntary addition thicknesses		rudder and rudder stock	on board ship
				structural details	on board ship
				yard plans	on shore archive
			hull form information indicated in key construction plans	lines plan	on shore archive
		hull form		or equivalent	on board ship

Table — continued

Nos.	Tier II items	Information to be included	Further explanation of the content	Example documents	Normal storage location
14	**Structural accessibility**	means of access to holds, cargo and ballast tanks and other structure-integrated deep tanks	plans showing arrangement and details of means of access	Ship Structure Access Manual means of access to other structure-integrated deep tanks	on board ship on board ship
RECYCLING CONSIDERATIONS					
15	**Recycling**	identification of all materials that were used in construction and may need special handling due to environmental and safety concerns	list of materials used for the construction of the hull structure	SCF-specific	on board ship

Notes: 1. "SCF-specific" means documents to be developed especially to meet the requirements of these GBS guidelines (MSC.1/Circ.1343).

2. "Key construction plans" means plans such as midship section, main oil tight and water tight transverse bulkheads, construction profiles/plans, shell expansions, forward and aft sections in cargo tank (or hold) region, engine-room construction, forward construction and stern construction drawings.

3. "Yard plans" means a full set of structural drawings, which include scantling information of all structural members.

4. "Hull form" means a graphical or numerical representation of the geometry of the hull. Examples shall include the graphical description provided by a lines plan and the numerical description provided by the hull form data stored within an onboard computer.

5. "Lines plan" means a special drawing which is dedicated to show the entire hull form of a ship.

6. "Equivalent (to Lines plan)" means a set of information of hull form to be indicated in key construction plans for SCF purposes. Sufficient information shall be included in the drawings to provide the geometric definition to facilitate the repair of any part of the hull structure.

7. "Normal storage location" means a standard location where each SCF information item shall be stored. However, those items listed as being on board in the Table above shall be on board as a minimum to ensure that they are transferred with the ship on a change of owner.

8. "Shore archive" shall be operated in accordance with applicable international standards.

PART II. TECHNICAL DOCUMENTATION

1 APPLICATION

1.1 The provisions of the present Part are applied in review of the technical documentation on construction of ships and manufacture of materials and products for ships subject to the Register technical supervision in compliance with the General Regulations for the Classification and Other Activity.

1.2 These provisions are also applied in review of the technical documentation on conversion, modernization, restoration and repair of the items of technical supervision as far as it is practicable and reasonable.

2 DEFINITIONS AND EXPLANATIONS

2.1 Definitions and explanations related to the general terminology of the RS rules are given in **1.1**, Part I "Classification" of the Rules for the Classification and Construction of Sea-Going Ships.

Terms and definitions used in the present Part and related to the technical documentation are given in Section **1**, Part I "General Regulations for Technical Supervision" of the present Rules.

3 GENERAL

3.1 Construction of ships and manufacture of materials and products for ships shall be in compliance with the technical documentation approved (agreed) by the Register.

3.2 Review (expertise) of the technical documentation aims at verification of the compliance of the items of technical supervision with the RS requirements.

3.3 Technical documentation on items of technical supervision shall be submitted to the Register for review and approval (agreement) prior to the commencement of construction (manufacture) of the items.

Documents shall be compiled in the Russian or English languages.

Documents shall be submitted:

.1 in hard copy (in the form of originals, duplicates or copies); or

.2 in electronic form in PDF format (on CD, by e-mail, via FTP-server or in a different way agreed with the Register).

It is not allowed to submit documentation partially in electronic form and partially in hard copy.

3.4 Technical documentation submitted to the Register for review shall be prepared in such a way or supplied with such additional information that enables to make sure that the appropriate provisions of the RS rules and international conventions and agreements are fulfilled.

3.5 For class assignment to a ship under construction the plan approval documentation, as stated in **3.1.2**, Part I "Classification" of the Rules for the Classification and Construction of Sea-Going Ships, **3.1.2**, Part I "Survey Regulations" of the Rules for the Equipment of Sea-Going Ships, and in other rules for the classification and construction of specialized types of ships and fixed offshore platforms (refer to **1.3** of General Regulations for the Classification and Other Activity) shall be submitted to the Register for approval.

The scope of technical documentation for ships and products of special design and purpose is subject to agreement with the Register in each particular case.

Standards on individual materials and products agreed with the Register may substitute the relevant part of the documentation or documentation as a whole.

3.6 Where novel engineering solutions are used, and for the purpose of feasibility studies, tendering process, etc., the performance specification, draft proposal, tender documentation, conceptual design, engineering analysis procedure as well as experimental design and research developments (Front End Engineering Design, etc.) and other documentation of high degree of novelty may be submitted to the Register for review. Such documents are not subject to approval, and on the results of their review a written conclusion (expert opinion) of the Register is compiled (refer to 8.5).

On the customer's request, the Register may review the above technical documentation as part of "Approval in Principle" (AIP) service. With regard to this service, the written conclusion (expert opinion) contains the additional information including, but not limited to, the following:

list of actions with respect to the project aimed at obtaining the RS approval;

information on new RS requirements to be implemented at subsequent stage of the documentation review;

list of restrictions and conditions of use for the proposed new engineering solutions based on their engineering evaluation and research results.

Due to the novelty of the proposed engineering solutions, the scope of technical documentation submitted to the Register, and the actions required for rendering AIP service are subject to agreement between the customer and the Register in each particular case.

Technical documentation shall contain general information on the item, drawings, specifications, engineering analysis results, test reports, etc., where applicable.

3.7 The Register reviews and agrees the Russian standards (national standards and standards of organizations) as well as standards of other countries and international standards containing norms and requirements for items of the Register technical supervision.

Standards of another country are agreed upon when they are officially submitted by a state organization of the country for agreement.

In case standards of another country are submitted together with the technical documentation on items of the Register technical supervision, they are reviewed as part of that documentation, and a possibility of their application in each case is confirmed by the approval of the technical documentation without agreement of the standards themselves.

The main provisions concerning agreement of standards and other normative documents are stated in Section **7**.

3.8 Calculations necessary for determination of parameters and values regulated by the RS rules shall be made in compliance with the provisions of these rules or according to the standards, methods and other normative documents agreed by the Register.

The procedures and methods of calculations used shall provide an adequate accuracy of the problem solution.

Computer-aided calculations shall be made in accordance with the programs having type approval of the Register.

The Register does not check the correctness of computing operations in calculations, including those made according to the programs having type approval of the Register but examines only the final results of the calculations. In separate cases, the Register may conduct additional expertise of the accuracy of the final results.

The main provisions concerning approval of computer-aided calculation programs and agreement of calculation procedures are stated in Section **12**.

3.9 Amendments made in the technical documentation approved (agreed) by the Register and dealt with the fulfillment of the RS requirements shall be submitted to the Register for review prior to their implementation (refer to Section **10**).

3.10 In case the submitted technical documentation shows full (or recognized by the Register as adequate) compliance of the items of supervision with the RS requirements, this documentation is approved (agreed).

The documentation, which does not meet the RS requirements, is returned to the design office for further work and/or updating.

3.11 The fact that the documentation is approved (agreed) is acknowledged by putting on it the appropriate stamps of the Register (refer to **8.3**).

Approval (agreement) relates only to the technical documentation covered by the RS requirements.

3.12 Where technical documentation contains technical solutions that differ from those regulated by the RS rules (deviations), the design office shall submit the list of these solutions with description of their essence and technical grounds. The Register informs of its decisions taken on the list in its conclusion on the results of review. Deviations not included in the list are not considered as approved, and the Register may require their elimination at any subsequent stage of design, construction or manufacture of the item.

3.13 Approval of the technical documentation by any RS Branch Office is valid for all other RS Branch Offices. Such approval may be (in case of proper reasons) cancelled or altered only by the RS Branch Offices, which approved the documentation, as well as a higher RS Branch Office up to RHO.

The technical documentation approved by one of the Register Branch Offices is accepted by other RS Branch Offices for carrying out technical supervision without additional approval of the documentation concerned, provided no updating is required by the production conditions of the particular firm (manufacturer).

3.14 The differences of principle on the technical documentation shall be finally resolved by:

.1 RHO in relation of technical designs, plan approval documentation, specifications and normative documents;

.2 the RS Branch Offices in relation to detailed design documentation.

3.15 The Register charges fees for review of the technical documentation in accordance with its current tariffs (irrespective of the results of review).

3.16 All the documentation submitted to the Register for review is confidential and may be handed over to a third party only upon the written consent of its legal owner.

4 TECHNICAL DOCUMENTATION ON SHIPS

4.1 Plan approval documentation, projects involving major conversions of ships, passage of ships, as well as the documentation stated in 3.6 and 3.7 are subject to review and approval by RHO or by the RS Branch Office when duly authorized by RHO.

The projects involving minor conversion (outfitting, modernization) as well as technical documentation on ships of less than 100 gross tonnage (excluding high-speed craft, passenger ships, tankers, tugs, ships designed for carriage of dangerous goods, pleasure craft with passenger capacity more than 12) shall be reviewed by the RS Branch Offices without the RHO authorization.

4.2 Requests for review of plan approval documentation shall be sent to the relevant RS Branch Office depending on the type of the documentation according to **4.1**.

A request shall contain the following information:

project number;

ship type;

ship purpose;

ship main particulars;

date of contract for construction of the ship or series of sister ships, as well as hull numbers (i.e. order numbers) of all ships included in the contract, with indication of optional ships;

confirmation that the organization has been familiarized with the General Conditions for Rendering Services by Russian Maritime Register of Shipping;

guarantee of payment for the RS services.

4.3 Plan approval documentation, as well as the documentation stated in 3.6 submitted for the Register approval shall be reviewed by the Register for compliance with the RS requirements in effect on the date of signing the contract for construction of a ship (series of ships).

In the absence of the contract for construction the documentation shall be reviewed for compliance with the RS requirements in effect on one of the following dates, as applicable:

.1 keel laying date or the date on which the ship was at a similar stage of construction;

.2 the date of the customer's request for documentation review by the Register (if the terms of construction of the ship (series of ships) are not known yet).

In case of **4.3.2**, and if new RS requirements came into force on the date of signing the contract for construction of the ship (series of ships), or on the keel laying date, or on the date on which the ship was at a similar stage of construction (in the absence of the contract for construction), the documentation shall be amended in compliance with these new requirements.

4.4 Plan approval documentation, projects involving major conversions of ships, passage of ships, as well as the documentation stated in 3.6 shall be submitted to the Register as a set either in hard copy in triplicate or in electronic form according to 3.3.2.

The documentation stated in 3.7 shall be submitted to the Register as a set either in one hard copy or in electronic form according to 3.3.2.

Documentation shall be submitted with a covering letter with a list of documents to be submitted for review attached.

On the Register request, the designer shall submit additional documents to support and explain the solutions adopted in the design.

Submission of the documentation by separate parts (on hull, machinery, systems, electrical equipment, etc.) may be allowed on agreement with the Register. In so doing, specification and general arrangement plans shall be submitted together with the first portion of the documentation, as well as the complete list of documents to be submitted for review.

4.5 In general, the Register review of the documentation set stated in **4.1** takes 30 working days.

In case the documentation is submitted by parts, its review takes 30 working days from the date of receiving the last portion.

Duration of the documentation review may be reduced upon agreement with the Register in each particular case.

5 TECHNICAL DOCUMENTATION ON PRODUCTS

5.1 RHO or the RS Branch Offices, if duly authorized by RHO, review and approve the technical documentation on the products against which description symbols "CTO*", "C*", or "C3*" are indicated in columns **4** and 5 of the RS Nomenclature (refer to Appendix **1**, Part I "General Regulations for Technical Supervision"), as well as on new products, which are not regulated by the RS rules and have not been used before in shipbuilding and ship machine building.

The technical documentation on the items shown under other letters in the RS Nomenclature may be reviewed and approved by the RS Branch Offices without the RHO authorization.

5.2 The design documentation shall be submitted to the Register in triplicate, detailed design documentation — in duplicate.

It is allowed to submit documentation in electronic form according to 3.3.2.

5.3 In case products or their parts or assemblies indicated in the RS Nomenclature are produced in compliance with standards, the standards shall be agreed upon with the Register in accordance with Section **7**.

5.4 The technical documentation on the products of assembly unit types or on sets of products, etc., which include the component parts indicated in the RS Nomenclature and supplied by subcontractors (generators, reduction gears, prime movers of generators, compressors, pumps, deck machinery, automation systems, etc.) is approved after approval by the Register of the technical documentation on the component parts.

In particular cases, the Register may approve the technical documentation on assembly units, the technical documentation of which component parts does not have the Register approval, provided satisfactory results of testing component parts together with assembly units show their suitability for on board operation (mechanical and climatic tests) and their electromagnetic compatibility (for electrical and electronic equipment).

5.5 Where the products are designed not as type products but for a particular ship, the technical documentation on such products is generally reviewed by the Register within the ship technical documentation.

5.6 Where use is made of type products manufactured in accordance with the technical documentation approved by the Register, the latter reserves the right for additional review of their possible use within the particular ship project.

5.7 In case the technical documentation for the products is presented for review and approval complete with the ship design (upon the agreement with the firm (manufacturer)), the results of its review are communicated to the designer by a separate letter.

5.8 The products referred to in the RS Nomenclature and intended for repairs and supply of the ships with spare parts shall be manufactured according to the technical documentation approved by the Register.

5.9 In case the technical documentation on spare parts for products in service is developed anew, the developer of the documentation shall present it to the RS Branch Office, in which area the documentation developer is located, for review and approval together with the information, which confirms the compliance of the design and materials of spare parts to the specifications of these products.

Technical documentation submitted to the Register for approval shall be reviewed for compliance with the requirements of the RS rules being in force on the date of contract for manufacture of the products.

5.10 Additional requirements for submitting the ICE documentation to the Register for review and approval are given in Appendices 2 and 3 to Section 5 "Machinery" of Part IV "Technical Supervision during Manufacture of Products".

6 TECHNICAL DOCUMENTATION ON MATERIALS

6.1 Technical documentation on materials shall be submitted for review and approval to RHO or, if so instructed by RHO, to the RS Branch Offices in duplicate.

It is allowed to submit documentation in electronic form according to 3.3.2.

6.2 Documentation shall be submitted as standards, specifications and similar documents containing necessary information on the production procedure, chemical composition, mechanical and technological properties, scope of tests and testing procedures, drawing-up of the test results and marking procedure.

6.3 Where materials are manufactured in accordance with the standards, the latter shall be reviewed and agreed upon in compliance with Section 7.

6.4 Provisions of 5.5 to 5.9 concerning the products are also applicable to materials as far as it is practicable and reasonable.

7 NORMATIVE DOCUMENTS

7.1 National standards and guidelines, as well as international standards (refer to 3.8) shall be submitted for review to RHO; standards of organizations and other normative documents — to the appropriate RS Branch Offices situated within the area of their operation.

Standards of another country are considered by RHO or the RS Branch Office, if duly authorized by RHO.

7.2 All wordings of the normative documents shall be submitted for review but only the final wording of the document shall be agreed upon.

7.3 The Register compiles a written conclusion (opinion) on the first and intermediate wordings of the normative documents, which is sent to the document developer, and the documents are kept for the Register files.

7.4 Where drawings have been produced, calculations made and other documents compiled as well as various tests carried out for the purpose of development or revision of the normative document, the Register may require these documentation and test results to be submitted for review.

7.5 Where it is found in the course of the normative document review that the content of the documentation is not in full compliance with the RS requirements, the Register may require the additional documentation to be submitted for review or additional tests to be carried out.

7.6 When the normative documents are reviewed and agreed upon, one shall be guided by the following:

.1 newly developed documents for the items subject to the Register technical supervision during manufacture are agreed upon by the Register, provided their requirements are at least as stringent as those of the RS requirements;

.2 where the requirements of the previously published documents do not meet the RS requirements, their applica-tion is subject to special consideration of the Register. In the subsequent revision of these documents, their requirements shall be brought in compliance with the RS requirements.

8 PREPARATION OF RESULTS OF TECHNICAL DOCUMENTATION REVIEW

8.1 Upon results of the technical documentation review, the Register puts the appropriate stamps on the documents and/or compiles a conclusion letter.

When reviewing the technical documentation in electronic form, stamping is carried out by software tools and is certified by digital signature of the Register authorized specialist.

8.2 The Register applies the following stamps (refer to Figs. 8.2-1 to 8.2-6).

8.3 The stamp to be applied is determined by the Register depending on a document type and result of its review.

Upon approval (agreement) of the technical documentation, the Register puts the appropriate stamps, namely:

.1 stamps shown in Figs. 8.2-1 and 8.2-2 are put on the structural drawings, (basic and functional) circuits, test programs, other similar documents;

.2 stamps shown in Figs. 8.2-3 and 8.2-4 are put on the list of deviations from the RS rules, various calculations, descriptions, technical back-grounds, ship specifications and general view drawings without indication of structural dimensions, lists of products and materials (applied), lists of spare parts, research reports and test results, etc, as well as on the normative documents (standards, including the shipyard and firm (manufacturer) standards, regulations, etc.);

.3 stamps shown in Fig. 8.2-5 are put on the documents approved on behalf of Administrations.





Fig. 8.2-1





Fig. 8.2-2





Fig. 8.2-3





Fig. 8.2-4





Fig. 8.2-5





Fig. 8.2-6

The various information documents not subject to review for compliance with the RS requirements are stamped as shown in Fig. 8.2-6.

8.4 Each sheet of the structural drawing shall be stamped. Paper-bound documents comprising several sheets with the same registration number, such as specifications, descriptions, calculations, instructions, lists, test programs, etc., shall be stamped only on the document title page.

Stamp on the title page of electronic document certified by digital signature may apply to all pages of the document.

8.5 Based on the results of review of the technical documentation referred to in 3.6 and 3.7, the Register compiles a conclusion letter without stamping or signing the documents.

8.6 In case of negative results of review, the RS requirements are communicated in the conclusion letter. No Register stamps are put on the documents.

8.7 In case of a single approval of the technical documentation on materials and products (refer to Section 1, Part I "General Regulations for Technical Supervision"), an entry on limitation of the material or product application (e.g., "for Project 15010", etc.) shall be made in the approval stamp or under the stamp and this shall be also indicated in the conclusion letter.

8.8 The requirements laid down by the Register in the course of approval of the design documentation of a ship under construction shall be taken into account by appropriate updating of the documentation bearing stamps shown in Figs. 8.2-2 and 8.2-5 to the satisfaction of the RS Branch Office in charge of technical supervision during construction of a ship.

The RS Branch Offices shall communicate information on cancelling the remarks to the Register Branch Office, which has approved the design documentation of a ship under construction as a whole, not later than one month before the delivery.

8.9 The detailed design documentation shall be approved without any remarks. The approval is issued only upon canceling all the remarks by the designer.

8.10 Copies of the documents bearing the original stamps of the Register are control copies.

8.11 One set of the approved technical documentation on ships, materials and products together with the conclusion letter are sent to the designer and the RS Branch Office, which will be in charge of review of the detailed design documentation or technical supervision during construction (manufacture) of the item. The third set of the approved documentation is kept in the RS Branch Office that has reviewed the documentation.

Documentation approved in electronic form is submitted to the designer and to the RS Branch Office by e-mail, via FTP-server or in a different way mutually agreed.

Upon approval of the detailed design documentation, one set is returned to the designer, the other is kept by the RS Branch Office, which has reviewed the documentation. If specially agreed upon with the RS Branch Office, another procedure for keeping approved detailed design documentation (e.g., at the designer or firm (manufacturer) where technical supervision will be effected, on conditions agreed upon with the RS Branch Office) may be adopted.

Where ship's construction is supervised by another RS Branch Office, one set of the detailed design documentation together with the conclusion letter shall be sent to this RS Branch Office.

8.12 Upon review and agreement of the final wording of the normative document, the Register sends to the organization, which submitted the document, an appropriate written confirmation on agreement of the document; the document itself with the Register stamp is kept in the RS Branch Office files as the control copy.

8.13 RHO carries out, where necessary, the control check of the technical documentation on ships, materials and products reviewed and approved by the RS Branch Offices upon the RHO authorization.

The order of review of the technical documentation in RHO and in the RS Branch Office is established by the appropriate RS internal normative documents (procedures, instructions).

9 DURATION OF VALDITY OF TECHNICAL DOCUMENTATION APPROVAL (AGREEMENT)

9.1 The period of validity of the Register approval for plan approval documentation is limited by the period of contract validity for construction of the ship or series of sister ships.

In this case, it is mandatory to meet the requirements of international conventions and RS circulars with due regard for the dates set for their implementation during construction of ships according to the Register-approved technical documentation (refer to **9.5**), and the RS Branch Office in charge of technical supervision during construction of the ship checks the implementation.

9.2 The validity of the Register approval of the technical documentation on materials and products in case of a single approval (refer to Section 1, Part I "General Regulations for Technical Supervision") is limited by the time of delivery of the materials and products or construction of ships, for which the materials and products are intended.

9.3 The Register approval of the technical documentation on materials and products in case of type approval (refer to Section 1, Part I "General Regulations for Technical Supervision"), including the specifications, is valid for a period of six years.

Approval of the technical documentation for the products specified in 5.8 has no duration of validity.

9.4 Standards and other normative documents on materials and products shall be agreed for the period of their validity.

When revising the standards and normative documents they shall be checked to take account of the current RS rules.

9.5 Irrespective of the approval validity, the technical documentation on ships, materials and products, as well as agreed standards and other normative documents are subject to mandatory updating with regard to adopted requirements of international conventions and agreements that have come into force after approval (agreement) of the documentation. All approved and agreed documentation is also subject to updating, having regard to the requirements of the RS circular letters that require their mandatory fulfillment.

9.6 The requirements of the RS rules as well as of international conventions and agreements that are in in effect on the date of submission of the documents shall be taken into consideration in the technical documentation submitted for re-approval (re-agreement) upon expiry of validity of its previous approval.

9.7 The Register approval (agreement) of the technical documentation loses its validity:

.1 upon expiry of approval validity (where the term is indicated);

.2 upon expiry of the documentation validity (where the term is indicated);

.3 in case amendments were introduced without consent of the Register into the approved (agreed) documentation dealing with the issues, which are within the Register terms of reference.

9.8 The Register may cancel its approval (agreement) of the technical documentation or change the terms of approval (agreement) in the following cases:

.1 if the documentation has not been timely brought in line with the provisions of international conventions and agreements, as well as with the requirements of the RS circular letters as set forth under 10.1;

.2 if the quality and reliability of materials and items are regularly low and do not meet the RS requirements.

10 INTRODUCTION OF AMENDMENTS INTO APPROVED (AGREED) TECHNICAL DOCUMENTATION

10.1 Any amendments to the technical documentation approved (agreed) by the Register that may relate to the requirements regulated by the RS rules or international conventions shall be approved (agreed) by the Register based on the results of review of the appropriate notifications on the amendments or of the reissued amended documents.

The amendments shall be detailed or specified in the amended documents, plans.

10.2 Review and approval of amendments to the design documentation shall be carried out by the RS Branch Office, which has approved this documentation.

10.3 Any amendments to the detailed design documentation made during the construction of the ship or the manufacture of the product that might affect solutions adopted in the design documentation shall be reviewed and approved by the RS Branch Office, which has approved the design documentation.

Amendments to the detailed design documentation that do not affect the solutions adopted in the design documentation shall be reviewed and approved by the RS Branch Office in charge of technical supervision of the development of the detailed design documentation or the construction of the ship or the manufacture of the product.

10.4 Any amendments to the normative documents agreed by the Register shall be reviewed and agreed by the RS Branch Office, which has agreed these documents.

10.5 Any amendments to the specifications for the materials and products approved by the Register shall be reviewed and approved by the Register Branch Office, which has approved these specifications.

10.6 The procedure for review and approval (agreement) of amendments to the technical documentation referred to in **10.1** to **10.5** above may be altered or updated when necessary at the discretion of RHO in each particular case.

10.7 The RS Branch Office that is in charge of approval of the amendments made in the technical documentation approved earlier shall timely inform to that effect the RS Branch Office, which carries out technical supervision during construction of ship or manufacture of materials and products, respectively.

11 FINAL DOCUMENTATION ON A SHIP TO BE SUBMITTED TO THE REGISTER

11.1 Upon completion of construction, trials and commissioning of the ship, the final documentation shall be sent for information to the RS Branch Office for in-service supervision.

The amount of the documentation and the order of its submission shall be agreed upon with the RS Branch Office in charge of technical supervision during construction of the ship prior to completion of the ship construction. Where necessary, an appropriate entry shall be made in the contract on technical supervision signed between the RS Branch Office and the shipyard.

Approximate lists of the final documentation, which may be reduced or extended in each particular case depending on specific features of the ship structure, are given in the Appendix.

In particular, for oil tankers and bulk carriers subject to SOLAS Chapter II-1 Part A-1 Regulation 3-**10**, the list of final documentation shall also contain the documents given under items **1**, 3.1 – 3.**4**, **4**, 6.1, 8, **10**, 12, 13 and 15 in the List of Information to Be Included in the Ship Construction File (SCF) (refer to Appendix 5 to Part I "General Regulations for Technical Supervision").

In order to reduce the number of the final documents to be sent to the RS Branch Offices, combined drawings and layouts are allowed.

11.2 The final documents shall correspond to the constructions actually done on board, installed machinery, arrangements, equipment, systems, etc.

11.3 Each document shall be provided with a stamp "final" or "operating". The documents shall be signed by a developer's official responsible for their development and correct information contained therein.

The list of final documentation shall bear the Register stamp (refer to Fig. 8.2-3).

11.4 The final documentation shall be sent to the RS Branch Office in one copy for the first ship of a series and a single ship. If ships of the same series are intended for operation under technical supervision of different RS Branch Offices, one complete set of the final documentation on the first ship of the series, operated under technical supervision of the particular RS Branch Office shall be sent to each RS Branch Office. In future the documents specified in **1**.5, 2.5 to 2.9, 3.12, 3.13, 6.7 of the Appendix, the documents to which major amendments have been made, and newly developed documents shall be sent to the RS Branch Offices for the ships of a series.

11.5 The final documentation on the first ship of a series and a single ship shall be sent to the RS Branch Offices not later than six months after commissioning of the ship, and for ships of a series, not later than three months after commissioning of the first ship of the series to a particular basin.

12 PROGRAMMES FOR COMPUTER-AIDED CALCULATIONS

12.1 DEFINITIONS

Algorithm is a set of a finite number of mathematical operations performed with initial data in a certain sequence and used for implementation of a calculation procedure.

Calculation method is a method for solving problem(s) of a certain class, based on more or less full idealization of a real physical object (construction or system), which includes a finite number of input and output parameters characterizing the object, and assumptions used to simplify the solution of the problem. The calculation method shall provide use of particular mathematical methods to arrive at numerical results, which are the parameters characterizing the object.

Calculation procedure is a set of methods for the practical solution of a particular problem, enabling to arrive at numerical results.

Onboard computer active system is a software system that uses, as input information, data from sensors automatically reading the contents of tanks and other ship loading parameters.

Onboard computer passive system is a software system that requires manual entry of input data for calculation.

Programme is a systematized sequence of mathematical computer-aided operations, which implements an algorithm for solving a problem.

Software is a totality of programmes intended for solving a certain problem (or a number of problems), using a shipborne computer of a certain type.

12.2 TYPE APPROVAL OF PROGRAMMES

12.2.1 Programmes of computer-aided calculations, which results are part of technical documentation to be submitted to the Register for approval according to **3.9**, shall be approved by the Register.

The programmes are approved by, and the Type Approval Certificate for Computer Program (СТОП) (Form 6.8.5) is issued by RHO.

Programmes of computer-aided calculations used for automated counting, which come to performance of separate computations for determination of auxiliary values, shall be duly noted by the Register.

12.2.2 Computer-aided calculation programmes, for which the Type Approval Certificate for Computer Program (СТОП) (Form 6.8.5) is issued in accordance with **12.2.1**, shall be submitted to the Register before their application.

In separate cases, computer-aided calculation programmes may be presented to the Register together with the technical documentation on the ship.

12.2.3 In order to obtain the Type Approval Certificate for Computer Program (СТОП) (Form 6.8.5), the materials shall be submitted to the Register containing the following:

.1 name of the programme;

.2 computer type, programming language, name of the programme developer;

.3 technical documentation on the calculation procedure.

The procedures for calculations, which results are used in developing the technical documentation on the ship, shall be agreed upon with the Register.

The technical documentation required for the calculation procedure submitted to the Register shall contain: mathematical statement of a problem, description of a procedure (method) for solution of a problem with indication of restrictions on application, accuracy, convergence criteria as well as analysis of a proposed procedure and adopted assumptions for compliance with the RS rules, references, etc.

An appropriate reference shall be made for the calculation procedure already known (agreed);

.4 detailed instructions on use of the programme and preparation of the initial data with enclosure of type forms;

.5 test conditions of calculations with listing of the initial data and calculation results with explanation of all initial data and results.

On preliminary agreement with the Register, used as a test task for a computer may be:

calculations on the check task issued by the Register;

comparison with calculation using a reference programme, with results of full-scale and model experiments.

Test conditions shall cover the whole range of the basic variable parameters.

The conditions shall contain verification calculations for two types of ships for which type approval is requested. Where approval is requested for only one type of ship, a minimum of two conditions for different hull forms of that type of ship shall be submitted.

For approval of a programme which is based on the input of hull form data, test conditions shall include calculations for three types of ships or three different hull forms if approval is requested for only one type of ship;

.6 minimum configuration of a computer system required for programme operation in different modes and with different quantities of initial data, information on type and number of necessary input-output devices, RAM and mass memory as well as on the type of the operation system, for use with which the programme is oriented.

Information on recognition of a particular programme by other classification societies or competent organizations may also be submitted to the Register.

In separate cases, based on the above recognition, the Register may allow to submit the documentation in the lesser scope.

The technical documentation on the calculation procedure and computer-aided calculation programme shall be submitted in duplicate.

The documentation shall have number, title and shall be registered in an established order.

12.2.4 When the calculation procedure is considered, account shall be taken of the following criteria:

reliability of physical process representation;

validity of assumptions;

compliance of the calculation results with those of check calculations.

12.2.5 The programmes are checked for suitability of the algorithm for calculation procedure adopted, for correct algorithm logic as well as correlation between the results of calculations made according to the programme concerned and test conditions.

The programmes shall also comply with the following requirements:

.1 provision shall be made in the programmes using large quantity of the initial data for checking these data before making calculations, including, where necessary, visual checking with plotted or printed output;

.2 the calculation programme shall present all relevant parameters of each loading condition. When making calculations, the user shall be provided with at least the following characteristics:

deadweight data;

lightship data;

trim;

draught at the draught marks and perpendiculars;

summary of loading condition displacement, vertical centre of gravity, longitudinal centre of gravity and transverse centre of gravity, downflooding angle and corresponding downflooding opening;

compliance with stability criteria: listing of all criteria, the limit values, the obtained values and the conclusions (criteria fulfilled or not fulfilled).

If direct damage stability calculations are performed, the relevant damage cases shall be pre-defined for automatic check of a given loading condition;

.3 the software shall be reliable, i.e. to function fail-free within the whole calculation range and to provide the accuracy for a specified time, agreed upon with the Register;

.4 printed calculation results shall contain information on the initial data (including references to the data bases used), values of the calculation results with indication of their designations as well as, in case use is made in the programme of the requirements of the RS rules or other RS normative documents, and international conventions, reference to the year of their edition.

Listing shall also contain information on the programme, necessary for its identification;

.5 the software shall have an easy system of inputting the required data and outputting the results and shall also provide the protection against input of unspecified data, such as:

input of weights and centre of gravity positions of cargoes (stores), which values exceed those specified for the particular space;

positioning of containers in the places already occupied, etc.;

.6 the software shall prevent a possibility of making any changes in the initial data by user as regards general arrangement, weight and centre of gravity position of the light ship;

.7 the Register does not restrict a programme builder in choosing a programming language and software development methods; the developed programmes, however, shall comply with the up-to-date requirements, including availability of a fetch protection unit, an unauthorized copying protection unit, etc.;

.8 the software shall provide the possibility of calling on the display of an easy and detailed guidance for user (HELP);

.9 decoding of basic terms and characteristics shall have English translation.

12.2.6 When the results of check calculations are verified using the submitted procedure and computer-aided calculation programme, account shall be taken both of compliance of calculation procedures and the programme with the above criteria and calculated values and parameters with the requirements of the RS rules.

12.2.7 The computational accuracy of the calculation programme results shall be within the acceptable tolerances of the results using the approved Information on Stability with identical input or an independent programme approved by the Register.

Programmes which use pre-programmed data from the approved Information on Stability as the basis for stability calculations, shall have zero tolerances for the printouts of input data.

Output data tolerances shall be close to zero, however, small differences associated with calculation rounding or abridged input data are acceptable. Differences associated with the use of hydrostatic and stability data for trims that differ from those in the approved Information on Stability, may be accepted subject to agreement with the Register.

When output data are calculated through programmes which use hull form models as their basis for calculations, the tolerances shall be obtained by the formula:

Deviation in % = {(base value — calculated value)/ base value} •100,

however, they shall not exceed those specified in Table **12.2.7**.

The base value may be from the approved Information on Stability or an independent programme approved by the Register.

An example of pre-programmed initial data:

Hydrostatic data: displacement, abscissa and applicate of the centre of buoyancy, abscissa of the centre of floatation, height of metacenter and moment to trim **1** cm (all are as a function of draught).

Stability data: stability cross-curves or residual arms of form stability for corresponding angles of heel/trim as a function of displacement, stability limitations.

Data on spaces: volumes, coordinates of center of volumes and correction for free surface effect/heeling moments due to grain shifting (all are as a function of the level of space filling).

An example of output:

Hydrostatic data: displacement, abscissa and applicate of the centre of buoyancy, abscissa of the centre of floatation, height of metacenter and moment to trim **1** cm (all are as a function of draught and also for ship's actual trim).

Stability data: corrections for free surface effect, arms of stability curve, applicate of ship's centre of gravity, initial transverse metacentric height, limiting curve, permissible heeling moments due to grain shifting, stability criteria being used.

Data on spaces: calculated volumes, coordinates of center of volumes and corrections for free surface effect/heeling moments due to grain shifting (all are as a function of the level of space filling).

12.2.8 The Type Approval Certificate for Computer Program (СТОП) (Form 6.8.5) is issued for the programmes reviewed and verified in accordance with the provisions of these Rules. The Type Approval Certificate for Computer Program (СТОП) (Form 6.8.5) shall contain the name of the programme, names of the developing organization and the owner of the programme, a computer type, programming language, brief description of the calculation procedure, scope of application, grounds for issuing the Type Approval Certificate for Computer Program (СТОП) (Form 6.8.5).

12.2.9 When computer-aided calculations, which are part of the ship's technical documentation and which are performed according to the programme having the type approval certificates are presented to the Register, a reference to the number of the Type Approval Certificate for Computer Program (СТОП) (Form 6.8.5) issued by the Register shall be made in these calculations.

12.2.10 The Type Approval Certificate for Computer Program (СТОП) (Form 6.8.5) issued by the Register for a programme loses its validity if changes affecting the subject agreed upon have been made in the programme.

Table 12.2.7

Parameter evaluated	Tolerance
Hull form dependent	
Displacement	2 %
Longitudinal center of buoyancy, from after perpendicular, X_C	1 % / 50 cm max
Vertical center of buoyancy, Z_C	1 % / 5 cm max
Transverse center of buoyancy, Y_C	0,5 % of B / 5 cm max
Longitudinal center of flotation, from after perpendicular, X_f	1 % / 50 cm max
Moment to trim 1 cm	2 %
Transverse metacentric height	1 % / 5 cm max
Longitudinal metacentric height	1 % / 50 cm max
Cross curves of stability	5 cm
Compartment dependent	
Volume or deadweight	2 %
Longitudinal center of gravity, from after perpendicular, X_V	1 % / 50 cm max
Vertical centre of gravity, Z_V	1 % / 5 cm max
Transverse center of gravity, Y_V	0,5 % of B / 5 cm max
Free surface moment	2 %
Shifting moment	5 %
Level of contents	2 %
Trim and stability	
Draughts (forward, aft, mean)	1 % / 5 cm max
Initial metacentric height (GMt)	1 % / 5 cm max
Righting curve levers (GZ values)	5 % / 5 cm max
Free surface correction	2 %
Downflooding angle	2°
Equilibrium angles	1°
Distance to unprotected openings or margin line from waterline (if applicable)	±5 % / 5 cm max
Areas under righting arm curve	5 % or 0,0012 mrad

12.3 APPROVAL OF COMPUTER SOFTWARE USED FOR SOLVING PROBLEMS ON EVALUATION OF TRIM, STABILITY AND STRENGTH (FOR A PARTICULAR SHIP)

12.3.1 General.

12.3.1.1 Where a shipborne computer or a shore-based stability and residual strength calculation programme is used for evaluation of ship's trim, stability or strength, the appropriate software shall be approved by the Register for application on board a particular ship. In such a case, the base software module shall have the Type Approval Certificate for Computer Program (СТОП) (Form 6.8.5) (refer to **12.2**).

12.3.1.2 These requirements are applicable to on-board computers when using passive systems and the off-line operation mode of active systems.

12.3.1.3 The stability calculated using a computer shall be checked with regard to all the stability criteria applicable to the ship.

12.3.1.4 The scope of calculations shall correspond to the Information on Stability approved by the Register. The input and output data shall, as far as practicable, be easily compatible in terms of contents and format with those in the Information on Stability so as to allow the operator to familiarize themselves promptly with the stability calculations.

The calculations output data of the damaged passenger ship stability and residual strength calculation programme shall as a minimum include the following parameters:

transverse metacentric height;

righting lever curve;

area under the righting lever curve;

maximum and actual heeling moments due to liquid overflow in all tanks and compartments below the bulkhead deck;

draft forward, amidships and aft;

angles of trim and heel;

areas of the damaged ship above-water and under-water parts projections to the centre plane and their centers to evaluate wind heeling moment;

bending moment and shear forces.

12.3.1.5 Unit measures shall be clearly specified and uniformly used in all calculations. Where different measurement systems are used in the software, input errors shall be ruled out. The software shall provide that all the necessary data are displayed as well as printed out in the measurement systems used.

12.3.1.6 Copies of all initial data needed for the programme operation shall be stored on a separate disk or diskettes in dublicate.

12.3.1.7 The programme shall have a simple command, which allows return to main menu from any working window.

12.3.1.8 The programme shall warn the user of any input errors and in cases where the calculation results do not comply with the requirements of the RS rules, as well as in case of a wrong use of the very programme.

12.3.1.9 The programme shall monitor operation and activate an alarm when the programme is incorrectly or abnormally used.

12.3.1.10 The language in which the stability information is displayed and printed out shall be the same as used in the Stability Information. For ships engaged on international voyages, it is allowed to use only English when developing onboard computer software.

12.3.1.11 Onboard computer software and any data stored in the system shall be protected from corruption by loss of power.

12.3.1.12 Every page of the calculation result printout shall contain the identification number of the programme including the version number, name of the ship, printing-out date and load condition indication.

12.3.1.13 The software shall be installed in a shipborne computer of a type approved by the Register or in two unapproved computers. The requirements for computers and computer-based systems on board sea-going ships are set forth in Part XV "Automation" of the Rules for the Classification and Construction of Sea-Going Ships. In case where two computers are used each shall be fitted with a monitor and a printer, and both computers shall be subjected to acceptance tests.

12.3.2 Software approval procedure.

12.3.2.1 To make use of software on board a particular ship possible, the software functioning shall be checked and Report (Form **6.3.29**) based on the check results issued. In order to obtain this Report, the following documentation shall be submitted to RHO:

.1 Manual for User, which shall contain:

identification number, name of ship;

clear and definitive commands with the use of illustrations and diagrams;

general description of the programme, including its identification, number and version date;

a copy of the Type Approval Certificate for Computer Program (СТОП) (Form 6.8.5);

requirements for the hardware parameters needed for normal start and functioning of the programme;

instruction for installation of programme on onboard computer;

description of messages on errors and warnings, which are most likely to occur, with the indication of sequence of actions to be taken by the user in such cases;

light ship mass and coordinates of centre of gravity with the indication of the source of information;

deadweight components for each test condition;

list of permissible still water shear force and bending moment values specified by the Register and, if necessary, torsion load;

if necessary, correction factors for the shear forces;

if necessary, limitations on the cargo mass for each hold and for each pair of adjacent holds, as a function of the mean draft lengthwise the hold (holds);

a sample of the calculation procedure accompanied by explanations and a sample of an output data printout;

a sample of each screen dump displayed with explanatory text;

.2 Information on Stability and Information on Damage Stability, including subdivision layout, approved by the Register;

.3 permissible bending moment and shear force values in the checked hull sections approved by the Register;

.4 solution printouts of the test conditions selected on agreement with the Register.

The test conditions shall be selected in such a way as to cover the whole range of load draughts (from the light ballast condition to the deepest envisaged loaded condition) and shall include at least one departure and one arrival condition. Calculations shall be provided for at least four loading conditions, taken from the ship's approved stability information. For ships carrying liquids in bulk and ships carrying grain in bulk at least one of the conditions shall include partially filled cargo spaces. In the test conditions selected, each cargo hold shall be at least once loaded.

The approval consists in checking the software functioning in the presence of the Register representative. The Register representative shall verify that the following data, used by the calculation programme, is consistent with arrangements and most recently approved lightship characteristics of the ship according to approved plans and documentation:

identification of the calculation programme including version number;

main dimensions, hydrostatic particulars and, if applicable, the ship profile;

the position of the forward and after perpendiculars, and if appropriate, the calculation method to derive the forward and after draughts at the actual position of the ship's draught marks;

ship lightweight and centre of gravity derived from the most recent inclining test;

lines plan, offset tables or other suitable presentation of hull form data if necessary to check the input data;

compartment definitions, including frame spacing, and centres of volume, together with capacity tables, free surface corrections;

cargo and consumables distribution for each loading condition.

The following procedures shall be followed when testing the software:

retrieve at least one test load condition and start a calculation run; compare the stability results with those in the documentation;

change several items of deadweight (tank weights and the cargo weight) sufficiently to change the draught or displacement by at least 10 per cent. The results are to be reviewed to ensure that they differ in a logical way from those of the approved test condition;

revise the above modified load condition to restore the initial test condition and compare the results; the relevant input and output data of the approved test condition shall be replicated;

alternatively, one or more test conditions shall be selected and the test calculation performed by entering all the necessary deadweight data manually; the results shall be verified as identical to the results in the approved test conditions.

Where satisfactory convergence of the results for some parameters has not been achieved, appropriate clarifications shall be presented, which then shall be reflected in the Register Report (Form 6.3.29) and/or Manual for User.

The Report (Form 6.3.29) is issued in the Russian and English languages with approved test conditions.

12.3.3 Acceptance tests of the software shall be conducted on board ship in the presence of the Surveyor to the Register with issuance of the Register Report (Form 6.3.10). Along with that:

.1 a check shall be made to ensure that the Manual for User duly noted by the Register is available on board;

.2 a check shall be made to ensure that the Report (Form 6.3.29) with approved test conditions is available on board;

.3 the software shall be installed in a computer of approved type or in two computers of unapproved type;

.4 the Information on Stability and Strength, Information on Damage Stability, on which software operation has been tested and which have been indicated in the Report (Form 6.3.29), shall not be updated since the issue of the Report;

.5 solution results of the test conditions shall be the same as the results of the approved conditions attached to the Report (Form 6.3.29).

12.3.4 Where the ship, while in service, experiences changes in general arrangement, light ship mass, loading plans, the Report (Form 6.3.29) is cancelled. The software for the new parameters of the ship shall be once more subject to the approval procedure according to 12.3.2.

APPENDIX

LIST OF FINAL DOCUMENTATION ON A SHIP TO BE SUBMITTED TO THE REGISTER[1]

1 GENERAL

1.1 List of final documentation on a ship.
1.2 Specification for all parts.
1.3 General arrangement plan.
1.4 List of machinery and equipment installed on board the ship, with brief indication of their technical characteristics.
1.5 List of deviations from the RS rules.
1.6 List of spare parts.
1.7 Drawing showing the location of the IMO ship identification number.

2 STABILITY, UNSINKABILITY

2.1 Lines drawing.
2.2 Summary table of displacements, centre of gravity positions, trim and initial stability for different loading conditions.
2.3 Table of tank capacities.
2.4 Draft mark arrangemen plan and load line.
2.5 Inclining Test Report or Weighing Report, if the ship is exempted from the inclining test.
2.6 Updated stability calculation.
2.7 Information on Stability and Instructions on Taking and Consuming Liquid Cargoes and Ballasting.
2.8 Information on Damage Trim and Stability or Information on the Effect of Flooding.
2.9 Information on Stability for the Ship Loaded with Grain.
2.10 Layout of watertight compartments.
2.11 Damage Control Plan.
2.12 Operating manual on water level detection system.

3 HULL

3.1 Midship section.
3.2 Constructional profile.
3.3 Deck and platform plans.
3.4 Double (single) bottom plan.
3.5 Shell expansion (for glass reinforced ships only in case the outer shell plating has different thickness).
3.6 Longitudinal and transverse bulkheads.
3.7 After end framing and sternframe.
3.8 Fore end framing and stem.
3.9 Propeller brackets and bossings.
3.10 Main machinery seatings and boiler bearers with bottom construction in that area.
3.11 Hydrofoil system and air cushion skirt plans.
3.12 Loading instructions for ships 65 m in length and more.
3.13 Information (Booklet) on Stability and Strength During Loading, Unloading and Arrangement of Bulk Cargoes Other than Grain.

[1] Given in the List are approximate designation of particular final documents adopted only to reflect their technical essence.

4 ARRANGEMENTS, EQUIPMENT, OUTFIT, LIFE-SAVING APPLIANCES AND SIGNAL MEANS

4.1 Stock list.

4.2 Arrangement plan of survival craft and personal life-saving appliances.

4.3 Arrangement plan of sound signal means and navigation lights.

4.4 Arrangement plan of openings in the hull, superstructures and deckhouses as well as in subdivision bulkheads with indication of coaming heights, types, designs and basic dimensions and parameters of closing appliances.

4.5 General arrangement plan of rudder and steering gear with indication of basic dimensions, design and material, main components, type and main parameters of steering gear (main and auxiliary).

4.6 General arrangement plan of anchor arrangement with indication of types, principal dimensions (parameters) of components, type and basic parameters of anchor machinery.

4.7 General arrangement plan of mooring and towing arrangements with indication of types, basic parameters of the equipment, main characteristics of mooring and towing ropes, type and basic parameters of mooring and towing machinery.

4.8 General arrangement plan of fittings used to prevent shifting of cargo with indication of the design, material and basic dimensions (parameters) of main components of the fittings.

4.9 Arrangement plan of emergency outfit.

4.10 General arrangement plan of cargo handling gear with indication of principle characteristics (safe working load, operation areas, outreach, cargo lifting and lowering speed, maximum and minimum outreach, slewing speed, etc.).

4.11 General view drawing of cargo handling gear together with specification of associated machinery, components and safety devices.

4.12 Drawing (scheme) of derrick and crane rigging.

4.13 Drawing of attachments of cargo masts, crane, winch and reel foundations to ship structures and of hull strengthening in way of their installation.

4.14 Drawing of securing of cargo handling gear in the stowing for sea position.

4.15 Drawing of securing timber deck cargo.

5 FIRE PROTECTION

5.1 Fire plan.

5.2 Arrangement plan of fire-proof divisions (ineluding doors) with indication of numbers of the type approval certificates.

5.3 Schemes of insulation of spaces with indication of type insulation constructions.

5.4 Deck covering schemes.

5.5 Fire fighting system diagrams.

6 MACHINERY INSTALLATION

6.1 General arrangement plans of machinery, boilers and equipment in machinery and boiler spaces and in spaces of emergency sources of electrical power.

6.2 General arrangement plan of shafting.

6.3 CPP system drawings.

6.4 General view of propeller.

6.5 Stern-tube drawing.

6.6 Diagram and description of remote control system for main machinery complete with information on equipment of remote control stations with control devices, indication and alarm signalling devices, means of communication and other arrangements.

6.7 Shafting alignment calculation. Torsional vibration calculations and torsiographing results.

7 SYSTEMS AND PIPING

7.1 Ship system diagrams:
.1 bilge system;
.2 ballast system;
.3 waste water, sewage and scupper systems;
.4 fuelling and fuel transfer systems;
.5 sounding, air and overflow pipes;
.6 cargo and stripping systems (on oil tankers);
.7 vent system (on oil tankers);
.8 ventilation system of accommodation, cargo, machinery and production spaces;
.9 liquid cargo heating system;
.10 arrangement plan of bottom and side fittings.
7.2 Machinery installation piping diagrams:
.1 live and exhaust steam, blow-off pipes;
.2 feed water, condensate and evaporator;
.3 fuel;
.4 lubricating oil;
.5 cooling;
.6 compressed air;
.7 fuel, water and oil heating;
.8 exhaust gas pipes and uptakes.

8 REFRIGERATING PLANTS

8.1 Refrigerant system diagram.
8.2 Cooling medium and cooling water system diagram.
8.3 Basic diagram of hold air cooling.
8.4 Arrangement plan of equipment in refrigerating machinery space with indication of escape routes.
8.5 Arrangement plan of equipment in refrigerated spaces.
8.6 Insulation drawing with technical specifications of insulating materials.
8.7 Basic diagram of telethermometer station and arrangement of thermometer tubes.
8.8 General arrangement plan of equipment in refrigerant storage spaces with stationary receivers.

Note. Only docmnentation referred to in 8.1, 8.4, 8.8 shall be presented for unclassed refrigerating plants.

9 ELECTRICAL EQUIPMENT

9.1 Circuit diagrams of electrical power distribution from main and emergency sources: power mains, lighting (to section switchboards) and navigation lights.
9.2 Circuit diagrams of main and emergency switchboards, control desks and other switchboards of non-standard design.
9.3 Circuit diagram of main current, excitation, control, monitoring, signalling, protection and interlocking of the electric propulsion plant.
9.4 Circuit diagram of outer connections of ship's control apparatus, telephone communication, general alarm and fire detection and alarm systems.
9.5 Circuit diagram of electric drives for steering gear, electrical remote control systems of rudder electric drive, protection and alarm.
9.6 General arrangement plan of essential electrical equipment and electric propulsion plant.
9.7 Lubricating oil and air cooling diagrams of main electric machines of the electric propulsion plant.
9.8 Diagrams of protective earthing, drawings of lightning protection devices for tankers, gas carriers, mobile offshore drilling units and ships with non-metal hulls.
9.9 Layout plan of cable penetrations through watertight and fire bulkheads.

Note. Information on cross-sectional areas of cable conductors, types of cables, currents and protection shall be given in the documentation.

10 NAVIGATIONAL EQUIPMENT

10.1 Connection diagram of navigational equipment (with indication of types and cross-sectional areas of cable conductors).

10.2 Drawings (not less than two views) showing arrangement of navigational equipment and sources of power, as well as heating, ventilation, communication, alarm and lighting facilities in spaces intended for the installation of navigational equipment.

10.3 Drawings (plan and side view) showing arrangement of aerials as well as spaces intended for the installation of navigational equipment.

10.4 List of navigational equipment fitted on board with specification of manufacturer, type, supplier and information on approval of the equipment by the Register.

10.5 Bridge fields of vision drawings showing:

.1 the horizontal field of vision from the various workstations, including the arc of individual blind sectors and the sum of blind sectors forward of the beam;

.2 the vertical field of vision over the bow from the conning station and the workstation for navigation and manoeuvring, including the line of sight under the upper edge of the window from standing working position at the workstation;

.3 window arrangement, including inclination, dimensions, framing and height of lower and upper edge above bridge deck surface as well as the height of the deckhead.

10.6 Bridge layout drawings showing:

.1 the bridge layout, including the configuration and location of all bridge workstations, including workstations for additional bridge functions;

.2 configuration and dimensions of workstation consoles including console foundations, and location of instruments and equipment in all workstation consoles.

10.7 In case of ships having a distinguishing mark **OMBO** in their class notation, the scope of technical documentation to be submitted shall be in accordance with the requirements of **1.3.7**, **Part V "Navigational Equipment"** of the Rules for Equipment of Sea-Going Ships.

11 AUTOMATION

11.1 Functional circuits of control and protection elements, devices and systems of main machinery and propellers (remote automated control systems).

11.2 Functional circuits of control and protection elements, devices and systems of auxiliary machinery, electric-generation plants, main and auxiliary boilers, refrigerating plants.

11.3 Functional circuits of control and protection elements, devices and systems of centralized and local warning alarm, indication and recording systems.

11.4 General view drawings of separate devices, switchboards, panels of control and protection systems of main machinery, propellers and auxiliary machinery, and their arrangement on board ship.

11.5 Structural drawings of sensors, alarms, instruments as well as control and monitoring switchboards and panels of the systems referred to in **11.3** to **11.5**.

11.6 Description of power sources of the systems referred to in **11.3** to **11.5** and their wiring schemes.

11.7 Block diagrams of machinery control algorithms for computers and computer-aided systems applied in the plants subject to the Register technical supervision.

11.8 Failure mode and effects analysis (FMEA) for dynamic positioning systems on the ships having distinguishing marks **DYNPOS-2** and **DYNPOS-3** in the class notation.

12 RADIO EQUIPMENT

12.1 Diagram of connections of radio equipment and commutation of aerials (with indication of types and cross-sectional areas of cable conductors and protection means from radio interference).

12.2 Drawing (plan and side view) of equipment arrangement in radio equipment spaces with indication of heating, ventilation, communication, alarm and lighting systems.

12.3 Drawing (plan and side view) of aerial arrangement with indication of the spaces intended for installation of radio equipment.

12.4 Drawing and diagram of radio equipment for motor lifeboats (if any).

13 ARRANGEMENTS AND EQUIPMENT FOR PREVENTION OF POLLUTION FROM SHIPS

13.1 For ships of all types:

.1 arrangement plan of equipment for prevention of pollution from ships;

.2 calculation of required capacity of holding tanks, oily water and sewage tanks, garbage containers and their arrangement plans;

.3 diagram of bilge oily water piping;

.4 diagram of oil residue piping;

.5 diagram of sewage piping;

.6 calculation of the discharge rate of untreated sewage;

.7 Energy Efficiency Design Index Technical File in accordance with the Guidelines on Survey and Certification of Energy Efficiency Design Index (EEDI) (IMO resolution MEPC.**254**(67) as amended by IMO resolution MEPC.**261**(68)), if applicable.

13.2 For oil tankers, other than those referred to in **13.1**:

.1 calculation of capacity of slop tanks;

.2 accidental oil outflow calculations for oil tankers delivered on or after **1** January **2010** (Regulation **23** of Annex I to MARPOL-**73**/78);

.3 arrangement plan of all cargo and slop tanks on board;

.4 subdivision plan and damage stability calculations;

.5 diagram of emergency oil transfer system, if applicable;

.6 diagram of crude oil washing system and shade diagram (if applicable);

.7 plan showing arrangement of discharge outlets;

.8 diagram of transfer of oil residues (sludge) and tank washings from cargo area into slop tanks;

.9 diagram of the ballast and cleaning water discharge monitoring and control system (if applicable);

.10 operations and equipment manual for crude oil washing system (if applicable);

.11 operation manual for discharge monitoring and control system of ballast and washing water (if applicable).

13.3 For tankers carrying noxious liquid substances, other than those referred to in **13.1**:

.1 arrangement plan of pump rooms;

.2 arrangement plan of cargo tank ventilation system;

.3 plan showing arrangement of discharge outlets;

.4 procedures and arrangements manual for discharge of noxious liquid substances.

LIST OF CIRCULAR LETTERS AMENDING/SUPPLEMENTING NORMATIVE DOCUMENT

ND 2-020101-040-E

Part I . General Regulations for Technical Supervision

(Normative document No. and title)

Item No.	Circular letter No., date of approval	List of amended and supplemented paras
1.	314-53-1050c dated 18.10.2017	APPENDIX 1
2.	381-08-1051c dated 24.10.2017	Section 2: Para 2.7. Text has been amended. Section 3: Paras 3.4, 3.5.Text has been amended. Section 5: Paras 5.2, 5.6 Text has been amended. Section 8: Table 8.1.1. Codes 22021000МК и 22005013. Text has been amended. Para 8.3.4.2 is excluded. Paras 8.3.13, 8.3.13.1, 8.3.13.2.2, 8.3.13.4.2.3, 8.3.17.4.6. Text has been amended. Section 9: Table 9.1.1 New code 21004100 is added. Para 9.3.9.1 Text has been amended. New para 9.3.12 is added. Section 11: Table11.1.1. Code 22013000 is excluded. Code 2201300 is added. Appendix 1. Nomenclature of items of the Register technical supervision has been amended.
3.	381-08-1120c dated 05.04.2018	Part I: Table 8.1.1, paras 8.3.1.1.8, 8.3.1.1.10.3, 8.3.1.2.6, 8.3.7.5, 9.3.1, 9.3.1.1- 9.3.1.3, 9.3.9.3, 9.3.12.4, 11.1.2.1, 11.3.1-11.3.1.1, 11.3.2-11.3.4, Appendix 1

RUSSIAN MARITIME REGISTER OF SHIPPING

CIRCULAR LETTER **No.** 314-53-1050c dated 18.10. 2017

Re:

amendments to the Rules for Technical Supervision During Construction of Ships and Manufacture of Materials and Products for Ships, 2017, ND No. 2-020101-040-E in compliance with the new requirements for the steel-titanium laminated composite material.

Item of technical supervision:

steel-titanium laminated composite material intended for ship machine building; ships under construction

Implementation	from the date of publication
Valid: till	ND re-publication
Validity period extended till	-

Cancels / amends / supplements Circular Letter No.
314-53 – 1049c dated 18.10.2017

Number of pages: 1+1

Appendices: text of amendments to the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships, 2017, ND No. 2-020101-040-E

Director General K.G. Palnikov

Amends Part I "General Regulations for Technical Supervision", Appendix 1 "Nomenclature of Items of the Register Technical Supervision" of the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships, 2017, ND No. 2-020101-040-E

We hereby inform that 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, 2017, ND No. 2-020101-040-E shall be amended as specified in the Appendix to the Circular Letter.

It is necessary to do the following:

1. Apply the provisions of this Circular Letter during the review and approval of the ships' technical documentation and technical supervision in industry.
2. 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.

Person in charge: M.E Yurkov 314 +7 (812) 314-07-34

"Thesis" System 17-195820

Appendix

to Circular Letter

No. 314-53-1050c

of 18. 10. 2017

RULES FOR TECHNICAL SUPERVISION DURING CONSTRUCTION OF SHIPS AND MANUFACTURE OF MATERIALS AND PRODUCTS FOR SHIPS, 2017

ND No 2-0200101-040-E

PART I. GENERAL REGULATIONS FOR TECHNICAL SUPERVISION

APPENDIX 1 NOMENCLATURE OF ITEMS OF THE REGISTER TECHNICAL SUPERVISION

For nomenclature code 13200000 "**Aluminium, titanium and copper alloys**" a new code shall be added after 13240100 as follows:

"

1	2	3	4	5	6	7	8	9
13250000	**Metallic composite materials:**							
13251000	Steel-titanium	P	СПИ	С3	К	-	-	-

"

RUSSIAN MARITIME REGISTER OF SHIPPING

CIRCULAR LETTER **No.** 381-08-1051c dated 24.10.2017

Re:

amendments to 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, 2017, ND No. 2-020101-040-E

Item of technical supervision:

material, product, activities, ship

Implementation	from the date of publication
Valid: till	01.07.2018
Validity period extended till	---
Cancels / amends / supplements Circular Letter No. -	--- dated --

Number of pages:	1+4
Appendices:	amendments to 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, 2017, ND No.2-020101-040-E

Director General K.G. Palnikov

Amends Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships, 2017, ND No. 2-020101-040-E

We hereby inform that 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, 2017, ND No.2-020101-040-E shall be amended as specified in the Appendix to the Circular Letter. The amendments will be introduced to the Rules for Technical Supervision During Construction of Ships and Manufacture of Materials and Products for Ships, 2018.

It is necessary to do the following:

1) Familiarize the surveyors of the RS Branch Offices with the content of the Circular Letter.
2) Implement the provisions of the Circular Letter.
3) Clarify the contents of the Circular Letter to all interested parties in the area of the RS Branch Offices' activity.

Person in charge: A.F. Remarchuk 381 +7 (812) 605-05-15

"Thesis" System 233708 (17-230204) of 25/08/2017

Appendix

to Circular Letter

No. 381-08-1051 dated 24.10 .2017

RULES FOR TECHNICAL SUPERVISION DURING CONSTRUCTION OF SHIPS AND MANUFACTURE OF MATERIALS AND PRODUCTS FOR SHIPS, 2017, ND No. 2-020101-040

PART I. GENERAL REGULATIONS FOR TECHNICAL SUPERVISION

2 GENERAL

Para **2.7** shall be amended to read:

"**2.7** A possibility of deviations from the RS requirements, where application of those requirements, methods and scope of supervision prescribed by RS is impracticable or unreasonable, is decided by RHO upon presentation by the RS Branch Office responsible for the technical supervision.".

3 SERVICES RENDERED IN TECHNICAL SUPERVISION DURING MANUFACTURE OF MATERIALS AND PRODUCTS. DOCUMENTS ISSUED

Para 3.4 shall be amended to read:

"**3.4 3.4** Validity period of the Recognition Certificate for Manufacturer (СПИ), Recognition Certificate of Testing Laboratory (СПЛ), Certificate of Firm Conformity (ССП) shall not exceed five years. Certificates are subject to endorsement not less than once a year. Endorsement shall be done within the period limited by thirty (30) days before and thirty (30) days after the date of the subsequent endorsement of the certificate.

The Recognition Certificate (СП) shall be issued for three (3) years and is not subject to endorsement.

Upon expiry of the validity period the certificates are renewed on request of the firm.

RS reserves the right to carry out occasional surveys of a firm having a valid RS certificate in cases that:

.1 an item of technical has been found non-complying with the RS requirements, in particular, based on information from a third party;

.2 the firm has not informed RS of changes to the item of technical supervision stated on the certificate."

Para 3.5. The text "from the specified date of endorsement" in the first paragraph shall be deleted.

5 TECHNICAL SUPERVISION DURING MANUFACTURE OF MATERIALS AND PRODUCTS

Para 5.2. The second paragraph shall be amended to read :
"Certificate filled-in and signed by the Register (C). Signing and drawing up of the Certificate (C) are allowed to carry out by digital signature."

Para 5.6 shall be amended to read:

"**5.6** Where in column 5 of the RS Nomenclature "CTO" is indicated, then the document to be issued may be a copy of the Type Approval Certificate (CTO). The appropriate record shall be made in the section "Type of document issued for product" of the Type Approval Certificate (CTO). In such a case, the Agreement on Survey (CO) (refer to 4.5) shall be concluded with the firm/manufacturer prior to supplying materials and/or products with copy of the Type Approval Certificate (CTO). In well-grounded cases, the certificates (C or C3) may be issued.".

8 RECOGNITION OF SERVICE SUPPLIERS

Table 8.1.1.
Code 22021000MK. The text of the kinds of activity shall be amended to read:
"Maintenance, repair, inspection and testing of lifeboats, launching appliances, on-load release gears, and davit-launched liferaft automatic release hooks".

Code 22005013. The text of the kinds of activity shall be amended to read:
"rigid-hull / combined rescue / fast rescue boats".

Para 8.3.4.2 shall be deleted.

Paras 8.3.4.3 to 8.3.4.6.2 shall be renumbered 8.3.4.2 to 8.3.4.5.2 accordingly.

Para 8.3.13 shall be amended to read:
"**8.3.13** Requirements for firms engaged in maintenance, repair, inspection and testing of lifeboats, launching appliances, on-load release gears, and davit-launched liferaft automatic release hooks."

Para 8.3.13.1 shall be amended to read:
"**8.3.13.1** Extent of engagement.
Thorough examination, maintenance, repair and testing of lifeboats, launching appliances, on-load release gear and davit-launched liferaft automatic release hooks.".

Para 8.3.13.2.2 shall be amended to read:
"**8.3.13.2.2** Any firm engaged in the thorough examination, maintenance, repair, inspection and testing of lifeboats, launching appliances, on-load release gear and davit-launched liferaft automatic release hooks carried out in accordance with SOLAS-74 regulation III/20 shall be qualified in these operations for each make and type of the equipment, for which they provide the service, and provide RS the manufacturer

documentary evidence that they have been so authorized or they are certified in accordance with MSC.I/Circ.1277, as amended.".

Para 8.3.13.4.2.3 shall be amended to read:
"**.3** design and construction of lifeboats, launching appliances, on-load release gears and davit-launched liferaft automatic release hooks;".

Para 8.3.17.4.6. The second sentence shall be amended to read:
"The personnel certified in accordance with SNT-TC-1A shall submit the evidence that Level I or higher training is controlled by an independent training body in a centralized and certified manner in accordance with the requirements of ASNT or similar recognized national certification.".

9 RECOGNITION OF TESTING LABORATORIES

Table 9.1.1. A new activity with Code 21004100 shall be introduced to Tests and measurements reading as follows:

21004100	Testing of bulk cargoes to determine transport performance by laboratories of the firms with the Recognition Certificate (СП) under code 22023000МК "Expertise of safe carriage of bulk cargoes by sea"

Para 9.3.9.1 shall be amended to read:
"**9.3.9.1** Sampling and sample preparation procedures shall comply with the requirements of the IMSBC Code, IMO resolution MSC.354(92) and IMO Circular MSC.I/Circ.1454 and shall be approved by the Register. ".

New para 9.3.12 shall be introduced reading as follows:

"**9.3.12** Special requirements for testing laboratories of the firms with the Recognition Certificate (СП) under code 22023000МК "Expertise of safe carriage of bulk cargoes by sea" and carrying out tests of bulk cargoes to determine transport performance (code 21004100МК).

9.3.12.1. Testing Laboratory is a structural part of the firm with the Recognition Certificate (СП) under code 22023000МК "Expertise of safe carriage of bulk cargoes by sea".

9.3.12.2 Sample preparation and testing procedures shall comply with the requirements of IMSBC Code, IMO resolution MSC.354(92) and IMO Circular MSC.I/Circ.1454 and shall be approved by the Register.

9.3.12.3 A testing laboratory shall keep, store for 10 years and submit to the Register the following records drawn up both in Russian and English:

- **.1** training record books for the personnel involved in sample preparation and testing;
- **.2** reports on internal testing of sample preparation procedure and testing
- **.3** record books of point sampling and representative samples preparation;

.4 test reports;
.5 calibration and maintenance logs for instrumentation and test equipment;
.6 reports on deviations from approved sample preparation procedures as well as testing and amendments to be introduced thereto. "

11 AUDITS OF FIRMS

Table 11.1.1. The kind of activity with code 22013000 "Measurement assurance of items of technical supervision" shall be deleted.

Table 11.1.1 shall be supplemented with a new kind of activity:

2201300	Shore-based centre for damage stability calculation and residual structural strength calculation

Appendix 1. Nomenclature of Items of the Register Technical Supervision

Table "Nomenclature of Items of the Register Technical Supervision" shall be supplemented with new Codes of item of technical supervision:

03070800	Seats for HSC passengers and crew	P	CTO	C3	—	P	—	—
09080201	turbochargers, category C	P	CTO	C3	-	P	P	P
09080202	turbochargers, category B	P	—	W	—	—	P	P
13351000	plating of reinforced polymer material for catwalks	P	CTO	CTO	—	—	—	—

Codes 09011601, 09011602, 0911604.
In column 2 the text "power > 400 kW/cyl" shall be amended to read: "power > 800 kW/cyl".".

Codes 09010021, 09011701, 09011702, 09011703.
In column 6 the text «K» shall be amended to read: " — ".

Codes 09011701, 09011702, 09011703.
In column 7 the text «P» shall be amended to read: " — ".

RUSSIAN MARITIME REGISTER OF SHIPPING

CIRCULAR LETTER **No. 38/08-1120c** dated 05.04.2018

Re:

amendments to the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships, 2017, ND No. 2-020101-040-E

Item(s) of technical supervision:

material, product, activities, ship

Implementation:	Valid till:	Validity extended till:
from the date of publication	**01.07.2018**	---

Cancels / amends/ supplements Circular Letter No. --- dated --

Number of pages: 1+6

Appendix(ces):

text of amendments to Part I "General Regulations for Technical Supervision"

Acting Director General - S.A. Kulikov

Text of CL:

We hereby inform that based on the proposals entered in SRPAA RS ND and external audit results, the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships shall be amended as specified in the Appendix to the Circular Letter. These amendments will be introduced into the Rules at their re-publication.

It is necessary to do the following:

1. Familiarize the surveyors of the RS Branch Offices with the content of the Circular Letter.
2. Apply provisions of the Circular Letter.
3. Clarify the content of the Circular Letter to all interested parties in the area of the RS Branch Offices' activity.

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

Part I: Table 8.1.1, paras 8.3.1.1.8, 8.3.1.1.10.3, 8.3.1.2.6, 8.3.7.5, 9.3.1, 9.3.1.1 — 9.3.1.3, 9.3.9.3, 9.3.12.4, 11.1.2.1, 11.3.1 — 11.3.1.1, 11.3.2 — 11.3.4, Appendix 1

Person in charge: Anatoly F. Remarchuk 381 +7 (812) 605-05-15

"Thesis" System No. 18390 (18-18201) of 25/01/2018

Appendix
to Circular Letter
No. 381-08-1120 dated 05.04.2018

RULES FOR TECHNICAL SUPERVISION DURING CONSTRUCTION OF SHIPS AND MANUFACTURE OF MATERIALS AND PRODUCTS FOR SHIPS, 2017, ND No. 2-020101-040

PART I. GENERAL REGULATIONS FOR TECHNICAL SUPERVISION

8 RECOGNITION OF SERVICE SUPPLIERS

8.1 GENERAL

Table 8.1.1. Code **22006002MK**. Kind of activity shall be amended to read:

22006002MK	servicing and testing of radio equipment on board ships or mobile offshore drilling units and fixed off shore platforms for compliance with the requirements of SOLAS 74, as amended (preliminary survey of radio equipment)

Table 8.1.1. Code **22005011**. Kind of activity shall be amended to read:

22005011	weak link, automatic gas inflation system, embarkation and pilot ladders, lifelines

8.3 SPECIAL REQUIREMENTS

Para 8.3.1.1.8 shall be amended to read:

"8.3.1.1.8 Details of Category I TM firm recognition.

TM firm recognition and issuance of the Recognition Certificate (СП) (form 7.1.4.2) are conditional on a practical demonstration of thickness measurements on board the ship performed under supervision of the RS surveyor, as well as satisfactory reporting being carried out based on the results of thickness measurement.

The Register shall issue the Certificate of Vocational Training (СПП) (form 7.1.34) to the operator/supervisor who has carried out thickness measurements confirming his/her appropriate qualification for carrying out thickness measurements on ships in compliance with the RS normative documents.

An entry on the type of service shall be made in the Annex to the Recognition Certificate (СП) reading as follows: "Category I: thickness measurements under supervision of the RS surveyor on board all ships regardless of their gross tonnage". During survey of recognized TM

firms for renewal of the Recognition Certificate (СП), it shall be confirmed that they comply with the applicable requirements of the RS normative documents concerning the TM firm recognition, and that the residual thickness measurements during the period of validity of the Recognition Certificate (СП) have been carried out on particular ships under supervision of the surveyors to the Register or under supervision of the surveyors to ACS — IACS member whose Recognition Certificates (СП) are also available at the TM firm. It shall be also confirmed that thickness measurement reports have been duly signed and stamped by the RS or ACS — IACS member surveyors. Particular attention shall be paid to the relevance of the list of the TM firm operators/supervisors and to the availability of the necessary documents confirming the NDT personnel qualification".

Para 8.3.1.1.10.3 shall be amended to read:

"**8.3.1.1.10.3** Prior to issuance of a new Recognition Certificate (СП) to a TM firm or renewal of a valid one, the RS surveyor shall check the information on cancellation of the TM firm recognition by ACS on the RS internal website in Section "Information Systems/Industry Database/Information on Supervision in Industry/List of TM Firms Recognized by Other Classification Societies, whose Certificates are Cancelled" by link: *http://gur.rs-head.spb.ru/win/survey/sto/tmcan.htm.* In cases where the RS surveyor reveals that the recognition of any TM firm has been cancelled by ACS, he/she (if necessary) may contact RHO for further instructions on this occasion".

Para 8.3.1.2.6 shall be amended to read:

"**8.3.1.2.6** Details of Category II firm recognition.

Upon reviewing the submitted documents with satisfactory results, the TM firm shall be audited to ascertain that the supplier (TM firm) is duly organized and managed in accordance with the submitted documents, and is capable of rendering the services which recognition of supplier (TM firm)/issuance of the Recognition Certificate (СП) is required.

The TM firm recognition and issuance of the Recognition Certificate (СП) are conditional on a practical demonstration of thickness measurement on board the ship performed under supervision of the RS surveyor, as well as satisfactory reporting being carried out based on the NDT results. Upon satisfactory completion of survey of the TM firm, the demonstration test and proper reporting, the Register shall issue relevant reports on survey and a Recognition Certificates (СП) stating that the procedures and methods for carrying out thickness measurements used by the TM firm have been recognized by the Register and may be accepted and used by the RS surveyors in making decisions during ship surveys. The following shall be specified in the Appendix to the Recognition Certificate (СП) (form 7.1.4.2):

"22001001 — Category II: thickness measurements under supervision of the RS Surveyor on fishing vessels regardless of their gross tonnage and non-**ESP** ships with less than 500 gross tonnage". The Register shall issue the Certificate of Vocational Training (СПП) (form 7.1.34) to the operator who has carried out thickness measurements confirming his/her training in thickness measurements on board ships as per the RS normative documents.

During survey of recognized TM firms for renewal of the Recognition Certificate (СП), it shall be confirmed that they comply with the applicable requirements of the RS normative documents concerning the TM firm recognition, and that the residual thickness measurements during the period of validity of the Recognition Certificate (СП) have been carried out on particular ships under supervision of the surveyors to the Register or under supervision of the surveyors to ACS — IACS member whose Recognition Certificates (СП) are also available at the TM firm. It shall be verified that thickness measurement reports are signed and sealed by the RS or ACS surveyors. Special consideration shall be given to the relevance of the list of operators employed in the TM firm and availability of required documents confirming the qualification of NDT personnel.

The Recognition Certificate (СП) shall be renewed according to Section 3.

The Register shall be immediately notified of any amendment made to the system for service rendering by the supplier, if any. The repeated check may be required as deemed necessary by the Register.

The recognition may be cancelled in cases specified in 3.6.

The Register reserves its right to cancel the recognition.

The supplier whose recognition was canceled may apply for re-recognition, provided it has corrected the non-conformances, which resulted in cancellation, and the Register is able to confirm it has effectively implemented the corrective action".

Para 8.3.7.5 shall be deleted.

9 RECOGNITION OF TESTING LABORATORIES

9.3 SPECIAL REQUIREMENTS

Para 9.3.1 shall be amended to read:

"**9.3.1** Special requirements for testing laboratories engaged in penetrant testing (PT), radiographic testing (RT), ultrasonic testing (UT), magnetic particle testing (MT) of materials, products, weld quality (code 21001700)".

New **para 9.3.1.1** shall be introduced reading as follows:

"**9.3.1.1** Non-destructive testing and quality assessment shall be performed by specialists who have passed the appropriate training, have the proper qualification and practical experience in a particular NDT method which shall be documented.

Assessment of the qualification level and certification of personnel involved in non-destructive testing shall be performed in accordance with requirements of national standards (GOST R

ISO 9712) unified with ISO 9712 or EN 473, as well as other requirements recognized by the Register.

Bodies operating certification of persons in non-destructive testing shall comply with the requirements of the international standard ISO/IEC 17024".

Existing **paras 9.3.1.1 — 9.3.1.3** shall be renumbered as **paras 9.3.1.2 — 9.3.1.4** accordingly.

Para 9.3.9.3 shall be introduced reading as follows:

"**9.3.9.3** The testing laboratory shall provide identification and recording of representative samples; identification, recording and storage of test samples prepared from representative samples. Storage conditions shall ensure sample property maintenance so as to enable carrying out of check tests. The minimum sample storage period shall be as follows:
.1 for representative samples for flow moisture tests — at least 9 months;
.2 for representative samples for testing for moisture content — prior to ship discharge but not less than 3 months;
.3 for representative samples for other tests (for determination of the particle size distribution, stowage factor, etc.) — prior to ship discharge but not less than 1 month".

Para 9.3.12.4 shall be introduced reading as follows:

"**9.3.12.4** The testing laboratory shall provide identification and recording of representative samples; identification, recording and storage of test samples prepared from representative samples. Storage conditions shall ensure sample property maintenance so as to enable carrying out of check tests. The minimum sample storage period shall be as follows:
.1 for representative samples for flow moisture tests — at least 9 months;
.2 for representative samples for testing for moisture content — prior to ship discharge but not less than 3 months;
.3 for representative samples for other tests (for determination of the particle size distribution, stowage factor, etc.) — prior to ship discharge but not less than 1 month".

11 AUDITS OF FIRMS

11.1 GENERAL

Para 11.1.2.1 shall be deleted.

11.3 SPECIAL REQUIREMENTS

Paras 11.3.1 — 11.3.1.1 shall be deleted.

Paras 11.3.2 — 11.3.4 shall be renumbered as **paras 11.3.1 — 11.3.3** accordingly.

APPENDIX 1. NOMENCLATURE OF ITEMS OF THE REGISTER TECHNICAL SUPERVISION

Code 0705000 shall be amended to read:

07050000	Bulkhead seals and glands	P	-	C3	-	P	P	-

Code 09010026 shall be amended to read:

09010026	Hydraulic pipes and high pressure flexible joints	P	-	W[8]	-	-	-	-

Code 09011902 shall be amended to read:

09011902	fuel valves	P	-	W[8]	-	-	P	P

Code 13510000 shall be amended to read:

13510000	wire ropes	P	СПИ	C3	-	-	-	-

Codes 19020200МК, 19030100МК, 19030202МК, 19040000МК, 19080000МК, 19090000МК, 19090001МК shall be amended to read:

19020200МК	15 ppm bilge separators (IMO resolution MEPC.107(49))	P	СОТО+СТО	C3	-	P	P	P
19030100МК	Oil discharge monitoring and control systems for oil tankers (IMO resolution MEPC.108(49) as amended)	P	СОТО+СТО	C3	-	P	P	P
19030202МК	15 ppm bilge alarms (IMO resolution MEPC.107(49))	P	СОТО+СТО	C3	-	P	P	P
19040000МК	Oil/water interface detectors in slop tanks	P	СОТИ+СТО	C3	-	P	P	P

19080000МК	Incinerators	P	COTO+CTO	C3	-	P	P	P
19090000МК	Sewage treatment plants (IMO resolution MEPC.227(64) as amended)	P	COTO+CTO	C3	-	P	P	P
19090001МК	Sewage treatment plants (IMO resolution MEPC.159(55))	P	COTO+CTO	C3	-	P	P	P
19220000МК	Ballast water management systems (IMO resolution MEPC.174(58))	P	COTO+CTO	C3	-	P	P	P

Footnote[1] shall be amended to read:

"[1]Type of technical supervision is based on the equipment purpose".

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