

RULES

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

PART II TECHNICAL DOCUMENTATION

ND No. 2-020101-139-E



St. Petersburg
2021

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

Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships have been approved in accordance with the established approval procedure and come into force on 1 January 2021.

The present edition is based on the latest version of the Rules, 2020.

The Rules are published in the following parts:

Part I "General Regulations for Technical Supervision";

Part II "Technical Documentation";

Part III "Technical Supervision during Manufacture of Materials";

Part IV "Technical Supervision during Manufacture of Products".

The Rules are published in electronic format in Russian and English.

REVISION HISTORY¹

(purely editorial amendments are not included in the Revision History)

Amended paras/chapters/sections	Information on amendments	Number and date of the Circular Letter	Entry-into-force date
Para 3.7	Requirements have been specified for the RS consideration of the possibility to apply national or international standards as well as standards of firms containing norms and requirements for items of the RS technical supervision	312-12-1529c of 18.03.2021	19.04.2021
Para 3.8	Para has been specified regarding necessity of type approval for programs used for calculations	312-12-1564c of 26.05.2021	01.07.2021
Para 3.17	Para has been specified in accordance with new revision of IACS procedural requirement (PR) 1B (Rev.6 Nov 2020)	312-12-1500c of 19.01.2021	01.02.2021
Para 4.1	Wording of the para has been specified in order to rule out possible double interpretation	312-12-1529c of 18.03.2021	19.04.2021
Para 5.10	Para has been specified regarding applicability of RS rules during review of documentation on products	312-12-1615c of 16.08.2021	01.10.2021
Section 7	Section has been completely revised	312-12-1529c of 18.03.2021	19.04.2021
Para 8.2	References to stamps applied during approval of documentation within dual classification of a ship with another classification society have been specified	312-12-1476c of 02.12.2020	01.01.2021

¹ Amendments and additions introduced at re-publication or by new versions based on circular letters or editorial amendments.

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Amended paras/chapters/sections	Information on amendments	Number and date of the Circular Letter	Entry-into-force date
Para 8.3.2	Cases for putting stamps on normative documents have been specified	312-12-1529c of 18.03.2021	19.04.2021
Section 9	Section has been renamed	312-12-1500c of 19.01.2021	01.02.2021
Para 9.1	Para has been specified regarding activities of the RS Branch Office, which carries out technical supervision during construction, aimed at control of introduction of necessary amendments into documentation approved earlier	312-12-1500c of 19.01.2021	01.02.2021
Para 12.1.1	Para has been specified regarding necessity of Register approval for software capable of performing calculations according to RS rules and guidelines	312-12-1564c of 26.05.2021	01.07.2021
Para 12.1.2	Para has been specified regarding necessity of Register approval for software used for counting assistance. Footnote has been introduced with a list of software, the use of which for performing calculations eliminates the need for Register to carry out control calculations	312-12-1564c of 26.05.2021	01.07.2021
Para 12.1.4	Para has been specified regarding distribution of responsibility for approval of software depending on its purpose	312-12-1564c of 26.05.2021	01.07.2021
Para 12.1.6	References to new Chapter 12.3 and codes of nomenclature of items of RS technical supervision have been introduced	312-12-1564c of 26.05.2021	01.07.2021

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Amended paras/chapters/sections	Information on amendments	Number and date of the Circular Letter	Entry-into-force date
Chapter 12.2	Chapter heading has been specified. The structure of Chapter has been revised. Requirements have been specified in accordance with IMO resolution MSC.415(97) and IACS UR L5 (Rev.4 June 2020)	312-12-1564c of 26.05.2021	01.07.2021
Para 12.2.3.2.1	Para has been specified regarding availability of the Type Approval Certificate for Software	312-12-1476c of 02.12.2020	01.01.2021
Para 12.2.4.1	Amendment has been introduced regarding the necessity for the shore-based emergency response service to have the Certificate of Firm Conformity	312-12-1476c of 02.12.2020	01.01.2021
Para 12.2.11.2.3	Amendment has been introduced regarding the verification of availability of information relating to a shore-based emergency response service recorded in the Operational manual for fire and flooding casualty cases and safe return to port operation, if applicable, aboard the passenger ship	312-12-1476c of 02.12.2020	01.01.2021
Chapter 12.3	New Chapter has been introduced containing requirements to software for strength calculations in connection with the transfer from Appendix 2 to Part II "Hull" of the Rules for the Classification and Construction of Sea-Going Ships	312-12-1564c of 26.05.2021	01.07.2021

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Amended paras/chapters/sections	Information on amendments	Number and date of the Circular Letter	Entry-into-force date
Appendix 1, Table 1	<p>Items 3, 22 — 26, 47 have been specified regarding document names, stamps and their types, and references to applicable requirements. New item 49 "Fire Safety Training Manual. Fire Safety Operational Booklets" has been introduced.</p> <p>Items 49 — 55 and references thereto have been renumbered 50 — 56 accordingly.</p> <p>Existing item 56 has been deleted. Items 52 (former item 51), 61, 84, 138 — 141 have been amended.</p> <p>New items 192 — 194 have been introduced relating to the documentation for passenger ships regarding fire and flooding casualty cases and safe return to port operation</p>	312-12-1476c of 02.12.2020	01.01.2021
Appendix 1, Table 1	Numbering of Table items has been amended	312-12-1571c of 28.05.2021	28.05.2021
Appendix 1, Table 1, items 2.11 and 2.13	Applicable requirements of RS normative documents for loading instruments have been specified	312-12-1615c of 16.08.2021	01.10.2021
Appendix 1, Table 1	Section "Electrical and electronic equipment" has been supplemented with document "Cable Transit Seal Systems Register" in accordance with IACS UR Z28 (Oct 2020)	312-12-1571c of 28.05.2021	01.07.2021
Appendix 1, Table 1	Section "For GFS (Gas Fuelled Ship)" has been supplemented with document "Inspection/survey plan for the liquefied gas fuel containment system"	312-12-1571c of 28.05.2021	28.05.2021

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Amended paras/chapters/sections	Information on amendments	Number and date of the Circular Letter	Entry-into-force date
Appendix 1, Table 1	Item 35.1 of Section "For descriptive notation gas carrier according to the Rules for the Classification and Construction of Ships Carrying Liquefied Gases in Bulk (LG Rules)" has been specified regarding Flag State MA approval and supplemented with the reference to the Rules for the Classification and Construction of Ships Carrying Liquefied Gases in Bulk	312-12-1571c of 28.05.2021	28.05.2021
Appendix 1, Table 1, Section 44	New section with information on operational documentation on cyber safety has been introduced	312-12-1615c of 16.08.2021	01.10.2021

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 The provisions of this Part are also applied in review of the technical documentation on ships in service, including documents on conversion, modification, changes, 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 in the Russian or English language.

Documents shall be submitted in any way agreed with the Register, in electronic form in PDF format to ensure downloading with a view to having unrestricted off-line storage and stamping as per results of the review.

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 documentation as stated in 3.1.2 and 4 (as applicable), Part I "Classification" of the Rules for the Classification and Construction of Sea-Going Ships, applicable sections of Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships, 2.1.2, Part I "General" of the Rules for the Equipment of Sea-Going Ships, 1.4 "Technical documentation" of the Rules for the Cargo Handling Gear 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](#)). Such documents are not subject to approval, and on the results of their review a written conclusion (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 at least the following information:

list of comments to be fulfilled at subsequent stages of the design;

information on new RS requirements to be implemented at subsequent stages of the documentation review;

list of limitations and conditions of use of the proposed new technical solutions based on their engineering evaluation and the research work results.

Due to the novelty of the proposed technical 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 RS in each particular case.

Technical documentation shall contain general information on the item, drawings, specifications, engineering review results, test reports, etc., where applicable.

3.7 The Register can consider the possibility of application of the national or international standards as well as standards of firms containing norms and requirements for items of the Register technical supervision. Such standards may be reviewed in the following cases:

if the Register does not have the standards available, they shall be submitted by the applicants together with the technical documentation on items of the Register technical supervision and reviewed as part of that documentation. The possibility of application of the standards is confirmed by the approval of the mentioned documentation containing, inter alia, the version of the applicable standard;

standards are reviewed during survey of firms and processes. The agreement procedure for such cases is stated in the relevant RS rules and guidelines.

The standards are not reviewed by the Register in isolation from their subjects.

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.

The requirements regarding the approval of software are specified in [Section 12](#).

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.

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 Approval (agreement) relates only to that part of technical documentation that is covered by the RS requirements.

3.12 Equivalences, deviations from the RS classification requirements, alternative design and arrangements.

3.12.1 Where technical documentation contains technical solutions that differ from those regulated by the requirements of international conventions (equivalences — refer to 1.1 of the General Regulations for the Classification and Other Activity), every such solution shall be agreed upon by the Administration in accordance with the instructions contained in the conventions. Each equivalence shall be agreed upon by the Administration on a case by case basis.

3.12.2 Where technical documentation contains technical solutions that differ from those regulated by the RS classification requirements (deviations — refer to 1.1 and 1.3.4 of the General Regulations for the Classification and Other Activity), the designer shall submit to the

Register the appropriate technical justification for such solutions. The deviations agreed upon by the Register shall be included in the List of Deviations from the RS Rules.

3.12.3 Where technical documentation contains alternative design and arrangements, they shall be agreed according to the procedure prescribed in 3.1.8, Part I "Classification" of the Rules for the Classification and Construction of Sea-Going Ships. Information on the agreed alternative design and arrangements shall not be included in the List of Deviations from the RS Rules, if any.

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.

3.17 During dual classification of a ship the scope of work and the authority of each society for technical supervision during design, construction of ship, certification of materials and products for ships, and survey upon completion of ship construction are governed by the Dual Classification Agreement (refer to Section 16, Part I "General Regulations for Technical Supervision").

3.18 In case of flag change before completion of the ship construction or before completion of the initial survey of the ship under construction, the technical documentation that is subject to approval upon the Flag State MA authorization shall be re-approved by the Register on behalf of the new Flag State MA. The RS surveyor shall supervise the fulfillment of the terms of the Agreement between the RS and flag MA, as well as additional MA instructions, if any.

3.19 Requirements for the scope of technical documentation of a ship under conversion, repair or renovation, as well as during RS class assignment, reassignment or class transferring into the RS Class for a ship in service, are given in relevant sections of the Rules for the Classification Surveys of Ships in Service, Guidelines on Technical Supervision of Ships in Service.

At the same time, technical documentation for conversion of single-hull tankers to double-hull tankers or bulk carriers shall meet the relevant requirements of these Rules, applicable requirements of the Rules for the Classification and Construction of Sea-Going Ships, international conventions and IACS UI SC226 (Rev.1 Dec 2012) — refer to section "Publications" of the website www.iacs.org.uk.

4 TECHNICAL DOCUMENTATION ON SHIPS

4.1 Distribution of authority to review technical documentation on ships.

4.1.1 Plan approval documentation, technical designs, 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.

4.1.2 The following documents are subject to review by the RS Branch Offices without the RHO authorization:

- detailed design documentation for a ship under construction;
- projects involving minor conversion (outfitting, modernization);
- technical documentation, including documents specified in [4.1.1](#), 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);
- operational documentation of ships under construction;
- mooring and sea trials programmes.

The gross tonnage shall be taken based on the design ship's tonnage calculation agreed by the Register.

4.2 Requests for review of technical 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, technical designs, 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 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 design submittal (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 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 Technical documentation shall be submitted in electronic form according to [3.3](#).

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 A set of copies of the report documents for the ship that contain information on actual ship's structures, installed machinery, arrangements, equipment, systems, etc. shall be submitted to the RS after completion of its construction. The terms of submission and the scope of documentation shall be agreed upon with the RS Branch Office, which carries out technical supervision during construction of ship.

4.6 A set of ship operational documentation (refer to [Appendix 1](#), as applicable) shall be submitted to the RS for review after the completion of the ship's construction. At the initial stage of construction or earlier (when entering into the Agreement), the shipyard shall be informed by the Register about the need to provide the RS approved operational documentation to the RS surveyor on board the ship before completion of the initial survey after construction. The terms of submission and the scope of documentation shall be agreed upon with the RS Branch Office, which carries out technical supervision during construction of ship.

4.7 The repair technical documentation shall be reviewed without the RHO authorization by the RS Branch Offices, which perform the supervision of the ship repair in accordance with the requests by the shipowner or the enterprises authorized by the shipowner.

4.8 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.

The procedure, place, terms and other conditions of detailed design documentation review by the Register shall be determined upon agreement with the RS Branch Office responsible for review of detailed design documentation.

4.9 Documents developed as a part of the plan approval documentation by the equipment suppliers and/or subcontractors shall be submitted for approval by the general designer under its covering letter, or a letter of the general designer shall be enclosed with the documentation to confirm its approval.

5 TECHNICAL DOCUMENTATION ON PRODUCTS

5.1 The Register reviews the technical documentation on products specified in the RS Nomenclature (refer to Appendix 1, Part I "General Regulations for Technical Supervision") taking into account provisions of Section 5 of the above stated Part.

5.2 Technical documentation on products shall be submitted for review in electronic form according to [3.3](#).

The Register confirms approval/agreement of technical documentation on products by issuing a conclusion letter and/or putting on stamps [8.2-1](#) or [8.2-3](#) accordingly, or [8.2-6](#) for various information documents (refer to [8.3.4](#)). Where the technical documentation fails to comply with the RS requirements, the comments shall be fulfilled by the designer (manufacturer) prior to its final approval (agreement).

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 may be 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.

5.10 Technical documentation submitted to the Register shall be reviewed for compliance with the applicable requirements of the RS rules being in force on the date of the customer's request for documentation review by the Register, unless specified otherwise in the relevant sections of the RS rules. For products supplied to ships under construction for which the contract for construction has been signed, the documentation shall be reviewed for compliance with the applicable requirements of the RS rules being in force on the date of contract for construction, taking into account the requirements of international instruments

being in force on the date of the customer's request for documentation review by the Register (if applicable).

5.11 Duration of the technical documentation review shall comply with that stated in [4.8](#).

5.12 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 The Register reviews the technical documentation on products specified in the RS Nomenclature (refer to Appendix 1, Part I "General Regulations for Technical Supervision") taking into account provisions of [Section 5](#) of the above stated Part. Technical documentation on materials shall be submitted to the Register in electronic form in PDF format for review and approval.

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 — 5.11](#) concerning the products are also applicable to materials as far as it is practicable and reasonable.

7 NORMATIVE DOCUMENTS

7.1 National and international standards ([refer to 3.7](#)) as well as standards of firms and other normative documents shall be submitted for review as part of the works following a request for technical supervision of the subjects of these standards. The standards shall be submitted for review in full, without excluding their integral parts. The results of considering the possibility of application of the submitted standards shall be finalized by the Register in the following ways:

through the approval of the technical documentation (drawings, specifications, etc.) on the subject of the standards. In this case, the documentation on the subject shall contain references to the applicable standard with indication of its year of publication/version;

through a separate RS conclusion;

by other methods specified in the relevant RS normative documents.

Unless otherwise agreed, no Register stamps are put on the standards.

7.2 On requests of state bodies and Administrations, firms and organizations, the Register may review newly developed standards prior to their publication. In this case, the Register provides an expert opinion without any conclusion on agreement.

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.

7.3 The requirements for the item of technical supervision specified in the normative documentation shall be equivalent to or more strict than those of the Register.

7.4 If the normative documentation contains relaxation in regard to the scope of requirements as compared to the RS rules (e.g. prescribed tests missing, insufficient scope of non-destructive testing, smaller quantities of samples taken, etc.), the applicant shall amend it or submit additional technical documentation (test programme, drawing, specification, procedure, etc.), taking into account the revealed discrepancy and making up for the missing scope of the required RS technical supervision.

7.5 The normative documentation on materials shall be reviewed for compliance with the RS normative documents, the publication year of which corresponds to the year of submission of the request for review.

At the request of the applicant, if the scope of requested works involves issuing of RS conclusion/documents of compliance with the RS requirements at the time of completion of the requested works, the normative documentation on materials and results of technical supervision are subject to re-review for compliance with the current requirements of the Register.

8 PREPARATION OF RESULTS OF TECHNICAL DOCUMENTATION REVIEW

8.1 Depending on the type of documentation, the results of the technical documentation review by the Register are finalized by appropriate stamping of the documents and/or drawing up 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 stamps shown in [Figs. 8.2-1 — 8.2-11](#). In case of documentation review within dual classification of a ship with another classification society (hereinafter referred to as "ACS") and further assignment of character of classification according to 2.2.2.4, Part I "Classification" of the Rules for the Classification and Construction of Sea-Going Ships, the stamps shown in [Figs. 8.2-6 — 8.2-11](#) are applied.



<p style="text-align: center;">ГЛАВНОЕ УПРАВЛЕНИЕ HEAD OFFICE</p> <p style="text-align: center;">PC RS</p> <p style="text-align: center;">ОДОБРЕНО APPROVED</p> <p style="text-align: center;">письмом by letter</p> <p style="text-align: center;">No. _____</p> <p style="text-align: center;">дата / date _____</p> <p style="text-align: center;"> 312-01</p>	<p style="text-align: center;">120 ПОДРАЗДЕЛЕНИЕ BRANCH OFFICE</p> <p style="text-align: center;">PC RS</p> <p style="text-align: center;">ОДОБРЕНО APPROVED</p> <p style="text-align: center;">письмом by letter</p> <p style="text-align: center;">No. _____</p> <p style="text-align: center;">дата / date _____</p> <p style="text-align: center;"> 001</p>
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Fig. 8.2-1



<p style="text-align: center;">ГЛАВНОЕ УПРАВЛЕНИЕ HEAD OFFICE</p> <p style="text-align: center;">PC RS</p> <p style="text-align: center;">ОДОБРЕНО APPROVED</p> <p style="text-align: center;">при условии subject выполнения to comments замечаний письма in letter</p> <p style="text-align: center;">No. _____</p> <p style="text-align: center;">дата / date _____</p> <p style="text-align: center;"> 312-02</p>	<p style="text-align: center;">120 ПОДРАЗДЕЛЕНИЕ BRANCH OFFICE</p> <p style="text-align: center;">PC RS</p> <p style="text-align: center;">ОДОБРЕНО APPROVED</p> <p style="text-align: center;">при условии subject выполнения to comments замечаний письма in letter</p> <p style="text-align: center;">No. _____</p> <p style="text-align: center;">дата / date _____</p> <p style="text-align: center;"> 002</p>
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Fig. 8.2-2



<p style="text-align: center;">ГЛАВНОЕ УПРАВЛЕНИЕ HEAD OFFICE</p> <p style="text-align: center;">PC RS</p> <p style="text-align: center;">СОГЛАСОВАНО AGREED</p> <p style="text-align: center;">письмом by letter</p> <p style="text-align: center;">No. _____</p> <p style="text-align: center;">дата / date _____</p> <p style="text-align: center;"> 312-03</p>	<p style="text-align: center;">120 ПОДРАЗДЕЛЕНИЕ BRANCH OFFICE</p> <p style="text-align: center;">PC RS</p> <p style="text-align: center;">СОГЛАСОВАНО AGREED</p> <p style="text-align: center;">письмом by letter</p> <p style="text-align: center;">No. _____</p> <p style="text-align: center;">дата / date _____</p> <p style="text-align: center;"> 003</p>
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Fig. 8.2-3

ГЛАВНОЕ УПРАВЛЕНИЕ HEAD OFFICE	120 ПОДРАЗДЕЛЕНИЕ BRANCH OFFICE
PC RS СОГЛАСОВАНО AGREED	PC RS СОГЛАСОВАНО AGREED
при условии выполнения замечаний письма No. _____ 312-04 дата / date _____	при условии выполнения замечаний письма No. _____ 004 дата / date _____

Fig. 8.2-4

ГЛАВНОЕ УПРАВЛЕНИЕ HEAD OFFICE	120 ПОДРАЗДЕЛЕНИЕ BRANCH OFFICE
PC RS ОДОБРЕНО APPROVED	PC RS ОДОБРЕНО APPROVED
Российским морским регистром судоходства по поручению Морской администрации _____ _____ 312-05	by the Russian Maritime Register of Shipping under the authority of Maritime Administration of _____ _____ 005

Fig. 8.2-5

ГЛАВНОЕ УПРАВЛЕНИЕ HEAD OFFICE	120 ПОДРАЗДЕЛЕНИЕ BRANCH OFFICE
PC RS ДЛЯ ИНФОРМАЦИИ FOR INFORMATION	PC RS ДЛЯ ИНФОРМАЦИИ FOR INFORMATION
письмо PC / RS letter No. _____ _____ 312-06 дата / date _____	письмо PC / RS letter No. _____ _____ 006 дата / date _____

Fig. 8.2-6

HEAD OFFICE	120 BRANCH OFFICE
RS APPROVED	RS APPROVED
in scope of Dual classification Agreement with _____ _____ _____ 312-07	in scope of Dual classification Agreement with _____ _____ _____ 007

Fig. 8.2-7

<p style="text-align: center;">HEAD OFFICE</p> <p>RS</p> <p style="text-align: center;">APPROVED</p> <p>in scope of Dual classification Agreement with _____</p> <p>subject to comments in letter</p> <div style="display: flex; align-items: center;"> <p>No. _____</p> </div> <div style="display: flex; align-items: center;"> <p>date _____</p> </div> <p style="font-size: small;">312-08</p>	<p style="text-align: center;">120 BRANCH OFFICE</p> <p>RS</p> <p style="text-align: center;">APPROVED</p> <p>in scope of Dual classification Agreement with _____</p> <p>subject to comments in letter</p> <div style="display: flex; align-items: center;"> <p>No. _____</p> </div> <div style="display: flex; align-items: center;"> <p>date _____</p> </div> <p style="font-size: small;">008</p>
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Fig. 8.2-8

<p style="text-align: center;">HEAD OFFICE</p> <p>RS</p> <p style="text-align: center;">AGREED</p> <p>in scope of Dual classification Agreement with _____</p> <p>by letter No. _____</p> <div style="display: flex; align-items: center;"> <p>date _____</p> </div> <p style="font-size: small;">312-09</p>	<p style="text-align: center;">120 BRANCH OFFICE</p> <p>RS</p> <p style="text-align: center;">AGREED</p> <p>in scope of Dual classification Agreement with _____</p> <p>by letter No. _____</p> <div style="display: flex; align-items: center;"> <p>date _____</p> </div> <p style="font-size: small;">009</p>
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Fig. 8.2-9

<p style="text-align: center;">HEAD OFFICE</p> <p>RS</p> <p style="text-align: center;">AGREED</p> <p>in scope of Dual classification Agreement with _____</p> <p>subject to comments in letter</p> <div style="display: flex; align-items: center;"> <p>No. _____</p> </div> <div style="display: flex; align-items: center;"> <p>date _____</p> </div> <p style="font-size: small;">312-10</p>	<p style="text-align: center;">120 BRANCH OFFICE</p> <p>RS</p> <p style="text-align: center;">AGREED</p> <p>in scope of Dual classification Agreement with _____</p> <p>subject to comments in letter</p> <div style="display: flex; align-items: center;"> <p>No. _____</p> </div> <div style="display: flex; align-items: center;"> <p>date _____</p> </div> <p style="font-size: small;">010</p>
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Fig. 8.2-10

<p style="text-align: center;">HEAD OFFICE</p> <p>RS</p> <p style="text-align: center;">DULY NOTED</p> <p>in scope of Dual classification Agreement with _____</p> <p>by letter No. _____</p> <div style="display: flex; align-items: center;"> <p>date _____</p> </div> <p style="font-size: small;">312-11</p>	<p style="text-align: center;">120 BRANCH OFFICE</p> <p>RS</p> <p style="text-align: center;">DULY NOTED</p> <p>in scope of Dual classification Agreement with _____</p> <p>by letter No. _____</p> <div style="display: flex; align-items: center;"> <p>date _____</p> </div> <p style="font-size: small;">011</p>
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Fig. 8.2-11

8.3 The stamp to be applied is determined by the Register depending on a document type, result of its review as well as participation of ACS in the documentation review within dual classification.

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, preliminary fire plan and other similar documents of a preliminary nature, various

calculations, descriptions, technical backgrounds, lists of spare parts, research reports and test results, etc. These stamps may also be put on the normative documents (standards, including the shipyard and firm (manufacturer) standards, specifications, regulations, etc.) if the documents have been developed for a particular project and provide data required within the technical documentation of the project;

.3 stamps shown in [Fig. 8.2-5](#) are put on the documents approved on behalf of Administrations if it is regulated by the RS requirements;

.4 stamp shown in [Fig. 8.2-6](#) is put on the various information documents not subject to review for compliance with the RS requirements;

.5 stamps shown in [Figs. 8.2-7](#) and [8.2-8](#) are put on the structural drawings, (basic and functional) circuits, test programs, other similar documents reviewed by the Register together with ACS in the scope stipulated in the Dual Classification Agreement at assignment of character of classification according to 2.2.2.4, Part I "Classification" of the Rules for the Classification and Construction of Sea-Going Ships;

.6 stamps shown in [Figs. 8.2-9](#) and [8.2-10](#) are put on the List of Deviations from the RS Rules, various calculations, descriptions, technical backgrounds, 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.), reviewed by the Register together with ACS in the scope stipulated in Dual Classification Agreement at assignment of character of classification according to 2.2.2.4, Part I "Classification" of the Rules for the Classification and Construction of Sea-Going Ships;

.7 stamps shown in [Fig. 8.2-11](#) are put on the documents reviewed by ACS and not subject to review by the Register under the Dual Classification Agreement at assignment of character of classification according to 2.2.2.4, Part I "Classification" of the Rules for the Classification and Construction of Sea-Going Ships.

8.4 Stamp on the first page of electronic document certified by digital signature applies 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 (expert opinion) without stamping or signing the documents.

8.6 In case of negative results of review (the review status is "not approved"), the document is not stamped and the comments to the document are sent to the designer.

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"), a conclusion letter shall contain an entry on limitation of the material or product application by a particular ship project or hull numbers.

8.8 The comments raised in the course of approval of the plan approval documentation shall be fulfilled to the satisfaction of the Register.

The RS Branch Offices in charge of control over comments fulfillment shall communicate information on their fulfillment to the RS Branch Office, which has approved the plan approval documentation as a whole.

8.9 The detailed design documentation for a ship under construction as well as documentation on materials and products shall be approved without any comments. The approval is issued only upon fulfillment all the comments by the designer.

8.10 A set of the approved technical documentation together with a conclusion letter is sent to the customer 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.

8.11 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 a master copy.

8.12 The order of the technical documentation review in RHO and the RS Branch Offices is established by the appropriate RS internal normative documents (procedures, instructions).

9 DURATION OF VALIDITY OF TECHNICAL DOCUMENTATION APPROVAL (AGREEMENT). PROCEDURE FOR INTRODUCTION OF AMENDMENTS INTO APPROVED (AGREED) DOCUMENTATION

9.1 The period of validity of the Register approval for plan approval documentation as well as technical design is limited by the period of validity of the contract 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. For this purpose, the Branch Office carrying out technical supervision during construction of the ship shall analyse whether the amendments and additions to the RS requirements as well as the RS circulars that came into force after approval (agreement) of design documentation are to be applied to the ship under construction and, if such amendments and additions are applicable, it shall immediately inform the firm, with which the agreement on the classification of ship under construction has been concluded, that they are to be mandatorily adhered to until completion of the ship's delivery, and also monitor adherence to such amendments and additions. Amendments shall be introduced into the technical documentation in accordance with [Section 10](#).

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 and/or recognition of a manufacturer (refer to Section 1, Part I "General Regulations for Technical Supervision"), including technical 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 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 — 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 GRANTING THE SHIP UNDER CONSTRUCTION WITH AN EXEMPTION (WAIVER) FROM COMPLIANCE WITH THE REQUIREMENTS OF INTERNATIONAL CONVENTIONS

11.1 GENERAL

11.1.1 Review to confirm the possibility of granting the ship under construction with an exemption (waiver) from compliance with the requirements of international conventions and specifying the conditions thereof is entirely an exclusive right of the Administration.

11.1.2 If necessary, the Register shall provide the Administration with the conclusion on the conditions for granting an exemption (waiver) to a ship under construction from compliance with the requirements of the international conventions. The procedure for the Register in this case, for ships flying the flag of the Russian Federation (RF) shall be defined in [11.2](#) and for ships flying the flag other than the RF flag — in [11.3](#).

11.2 GRANTING THE SHIP UNDER CONSTRUCTION FOR THE RF FLAG WITH AN EXEMPTION (WAIVER) FROM COMPLIANCE WITH THE REQUIREMENTS OF INTERNATIONAL CONVENTIONS

11.2.1 Granting the ship under construction for RF flag with an exemption (waiver) from compliance of the requirements of international conventions shall be performed compliant to the appropriate documents¹ of the Maritime Administration of the Russian Federation (RF MA).

11.2.2 The prospective shipowner or its legal representative (designer or shipyard) (hereinafter referred to as "the applicant") shall send an application for granting an exemption (waiver) to the RF MA² and a copy to RHO.

11.2.3 Within three working days from receipt of the copy of the application, RHO shall send it to the RS Branch Office for supervision during design to get a conclusion on the possibility of granting an exemption (waiver) indicating the conditions under which it may be granted. The preparation of such conclusion takes three working days.

11.2.4 The RS conclusion on the possibility of granting an exemption (waiver) indicating the conditions under which it may be granted, approved by the RS Director General, shall be sent to the RF MA².

11.2.5 Within three working days from receipt of the relevant decision of the RF MA², RHO shall inform about it the RS Branch Office for supervision during design, which shall immediately bring the decision of the RF MA² to the notice of the applicant and the RS Branch Office for supervision under construction.

¹ RF Government Regulation No. 1012 of December 24, 2008 "On granting the ship flying the RF flag with an exemption (waiver) from compliance with the requirements of the International Convention on Load Lines 1966, Convention on the International Regulations for Preventing Collisions at Sea, 1972, International Convention for the Prevention of Pollution from Ships, 1973 (as amended by Protocol of 1978 thereto) and the International Convention for the Safety of Life at Sea, 1974";

"Administration regulations of the Federal Agency for Maritime and River Transport on granting the ship with an exemption (waiver) from compliance with the requirements of the International Convention on Load Lines 1966, Convention on the International Regulations for Preventing Collisions at Sea, 1972, International Convention for the Prevention of Pollution from Ships 1973 (as amended by Protocol of 1978 thereto) and the International Convention for the Safety of Life at Sea, 1974" approved by Order of the Ministry of Transport of the Russian Federation No. 239 of July 17, 2012;

² The Federal Agency for Maritime and River Transport (Rosmorrechflot), and in addition, regarding the fishing vessels — the Federal Agency for Fishery (Rosrybolovstvo).

11.2.6 The decision of the RF MA¹ shall be included by the RS Branch Office for supervision under construction in the ship's file.

11.2.7 The decision of the RF MA¹ on granting an exemption (waiver) shall be issued in compliance with 4.3.4 of Part III "Survey of Ships in Compliance with International Conventions, Codes, Resolutions and Rules for the Equipment of Sea Going Ships" of the Guidelines on Technical Supervision of Ships in Service.

11.3 GRANTING THE SHIP UNDER CONSTRUCTION FOR THE FLAG OTHER THAN THE RF FLAG WITH AN EXEMPTION (WAIVER) FROM COMPLIANCE WITH THE REQUIREMENTS OF INTERNATIONAL CONVENTIONS

11.3.1 The prospective shipowner or his legal representative (designer or shipyard) (hereinafter referred to as "the applicant") shall send an application on granting an exemption (waiver) to the Administration and, at the applicant's discretion, a copy to the RS Branch Office for supervision during design. In this regard, the additional instructions of the Administration (if any) concerning the application form shall be taken into account.

11.3.2 When the Administration requests the RS opinion regarding the conditions of granting an exemption (waiver), the preparation of response shall not exceed 5 working days, and the review of such a request and sending the RS opinion regarding the conditions of granting an exemption (waiver) are the RHO responsibility.

11.3.3 When the decision of the Administration is sent to RS only, RHO within three working days shall inform about it the RS Branch Office for supervision during design, which shall immediately bring the decision of the Administration to the notice of the applicant and the RS Branch Office for supervision under construction.

11.3.4 When the decision of the Administration is sent to the applicant only, the latter shall inform the Register of such a decision. In this regard, the RS Branch Office/RHO Location on receipt of such information shall bring it to the notice of other interested RS Branch Offices/RHO Locations performing technical supervision during design and construction of the ship.

11.3.5 The decision of the Administration shall be included by the RS Branch Office for supervision under construction in the ship's file.

11.3.6 The decision of the Administration on granting an exemption (waiver) shall be issued in compliance with 4.3.4 of Part III "Survey of Ships in Compliance with International Conventions, Codes, Resolutions and Rules for the Equipment of Sea Going Ships" of the Guidelines on Technical Supervision of Ships in Service.

¹ The Federal Agency for Maritime and River Transport (Rosmorrechflot), and in addition, regarding the fishing vessels – the Federal Agency for Fishery (Rosrybolovstvo).

12 SOFTWARE

12.1 TYPE APPROVAL OF SOFTWARE

12.1.1 Software which is capable of performing calculations according to the RS rules and guidelines which results are part of technical documentation in accordance with [3.8](#), and which is related to codes 20100000, 20200000 according to the Nomenclature of items of the RS technical supervision, shall be approved by the Register as it pertains to the calculations according to the RS rules and guidelines.

12.1.2 The software used for counting assistance, which comes down to performance of a number of separate calculations for determination of auxiliary values, shall not be subject to approval by the Register. The software User Manual (or other documentation) shall confirm that the software used is suitable for performing the submitted calculations.

When submitting the results of finite element analyses and results of hydrodynamic calculations to the Register, the input data used (mathematical model of ship/structure/device) for the control calculations shall also be submitted¹. The format for providing such information is determined on a case-by-case basis.

12.1.3 The software which shall be approved, is submitted to the Register for review before its application.

In separate cases, the software may be submitted to the Register together with the technical documentation on the ship.

12.1.4 The software related to code 20100000 is approved by RHO. The software related to code 20200000 is approved by the RS Branch Office when duly authorized by and jointly with RHO.

12.1.5 The Type Approval Certificate for Software (СТОП) (form 6.8.5) is issued for the software reviewed and verified in accordance with the requirements of these Rules, for the period not exceeding 5 years.

Upon expiry of the validity period the Type Approval Certificate for Software (СТОП) is renewed on request of the software designer. Renewal shall be done within the period limited by thirty (30) days from the date of СТОП expiry. Upon expiry of this period, СТОП becomes invalid.

Validity of СТОП may be suspended for a period agreed upon with the software designer but not more than ninety (90) days in case the Register has not received a request before the СТОП expiry date.

12.1.6 Type approval of the design software for ship theory and strength calculations (code of the Nomenclature of items of the RS technical supervision 20101000) and onboard software for ship theory and strength calculations (code of the Nomenclature of items of the RS technical supervision 20102000) shall be carried out according to [12.2.2](#) and [12.3.2](#).

12.1.7 When submitting to the Register the calculations which are performed using the software being type approved by RS, a reference to the number of the Type Approval Certificate for Software (СТОП) (form 6.8.5) issued by the Register shall be made in these calculations.

12.1.8 The Type Approval Certificate for Software (СТОП) issued by the Register for a software loses its validity if changes affecting the subject agreed have been done in the software.

¹ Control calculations by the Register are not required if the calculations are carried out using the following software: ANSYS, NASTRAN, ABAQUS, FESTA, SCAD, LIRA, Anchored Structures, LS-DYNA, DIODORE, Zenit-95.

12.2 ONBOARD SOFTWARE FOR STABILITY CALCULATIONS

12.2.1 Definitions.

Onboard software for stability calculations (stability software) is a software which calculates the stability for actual loading condition and which is installed onboard of a ship and a floating unit.

Active software is a software that uses, data from sensors automatically reading the contents of tanks and other ship loading parameters as input information.

Passive software is a software that requires manual entry of input data for calculation.

12.2.2 General.

12.2.2.1 The technical documentation on software submitted for review shall include as follows:

name of the software;

User Manual;

results of test calculations carried out using the software;

input data for test calculations (ship's hull form data, compartmentation data, lines plan, offset tables, hydrostatic tables, capacity tables, etc.).

12.2.2.2 Test calculations may be performed on the basis of input data provided by the Register or selected by the software designer and agreed upon with the Register.

Test calculations shall be carried out for a minimum of two types of ships (tanker, bulk carrier, container ship, dry cargo ship, passenger ship). Where the software approval is required for only one type of ship, test calculations for a minimum of two ships of this type shall be submitted.

For approval of software which is based on a hull form model, test calculations shall be carried out for a minimum of three types of ships, or three different ships, if approval is required for only one type of ship.

12.2.2.3 The approval procedure includes verification for compliance of the results of test calculations and results of control calculations, performed by the Register, or contained in documentation approved earlier.

12.2.2.4 In case of satisfactory verifications results the Report (form 6.3.29) and Type Approval Certificate for Software (CTOP) (form 6.8.5) are issued.

12.2.2.5 For renewal of the Type Approval Certificate for Software (CTOP), the results of test calculations confirming that calculation procedure has not been changed since CTOP issue shall be submitted to the Register. Calculations approved by the Register and carried out during the period of validity of CTOP using the software, may be submitted for confirmation.

12.2.3 Onboard software approval for a specific ship.

12.2.3.1 For review of the onboard software, documentation specified in [12.2.2.1](#) and approved documentation on stability shall be submitted to the Register.

12.2.3.2 The approval procedure includes:

.1 verification of Type Approval Certificate for Software (CTOP) compliance (where available): software name including version number;

.2 verification that the following input data is consistent with the approved documentation:

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;

light ship displacement and centre of gravity derived from the most recently approved inclining test or light-weight check;

lines plan, offset tables or other suitable presentation of hull form data, if required;

compartment definitions, including frame spacing, and centres of volume, together with capacity tables (sounding/ullage tables), free surface corrections, if appropriate;

.3 verification that the following parameters of the test loading conditions are consistent with the approved documentation:

cargo and consumables distribution for each loading;

output data of calculations taking into account the acceptable tolerances stated in [12.2.11](#);

.4 verification that the software type is appropriate for the type of ship and stability calculations required;

.5 verification of general requirements under [12.2.9](#);

.6 verification of functional requirements under [12.2.10](#);

.7 verification that the User Manual is consistent with the requirements under [12.2.12](#).

12.2.3.3 The test loading conditions normally shall cover the range of load draughts from the deepest envisaged loaded condition to the light ballast 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 documentation on stability. For tankers and ships carrying grain in bulk at least one of the conditions shall include partially filled cargo spaces. Within the selected loading conditions each cargo hold shall be loaded at least once.

For Type 4 stability software ([refer to 12.2.8.5](#)), at least three damage cases shall be selected, each of them associated with at least three test loading conditions taken from the ship's approved Stability Booklet.

12.2.3.4 In case of satisfactory verifications results the Report (form 6.3.29) is issued, the test loading conditions are approved, and the User Manual is agreed.

12.2.3.5 The satisfactory operation of the software with the onboard computer(s) for stability calculations shall be verified by testing upon installation onboard. The software operation shall be verified in the presence of the RS surveyor in accordance with [12.2.5](#). The approved test loading conditions, the User Manual and the Report (form 6.3.29) shall be available on board.

12.2.3.6 Approval by the Register does not absolve the software designer and shipowner of responsibility for ensuring that the information programmed into the onboard computer software is consistent with the current condition of the ship.

12.2.4 Approval of the ship computer model used in shore-based emergency response service.

12.2.4.1 For review of the ship computer model used by shore-based emergency response service, the test loading conditions complying with the requirements of [12.2.3.3](#) as well as approved documentation on stability and strength shall be submitted to the Register. The shore-based emergency response service shall have the Certificate of Firm Conformity (form 7.1.27) with code 22013000 (refer to Table 11.1.1, Part I "General Regulations for Technical Supervision").

12.2.4.2 The procedure for review of the ship computer model includes verifications specified in [12.2.3.2.1 — 12.2.3.2.3](#).

12.2.4.3 In case of satisfactory verifications results, the Report (form 6.3.29) is drawn up, the test loading conditions are approved.

12.2.4.4 After drawing up the Report (6.3.29), the prompt access to shore-based emergency response service shall be verified in the presence of the RS surveyor in accordance with [12.2.5](#). Agreement with a shore-based emergency response service undertaking damage stability and residual structural strength calculations, user manual for a system of prompt access to shore-based emergency response service and the Report (form 6.3.29) shall be available on board.

12.2.5 Onboard verification.

12.2.5.1 Acceptance tests of the software shall be conducted on board the ship in the presence of the RS surveyor with drawing up the Report on Survey of the Ship (form 6.3.10) or with the relevant entries made in the Survey Checklist (form 6.1.01), as applicable.

12.2.5.2 The onboard software acceptance tests shall include:

.1 verification of availability of Report (form 6.3.29), approved test loading conditions and User Manual;

.2 verification that the documentation on stability, which is stated in the Report (form 6.3.29) has not been updated since the date of issuance of the above Report;

.3 calculation of at least one load case (other than light-ship) in accordance with [12.2.5.3](#). Actual loading condition results are not suitable for checking the correct working of the computer.

12.2.5.3 Steps to be performed during calculation:

.1 retrieve the test loading condition and start a calculation run. Compare the calculation results with the approved test loading conditions;

.2 change several items of deadweight (tank weights and the cargo weight) sufficiently to change the draught or displacement by at least 10 %. The results shall be reviewed to ensure that they differ in a logical way from those of the approved test condition;

.3 revise the above modified loading condition to restore the initial test loading condition and compare the results. Confirm that the relevant input and output data of the approved test loading condition have been replicated;

.4 alternatively, one or more test loading conditions shall be selected and the calculation performed after entering all deadweight data into the program. The results shall be verified as identical to the results in the approved test loading conditions.

12.2.5.4 The software shall be installed on the onboard computer of a type approved by the Register or on two unapproved computers.

12.2.6 Onboard verification of prompt access to shore-based emergency response service.

12.2.6.1 Prompt access to shore-based emergency response service shall be verified on board the ship in the presence of the RS surveyor with drawing up the Report on Survey of the Ship (form 6.3.10) or with the relevant entries made in the Survey Checklist (form 6.1.01), as applicable.

12.2.6.2 Onboard verification of prompt access to shore-based emergency response service shall include:

.1 verification of availability of an agreement with a shore-based emergency response service undertaking calculations;

.2 verification of availability of user manual for a system of prompt access to shore-based emergency response service;

.3 verification of presence of information relating to a shore-based emergency response service recorded in the Shipboard Oil Pollution Emergency Plan (SOPEP)/Shipboard Marine Pollution Emergency Plan for Noxious Liquid Substances (SMPEP)/Operational manual for fire and flooding casualty cases and safe return to port operation (as applicable);

.4 verification of availability of Report (form 6.3.29) on ship computer model used by shore-based emergency response service with approved test loading conditions;

.5 verification that Stability Booklet, Damage Stability Booklet and Loading Manual, which are stated in the Report (form 6.3.29) have not been updated since the date of issuance of the above Report;

.6 verification that the prompt access to shore-based emergency response service may be provided at any time;

.7 verification that results of test calculations, received from the shore-based emergency response service, comply with test loading conditions attached to the Report (form 6.3.29).

12.2.7 Periodical verifications.

12.2.7.1 At annual, intermediate and renewal survey, the software installed onboard shall be verified in the presence of the RS surveyor in accordance with [12.2.5](#).

12.2.7.2 At annual, intermediate and renewal survey, the prompt access to shore-based emergency response service shall be verified in the presence of the RS surveyor. The verification shall include:

.1 verification that the Stability Booklet, Damage Stability Booklet and Loading Manual, which are stated in the Report (form 6.3.29) on ship computer model used by shore-based emergency response service, have not been updated since the date of issuance of the above Report;

.2 verification that the prompt access to shore-based emergency response service may be provided at any time.

12.2.8 Types of onboard stability software.

12.2.8.1 Four types of stability software are acceptable depending upon a ship's stability requirements.

12.2.8.2 Type 1. Software calculating intact stability only.

12.2.8.3 Type 2. Software calculating intact stability and checking damage stability on basis of a limit curve or checking all the stability requirements (intact and damage stability) on the basis of a limit curve.

12.2.8.4 Type 3. Software calculating intact stability and damage stability by direct application of preprogrammed damage cases based on the applicable requirements.

12.2.8.5 Type 4. Software calculating damage stability associated with an actual loading condition and actual flooding case, using direct application of user defined damage, for the purpose of providing operational information for safe return to port (SRtP).

12.2.8.6 Damage stability of both Type 3 and Type 4 stability software shall be based on a three-dimensional hull form model.

12.2.9 General requirements for onboard stability software.

12.2.9.1 Compliance of active software to the requirements of this Section shall be verified in off-line operation mode.

12.2.9.2 The scope of a stability calculation software shall be in accordance with the approved Stability Booklet and shall at least include all information and perform all calculations or checks which are necessary to ensure compliance with the applicable stability requirements.

12.2.9.3 Approved stability software is not a substitute for the approved Stability Booklet, and is used as a supplement to the approved Stability Booklet to facilitate stability calculations.

12.2.9.4 Content and format of the input/output information shall be easily comparable with the approved Stability Booklet.

12.2.9.5 The User Manual shall be provided for the onboard computer stability software, the language in which the User Manual is written shall be the same as used in the approved Stability Booklet.

12.2.9.6 The language of displayed and printed out information shall be the same as used in the approved Stability Booklet.

12.2.9.7 The onboard computer software for stability calculations shall be ship specific and the results of the calculations shall be only applicable to the ship for which it has been approved.

12.2.9.8 In case of modifications implying changes in the main data or internal arrangement of the ship as well as in the Stability Booklet, the approval of stability software is not valid. The software shall be modified accordingly and reapproved.

12.2.9.9 Protection against unintentional or unauthorised modification of the software and preprogrammed data shall be provided.

12.2.9.10 The software shall warn the user of any input errors (with regard to limitations such as filling a compartment beyond capacity, or exceeding the assigned load line, etc.) and in cases where the calculation results do not comply with the applicable criteria, as well as in case of a wrong use of the very program.

12.2.9.11 The program and any data stored in the system shall be protected from corruption by loss of power.

12.2.10 Functional requirements for onboard stability software.

12.2.10.1 General requirements for any type of stability software.

12.2.10.1.1 The stability software shall present the following parameters for a given loading condition:

deadweight data;

light-ship data;

trim;

draught at the draught marks and perpendiculars;

summary of loading condition displacement, vertical centre of gravity, longitudinal centre of gravity and, if applicable, transverse centre of gravity;

downflooding angle and corresponding downflooding opening (not applicable for Type 2 software which uses limit curve for checking all the stability requirements);

compliance with stability criteria: listing of all calculated stability criteria, the limit values, the obtained values and the conclusions (criteria fulfilled or not fulfilled) (not applicable for Type 2 software which uses limit curve for checking all the stability requirements).

12.2.10.1.2 A clear warning shall be given on screen and in hard copy printout if any of the loading limitations are not complied with.

Loading limitations shall include, but may not be limited to:

trim, draught, liquid densities, tank filling levels, initial heel;

limiting value of vertical centre of gravity/metacentric height in conjunction with above for Type 2;

restrictions to the stowage height for timber.

12.2.10.1.3 Loading limitations to be included in the software installed onboard anchor handling vessels shall comprise information on required ballasting, amount of consumables, permissible tension, working sectors, heeling angles and use of roll-reduction devices.

12.2.10.1.4 Type 3 software shall include pre-defined relevant damage cases for both sides of the ship based on the applicable requirements for location and extent of damages, intended for automatic check of a given loading condition.

12.2.10.1.5 The date and time of a saved calculation shall be part of the screen display and hard copy printout.

12.2.10.1.6 Each hard copy printout shall contain identification of the calculation program including version number.

12.2.10.1.7 Units of measurement shall be clearly identified and used consistently within a loading condition.

12.2.10.1.8 Type 3 and Type 4 software shall contain a computer model of the ship, including appendages, all compartments, tanks and the relevant parts of the superstructure considered in the damage stability calculation, wind profile, down-flooding and up-flooding openings, cross-flooding arrangements, internal compartment connections and escape routes, as applicable and according to the type of stability software.

12.2.10.1.9 For Type 1 and Type 2 software, in case a ship model is used for stability calculations, the requirements of the computer model shall be as per [12.2.10.1.8](#) above to the extent as applicable and according to the type of stability software.

12.2.10.2 Additional requirements for Type 4 stability software.

12.2.10.2.1 Where the normal (Type 1, 2 or 3) and SRtP (Type 4) software are not totally separated:

the function of switching between normal software and Type 4 software shall be provided;

the actual intact loading condition shall be the same for both functions (normal operation and SRtP); and

the SRtP module needs only to be activated in case of an incident.

Approval of Type 4 (SRtP) software is for stability only.

12.2.10.2.2 In passenger ships which are subject to SRtP and have an onboard stability computer and prompt access to shore-based emergency response service, such software need not be identical.

12.2.10.2.3 Each internal space shall be assigned its permeability as shown in [Table 12.2.10.2.3](#) below, unless a more accurate permeability has been reflected in the approved Stability Booklet.

Table 12.2.10.2.3

Spaces	Permeability			
	Default	Full	Partially filled	Empty
container spaces	0,95	0,70	0,80	0,95
dry cargo spaces	0,95	0,70	0,80	0,95
ro-ro spaces	0,95	0,90	0,90	0,95
cargo liquids	0,95	0,70	0,80	0,95
intended for consumable liquids	0,95	0,70	0,80	0,95
stores	0,95	0,60	0,60	0,95
occupied by machinery	0,85			
void spaces	0,95			
occupied by accommodation	0,95			

12.2.10.2.4 The stability software shall be capable of accounting for applied moments such as wind, lifeboat launching, cargo shifts and passenger relocation.

12.2.10.2.5 The stability software shall account for the effect of wind by using the method in 2.5.4.1.2, Part V "Subdivision" of the Rules for the Classification and Construction of Sea-Going Ships as the default, but allow for manual input of the wind speed/pressure.

12.2.10.2.6 The stability software shall be capable of assessing the impact of open main watertight doors on stability.

12.2.10.2.7 The stability software shall utilize the latest light-ship parameters stated in the approved Stability Booklet.

12.2.10.2.8 The output of the software shall be such that it provides the sufficient clear unambiguous information to enable quick and accurate assessment of the stability of the ship for any actual damage, the impact of flooding on the means of escape and the controls of devices necessary for managing and/or controlling the stability of the ship.

.1 when the actual loading condition is input in the Type 4 software, the following output (intact stability) shall be presented:

deadweight data;

light-ship data;

trim;

heel;

draught at the draught marks and perpendiculars;

summary of loading condition displacement, vertical centre of gravity, longitudinal centre of gravity and, if applicable, transverse centre of gravity;

downflooding angle and corresponding downflooding opening;

free surfaces;
metacentric height;
righting lever corrected for free surfaces values relevant to an adequate range of heeling (not less than 60°) available indicatively at the following intervals: 0°, 5°, 10°, 15°, 20°, 25°, 30°, 40°, 50°, 60°;
compliance with relevant intact stability criteria: listing of all calculated intact stability criteria, the limiting values, the obtained values and the conclusions (criteria fulfilled or not fulfilled);
stability limiting curve;
.2 when the actual loading condition is associated to the actual damage case(s), the following output (damage stability) shall be presented:
trim;
heel;
draught at the draught marks and perpendiculars;
progressive flooding angle and corresponding progressive flooding openings;
metacentric height;
righting levers relevant to an adequate range of heeling (not less than 60°) available indicatively at the following intervals: 0°, 5°, 10°, 15°, 20°, 25°, 30°, 40°, 50°, 60°;
compliance with stability criteria: listing of all calculated stability criteria, the limit values, the obtained values and the conclusions (criteria fulfilled or not fulfilled);
the survivability criteria (if required by the Administration);
relevant flooding points (unprotected or weathertight) with the distance from the damage waterline to each point;
list of all flooded compartments with the permeability considered;
amount of water in each flooded compartment;
escape route immersion angles;
a profile view, deck views and cross-sections of the ship indicating the flooded waterplane and the damaged compartments.

12.2.10.2.9 For ro-ro passenger ships there shall be algorithms in the software for estimating the effect of water accumulation on deck (WOD)¹.

In addition to the predefined significant wave height taken from the approved Stability Booklet, there shall be possibility for the crew to input manually the significant wave height of the ship navigation area in the stability software.

In addition to the predefined significant wave height taken from the approved Stability Booklet, calculations with two additional significant wave heights shall be submitted.

12.2.11 Acceptable tolerances.

12.2.11.1 Depending on the type of program, the computational accuracy shall be within the acceptable tolerances according to [12.2.11.2](#) or [12.2.11.3](#), of the results using an independent program or the approved Stability Booklet with identical input.

12.2.11.2 In case of programs, which use only pre-programmed data from the approved Stability Booklet as the basis for stability calculations, such data shall have zero tolerances for the output of the Stability booklet data.

Output data tolerances shall be close to zero, however, small differences associated with calculation rounding or abridged input data are acceptable.

Additionally differences associated with the use of hydrostatic and stability data for trims that differ from those in the approved Stability Booklet, are acceptable subject technical background for obtained data.

¹ These requirements apply to ro-ro passenger ships subject to the Stockholm Agreement (IMO circular letter No. 1891).

12.2.11.3 Programs which use hull form models as their basis for stability calculations, shall have tolerances for the printouts of basic calculated data established against data from the approved Stability Booklet in accordance with [Table 12.2.11.3](#).

Table 12.2.11.3

Parameter	Acceptable tolerances
Hull form dependent	
Displacement	±2 %
Longitudinal center of buoyancy, from AP (after perpendicular)	±1 % / 50 cm
Vertical center of buoyancy	±1 % / 5 cm
Transverse center of buoyancy	±0,5 % of B (breadth) / 5 cm
Longitudinal center of flotation, from AP	±1 % / 50 cm
Moment to trim 1 cm	±2 %
Transverse metacentric height	±1 % / 5 cm
Longitudinal metacentric height	±1 % / 50 cm
Cross curves of stability	±5 cm
Compartment dependent	
Volume or deadweight	±2 %
Longitudinal center of gravity, from AP	±1 % / 50 cm
Vertical centre of gravity	±1 % / 5 cm
Transverse center of gravity	±0,5 % of B / 5 cm
Free surface moment	±2 %
Shifting moment	±5 %
Level of contents	±2 %
Trim and stability	
Draughts (forward, aft, mean)	±1 % / 5 cm
Transverse metacentric height (both initial and corrected)	±1 % / 5 cm
Righting levers	5 % / 5 cm
Downflooding angle	±2°
Equilibrium angles	±1°
Distance from WL (waterline) to unprotected and weathertight openings, or other relevant point, if applicable	±5 % / 5 cm
Areas under righting arm curve	±5 % / 0,0012 mrad
<p>Notes: 1. Deviation in % = $\{(base\ value - applicant's\ value) / base\ value\} \times 100$. Where the "base value" may be from the approved Stability Booklet or control calculation.</p> <p>2. When applying the tolerances in Table 12.2.11.3 having two values, the allowable tolerance is the greater of the two values.</p> <p>3. Where differences in calculation methodology exist between the software used in the comparison, this may be a basis for accepting deviations greater than those specified in Table 12.2.11.3 provided a software examination is carried out in sufficient detail to clearly document that such differences are technically justifiable.</p> <p>4. Deviation from these tolerances shall not be accepted unless the Register considers that there is a technical background (satisfactory explanation) for the difference and that it is clearly evident that the deviation does not impact compliance with the applicable stability criteria.</p>	

12.2.12 User manual.

12.2.12.1 The User Manual shall contain the following information:

- instructions for installation of software on the computer;
- description of the main functions;
- a sample of each displayed screen with explanatory text;
- input and output data;
- required minimum hardware to operate the software;
- description of use of the test loading conditions;
- example of the calculation accompanied by explanations;
- list of warnings.

12.3 SOFTWARE FOR STRENGTH CALCULATIONS

12.3.1 General.

12.3.1.1 The requirements of this Chapter are applicable to the software for strength calculations required by 1.4.9, Part II "Hull" of the Rules for the Classification and Construction of Sea-Going Ships.

12.3.2 Type approval of software.

12.3.2.1 The technical documentation on software submitted for review shall include the following:

- name of the software;
- hardware/operation system requirements;
- User Manual;
- results of test calculations carried out using the software;
- input data for test calculations (ship's hull form data, compartmentation data, lines plan, offset tables, hydrostatic tables, capacity tables, etc.).

12.3.2.2 Test calculations shall be carried out for a minimum of two types of ships (tanker, bulk carrier, container ship, dry cargo ship, passenger ship). Where the software approval is required for only one type of ship, test calculations for a minimum of two ships of this type shall be submitted.

For approval of software which is based on a hull form model, test calculations shall be carried out for a minimum of three types of ships, or three different ships, if approval is required for only one type of ship.

12.3.2.3 The approval procedure includes verification for compliance of the results of test calculations and the results of control calculations, performed by the Register, or contained in documentation approved earlier.

12.3.2.4 In case of satisfactory verifications results the Report (form 6.3.29) and Type Approval Certificate for Software (СТОП) (form 6.8.5) are issued.

12.3.2.5 For renewal of the Type Approval Certificate for Software (СТОП), the results of test calculations confirming that calculation procedure has not been changed since СТОП issue shall be submitted to the Register. Calculations approved by the Register and carried out during the period of validity of СТОП using the software, may be submitted for confirmation.

12.3.3 Software approval for a specific ship.

12.3.3.1 For review of the software for a specific ship, documentation specified in [12.3.2.1](#) and approved Loading Manual shall be submitted to the Register.

12.3.3.2 The documentation review procedure includes:

.1 verification of Type Approval Certificate for Software (СТОП) compliance (where available): software name including version number;

.2 verification that the following input data is consistent with the approved documentation:

- main dimensions and the ship profile, if applicable;
- 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;

- light ship displacement and its distribution through the ship length, light ship gravity centre position;

- lines plan, offset tables or other suitable presentation of hull form data, where required;
- compartment definitions, including frame spacing, and centres of volume, together with capacity tables (sounding/ullage tables);

.3 verification that the following parameters of the test loading conditions are consistent with the approved documentation:

- cargo and consumables distribution for each loading;

output data of calculations taking into account the acceptable tolerances stated in [12.3.8](#);

.4 verification of general requirements under [12.3.6](#);

.5 verification of functional requirements under [12.3.7](#);

.6 verification that the User Manual is consistent with the requirements under [12.3.9](#).

12.3.3.3 The test loading conditions normally shall cover the range of load draughts (from the minimum draught ballast condition to the deepest envisaged loaded condition).

Calculations shall be provided for at least four loading conditions, taken from the ship's approved Loading Manual.

Within the selected loading conditions each compartment shall be loaded at least once.

12.3.3.4 In case of satisfactory verifications results the Report (form 6.3.29) is issued, the test loading conditions are approved, and the User Manual is agreed.

The satisfactory operation of the software with the onboard computer(s) shall be verified by testing upon installation. The software operation shall be verified in the presence of the RS surveyor in accordance with [12.2.4](#). The approved test loading conditions, the User Manual and the Report (form 6.3.29) shall be available on board.

12.3.3.5 Approval by the Register does not absolve the software designer and shipowner of responsibility for ensuring that the information programmed into the onboard computer software is consistent with the current condition of the ship.

12.3.4 Onboard verification.

12.3.4.1 Acceptance tests of the software shall be conducted on board the ship in the presence of the RS surveyor with drawing up the Report on Survey of the Ship (form 6.3.10) or with the relevant entries made in the Survey Checklist (form 6.1.01), as applicable. From the approved test loading conditions at least one load case (other than light-ship) shall be calculated. Actual loading condition results are not suitable for checking the correct working of the computer.

12.3.4.2 The onboard software acceptance tests shall include:

.1 verification of availability of Report (form 6.3.29), approved test loading conditions and User Manual;

.2 verification that the Loading Manual, which is stated in the Report (form 6.3.29) has not been updated since the date of issuance of the above Report;

.3 calculation of at least one load case (other than light-ship) in accordance with [12.3.4.3](#). Actual loading condition results are not suitable for checking the correct working of the computer.

12.3.4.3 Steps to be performed during calculation:

.1 retrieve the test loading condition and start a calculation run. Compare the calculation results with the approved test loading conditions;

.2 change several items of deadweight (tank weights and the cargo weight) sufficiently to change the draught or displacement by at least 10 %. The results shall be reviewed to ensure that they differ in a logical way from those of the approved test condition;

.3 revise the above modified loading condition to restore the initial test loading condition and compare the results. Confirm that the relevant input and output data of the approved test loading condition have been replicated;

.4 alternatively, one or more test loading conditions shall be selected and the test calculation performed after entering all deadweight data into the program. The results shall be verified as identical to the results in the approved test loading conditions.

12.3.4.3 The software shall be installed on the onboard computer of a type approved by the Register or on two unapproved computers.

12.3.5 Periodical verifications.

12.3.5.1 At annual, intermediate and renewal survey, the software installed onboard shall be verified in the presence of the RS surveyor.

12.3.5.2 The verification shall be carried out in accordance with [12.3.4](#).

12.3.6 General requirements for software.

12.3.6.1 The scope of a software shall be in accordance with the approved Loading Manual and shall at least include all information and perform all calculations or checks which are necessary to ensure compliance with the applicable requirements for forces and moments affecting the hull, and for hull bend/sagging.

12.3.6.2 A loading instrument shall not substitute for an approved Loading Manual.

12.3.6.3 Content and format of the input/output information shall be easily comparable with the approved Loading Manual.

12.3.6.4 The User Manual shall be provided for the onboard computer software, the language in which the User Manual is written shall be the same as used in the approved Loading Manual.

12.3.6.5 The language of displayed and printed out information shall be the same as used in the approved Loading Manual.

12.3.6.6 The onboard computer software shall be ship specific and the results of the calculations shall be only applicable to the ship for which it has been approved.

12.3.6.7 In case of modifications affecting the longitudinal strength of hull as well as in the approved Loading Manual, the approval of software is not valid. The software shall be modified accordingly and reapproved.

12.3.6.8 Protection against unintentional or unauthorised modification of the software and preprogrammed data shall be provided.

12.3.6.9 The software shall warn the user of any input errors (with regard to limitations such as filling a compartment beyond capacity, or exceeding the assigned load line, etc.) and in cases where the calculation results do not comply with the applicable criteria, as well as in case of a wrong use of the very program.

12.3.6.10 The program and any data stored in the system shall be protected from corruption by loss of power.

12.3.7 Functional requirements for software.

12.3.7.1 The software shall present the following parameters for a given loading condition:
trim;
draught at the draught marks and perpendiculars;
displacement.

12.3.7.2 Control points for calculation of forces and moments affecting the hull shall be positioned at compartment centres, on transverse bulkheads or other obvious compartment boundaries. Additional control points may be necessary between the bulkheads of long holds or tanks, or between container stacks.

12.3.7.3 A clear warning shall be given on screen and in hard copy printout if any of the loading limitations are not complied with. Loading limitations shall include, but may not be limited to:

- permissible still water shearing forces and bending moments;
- permissible still water torques, where applicable;
- all local loading restrictions pertinent to both the loading of a particular hold and of the one adjacent thereto, where applicable;
- mass of cargo contained in the hold;
- ballast tanks and holds capacity;
- restrictions on filling.

12.3.7.4 The calculation results shall be issued both in digital and graphic form. The calculation results in digital form shall be represented both in the absolute values and as percentage of permissible values. Printouts shall contain description of the relevant loading condition of the ship.

12.3.7.5 The date and time of a saved calculation shall be part of the screen display and hard copy printout.

12.3.7.6 Each hard copy printout shall contain identification of the calculation program including version number.

12.3.7.7 Units of measurement shall be clearly identified and used consistently within a loading condition.

12.3.8 Acceptable tolerances.

12.3.8.1 The computational accuracy of the calculation program results shall be within the acceptable tolerances, specified in [Table 12.3.8.1](#), of the results using an independent program or the approved Loading Manual with identical input.

Table 12.3.8.1

Parameter	Acceptable tolerance (percentage of permissible value)
Still water shearing force N_{sw}	±5 %
Still water bending moment M_{sw}	±5 %
Still water torque M_{tsw}	±5 %
<p>Notes: 1. Deviation in % = {(base value – applicant's value) / base value} x 100. Where the "base value" may be from the approved Loading Manual or control calculation.</p> <p>2. Where differences in calculation methodology exist between the software used in the comparison, this may be a basis for accepting deviations greater than those specified in Table 12.3.8.1 provided a software examination is carried out in sufficient detail to clearly document that such differences are technically justifiable.</p> <p>3. Deviation from these tolerances shall not be accepted unless the Register considers that there is a technical background (satisfactory explanation) for the difference and that it is clearly evident that the deviation does not impact compliance with the applicable requirements for strength.</p>	

12.3.9 User Manual.

12.3.9.1 The User Manual shall contain the following information:

- instructions for installation of software on the computer;
- description of the main functions;
- a sample of each displayed screen with explanatory text;
- input and output data;
- required minimum hardware to operate the software;
- description of use of the test loading conditions;
- example of the calculation accompanied by explanations;
- list of warnings.

SHIP OPERATIONAL DOCUMENTATION FOR THE ITEMS OF RS TECHNICAL SUPERVISION

The minimum list of mandatory ship operational documentation (as applicable) with information on its approval by the RS and/or Flag State MA is given in [Table 1](#). For ships covered by the requirements of international conventions (SOLAS, International Load Line Convention, MARPOL 73/78, etc.) one shall also be guided by the List of documents to be available on board the ship given in Appendix 12, IMO resolution A.1138(31) as amended – as applicable. For all ships one also shall be guided by the national MA requirements, if any, regarding the availability of additional ship documents.

As regards the approval of the MA, one shall be guided by the provisions of agreements with particular MA concerning the RS authorizations for review and approval of technical documentation. If MA authorization is available, the appropriate RS stamp shall apply to confirm approval/agreement on behalf of the MA.

The table essentially provides references to the Rules for the Classification and Construction of Sea-Going Ships, as well as to the main international conventions and codes. For specialized types of ships, MODU, FOP, FPU one shall also be guided by the rules for construction of the corresponding types of ships and offshore installations. For certain categories of descriptive notations and distinguishing marks in the class notation the information provided in the list of operational documentation is additional to the main documentation required in accordance with 3.1.2, Part I "Classification" of the Rules for the Classification and Construction of Sea-Going Ships, as well as the relevant requirements of the rules for construction of specialized types of ships and offshore installations.

The list of operational documentation for ships of inland navigation (for European inland waterways), nuclear ships and floating facilities, nuclear support vessels, auxiliary ships of war, small craft, pleasure craft, small sea fishing vessels, sport sailing vessels shall be determined by the Branch Office for supervision of construction of ships, taking into account the relevant RS Rules and Guidelines for these types of ships and [Table 1](#) below, as applicable.

Table 1

Nos.	Document name	RS approval	Flag MA approval	Stamp	Application
1 – General					
1.1	Documentation related to list of equivalents	+	+	Depending on type of approved documentation	3.12, Part II "Technical Documentation" of these Rules
1.2	List and justification of deviations from the requirements of RS Rules	+	–	Agreed	1.3.4 of the General Regulations for the Classification and other Activity; 3.12, Part II "Technical Documentation" of these Rules
1.3	Engineering analysis or evaluation of the alternative design and arrangements	+	+	Agreed/Approved	3.1.8, Part I "Classification" of the Rules for the Classification and Construction of Sea-Going Ships; 3.12, Part II "Technical Documentation" of these Rules

*Rules for Technical Supervision during Construction of Ships
and Manufacture of Materials and Products for Ships (Part II)*

Nos.	Document name	RS approval	Flag MA approval	Stamp	Application
1.4	Asbestos free declaration	–	–	nil	(required during initial survey under construction as well as during replacement/installation of new materials, products, equipment in service) SOLAS 74 as amended, reg. II-1/3-5 (with account of IMO resolution MSC.282(86)), IMO circulars MSC/Circ.1045 "Guidelines for maintenance and monitoring of on-board materials containing asbestos", MSC.1/Circ.1374 "Information on prohibiting the use of asbestos on board ships", MSC.1/Circ.1379 "Unified Interpretation of SOLAS Regulation II-1/3-5" and MSC.1/Circ.1426/rev.1 "Unified Interpretation of SOLAS Regulation II-1/3-5"; Annex 48 to the Guidelines on Technical Supervision of Ships in Service; IACS Recommendation No. 130; 2.10.3, Chapter 2 of the MODU Code 2009 (IMO resolution A.1023(26))
1.5	As-built structural drawings and other plans, showing the latest subsequent changes in ship's structures	+	–	Stamps depending on type of approved documentation within the design	(for ships built on or after 01.01.2007) SOLAS as amended, reg. II-1/3-7; IMO circular MSC/Circ.1135
1.6	Mooring and sea trials programme	+	–	Approved	3.5, Part I "Classification" of the Rules for the Classification and Construction of Sea-Going Ships; 2.5, Part I of the Rules for the Equipment of Sea-Going Ships; some sections of Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships; applicable paras of the Guidelines on Technical Supervision of Ships under Construction (for instance, 5.16, 5.17, 6.6, 7.8, 7.9, 8.4, 9.7, 9.8, 10.4, 12.4, 15.4, 16.4, 17.6, 18 etc.); 2.3, 2.4, Part II "Survey Schedule and Scope" of the Rules for the Classification Surveys of Ships in Service
1.7	Noise survey report in accordance with the Code on Noise Levels on Board Ships	–	–	nil	SOLAS 1974 as amended, reg. II-1/3-12
1.8	List of operational limitations	–	–	nil	SOLAS 74 reg. V/30.2 (for passenger ships)
1.9	Ship conversion, modernization, modification project (containing measures and arrangements for ship conversion, modernization, modification)	+	+ (when required as per the terms of agreement)	Depending on type of approved documentation within the design	3.1.5, Part I "Classification" of the Rules for the Classification and Construction of Sea-Going Ships; 4.9, Part II "Survey Schedule and Scope" of the Rules for the Classification Surveys of Ships in Service; Sect. 3, Part II "Carrying out Classification Surveys of Ships" of the Guidelines on Technical Supervision of Ships in Service
1.10	Passage plan	+	–	Approved	Sect. 8, Part II "Carrying out Classification Surveys of Ships" of the Guidelines on Technical Supervision of Ships in Service
1.11	Ship Security Plan and associated records	+	+	Approved	SOLAS 74 reg. XI-2/9 and ISPS Code part A/9 and 10

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Nos.	Document name	RS approval	Flag MA approval	Stamp	Application
2 – Stability, subdivision, strength of ship's hull, carriage of cargoes					
2.1	Inclining Test Report	+ (when inclining is performed under the RS supervision)	–	Endorsed by RS surveyor	(during inclining experiment, required by RS Rules) 1.5, Part IV "Stability" of the Rules for the Classification and Construction of Sea-Going Ships; Part IV "Stability" of the Rules for Classification, Construction and Equipment of Mobile Offshore Drilling Units and Fixed Offshore Platforms; Part IV "Stability" of the Rules for the Classification, Construction and Equipment of Floating Offshore Oil-and-Gas Production Units (FPU); Sect. 3, Part IV "Stability" of the Rules for the Classification and Construction of Type A WIG Craft; Sect. 5, Part IV "Stability" of the Rules for the Classification and Construction of High-Speed Craft
2.2	Maneuvering booklet and information	+	–	Approved	SOLAS 74 as amended, reg. II-1/28, IMO resolution A.601(15), IMO resolution MSC.137(76), IMO circular MSC/Circ.1053
2.3	Stability Booklet	+	+	Approved	Part IV "Stability" of the Rules for the Classification and Construction of Sea-Going Ships; SOLAS 74 regs. II-1/5 and II-1/5-1, and LL 1966/LL PROT 1988 reg. 10; MARPOL 73/78, Annex I, regs. 27 and 28; 2.2.5, Chapter II, IGC Code, as amended (for ships intended for the carriage of liquefied gases in bulk); 2.2.5, Chapter II, IBC Code, as amended (for ships intended for the carriage of dangerous chemicals in bulk); 1.4.8.1, Part IV "Stability" of the Rules for Classification, Construction and Equipment of Mobile Offshore Drilling Units and Fixed Offshore Platforms; 1.4, Part IV "Stability" of the Rules for the Classification, Construction and Equipment of Floating Offshore Oil-and-Gas Production Units (FPU); 2.8, Part IV "Stability" of the Rules for Classification and Construction of Type A WIG Craft; Sect. 5, Part IV "Stability" of the Rules for Classification and Construction of High-Speed Craft
2.4	Information on the Effect of Flooding	+	+	Approved	(if applicable) — refer to 1.4.9, Part V "Subdivision" of the Rules for the Classification and Construction of Sea-Going Ships

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Nos.	Document name	RS approval	Flag MA approval	Stamp	Application
2.5	Light-Weight Check Report (if the ship is exempted from inclining test)	+	+	Endorsed by RS surveyor	(during light-weight check of a ship) 1.5, Part IV "Stability" of the Rules for the Classification and Construction of Sea-Going Ships; 1.5, Part IV "Stability" of the Rules for Classification, Construction and Equipment of Mobile Offshore Drilling Units and Fixed Offshore Platforms; Part IV "Stability" of the Rules for the Classification, Construction and Equipment of Floating Offshore Oil- and-Gas Production Units (FPU); Sect. 3, Part IV "Stability" of the Rules for Classification and Construction of Type A WIG Craft; Sect. 5, Part IV "Stability" of the Rules for Classification and Construction of High-Speed Craft
2.6	Damage Stability Booklet	+	+	Approved	1.4.6, Part V "Subdivision" of the Rules for the Classification and Construction of Sea-Going Ships; SOLAS regs. II-1/8, II-1/19; MARPOL, Annex I, reg. 28; 1.4, Part V "Subdivision" of the Rules for the Classification, Construction and Equipment of Floating Offshore Oil-and-Gas Production Units (FPU); 1.4.4, Part V "Subdivision" of the Rules for Classification, Construction and Equipment of Mobile Offshore Drilling Units and Fixed Offshore Platforms; Part V "Reserve of Buoyancy and Subdivision" of the Rules for Classification and Construction of Type A WIG Craft; Part V "Reserve of Buoyancy and Subdivision" of the Rules for Classification and Construction of High-Speed Craft
2.7	Booklet (Information) on stability and strength during carriage of bulk cargoes other than grain	+	+	Approved	1.4.9.7, Part II "Hull" of the Rules for the Classification and Construction of Sea-Going Ships; SOLAS as amended, regs. VI/7.2 and XII/8 and Code of Practice for the Safe Loading and Unloading of Bulk Carriers (BLU Code); IMO resolution A.862(20)
2.8	Loading Manual	+	+	Approved	1.4.9 and 3.3.6, Part II "Hull" of the Rules for the Classification and Construction of Sea-Going Ships; reg. 10(1), Chapter II, LL-66 as amended; SOLAS 74 as amended, reg. XII/11; 1.4.9, Part IV "Stability" of the Rules for Classification, Construction and Equipment of Mobile Offshore Drilling Units and Fixed Offshore Platforms (the Guidance for the ballast system arrangement plan)
2.9	Grain Stability Booklet	+	+	Approved	1.4.11.4, Part IV "Stability" of the Rules for the Classification and Construction of Sea-Going Ships; 3.5.6 of Appendix 1 to Part IV "Stability" of the Rules for the Classification and Construction of Sea-Going Ships; SOLAS 74 reg. VI/9 and Grain Code, section 3
2.10	Damage Control Plan	+	+	Approved	1.4.6 and 1.4.9, Part V "Subdivision" of the Rules for the Classification and Construction of Sea-Going Ships; SOLAS 74 reg. II-1/19 and circular MSC.1/Circ.1245, as amended

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Nos.	Document name	RS approval	Flag MA approval	Stamp	Application
2.11	Test loading conditions of the loading instrument	+	–	Approved	1.4.9, 3.3.6, Part II "Hull" of the Rules for the Classification and Construction of Sea-Going Ships; 12.3, Part II "Technical Documentation" of these Rules; SOLAS 74 as amended, reg. XII/11-1; IACS UR S1; IACS UR S1A
2.12	Test loading conditions of the stability instrument (software for stability calculations)	+	–	Approved	1.4.12, Part IV "Stability" of the Rules for the Classification and Construction of Sea-Going Ships; 3.2.7, Part IV "Stability" of the Rules for the Classification and Construction of Sea-Going Ships; 3.4.6, Part IV "Stability" of the Rules for the Classification and Construction of Sea-Going Ships (for oil tankers); 2.7.5, Part V "Subdivision" of the Rules for the Classification and Construction of Sea-Going Ships (for passenger ships); 1.2, Part IV "Stability, Subdivision and Freeboard" of the Rules for the Classification and Construction of Chemical Tankers; 1.4, Part III "Stability, Subdivision and Freeboard" of the Rules for the Classification and Construction of Ships Carrying Liquefied Gases in Bulk; 1.4.9, Part V of the Rules for Classification, Construction and Equipment of Mobile Offshore Drilling Units and Fixed Offshore Platforms; SOLAS 74 as amended, reg. XII/11-4; SOLAS reg. II-1/8-1 as amended by IMO resolution MSC.325(90) (for passenger ships); MARPOL 73/78, Annex I, reg. 28.6; 2.2.6, Chapter II, IBC Code, as amended (for ships intended for the carriage of dangerous chemicals in bulk); 2.2.6, Chapter II, IGC Code, as amended (for ships intended for the carriage of liquefied gases in bulk)
2.13	Loading instrument User's manual	+	–	Agreed	(if applicable, refer to item 2.11 above) — refer also to 1.4.9, 3.3.6, Part II "Hull" of the Rules for the Classification and Construction of Sea-Going Ships; 12.3, Part II "Technical Documentation" of these Rules
2.14	Stability instrument User's manual (software for stability calculations)	+	–	Agreed	(if applicable, refer to item 2.12 above) — refer also to 1.4.12, Part IV "Stability" of the Rules for the Classification and Construction of Sea-Going Ships
2.15	Prompt access to shore-based support organization for damage stability calculation	+	–	Approved	SOLAS reg. II-1/8-1 as amended by IMO resolution MSC.325(90) (for passenger ships); MARPOL 73/78, Annex I, reg. 37.4 (for oil tankers of 5000 tonnes deadweight and more); 2.7.5, Part V "Subdivision" of the Rules for the Classification and Construction of Sea-Going Ships

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Nos.	Document name	RS approval	Flag MA approval	Stamp	Application
2.16	Determination (calculation) of the ship's hull scantlings according to the RS Rules	+	-	Agreed	For ships under construction — information shall be submitted within the design (no separate document is needed); for existing ships — information shall be submitted in case of change of ship's type, its main particulars, cargo capacity, extension of the area of navigation, boundaries of navigation within the prescribed area, conversion of a ship, assignment of RS class (in applicable cases), etc.; Sect. 5, Part I "General Provisions", 3.2, Part II "Survey Schedule and Scope" and Sect. 4 of Annex 2 to the Rules for the Classification Surveys of Ships in Service
2.17	Calculation of permissible residual scantlings for hull members	+	-	Agreed	(if applicable) — refer to Sect. 5, Part I, 3.2, Part II "Survey Schedule and Scope" and Sect. 4 of Annex 2 to the Rules for the Classification Surveys of Ships in Service
2.18	Calculation of ship's hull overall longitudinal strength	+	-	Agreed	1.4, Part II "Hull" of the Rules for the Classification and Construction of Sea-Going Ships; 3.2, Part II "Survey Schedule and Scope" of the Rules for the Classification Surveys of Ships in Service; Sect. 2 of Annex 2 of the Rules for the Classification Surveys of Ships in Service
2.19	Justifying the purpose of ice class assignment	+	-	Agreed	For ships under construction — information shall be submitted within the design (no separate document is needed); for existing ships — information shall be submitted in case of assignment/changing of ice class of a ship
2.20	Flooding Detection System Manual	+	+	Approved	For bulk carriers — refer to SOLAS reg. XII/12, IMO resolution MSC.145(77) and 3.4.11, Part V "Subdivision" of the Rules for the Classification and Construction of Sea-Going Ships; for cargo ships having length < 100 m, which are not bulk carriers — refer to IMO resolution MSC.216(82), 3.4.13, Part V "Subdivision" of the Rules for the Classification and Construction of Sea-Going Ships; cargo ships having one cargo hold and which are not bulk carriers, built before 01.01.2007, shall comply with relevant requirements not later than 31.12.2009
2.21	Ship's structure access manual	+	+	Approved	7.14, Part III "Equipment, Arrangements and Outfit" of the Rules for the Classification and Construction of Sea-Going Ships (SOLAS 74/04 reg. II-1/3-6.4)
2.22	Document on condition assessment of the transverse watertight corrugated bulkhead between cargo holds No. 1 and No. 2	+	-	Agreed	5.9, Part III "Additional Surveys of Ships Depending on their Purpose and Hull Material" of the Rules for the Classification Surveys of Ships in Service (SOLAS 74/04 reg. XII/6.1 and IACS UR S19) (for bulk carriers with single skins of 150 m in length and above)
2.23	Document on evaluation of allowable hold loading of cargo hold No. 1	+	-	Agreed	5.10, 5.11, Part III "Additional Surveys of Ships Depending on their Purpose and Hull Material" of the Rules for the Classification Surveys of Ships in Service (SOLAS 74/04 reg. XII/6.1 and IACS UR S22, S23) (for bulk carriers with single skins 150 m long and above)
2.24	Document on condition assessment of side frames in cargo holds	+	-	Agreed	5.12, Part III "Additional Surveys of Ships Depending on their Purpose and Hull Material" of the Rules for the Classification Surveys of Ships in Service (SOLAS 74/04 reg. XII/5.1 and IACS UR S31) (for bulk carriers with single skins)

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Nos.	Document name	RS approval	Flag MA approval	Stamp	Application
3 – Machinery, propulsion, systems					
3.1	Torsional vibration calculation	+	–	Agreed	3.2.7.5.11, Part I "Classification" of the Rules for the Classification and Construction of Sea-Going Ships; Sect. 8, Part VII "Machinery Installations" of the Rules for the Classification and Construction of Sea-Going Ships; 6.7 of the Guidelines on Technical Supervision of Ships under Construction; 2.4, 2.11, Part II "Survey Schedule and Scope" of the Rules for the Classification Surveys of Ships in Service
3.2	Torsional vibration measurements results	+	–	Agreed	6.7 of the Guidelines on Technical Supervision of Ships under Construction; 2.4, Part II "Survey Schedule and Scope" of the Rules for the Classification Surveys of Ships in Service
3.3	Programme on the machinery and equipment vibration measurements	+		Approved	9.1.2, Part VII "Machinery Installations" of the Rules for the Classification and Construction of Sea-Going Ships; 18.6 of the Guidelines on Technical Supervision of Ships under Construction
3.4	Results of vibration measurements	+	–	Agreed	Sect. 18 of the Guidelines on Technical Supervision of Ships under Construction; 2.4, 2.11, Part II "Survey Schedule and Scope" of the Rules for the Classification Surveys of Ships in Service
3.5	AMSS Service Manual	+	–	Agreed	7.2.9, Part VII "Machinery Installations" of the Rules for the Classification and Construction of Sea-Going Ships
4 – Equipment, arrangements and outfit					
4.1	Manual on operation and repair of doors in shell plating	+		Approved	7.15, Part III "Equipment, Arrangements and Outfit" of the Rules for the Classification and Construction of Sea-Going Ships
4.2	Cargo Securing Manual	+	+	Approved	SOLAS 74 regs. VI/5.6 and VII/5 and MSC.1/Circ.1353/Rev.1 (for ships intended for the carriage of general dry cargoes)
4.3	Towing and mooring arrangements plan (for the master of a ship)	+	–	Approved	1.4.2, Part III "Equipment, Arrangements and Outfit" of the Rules for the Classification and Construction of Sea-Going Ships; SOLAS 74 as amended, reg. II-1/3-8, IMO circular MSC/Circ.1175
4.4	Emergency towing procedure	+	–	For information	5.7.11, Part III "Equipment, Arrangements and Outfit" of the Rules for the Classification and Construction of Sea-Going Ships (SOLAS 74 as amended, reg. II-1/3-4, IMO circular MSC.1/Circ.1255)
4.5	Cargo Safe Access Plan (CSAP)	+	+	Approved	(for ships which are specifically designed and fitted for the purpose of carrying containers) SOLAS 74 as amended, regs. VI/5.6 and VII/5, IMO circular MSC.1/Circ.1353/Rev.1, the Code of safe practice for cargo stowage and securing (CSS Code)

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Nos.	Document name	RS approval	Flag MA approval	Stamp	Application
5 – Fire protection					
5.1	Fire protection scheme and safety plan	+	+	Approved	1.4, Part VI "Fire protection" of the Rules for the Classification and Construction of Sea-Going Ships (SOLAS 74 as amended, regs. II-2/15.2.4, II-2/15.3.2, II-2/16.2, IMO resolutions A.952(23), A.756(18)); 1.5, Part VI "Fire and explosion protection" of the Rules for the Classification, Construction and Equipment of Floating Offshore Oil-and-Gas Production Units; 1.3, Part VI "Fire protection" of the Rules for the Classification, Construction and Equipment of Mobile Offshore Drilling Units and Fixed Offshore Platforms; MODU Code 2009; Part VI, "Fire protection" of the Rules for the Classification and Construction of Type A WIG Craft
5.2	Guidelines for maintenance, testing and inspection of fire protection systems and appliances (Technical instructions for maintenance and use of all ship's installations for extinction and containment of fire)	–	–	–	SOLAS 74 as amended, regs. II-2/14.2.2, 14.3, 14.4; IMO circular MSC.1/Circ.1432; 1.5, Part VI "Fire and Explosion Protection" of the Rules for Classification, Construction and Equipment of Floating Offshore Oil-and-Gas Production Units; 1.3, Part VI "Fire Protection" of the Rules for the Classification, Construction and Equipment of Mobile Offshore Drilling Units and Fixed Offshore Platforms; MODU Code 2009; 1.4.6, 1.4.7, Part VI "Fire Protection" of the Rules for the Classification and Construction of Sea-Going Ships
5.3	Document of approval of alternative design and arrangements for fire safety (SOLAS 74/02/08 reg. II-2/17)	+	+	Approved	1.7, Part VI "Fire protection" of the Rules for the Classification and Construction of Sea-Going Ships (SOLAS 74 as amended, reg. II-2/17)
5.4	Fire Safety Training Manual Fire Safety Operational Booklets	–	–	–	SOLAS 74 as amended, reg. II-2/15.2.3; SOLAS 74 as amended, regs. II-2/16.1, II-2/16.2, II-2/16.3
6 – Life-saving appliances and equipment					
6.1	Ship-specific plans and procedures for recovery of persons from the water (SOLAS reg. III/17-1, MSC.1/Circ.1447)	–	–	nil	SOLAS reg. III/17-1, MSC.346(91), MSC.1/Circ.1447 (if applicable)
6.2	Training manual	–	–	nil	SOLAS 74 as amended, reg. III/35
7 – Electrical and electronic equipment					
7.1	The list of electrical and electronic equipment intended to be operated on the bridge or in the vicinity of the bridge, and evidence of their electromagnetic compatibility (EMC)	–	–	–	Annex 4, Part V "Navigational Equipment" of the Rules for the Equipment of Sea-Going Ships; Appendix 3, Sect. 16 of the Guidelines on Technical Supervision of Ships under Construction; IACS UI SC194

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Nos.	Document name	RS approval	Flag MA approval	Stamp	Application
7.2	Cable Transit Seal Systems Register	–	–	Record keeping in Cable Transit Seal Systems Register shall be reviewed by the RS surveyor and the results of survey shall be recorded and, where appropriate, signed and stamped with the RS surveyor's seal	2.10.3.5.1, 2.11.3.1.1.9.1 of the Guidelines on Technical Supervision of Ships under Construction; 2.2.7.8, 2.4.7.6.2, Part II "Survey Schedule and Scope" and 19.2.3.7.6.5, 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 – Cargo handling gear					
8.1	Instructions for derricks operating in union purchase rig with indication of the working range, safe working load, types, sizes and scheme of rigging	+	–	Agreed	1.4 of the Rules for the Cargo Handling Gear of Sea-Going Ships
9 – Marine pollution prevention (by oil, noxious substances, sewage, wastage), atmosphere pollution prevention					
9.1	Shipboard Oil Pollution Emergency Plan	+	+	Approved	MARPOL 73/78 as amended, Annex I, reg. 37.1, IMO resolution MEPC.54(32) as amended by IMO resolution MEPC.86(44)
9.2	Shipboard Marine Pollution Emergency Plan for Noxious Liquid Substances	+	+	Approved	MARPOL 73/78, Annex II, reg. 17
9.3	Shipboard Pollution Emergency Plan (combined, refer to items 9.1 and 9.2 above)	+	+	Approved	MARPOL 73/78 as amended, Annex I, reg. 37.3
9.4	Ship to Ship (STS) Operations Plans	+	+	Approved	MARPOL 73/78, Annex I, reg. 41
9.5	Cargo record book	–	–	nil	MARPOL 73/78, Annex II, reg. 15
9.6	Shipboard Garbage Management Plan	+	+	Approved (if MA authorization is available)	MARPOL 73/78 as amended, Annex V, reg. 10, IMO resolution MEPC.220(63); Sect. 8 of Appendix 1 to the Guidelines on the Application of Provisions of the International Convention MARPOL 73/78
9.7	Garbage record book	–	–	nil	MARPOL 73/78, Annex V, reg. 9
9.8	Calculation of untreated sewage water discharge rate	+	+	Agreed/Approved (stamp "Approved" for ship to which Annex IV to MARPOL 73/78 Convention applies)	Ships having untreated sewage water discharge pipeline. Calculations shall be carried out in accordance with Recommendation on standards of untreated sewage water discharge rate from ships in accordance with IMO resolution MEPC.157(55); MARPOL 73/78, Annex IV
9.9	Sewage Management Plan and procedure for sewage record keeping	+	–	Agreed	Sect. 3, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships (for ECO/ECO-S only)

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Nos.	Document name	RS approval	Flag MA approval	Stamp	Application
9.10	Procedure for keeping records on detection and elimination of impermissible operating leakages of petroleum products i.e. fuel oil, hydraulic oil, etc.	+	-	For information	Sect. 3, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships (for ECO/ECO-S only)
9.11	Guidelines on methods and arrangements	+	+	Approved	MARPOL 73/78, Annex II, reg. 14.1, IMO resolution MEPC.18(22) as amended by IMO resolution MEPC.62(35) (chemical tankers, ships carrying noxious substances in bulk)
9.12	Oil record book, Parts I & II	-	-	nil	MARPOL 73/78 as amended, Annex I, regs. 17 and 36
9.13	Oil Discharge Monitoring and Control (ODMC) Operational Manual	+	+	Approved	MARPOL 73/78, Annex I, reg. 31.4; IMO resolution A.496(XII); IMO resolution A.586(14), as amended by IMO resolution MEPC.24(22) and IMO resolution MEPC.108(49) as amended by IMO resolution MEPC.240(65)
9.14	Operations and Equipment Manual for Crude Oil Washing Systems (COW Manual)	+	+	Approved	MARPOL 73/78, Annex I, reg. 35
9.15	Volatile Organic Compound (VOC) Management Plan	+	+	Approved	MARPOL 73/78, Annex VI, regs. 15.6 and 15.7 (for oil tankers, carrying crude oil, and gas carriers, if applicable)
9.16	Technical documentation for the cargo vapour discharge system including principal diagram of the pipeline for vapour collection on oil tanker with indication of location and purpose of all control and safety arrangements	+	+	Approved	For oil tankers carrying crude oil, petroleum products, as well as for chemical tankers carrying chemical cargoes with flashpoint < 60 °C for which MARPOL 73/78, Annex VI, reg. 15.1 applies (MSC/Circ.585)
9.17	Cargo transfer procedure	+	-	For information	For oil tankers carrying crude oil, petroleum products, as well as for chemical tankers carrying chemical cargoes with flashpoint < 60 °C for which MARPOL 73/78, Annex VI, reg. 15.1 applies (MSC/Circ.585)
9.18	Manufacturer's Operating Manual for Incinerators	-	-	nil	MARPOL 73/78, Annex VI, reg. 16.7
9.19	Written procedure showing fuel oil changeover before entering into an SO _x emission control area	-	-	nil	MARPOL 73/78, Annex VI, reg. 14 (if applicable)
9.20	Ozone Depleting Substances Record Book	-	-	nil	For ships for which MARPOL 73/78, Annex VI, regs. 6.1 and 12.6 apply

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Nos.	Document name	RS approval	Flag MA approval	Stamp	Application
9.21	Record book of engine parameters for each engine subject to survey in accordance with NO _x Technical Code (in case of application of engine parameters verification method)	–	–	nil	NO _x Technical Code, paragraph 2.3.7
9.22	SO _x Emissions Compliance Plan (SECP)	+	+	Approved	In case of installation of exhaust gas cleaning system (EGCS) for SO _x in accordance with IMO resolution MEPC.259(68)
9.23	Exhaust gas cleaning system Technical Manual	+	+	Approved	In accordance with IMO resolution MEPC.259(68)
9.24	Onboard Monitoring Manual (OMM)	+		Approved	In case of installation of exhaust gas cleaning system (EGCS) for SO _x in accordance with IMO resolution MEPC.259(68)
9.25	Record Book of SO _x -Reducing Device Parameters (EGCS)	+	+	Approved	In case of installation of exhaust gas cleaning system (EGCS) for SO _x in accordance with IMO resolution MEPC.259(68)
9.26	Engine's Technical File for NO _x (for engines of power output more than 130 kW)	+	+	Approved	NO _x Technical Code 2008, paragraph 2.3.4
9.27	Technical file of approved method (for ship's diesel engine with power output more than 5000 kW and a per cylinder displacement at or above 90 l, installed on board a ship built on or after 1 January 1990 or after but prior to 1 January 2000)	+	+	Approved	Technical file of ship's diesel engine exhaust is applicable to engines for which limits for nitrogen oxides emission listed in regs. 13.3, 13.4 and 13.5.1, Annex VI to MARPOL 73/78 apply, and technical file of approved method is applicable to engines falling under reg. 13.7.1, Annex VI to MARPOL 73/78
10 – Ship's energy efficiency					
10.1	Ship Energy Efficiency Management Plan (SEEMP) required by regulation 22 of Annex VI to MARPOL 73/78	–	–	For ships of GT of 5000 and above, engaged in international voyages, the "Confirmation of compliance ship energy efficiency management plan (SEEMP) PART II" (form 2.4.43.1) is issued	All ships of GT 400 and above (new and existing), excluding platforms (including floating offshore oil-and-gas production units), drilling units independently of their propulsion units, and any other non-self-propelled ship; for ships of GT 5000 and above, engaged in international voyages, SEEMP plan shall contain part II of the Plan (Ship fuel oil consumption data collection plan); Sect. 3, Part I of the Guidelines on the Application of Provisions of the International Convention MARPOL 73/78 (MARPOL 73/78, Annex VI, regs. 22 and 22A, MEPC.282(70))
10.2	Energy Efficiency Design Index (EEDI Technical file)	+	–	Agreed	MARPOL 73/78, Annex VI, reg. 20; Sect. 3, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships (for ECO or ECO-S)

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Nos.	Document name	RS approval	Flag MA approval	Stamp	Application
11 – Ballast water management					
11.1	Ballast Water Management Plan	+	+	Approved	2.5, Part III "Survey of Ships in Compliance with International Conventions, Codes, Resolutions and Rules for the Equipment of Sea-Going Ships" of the Guidelines on Technical Supervision of Ships in Service (BWM-2004 Convention, reg. B-1 and IMO resolution MEPC.127(53), as amended)
11.2	Ship's Guidelines for Safe Water Ballast Exchange at Sea	+	–	Approved	BWM-2004, reg. B-4; Sect. 3, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships (only for ECO or ECO-S)
11.3	Ship's software for planning water ballast exchange at sea (where applicable)	+	–	Approved	Sect. 3, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships (only for ECO or ECO-S)
11.4	Ballast Water Record Book	–	–	nil	BWM-2004, article 9.1 (b) and reg. B-2; Sect. 3, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships (also for ECO or ECO-S)
12 – Recycling					
12.1	Inventory of Hazardous Materials	+	+	Compliance of the Inventory to the requirements shall be endorsed by the RS surveyor's signature and stamp	In accordance with the Regulation (EU) No. 1257/2013 of the European Parliament, the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2015 Guidelines for the development of the inventory of hazardous materials (refer to IMO resolution MEPC.269(68)); 3.3, Part III "Survey of Ships in Compliance with International Conventions, Codes, Resolutions and Rules for the Equipment of Sea-Going Ships" of the Guidelines on Technical Supervision of Ships in Service
13 – Coatings, materials					
13.1	List of specifications for paintwork materials used for protection of cargo and ballast spaces, living and service spaces and underwater hull			Refer to 2.12.7 of the Guidelines on Technical Supervision of Ships under Construction	1.2.5 and 3.3.5, Part II "Hull" and 6.5, Part XIII "Materials" of the Rules for the Classification and Construction of Sea-Going Ships, as well as Sect. 3, Part III "Technical Supervision during Manufacture of Materials" of these Rules, 2.12.7 of the Guidelines on Technical Supervision of Ships under Construction; IACS UR Z8 and Z9, SOLAS 74/78 as amended, reg. II-1/3-2 (IMO resolutions MSC.215(82) and MSC.216(82)), SOLAS 74/78 as amended, reg. II-1/3-11 (IMO resolutions MSC.288(87) and MSC.291(87))
13.2	The safety certificate on antifouling coating			Refer to 2.12.7 of the Guidelines on Technical Supervision of Ships under Construction	2.12.7 of the Guidelines on Technical Supervision of Ships under Construction; 2.4, Part III "Survey of Ships in Compliance with International Conventions, Codes, Resolutions and Rules for the Equipment of Sea-Going Ships" of the Guidelines on Technical Supervision of Ships in Service; AFS Convention, Annex 4, reg. 2, EC regulation 782/2003

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Nos.	Document name	RS approval	Flag MA approval	Stamp	Application
13.3	Final Inspection Report on application of coatings for protection of cargo and ballast spaces, living and service spaces and underwater hull			Refer to 2.12.7 of the Guidelines on Technical Supervision of Ships under Construction	2.4, Part III "Survey of Ships in Compliance with International Conventions, Codes, Resolutions and Rules for the Equipment of Sea-Going Ships" of the Guidelines on Technical Supervision of Ships in Service; Appendix 2 to Sect. 2 "Hull" of the Guidelines on Technical Supervision of Ships under Construction
13.4	Coating Technical File in accordance with the Performance Standard for Protective Coatings for Dedicated Seawater Ballast Tanks in all types of Ships and Double-side Skin Spaces of Bulk Carriers (PSPC)/ Performance standard for protective coatings for cargo oil tanks of crude oil tankers (PSPC-COT)			Refer to 2.12.7 of the Guidelines on Technical Supervision of Ships under Construction	SOLAS 74/78 as amended, reg. II-1/3-2 (IMO resolutions MSC.215(82) and MSC.216(82)), SOLAS 74/78 as amended, reg. II-1/3-11 (IMO resolutions MSC.288(87) and MSC.291(87))
13.5	Biofouling Management Plan and Biofouling Record Book			nil	In accordance with IMO resolution MEPC.207(62); Sect. 3, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships (also for ECO or ECO-S)
14 – Operation in polar waters					
14.1	Polar Water Operational Manual (PWOM)			nil	For ships, operating in polar waters and for which part I-A of the Polar Code applies (refer to the Guidelines on Application of the International Code for Ships Operating in Polar Waters (Polar Code))
15 – Carriage of dangerous goods, INF					
15.1	Justification of possibility of carrying bulk cargoes possessing chemical hazards and/or materials hazardous only in bulk (MHB)	+	–	Approved	(if applicable) — refer to 2.1.12, Part III "Survey of Ships in Compliance with International Conventions, Codes, Resolutions and Rules for the Equipment of Sea-Going Ships" of the Guidelines on Technical Supervision of Ships in Service
15.2	Shipboard emergency plan developed in accordance with "Guidelines for developing shipboard emergency plans for ships carrying materials subject to the INF Code" adopted by IMO resolution A.854(20)	+	–	Approved	For ships, carrying materials subject to the INF Code, adopted by IMO resolution A.854(20)

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Nos.	Document name	RS approval	Flag MA approval	Stamp	Application
15.3	Radiation protection programme (for carriage of dangerous goods of class 7 and INF cargoes)	+	–	For information (to be agreed with Flag State MA competent authorities)	Annex 25 to the Guidelines on Technical Supervision of Ships in Service (during carriage of dangerous goods of class 7 and INF cargoes)
16 – If mark ESP is available					
16.1	Enhanced survey programme (ESP), ESP ship's file	+	+	Approved	(for ships in service having distinguishing mark (ESP) in class notation) 1.3, 1.4, Part III of the Rules for the Classification Surveys of Ships in Service; SOLAS 74 reg. XI-1/2 and 2011 ESP Code paragraphs 6.2 and 6.3 of annex A, part A and part B, and annex B, part A and part B
17 – For descriptive notation Escort tug					
17.1	Plan for full scale trials	+	–	Approved	Sect. 2, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
17.2	Stability Booklet, as well as preliminary calculations of the ship's escort characteristics and tug's stability during escort service	+	–	Approved	Sect. 2, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
18 – For ECO, ECO-S					
18.1	Documentation according to MARPOL 73/78, BWM-2004, AFS-2001, the Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships Conventions, Regulation (EU) No. 1257/2013 of the European Parliament on ship recycling			Refer to section 9 — 13 of this table (as applicable)	Sect. 3, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
19 – For ANTI-ICE					
19.1	Icing Protection Manual	+	–	Agreed	Sect. 4, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
19.2	Stability Booklet, including loading conditions considering icing	+	–	Approved	Sect. 4, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
20 – For BLS-SPM, BLS or SPM					
20.1	Bow loading system (BLS) operating manual	+	–	Approved	Sect. 5, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
20.2	BLS test program	+		Approved	Sect. 5, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships

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Nos.	Document name	RS approval	Flag MA approval	Stamp	Application
21 – For HELIDECK, HELIDECK-F or HELIDECK-H					
21.1	Documentation on helideck and hangar deck covering	+	–	Approved	Sect. 6, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
21.2	Helicopter facility test program	+	–	Approved	Sect. 6, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
21.3	Helicopter facility operation manual	+	–	Approved	Sect. 6, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
21.4	Diagram of obstacle restriction and removal	+	–	For information (approved by the Flag State Civil Aviation Authority)	Sect. 6, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
21.5	Drawing of helideck and obstacle marking (colour, dimensions and configuration of marks shall be indicated)	+	–	For information (approved by the Flag State Civil Aviation Authority)	Sect. 6, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
22 – For WINTERIZATION (DAT)					
22.1	Manual on operation of ship at low temperature (Winterization Manual)	–	–	nil	Sect. 7, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
22.2	Stability Booklet, including loading conditions considering icing	+	–	Approved	Sect. 7, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
22.3	Damage stability booklet	+	–	Approved	Sect. 7, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
23 – For RP-1, RP-1A, RP-1AS, RP-2 or RP-2S (propulsion plant redundancy)					
23.1	Calculation results demonstrating that a single failure does not lead to the loss of propulsion and ship's steering (as an alternative, the results of the model or full-scale tests may be submitted)	+	–	Agreed	Sect. 8, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships

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Nos.	Document name	RS approval	Flag MA approval	Stamp	Application
23.2	Qualitative failure analysis for propulsion and steering (in compliance with Section 11, Part VII "Machinery Installations") or Failure Mode and Effect Analysis (FMEA) of the propulsion plant components based on the failure tree or the equivalent risk analysis agreed with the Register	+	–	Agreed	Sect. 8, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
23.3	Torsional vibration calculations	+	–	Agreed	3.2.7.5.11, Part I "Classification" of the Rules for the Classification and Construction of Sea-Going Ships; Sect. 8, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
23.4	Programme for mooring and sea trials	+	–	Approved	Sect. 8, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
24 – For GFS (Gas Fuelled Ship)					
24.1	Operating Manual	+	+	Approved	Sect. 9, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
24.2	Analysis of risks related to the use and storage of gas fuel and possible consequences of its leakages (may be included in the Operating Manual)	+	+	Approved	Sect. 9, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
24.3	Gas fuel bunkering instructions	–	–	nil	Sect. 9, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
24.4	Inerting and gas freeing instructions	–	–	nil	Sect. 9, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
24.5	Instructions for using gas fuel	–	–	nil	Sect. 9, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
24.6	Instructions describing the crew actions in emergencies which may arise during operations with gas fuel	–	–	nil	Sect. 9, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships

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Nos.	Document name	RS approval	Flag MA approval	Stamp	Application
24.7	Plan of periodic audits and maintenance of equipment related to the use of gas as fuel	–	–	nil	Sect. 9, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
24.8	Inspection/survey plan for the liquefied gas fuel containment system	+	+	Approved	6.4.1.8 of the IGF Code (IMO resolution MSC.391(95), as amended); Sect. 9, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships; Sect. 20, Part III "Additional Surveys of Ships Depending on their Purpose and Hull Material" of the Rules for the Classification Surveys of Ships in Service
25 – For descriptive notation LNG bunkering ship					
25.1	Ship's Operating Manual, including risk analysis related to gas fuel bunkering operations and potential consequences of leakage, as well as procedure of tightness test of connections between the LNG bunkering and receiving ships prior to bunkering operations	+	+	Approved	Sect. 11, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
25.2	Operating instructions containing the procedures of bunkering, inerting and control of cargo vapour return	–	–	nil	Sect. 11, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
25.3	Bunkering procedure for LNG receiving from a gas fueled ship with the required calculations	+		Approved	11.13.1, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships (for mark RE)
25.4	Diagram of gas freeing system and procedure for gas freeing	+	–	Approved	11.13.2, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships (for mark IG-supply)
25.5	Bunkering procedure for boil-off gas management indicating the operations	+	–	Approved	11.13.3, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships (for mark BOG)

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Nos.	Document name	RS approval	Flag MA approval	Stamp	Application
25.6	Calculation of the maximum LNG vapour flow rate possible to be generated during the bunkering to be less than the capacity of boil-off gas unit specified in the bunkering procedure	+	–	Agreed	11.13.3, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships (for mark BOG)
26 – For IWS (in-water survey)					
26.1	Drawing of the marking on the side and bottom plating to identify the tanks	+	–	Approved	Sect. 12, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
27 – For descriptive notation Anchor handling vessel					
27.1	Bollard pull test procedure	+	–	Approved	13.3, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
27.2	Information on stability	+	–	Approved	13.3.5, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of ships" of the Rules for the Classification and Construction of Sea-Going Ships
27.3	Bollard pull estimation	+	–	Agreed	13.3, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
28 – For GRS (Gas Ready Ship) — ships prepared for conversion for the use of gas fuel					
28.1	Ship conversion design	+	–	Depending on the type of documentation within the design	Sect. 14, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of ships" of the Rules for the Classification and Construction of Sea-Going Ships
29 – For NAABSA (ships Not Always Afloat But Safely Aground)					
29.1	Information on stability	+	–	Approved (may be included in the basic information on stability of a ship)	15.4, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
30 – For BMS (boiler monitoring system)					
30.1	Instruction on maintaining boiler water and chemistry quality	+	–	For information	Sect. 16, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
30.2	Ship's boiler monitoring log-book	–	–	nil	Sect. 16, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
31 – For HMS(...) (hull strength and/or stability monitoring system)					
31.1	Monitoring system operating manual	+	–	Agreed	17.5, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
31.2	Maintenance instruction manual including calibration procedure				
31.3	List of measuring channels				
31.4	Schematic diagram				

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Nos.	Document name	RS approval	Flag MA approval	Stamp	Application
32 – For COMF(C) (ships complying with the indoor climate requirements)					
32.1	Heat balance calculation	+	–	For information	Sect. 18, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
32.2	Programme of mooring and sea trials	+	–	Approved	Sect. 18, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
32.3	Measurement report	+	–	For information	Sect. 18, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
33 – For COMF(N – 1 or 2 or 3) (ships complying with the requirements for noise level in all passenger and crew spaces)					
33.1	Noise level measurement programme	+	–	Approved	Sect. 18, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
33.2	Measurement report	+	–	For information	Sect. 18, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
34 – For COMF(V – 1 or 2 or 3) (ships complying with the requirements for sanitary vibration level in all passenger and crew spaces)					
34.1	Programme of sanitary vibration measurements within the spaces	+	–	Approved	Sect. 18, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of ships" of the Rules for the Classification and Construction of Sea-Going Ships
34.2	Measurement report	+	–	For information	Sect. 18, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships
35 – For descriptive notation gas carrier according to the Rules for the Classification and Construction of Ships Carrying Liquefied Gases in Bulk (LG Rules)					
35.1	Inspection/survey plan for the cargo containment system	+	+	Approved	4.3.6 of the IGC Code; 4.1.25, Part I "Classification" of the Rules for the Classification and Construction of Ships Carrying Liquefied Gases in Bulk
35.2	Cargo system operation manual	+	+	Approved	In accordance with the requirements of Chapter 18 of the IGC Code
35.3	Cargo handling plan	+	+	Approved	18.19, Part X "Special requirements" of LG Rules; 17.18.24 of the IGC Code
35.4	Document (Record) specifying the maximum allowable loading limits for each cargo tank and product	+	–	Approved	3.20.6, Part VI "Systems and piping" of LG Rules
35.5	Failure modes and effects analysis	+	+	Agreed	10.2.6 of the IGC Code and 14.3.4 of the IGF Code

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Nos.	Document name	RS approval	Flag MA approval	Stamp	Application
35.6	List of cargoes to be carried onboard a ship specifying their basic chemical and physical properties, as well as dangerous properties related to their carriage and storage	+	–	For information	4.3, Part I "Classification" of the LG Rules (18.3 of the IGC Code)
35.7	Operating instruction of emergency shutdown valve Manufacturer	–	–	nil	3.15.4, Part VI "Systems and piping" of the LG Rules
35.8	Testing procedures during sea and gas trials	+	+	Approved	IGC Code (sections regarding testing)
35.9	Failure mode and effects analysis (FMEA) for reliquefaction unit for cargo vapours (in accordance with IEC 60812 standard) performed against the level confirming the operation of the unit as intended after any single failure	+	–	Agreed	4.4.11, Part I "Classification" of the LG Rules. It is included in the overall document "Failure modes and effects analysis" (for mark RLU)
35.10	Testing procedures during sea and gas trials of reliquefaction unit for cargo vapours	+	–	Approved	4.4.12, Part I "Classification" of the LG Rules. It is included in the overall document "Testing procedures during sea and gas trials" (for mark RLU)
36 – For descriptive notation Gas carrier CNG according to the Rules for the Classification and Construction of Ships Carrying Compressed Natural Gas (CNG Rules)					
36.1	Program and procedure for testing full-scale prototype of a cargo tank for fatigue and fracture due to internal pressure	+	–	Approved	Part I "Classification" of the CNG Rules
36.2	Instruction for cargo handling operations, including emergency procedures	+	–	Agreed	2.9, Part VI "Systems and piping" of the CNG Rules
36.3	Operating Instruction for the Cargo System	+	–	Agreed	5.1, Part VI "Systems and piping" of the CNG Rules
37 – For descriptive notation Chemical tanker					
37.1	List of cargoes intended for carriage on board the ship	+	–	For information	Part I "Classification" of the Rules for the Classification and Construction of Chemical Tankers; Chapter 16 of the IBC Code
37.2	Documentation on access to spaces	+	–	Approved	3.4 of the IBC Code
37.3	Stripping system testing programme	+	–	Approved	Part I "Classification" of the Rules for the Classification and Construction of Chemical Tankers

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Nos.	Document name	RS approval	Flag MA approval	Stamp	Application
38 – For CSR and ships for which requirements of SOLAS as amended, reg. II-1/3-10 apply					
38.1	Ship Construction File	+	–	Stamps depending on type of approved documentation within the design	For oil tankers and bulk carriers in accordance with SOLAS as amended, reg. II-1/3-10, MSC.1/Circ.1343; IACS Common Structural Rules (2.2.3, Part 1, Chapter 1)
39 – For high-speed craft, type A WIG craft					
39.1	Operating Manual	+	+	Approved	Chapter 18 of the HSC Code; Sect. 8 of the Appendix to the Rules for the Classification and Construction of Type A WIG Craft
39.2	Craft training manual and instructions for on-board maintenance	–	–	nil	12.6, Part XVI "Life-Saving Appliances" of the Rules for Classification and Construction of High-Speed Craft; Sect. 8 of the Appendix to the Rules for Classification and Construction of Type A WIG Craft
39.3	Evacuation procedure, including a critical path analysis	+	–	Agreed	13.2, Part XVI "Life-Saving Appliances" of the Rules for Classification and Construction of High-Speed Craft
40 – For DYNPOS-1, DYNPOS-2 or DYNPOS-3					
40.1	Failure mode and effects analysis (FMEA) on ships with DYNPOS-2 or DYNPOS-3 distinguishing mark in the class notation	+	+	Agreed	During initial survey of the ship
40.2	DP system operation instructions according to IMO circular MSC/Circ.645 of 6 June 1994 (it shall contain documents according to 4.4.1 — 4.4.6 of the above-mentioned IMO circular)			During the next periodical survey it is necessary to check availability of the document on board. In case of absence of the document it is necessary to introduce the condition into ship's survey status with the term of fulfillment agreed by RS and shipowner	For ships which keels are laid before 09.06.2017 (for ships under RF flag — before 16.06.2017)

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Nos.	Document name	RS approval	Flag MA approval	Stamp	Application
40.3	DP system operation instructions according to IMO circular MSC.1/Circ.1580 (as a rule, it shall contain documents, listed in items 40.4 — 40.14 of this table)			During the first annual survey after construction it is necessary to check availability of the document on board (in case of absence of the documentation before completion of the initial survey after construction for issuance of FSVAD or DPVAD it is necessary to enter the following record into ship's survey status: "Before commencement of actual operation of the ship in DP modes, but not later than the first annual survey the set of documents "DP operations manuals" shall be submitted to RS surveyor on board")	For ships which keels are laid on or after 09.06.2017 (for ships under RF flag — on or after 16.06.2017)
40.4	Checklist for the DP system check before its operation, taking into account the DP system specific use			refer to item 40.3	
40.5	Checklist for the DP system checks at regular intervals when dynamically keeping the ship's position and/or heading			refer to item 40.3	
40.6	DP operation instructions			refer to item 40.3	
40.7	Annual survey programme for the DP system to confirm that the system has been maintained in good working order			refer to item 40.3	

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Nos.	Document name	RS approval	Flag MA approval	Stamp	Application
40.8	Initial and special survey programme for the DP system to confirm that the system complies with the approved technical documentation and remains in good working order, including, inter alia, necessary checks and tests according to all FMEA items for the DP systems on ships having DYNPOS-2 or DYNPOS-3 distinguishing mark in the class notation	+		Approved	
40.9	Typical recommendations on checking the DP system operability after failure elimination or the DP system changes			refer to item 40.3	
40.10	Procedure for the DP system restoring after the ship blackout	+		Agreed	
40.11	List of critical components of the DP system	+		Agreed	
40.12	Examples of the DP system operating conditions			refer to item 40.3	
40.13	Guidelines for decision-making during the DP system control, taking into account the DP system specific use (ship type and operational profile), ship service area (weather conditions, currents, depths, etc.)			refer to item 40.3	
40.14	Diagrams showing the ability of the ship having DYNPOS-2 or DYNPOS-3 distinguishing mark in the class notation to keep position both with the DP system in fully serviceable condition and after the single worst DP system failure as defined in FMEA	+		Agreed	

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Nos.	Document name	RS approval	Flag MA approval	Stamp	Application
41 – For MODU and FOP					
41.1	Information on stability on seabed	+	–	Approved	Part II "Hull" of the Rules for Classification, Construction and Equipment of Mobile Offshore Drilling Units and Fixed Offshore Platforms; Sect. 19, Part III "Additional Surveys of Ships Depending on their Purpose and Hull Material" of the Rules for the Classification Surveys of Ships in Service
41.2	Guidance for the ballast system arrangement plan	+	–	Approved	1.4.9, Part IV "Stability" of the Rules for Classification, Construction and Equipment of Mobile Offshore Drilling Units and Fixed Offshore Platforms
41.3	Strength calculations	+	–	Agreed	1.3.3, Part II "Hull" of the Rules for Classification, Construction and Equipment of Mobile Offshore Drilling Units and Fixed Offshore Platforms
41.4	MODU/FOP Operating Manual	+	+	Approved	1.3.3, Part II "Hull" of the Rules for Classification, Construction and Equipment of Mobile Offshore Drilling Units and Fixed Offshore Platforms; Chapter 14 of the MODU Code 2009
41.5	Helicopter facility operation manual	+	–	Approved	Sect. 6, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships" of the Rules for the Classification and Construction of Sea-Going Ships (if helicopter arrangement is available) (may be included in the MODU/FOP Operating Manual)
41.6	MODU/FOP special survey programme or continuous survey programme, as applicable	+	–	Approved	Sect. 19, Part III "Additional Surveys of Ships Depending on their Purpose and Hull Material" of the Rules for the Classification Surveys of Ships in Service
42 – For manned submersibles and ship's diving systems					
42.1	Passenger submersible operation manual containing normal and emergency working procedures	+	+	Approved	4.2.5.3, Part I "Classification" of the Rules for the Classification and Construction of Manned Submersibles and Ship's Diving Systems
42.2	Emergency plan	–	–	nil	4.2.5.3, Part I "Classification" of the Rules for the Classification and Construction of Manned Submersibles and Ship's Diving Systems
42.3	Passenger submersible maintenance manual	–	–	nil	4.2.5.3, Part I "Classification" of the Rules for the Classification and Construction of Manned Submersibles and Ship's Diving Systems
43 – For passenger ships					
43.1	Ship's description Overall assessment of essential systems' report Detailed assessment of critical systems' report, if any critical system is identified	+	+	Approved	SOLAS 74 as amended, regs. II-1/8-1, II-2/21 and II-2/22; paras 7.2, 7.4, IMO circular MSC.1/Circ.1369, as amended
43.2	Operational manual for fire and flooding casualty cases and safe return to port operation	+	+	Approved	SOLAS 74 as amended, regs. II-1/8-1, II-2/21 and II-2/22; paras 7.2, 7.4, IMO circular MSC.1/Circ.1369, as amended

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Nos.	Document name	RS approval	Flag MA approval	Stamp	Application
43.3	Description of operation of essential systems after a fire casualty exceeding the casualty threshold List of spaces considered having negligible fire risk, if any Test, inspection, and maintenance plan	+	+	Approved	SOLAS 74 as amended, regs. II-1/8-1, II-2/21 and II-2/22; paras 7.2, 7.4, IMO circular MSC.1/Circ.1369, as amended
44 — Cyber safety					
44.1	Description of data transmission networks	-	-	For information	2.2 of the Guidelines on Cyber Safety
44.2	Inventory of components of category II and III computer based systems	-	-	For information	2.2 of the Guidelines on Cyber Safety Shall be applied to ships contracted for construction on or after 01.01.2021 and existing ships after 01.01.2022. For existing ships the inventory shall be prepared by the company. For ships contracted for construction on or after 01.01.2021, the inventory shall be prepared by the system integrator prior to delivery of the ship. During the ship operation, immediately after making changes in the computer based system (software update, replacement of equipment, except replacement by the similar equipment without software changes), the responsible personnel on board the ship shall introduce the relevant amendments to the inventory indicating the date and reason of changes, as well as information on the persons making the changes
44.3	Inventory of category II and III computer based systems (logic level)	-	-	For information	2.2 of the Guidelines on Cyber Safety Shall be applied to ships contracted for construction on or after 01.01.2021. The inventory shall be prepared by the system integrator prior to delivery of the ship. During the ship operation, immediately after making changes in the computer based system (software update, replacement of equipment, except replacement by the similar equipment without software changes), the responsible personnel on board the ship shall introduce the relevant amendments to the inventory, indicating the date and reason of changes, as well as information on the persons making the changes
44.4	Inventory of software of category II and III computer based systems	-	-	For information	2.2 of the Guidelines on Cyber Safety Shall be applied to ships contracted for construction on or after 01.01.2021. The inventory shall be prepared by the system integrator prior to delivery of the ship. During the ship operation, immediately after making changes in the computer based system (software update, replacement of equipment, except replacement by the similar equipment without software changes), the responsible personnel on board the ship shall introduce the relevant amendments to the inventory, indicating the date and reason of changes, as well as information on the persons making the changes

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Nos.	Document name	RS approval	Flag MA approval	Stamp	Application
44.5	Risk assessment	-	-	For information	2.2 of the Guidelines on Cyber Safety
44.6	Instructions on Cyber Safety on Board the Ship	-	-	For information	2.2 of the Guidelines on Cyber Safety Shall be applied to ships contracted for construction on or after 01.01.2021 and existing ships after 01.01.2022. The document shall be developed by a company based on the results of risk assessment and recommendations of the equipment producers
44.7	List of service providers	-	-	For information	2.2 of the Guidelines on Cyber Safety Shall be applied to existing ships and ships contracted for construction on or after 01.01.2021. The document shall be developed and updated, where necessary, by the company during the ship life cycle
44.8	Description of security perimeter	-	-	For information	2.2 of the Guidelines on Cyber Safety Shall be applied to ships contracted for construction on or after 01.01.2021 and existing ships after 01.01.2022. For existing ships the description shall be prepared by the company. For ships contracted for construction on or after 01.01.2021, the description shall be prepared by the system integrator prior to delivery of the ship. The description shall be updated, where necessary, by the company during the ship life cycle

Russian Maritime Register of Shipping

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Part II
Technical Documentation**

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