

**RULES  
FOR THE CLASSIFICATION OF  
SHIPS**

*Part 1 – GENERAL REQUIREMENTS*  
**July 2020**

**CROATIAN REGISTER OF SHIPPING**

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By the decision of the General Committee of Croatian Register of Shipping,

**RULES FOR THE CLASSIFICATION OF SHIPS**  
Part 1 – GENERAL REQUIREMENTS

have been adopted on 30th June 2020 and shall enter into force on 1st July 2020

## **REVIEW OF AMENDMENTS IN RELATION TO PREVIOUS EDITION OF THE RULES**

### **RULES FOR THE CLASSIFICATION OF SHIPS** *Part 1 - GENERAL REQUIREMENTS* *Chapter 2 – Survey during construction and initial survey*

All major changes in respect to Rules for the classification of ships, Part 1 – General requirements, Chapter 2 – Survey during construction and initial survey, edition January 2020, throughout the text are shaded (if any).

Items not being indicated as corrected have not been changed.

The grammar and print errors, have been corrected throughout the Rules and are not subject to above indication of changes.

The subject Chapter of this part of the Rules includes the requirements of the following international Organisations:

**International Maritime Organization (IMO):**

**Resolutions:** MEPC.269(68) 2015 Guidelines for the development of the inventory of hazardous materials

**Circulars:** MSC/Circ.1142/MEPC/Circ.425 Marking the ship's plans, manuals and other documents with the IMO identification number  
MSC/Circ.1135 As-built construction drawings to be maintained on board the ship and shore  
MSC.1/Circ.1379 Unified interpretation of SOLAS Regulation II-1/3-5  
MSC.1/Circ.1426/Rev.1 Unified interpretation of SOLAS Regulation II-1/3-5 and MSC.1/Circ.1379

**International Association of Classification Societies (IACS):**

**Unified Requirements (UR):**

S14 (rev. 6, Sep 2016), Z23 (rev. 6, Nov 2016)

**Procedural Requirements (PR):**

PR1A (rev. 7, May 2019), PR1B (rev. 5, Nov. 2019), PR1D (rev. 2, May 2019)

**Unified Interpretations (UI):**

LL77 (Dec. 2011), SC226 (rev. 1, Dec 2012), SC249 (rev. 1, Feb. 2013)

## Chapter 2      **SURVEY DURING CONSTRUCTION AND INITIAL SURVEY**

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# 1 SURVEY DURING CONSTRUCTION

## 1.1 GENERAL REQUIREMENTS

**1.1.1** This Section of this Chapter of the Rules prescribes requirements for survey during construction for the purpose of classification of newbuildings, directly comprising the following:

- .1 Approval of technical documentation of the ship.
- .2 Survey at the premises of the manufacturer during manufacture of the materials, machinery, installations and equipment to be installed on board ship.
- .3 Survey during construction of the ship at the premises of the shipyard, as stated in 1.3.
- .4 Survey during sea-trials and final tests.
- .5 Issuing of the Certificate of class upon satisfactory completion of the survey.

This Section of the Rules is applicable to all ships or floating units, irrespective of their size or navigation area, when being built under survey of the *Register* for the purpose of assigning appropriate class notation.

Nevertheless, the *Register* reserves the right to make justified deviation from this requirements, when survey during construction is desired for ships not to be engaged in international voyages. As a rule, such deviations will not be accepted in respect to structural strength, intact stability, machinery installations and electrical equipment covered by main class notations.

Compliance with class related requirements does not relieve the interested party from compliance with any statutory requirement demanded by the Flag State Administration.

Before starting any activities related to construction, it is necessary to submit the "Request for survey during construction" to the Head Office of the *Register*.

This Section of this Chapter of the Rules shall also apply to shipyard subcontractors, when performing fabrication works which are falling under the scope of classification survey as defined in the following paragraphs.

Major modifications and conversions, significant repairs, modifications or alterations, change of navigation area or number of passengers

**1.1.2** Activities which are foreseen to be undertaken in a view of:

- .1 major modifications or conversions (see *Chapter 1 - General requirements, 2.22*); or
- .2 significant repairs; or
- .3 modifications or alternations of the equipment; or
- .4 change of navigation area;
- .5 change of number of passengers;

directly comprises activities required for newbuildings, as specified in 1.1.1, also, in extent as deemed nec-

essary and reasonable by the *Register*, considering each specific case separately.

### Conversion of existing vessel to a passenger ship

**1.1.3** In cases when existing vessel, irrespectively of the date of built and its navigation area, is converted into passenger ships, requirements as for new passenger ships are to apply.

### Technical documentation

**1.1.4** The list of technical documentation, which is to be submitted for information or approval, shall be previously agreed with the *Register*, prior to commencement of delivery of such technical documentation, for each particular ship.

**1.1.5** The list of technical documentation which is to be submitted to the *Register* for information is stated in 1.2.1 (and where explicitly stated otherwise), while the list of technical documentation, which is to be submitted for approval, is stated in 1.2.2 to 1.2.11.

The following documentation shall be submitted:

- .1 Drawings, plans and specifications as required by the relevant parts of the Rules.
- .2 Corresponding technical descriptions, calculations and data, including material specifications.
- .3 Outline specification of the ship.

The extent of technical documentation for the ships having special design features is to be determined for every such ship in agreement with the *Register*.

Notwithstanding above stated, the *Register* reserves the right to ask for additional documentation which considers necessary.

**1.1.6** Technical documentation is to be submitted to the *Register* for information or approval in three copies, unless required or agreed otherwise.

Technical documentation is to be submitted to the *Register*, for information or approval, duly in advance of starting the construction, or exceptionally, duly in advance prior to commencement of particular phase of the construction of the ship, which is to be specially arranged with the *Register*.

All information which may influence the judgement and decisions made by the *Register* during the process of approval is to be made available to the *Register*. It is the responsibility of the shipbuilder to ensure that such information is brought to the attention of the *Register* in time.

For ships to be engaged on international voyages technical documentation is to be submitted in English (mandatory).

**1.1.7** Technical documentation is to be produced in the manner of common good shipbuilding practice and is to be elaborated and completed with all necessary data to make checking whether ship complies with the requirements of the Rules possible.

In the case of conflicting information, submitted documentation will be considered in the following order for precedence: design data, plans, design and calculation.

**1.1.8** The documentation forming the basis for the survey is, at all times, to reflect the true conditions. Revisions of documents are therefore to be submitted to the *Register* to the extent such revisions may influence decisions or statements made by the *Register*.

Revisions of already approved documentation are to be submitted to the *Register* for approval prior to being realised. Such documentation is to be specially marked to identify revisions made.

**1.1.9** Where applicable, approval of technical documentation is to be confirmed by the seal of the *Register*. Conditions and restrictions, deriving from plan approval, and relevant for a specific document may be indicated on the technical documentation itself and/or on the pertinent appraisal letter.

The approval does not refer to the parts and construction details, contained in the approved technical documentation, which are not covered by the Rules.

**1.1.10** If subsequent information indicates that the design solutions are against the requirements of the Rules, the *Register* may revoke approval of the technical documentation at any time.

**1.1.11** It is the responsibility of the shipyard to ascertain that drawings used for procurement, construction and other works (shop drawings) are in accordance with the technical documentation approved by the *Register*.

**1.1.12** The *Register* may, at its discretion and subject to conditions and checks deemed appropriate, accept the plans and documentation approved by other class society, being IACS member, as far as classification is concerned and according to the principle of equivalence of Rules and other works are in accordance with the approved plans, i.e. the *Register* may consider the acceptance of alternatives to these Rules, provided that they are deemed to be equivalent to the Rules to the satisfaction of the *Register*.

**1.1.13** Technical documentation (plans, manuals and other documents) which is required to be carried on board ships on international voyages constructed on or after 1st July 2005, according to IMO MSC/Circ.1142/MEPC/Circ.425 (Marking the ship's plans, manuals and other documents with the IMO identification number) should be marked with IMO ship identification number <sup>1)</sup> in clearly legible and unambiguous manner. The originator of such technical documentation should ensure that the IMO ship identification number is marked on it prior to submission for approval to the *Register*.

**1.1.14** As required by IMO MSC/Circ.1135 (*As-built construction drawings to be maintained on board the ship and shore*) on completion of survey during construction, as required by 1.1.13, the following technical documentation with IMO identification number entered is to be maintained on board the ship and ashore:

- .1 General arrangement plan.
- .2 Capacity plan.
- .3 Stability file and hydrostatic curves.
- .4 Loading Manual, where required.

- .5 Midship section, with dimensions of main structural elements entered.
- .6 Scantling plan.
- .7 Decks.
- .8 Shell expansion.
- .9 Transverse bulkheads.
- .10 Rudder and rudder stock.
- .11 Cargo hatch covers, where applicable.
- .12 Bilge, ballast and cargo piping diagrams.

#### Field survey at the premises of the shipyard

**1.1.15** During construction, the Surveyor should have safe access to all works directly or indirectly affecting classification survey during construction. In that respect the shipyard is to provide necessary facilities and safe working environment for the safe execution of the survey. This includes, inter alia, provision of the suitable and safe means of access, i.e. scaffolding, working platforms and related equipment, illumination, ventilation, temporary barriers, guard-rails or other equivalent arrangements to prevent falling down, as well as posting of warnings on possible danger from objects falling from the working areas. Safety measures and arrangements to be applied should be agreed between the shipyard and the *Register* in advance, prior starting surveying activities.

**NOTE:** For additional requirements related to safety of Surveyors the following may be considered also (as far as applicable): IACS Recommendation 91 - "Guidelines for acceptance / approval of alternative means of access", IACS Recommendation 78 - "Safe use of portable ladders for close-up survey", IACS Recommendation 72 - "Confined space safe practice", EU Directive 2001/45/EC, amending Council Directive 89/655/EEC concerning the minimum safety and health requirements for the use of work equipment by workers at work.

It is the duty of the shipyard to duly notify and arrange with the local Branch office of the *Register* on surveys and testing to be performed, as each phase during construction, which is to be inspected by the *Register*, is completed.

After such notification the Surveyor will inspect the work performed in order to establish whether the requirements of the Rules have been met.

The scope of survey will be decided by the *Register* based on elements such as experience feedback, patrolling and spot checks. The survey may consist of a combination of visual inspections, witnessing during tests and measurement and review of records.

For hull surveys of ships falling under the provisions of IACS UR Z23 - "Hull survey of newconstruction" specific survey requirements are to be applied. For that purpose the shipyard is to comply with the criteria given in UR Z23 and shall provide documentation stated therein. Shipyard subcontractors are also to comply with IACS UR Z23.

*IACS UR Z23*

For requirements related to survey during construction of hull, building in of machinery, installations and equipment see 1.3 also.

For requirements related to testing during construction see 1.4 also.

#### Testing program

**1.1.16** During construction of the ship, the shipyard is to develop a Testing Program (functional testing program) to

<sup>1)</sup> IMO Ship Identification Scheme adopted by IMO Res. A.1078(28) has been made mandatory through SOLAS, Reg. XI-1/3.

the satisfaction of the *Register*. This Program is to include testing during harbour and sea trials.

This Program is to specify systems, arrangements and equipment which are to be tested together with testing procedures. Such tests shall give evidence as to satisfactory operation and performance in accordance with the Rules.

In order to verify compliance with the Rules, the *Register* reserves the right to request additional tests to be conducted.

### Materials and products

**1.1.17** For the purpose of survey during construction, all materials, machinery, auxiliary installations, equipment, etc., which are covered by classification and to be installed on board ship are to be new, and where applicable are to be surveyed during production at the premises of the manufacturer, what in certain cases requires approval of the technical documentation also.

**1.1.18** Second hand materials, machinery, auxiliary installation, equipment, etc., may be used subject to approval of the *Register*, for each particular case, but limited to class related items only, under presumption that such second hand items are complying with the applicable Rules for newbuildings, including statutory requirements where relevant, and provided that the Owner has given a written acceptance.

### Defects and damages originated during construction and their repairs

**1.1.19** The *Register* may, at any time, reject items found to be defective or contrary to rule requirements or require supplementary inspections and tests and/or modifications, notwithstanding any previous certificates issued.

**1.1.20** All repairs are subject to the preliminary agreement of the *Register*. When the limits of tolerance for defects are specified in the Rules concerned or by the manufacturer, they are to be taken into account for repairs.

**1.1.21** It is incumbent upon the shipyard to notify the Register of any defects noted during the construction of the ship and/or of any item not complying with the applicable requirements or in any case unsatisfactory. Proposals regarding remedial actions intended to be adopted to eliminate such defects or unsatisfactory items are to be submitted to the *Register* and, if accepted, carried out to the Surveyor's satisfaction.

**1.1.22** Guidance to general welding repair work is given in IACS Recommendation No. 47 - "Shipbuilding and Repair Quality Standard", SARQS, Part A.

### Other requirements

**1.1.23** As a prerequisite for construction of ships with hull made from fibre-reinforced plastics suitability of the builder (workshop) for performance of such works is to be certified by the *Register* through relevant builder (workshop) approval.

**1.1.24** Welding on steel or aluminium structures is to be performed by approved welders using approved welding consumables and according to approved welding procedures (see the *Rules*, Part 26 - *Welding*, 1).

**1.1.25** For the requirements related to survey during construction of ships made of wood, aluminium alloys or reinforced plastics see the *Rules for technical supervision of ships made of wood, aluminium alloys and reinforced plastics*, Part A, Chapter 2 and Part B, Chapter 1, Chapter 2, Chapter 3, Chapter 4 and Chapter 5.

**1.1.26** For the requirements related to survey during construction of fishing vessels see the *Rules for statutory certification of fishing vessels*, Part A, Chapter 2 and Part B, Chapter 3, Chapter 4 and Chapter 5.

### Date of initial classification for newbuildings

**1.1.27** As a rule, for newbuildings the date of initial classification coincides with the date of build.

### Ships built under dual class agreement with other IACS member class society

**1.1.28** If the survey during construction is being performed on the ship dually classed with other IACS member class society a specific protocol shall to be developed and agreed between the *Register*, other class society and the shipyard to ease the survey procedure (comprising both plan approval activities and field survey at the premises of the shipyard). Such protocol is to be developed and agreed prior starting the project.

### Implementation of SOLAS II-1, Regulation 3-5 and MSC.1/Circ.1379 <sup>2)</sup>

**1.1.29** **Prohibition of the installation of asbestos** (SOLAS Ch. II-1, Reg. 3-5): From 1st January 2011, for all ships, new installation of materials which contain asbestos shall be prohibited.

IMO MSC.1/Circ.1379 (*Unified interpretation of SOLAS Regulation II-1/3-5*) <sup>3)</sup>: From 1st January 2011, for all ships, new installation of materials which contain asbestos shall be prohibited. In the context of this regulation, new installation of materials containing asbestos means any new physical installation on board. Any material purchased prior to 1st January 2011 being kept in the ship's store or in the shipyard for a ship under construction, should not be permitted to be installed after 1st January 2011 as a working part.

### Interpretation

**NOTE:** For additional clarification the following interpretation of MSC.1/Circ.1379 should be applied:

1. Verification that "new installation of materials which contain asbestos" under SOLAS, Reg. II-1/3-5 requires the *Register* to review asbestos-free declarations and supporting documentation, for the structure, machinery, electrical installations and equipment covered by the SOLAS Convention, which is to be provided to the *Register*, by repair yards, and equipment manufacturers taking into account Appendix 8 of the 2015 Guidelines for the develop-

<sup>2)</sup> For more requirements regarding prohibition of the installation of asbestos, as well as regarding requirements related to ship recycling refer to the *Rules for technical supervision of sea-going ships*, Part 32 – *Ship recycling*

<sup>3)</sup> Provisions of MSC.1/Circ.1426/Rev.1 *Unified interpretation of SOLAS Regulation II-1/3-5 and MSC.1/Circ.1379* should be taken into account also



ment of the inventory of hazardous materials (IMO Res. MEPC.269(68)) for:

- new construction (keel laid, or at a similar stage of construction, on or after 1st July 2012);
  - conversions (contract date for the conversion or, in the absence of a contract, the date on which the work identifiable with the specific conversion begins) on or after 1st July 2012.
2. The phrase “new installation of materials containing asbestos” in MSC.1/Circ.1379:
- means that material used (i.e., repaired, replaced, maintained or added) as a working part of the ship as per “indicative list” of products which is installed on or after 1st July 2012 is required to be documented with an asbestos-free declaration. The Register will, in consultation with the Company’s nominated person responsible to control asbestos containing material onboard, as per the Safety Management System in accordance with IMO MSC/Circ.1045 (*Guidance for maintenance and monitoring of on-board materials containing asbestos*), audit this documentation during annual safety construction and safety equipment surveys; and
  - does not preclude the stowage of material which contains asbestos onboard (e.g., spare parts existing on board as of 1st July 2012).
3. The phrase “should not be permitted to be installed after 1 January 2011 as a working part” in IMO MSC.1/Circ.1379 means that replacement, maintenance or addition of materials used for the structure, machinery, electrical installations and equipment covered by the SOLAS Convention which contain asbestos is prohibited
4. The "indicative list" of products that are presumed that might contain asbestos is given in IMO Res. MEPC.269(68), Appendix 5, paragraph 2.2.3.2, as listed below:

Structure and/or equipment	Component
Propeller shafting	Packing with low pressure hydraulic piping flange Packing with casing Clutch Brake lining Synthetic stern tubes
Diesel engine	Packing with piping flange Lagging material for fuel pipe Lagging material for exhaust pipe Lagging material turbocharger
Turbine engine	Lagging material for casing Packing with flange of piping and valve for steam line, exhaust line and drain line Lagging material for piping and valve of steam line, exhaust line and drain line
Boiler	Insulation in combustion chamber Packing for casing door Lagging material for exhaust pipe Gasket for manhole Gasket for hand hole Gas shield packing for soot blower and other hole Packing with flange of piping and valve for steam line, exhaust line, fuel line and drain line Lagging material for piping and valve of steam line, exhaust line, fuel line and drain line

Structure and/or equipment	Component
Exhaust gas economizer	Packing for casing door Packing with manhole Packing with hand hole Gas shield packing for soot blower Packing with flange of piping and valve for steam line, exhaust line, fuel line and drain line Lagging material for piping and valve of steam line, exhaust line, fuel line and drain line
Incinerator	Packing for casing door Packing with manhole Packing with hand hole Lagging material for exhaust pipe
Auxiliary machinery (pump, compressor, oil purifier, crane)	Packing for casing door and valve Gland packing Brake lining
Heat exchanger	Packing with casing Gland packing for valve Lagging material and insulation
Valve	Gland packing with valve, sheet packing with piping flange Gasket with flange of high pressure and/or high temperature
Pipe, duct	Lagging material and insulation
Tank (fuel tank, hot water, tank, condenser), other equipment (fuel strainer, lubricant oil strainer)	Lagging material and insulation
Electric equipment	Insulation material
Airborne asbestos	Wall, ceiling
Ceiling, floor and wall in accommodation area	Ceiling, floor, wall
Fire door	Packing, construction and insulation of the fire door
Inert gas system	Packing for casing, etc.
Air-conditioning system	Sheet packing, lagging material for piping and flexible joint
Miscellaneous	Ropes Thermal insulating materials Fire shields/fire proofing Space/duct insulation Electrical cable materials Brake linings Floor tiles/deck underlay Steam/water/vent flange gaskets Adhesives/mastics/fillers Sound damping Moulded plastic products Sealing putty Shaft/valve packing Electrical bulkhead penetration packing Circuit breaker arc chutes Pipe hanger inserts Weld shop protectors/burn covers Fire-fighting blankets/clothing/equipment Concrete ballast

IACS U1 SC249

### Application of Load Line Requirements to Conversions of Single-hull Oil Tankers to Double-hull Oil Tankers or Bulk Carriers

**1.1.30** This requirement is based on IACS UI LL77 and is applicable to conversions of single-hull oil tankers to double-hull oil tankers or bulk carriers and falling under provision of the International Convention on Load Lines, 1966, as amended, which occur on or after 1st January 2013, when the Register acts as Recognized organization on behalf of the Flag State Administration.

#### Article 10 - Repairs, alterations and modifications

(1) A ship which undergoes repairs, alterations, modifications and outfitting related thereto shall continue to comply with at least the requirements previously applicable to the ship. An existing ship in such a case shall not, as a rule, comply to a lesser extent with the requirements for a new ship than it did before.

(2) Repairs, alterations and modifications of a major character and outfitting related thereto should meet the requirements for a new ship in so far as the administration deems reasonable and practicable.

**NOTE:** For additional clarification the following interpretation should be applied:

#### 1. For single-hull oil tankers converted to double-hull oil tankers:

1.1 The ship should meet the requirements of the regulations contained in chapter III (Freeboards) of Annex I of the Load Line Convention in effect at the date of conversion. In cases where there are no changes to the parameters which result in a change of the minimum freeboard<sup>4)</sup>, and where there is no decrease in magnitude of freeboard assigned after conversion, using the Convention previously applicable to the ship in determining any change or decrease as mentioned above, the converted ship should continue to comply with at least the requirements previously applicable to the ship.

1.2 Any structure and/or equipment such as doors, hatches, and cable lockers, etc., which is newly added, replaced, or modified is to comply with the requirements of the regulations contained in chapter II (Conditions of assignment of freeboard) of Annex I of the Convention in effect at the date of conversion.

#### 2. For single-hull oil tankers converted to bulk carriers:

2.1 Any such conversion should be regarded as a modification of a major character and the ship should meet all the requirements of the regulations annexed to the Convention (including regulation 39) in effect at the date of conversion; and

2.2 Notwithstanding the above, the requirements of the regulations contained in chapter II (Conditions of assignment of freeboard) of Annex I of the Convention in effect at the date of conversion, should be applied only to the structure and/or equipment, which is newly added, replaced, or modified.

3. The date on which a conversion occurs for the purposes of determining the applicability of requirements for ships constructed on or after the date on which any relevant amendments enters into force should be:

3.1 the date on which the contract is placed for the conversion; or

3.2 in the absence of a contract, the date on which the work identifiable with the specific conversion begins; or

<sup>4)</sup> "which result in a change of the minimum freeboard" should be understood as "which are used in determining the minimum freeboard even though the minimum freeboard has no change in fact"

3.3 the completion date of the conversion<sup>5)</sup>, if that occurs more than 3 years after the date specified in subparagraph 3.1 above or 30 months after the date specified in subparagraph 3.2 above, either as applicable.

IACS UI SC LL77

<sup>5)</sup> Where the completion date of the conversion has been subject to delay beyond the period referred to in paragraph 3.3 above due to unforeseen circumstances beyond the control of the builder and the owner, the other dates referred to in paragraph 3.1 or 3.2 above, if applicable, may be accepted by the Flag State Administration in lieu of the completion date of the conversion in accordance with MSC-MEPC.1/Circ.1247 (Unified interpretation of "unforeseen delay in delivery of ships")

**Application of SOLAS Regulations to Conversions of Single-hull Oil Tankers to Double-hull Oil Tankers or Bulk Carriers**

**1.1.31** This requirement is based on IACS UI SC226 and is applicable to conversions of single-hull oil tankers to double-hull oil tankers or bulk carriers and falling under provision of the SOLAS, which occur on or after 1st January 2014, when the *Register* acts as Recognized organization on behalf of the Flag State Administration.

No.	Regulation	Title / Content	Note
1	II-1/1.3	Alterations and modifications of a major character	As amended by MSC.216(82)
2	II-1/3.2, 2 & 3.2, 4	Protective coatings of dedicated seawater ballast tanks in all types of ships and double-side skin spaces of bulk carriers	As amended by MSC.216(82)
3	II-1/3-6	Access to and within spaces in, and forward of, the cargo area of oil tankers and bulk carriers	As amended by MSC.194(80)
4	II-1/3-8	Towing and Mooring Equipment	As amended by MSC.194(80)
5	II-1/Part B & Part B1	Subdivision and stability	As amended by MSC.216(82)
6	II-2/1.3	Repairs, alterations, modifications and outfitting	-
7	III/1.4.2	Alterations and modifications of a major character	-
8	III/31.1.8	Survival craft and rescue boats	-
9	V/22	Navigation bridge visibility	-
10	XII/4	Damage stability requirements applicable to bulk carriers	-
	XII/5.1 & 5.2	Structural strength of bulk carriers	-
	XII/6.1	Structural and other requirements for bulk carriers	-
	XII/6.2	Structural and other requirements for bulk carriers	-
	XII/6.3	Structural and other requirements for bulk carriers	As amended by MSC.216(82), Annex 1
	XII/6.4	Structural and other requirements for bulk carriers	As amended by MSC.216(82), Annex 1
	XII/7.1	Survey and maintenance of bulk carrier	-
	XII/7.2	Survey and maintenance of bulk carrier	-
	XII/8	Information on compliance with requirements for bulk carriers	-
	XII/9	Requirements for bulk carriers not being capable of complying with regulation 4.3 due to the design configuration of their cargo holds	-
	XII/10	Solid bulk cargo density declaration	-
	XII/11	Loading instrument	-
	XII/12	Hold, ballast and dry space water ingress alarms	-
	XII/13	Availability of pumping systems	-
	XII/14	Restrictions from sailing with any hold empty	-

**1.1.31.1 Alterations and modifications of a major character SOLAS Ch. II-1 Reg. 1.3 (as amended by MSC.216(82))****SOLAS Ch. II-1, Reg. 1 ‘Application’:**

“3 All ships which undergo repairs, alterations, modifications and outfitting related thereto shall continue to comply with at least the requirements previously applicable to these ships.

Such ships, if constructed before the date on which any relevant amendments enter into force, shall, as a rule, comply with the requirements for ships constructed on or after that date to at least the same extent as they did before undergoing such repairs, alterations, modifications or outfitting. Repairs,

*alterations and modifications of a major character and outfitting related thereto shall meet the requirements for ships constructed on or after the date on which any relevant amendments enter into force, in so far as the Administration deems reasonable and practicable.”*

**Interpretation**

1. The date on which a conversion occurs for the purposes of determining the applicability of requirements for ships constructed on or after the date on which any relevant amendments enters into force is to be:

- .1 the date on which the contract is placed for the conversion; or

- .2 in the absence of a contract, the date on which the work identifiable with the specific conversion begins; or
  - .3 the completion date of the conversion, if that occurs more than three years after the date specified in subparagraph .1 above or 30 months after the date specified in subparagraph .2 above, either as applicable.
2. As for paragraph 1 above, the following applies:
- .1 Where the completion date of the conversion has been subject to delay beyond the period referred to in paragraph 1.3 above due to unforeseen circumstances beyond the control of the builder and the owner, the date on which contract is placed for the conversion or, if applicable, the date on which the work identifiable with the specific conversion begins may be accepted by the Administration in lieu of the completion date of the conversion. The treatment of such ships is to be considered by the Administration on a case-by-case basis, bearing in mind the particular circumstances.
  - .2 It is important that ships accepted by the Administration under the provisions of subparagraph .1 above are also to be accepted as such by port States. In order to ensure this, the following practice is recommended to Administrations when considering an application for such a ship:
    - .1 the Administration should thoroughly consider applications on a case-by-case basis, bearing in mind the particular circumstances. In doing so in the case of a ship converted in a foreign country, the Administration may require a formal report from the authorities of the country in which the ship was converted, stating that the delay was due to unforeseen circumstances beyond the control of the builder and the owner;
    - .2 when a ship is accepted by the Administration under the provisions of subparagraph .1 above, information on the conversion date annotated on the relevant certificates is to be footnoted to indicate that the ship is accepted by the Administration under the unforeseen delay in completion of the conversion provisions of this interpretation; and
    - .3 the Administration should report to the Organization on the identity of the ship and the grounds on which the ship has been accepted under the unforeseen delay in the completion of the conversion provisions of this interpretation.

**For conversions of single-hull oil tankers to double-hull oil tankers or bulk carriers, the following is to apply:**

1. Conversions of single-hull oil tankers to double-hull oil tankers or bulk carriers is to be regarded as modifications of a major character for the purposes of SOLAS Ch. II-1.
2. Repairs, alterations and modifications of a major character include:
  - .1 Substantial alteration of the dimensions of a ship, for example lengthening of a ship by adding a new midbody. The new midbody is to comply with SOLAS Ch. II-1.
  - .2 A change of ship type, for example an oil tanker converted to a bulk carrier. Any structure, machinery and systems that are added or modified is to comply with SOLAS Ch. II-1, taking into

account the interpretation of SOLAS Ch. II-1 regulations as contained herein.

**1.1.31.2 Protective coatings of dedicated seawater ballast tanks in all types of ships and double-side skin spaces of bulk carriers SOLAS Ch. II-1 Reg. 3-2, 2 and Reg. 3-2, 4 (as amended by MSC.216(82))**

**SOLAS Ch. II-1, Reg. 3-2:**

*“2 All dedicated seawater ballast tanks arranged in ships and double-side skin spaces arranged in bulk carriers of 150 m in length and upwards shall be coated during construction 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, adopted by the Maritime Safety Committee by resolution MSC.215(82), as may be amended by the Organization, provided that such amendments are adopted, brought into force and take effect in accordance with the provisions of article VIII of the present Convention concerning the amendment procedures applicable to the Annex other than chapter I.”*

and

*“4 Maintenance of the protective coating system shall be included in the overall ship’s maintenance scheme. The effectiveness of the protective coating system shall be verified during the life of a ship by the Administration or an organization recognized by the Administration, based on the guidelines developed by the Organization.\*”*

**Interpretation**

1. For single-hull oil tanker conversion into double-hull oil tanker, SOLAS Regulation II-1/3-2 as adopted by resolution MSC.216(82) is to apply to dedicated water ballast tanks if constructed with all structural members being entirely new. If converting existing spaces into water ballast tanks with part of the existing structural members remaining in place, revised SOLAS Regulation II-1/3-2 (MSC.216(82)) need not be applied. However, dedicated sea water ballast tanks are to have an efficient corrosion prevention system such as hard protective coatings or equivalent and be of light colour.
2. For single-hull oil tanker conversion into bulk carrier, SOLAS Regulation II-1/3-2 as adopted by resolution MSC.216(82) is to apply to dedicated water ballast tanks and double-side skin spaces of bulk carriers if constructed with all structural members being entirely new. If converting existing spaces into dedicated water ballast tanks or double-side skin space of bulk carriers with part of the existing structural members remaining in place, revised SOLAS Regulation II-1/3-2 (MSC.216(82)) need not be applied. However, dedicated sea water ballast tanks are to have an efficient corrosion prevention system such as hard protective coatings or equivalent and be of light colour.

**1.1.31.3 Access to and within spaces in, and forward of, the cargo area of oil tankers and bulk carriers SOLAS Ch. II-1 Reg. 3-6 (as amended by MSC.194(80))**

**Interpretation**

**1. For single-hull oil tanker conversion into double-hull oil tanker**

1.1 Permanent means of access contained in table 1 of the Technical provisions for means of access for inspections (resolution MSC.158(78)) need not apply. However, if, in the course of conversion, substantial new structures are added, these new structures are to comply with the regulation.

1.2 The term "substantial new structures" means hull structures that are entirely renewed or augmented by new double bottom and/or double-side construction (e.g., replacing the entire structure within cargo area or adding a new double bottom and/or double-side section to the existing cargo area).

1.3 Additionally, an approved Ship Structure Access Manual is to be provided.

**2. For single-hull oil tanker conversion into bulk carrier**

2.1 Permanent means of access contained in table 2 of the Technical provisions for means of access for inspections (resolution MSC.158(78)) need not apply. However, if, in the course of conversion, substantial new structures are added, these new structures are to comply with the regulation.

2.2 The term "substantial new structures" means hull structures that are entirely renewed or augmented by new double bottom and/or double-side skin construction (e.g., replacing the entire structure within cargo area or adding a new double bottom and/or double-side section to the existing cargo area).

2.3 Additionally, an approved Ship Structure Access Manual is to be provided.

**1.1.31.4 Towing and Mooring Equipment SOLAS Ch. II-1 Reg. 3-8 (as amended by MSC.194(80))**

**Interpretation**

**For single-hull oil tanker conversion into double-hull oil tanker or bulk carrier**

This regulation is to be applied when equipment and fittings for mooring/towing are replaced, modified or the safe working load of the existing equipment and fittings is known. Where the latter cannot be ascertained, alternative compliance with SOLAS Regulation II-1/3-8 is to be sought (e.g., the equipment is to be replaced, tested or modified).

**1.1.31.5 Subdivision and stability SOLAS Ch. II-1 Part B and Part B-1 (as amended by MSC.216(82))**

**Interpretation**

**1. For single-hull oil tanker conversion into double-hull oil tanker**

Oil tankers complying with damage stability requirements contained in Annex I to MARPOL 73/78 (except for combination carriers with type B freeboards) may be excluded from the damage stability requirements contained in SOLAS Ch. II-1, part B-1.

**2. For single-hull oil tanker conversion into bulk carrier**

2.1 A bulk carrier which is assigned a B reduced freeboard complying with damage stability requirements contained in regulation 27 of the 1966 Load Line Convention, and resolutions A.320(IX) and A.514(13); or regulation 27 of the 1988 Load Line Protocol, may be excluded from the damage stability requirements contained in SOLAS Ch. II-1, part B-1.

2.2 For a bulk carrier which is assigned a B freeboard, SOLAS Ch. II-1, Parts B and B-1 are to be applied.

**1.1.31.6 Repairs, alterations, modifications and outfitting SOLAS Ch. II-2 Reg. 1.3 SOLAS Ch. II-2, Reg. 1.3**

**'Repairs, alterations, modifications and outfitting':**

"3.1 All ships which undergo repairs, alterations, modifications and outfitting related thereto shall continue to comply with at least the requirements previously applicable to these ships. Such ships, if constructed before 1 July 2002, shall, as a rule, comply with the requirements for ships constructed on or after that date to at least the same extent as they did before undergoing such repairs, alterations, modifications or outfitting.

3.2 Repairs, alterations and modifications which substantially alter the dimensions of a ship or the passenger accommodation spaces, or substantially increase a ship's service life and outfitting related thereto shall meet the requirements for ships constructed on or after 1 July 2002 in so far as the Administration deems reasonable and practicable."

**Interpretation**

For single-hull oil tanker conversion into double-hull oil tanker or bulk carrier, new and converted parts are to comply with the latest applicable requirements.

**1.1.31.7 Alterations and modifications of a major character SOLAS Ch. III Reg. 1.4.2**

**SOLAS Ch. III, Reg. 1 'Application':**

"4 For ships constructed before 1 July 1998, the Administration shall:

- .1 .....; and
- .2 ensure that when life-saving appliances or arrangements on such ships are replaced or such ships undergo repairs, alterations or modifications of a major character which involve replacement of, or any addition to, their existing lifesaving appliances or arrangements, such life-saving appliances or arrangements, in so far as is reasonable and practicable, comply with the requirements of this chapter. However, if a survival craft other than an inflatable liferaft is replaced without replacing its launching appliance, or vice versa, the survival craft or launching appliance may be of the same type as that replaced."

- .2 in the absence of a contract, the date on which the work identifiable with the specific conversion begins; or
  - .3 the completion date of the conversion, if that occurs more than three years after the date specified in subparagraph .1 above or 30 months after the date specified in subparagraph .2 above, either as applicable.
2. As for paragraph 1 above, the following applies:
- .1 Where the completion date of the conversion has been subject to delay beyond the period referred to in paragraph 1.3 above due to unforeseen circumstances beyond the control of the builder and the owner, the date on which contract is placed for the conversion or, if applicable, the date on which the work identifiable with the specific conversion begins may be accepted by the Administration in lieu of the completion date of the conversion. The treatment of such ships is to be considered by the Administration on a case-by-case basis, bearing in mind the particular circumstances.
  - .2 It is important that ships accepted by the Administration under the provisions of subparagraph .1 above are also to be accepted as such by port States. In order to ensure this, the following practice is recommended to Administrations when considering an application for such a ship:
    - .1 the Administration should thoroughly consider applications on a case-by-case basis, bearing in mind the particular circumstances. In doing so in the case of a ship converted in a foreign country, the Administration may require a formal report from the authorities of the country in which the ship was converted, stating that the delay was due to unforeseen circumstances beyond the control of the builder and the owner;
    - .2 when a ship is accepted by the Administration under the provisions of subparagraph .1 above, information on the conversion date annotated on the relevant certificates is to be footnoted to indicate that the ship is accepted by the Administration under the unforeseen delay in completion of the conversion provisions of this interpretation; and
    - .3 the Administration should report to the Organization on the identity of the ship and the grounds on which the ship has been accepted under the unforeseen delay in the completion of the conversion provisions of this interpretation.

**For conversions of single-hull oil tankers to double-hull oil tankers or bulk carriers, the following is to apply:**

1. Conversions of single-hull oil tankers to double-hull oil tankers or bulk carriers is to be regarded as modifications of a major character for the purposes of SOLAS Ch. II-1.
2. Repairs, alterations and modifications of a major character include:
  - .1 Substantial alteration of the dimensions of a ship, for example lengthening of a ship by adding a new midbody. The new midbody is to comply with SOLAS Ch. II-1.
  - .2 A change of ship type, for example an oil tanker converted to a bulk carrier. Any structure, machinery and systems that are added or modified

is to comply with SOLAS Ch. II-1, taking into account the interpretation of SOLAS Ch. II-1 regulations as contained herein.

**1.1.31.2 Protective coatings of dedicated seawater ballast tanks in all types of ships and double-side skin spaces of bulk carriers SOLAS Ch. II-1 Reg. 3-2, 2 and Reg. 3-2, 4 (as amended by MSC.216(82))**

**SOLAS Ch. II-1, Reg. 3-2:**

*“2 All dedicated seawater ballast tanks arranged in ships and double-side skin spaces arranged in bulk carriers of 150 m in length and upwards shall be coated during construction 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, adopted by the Maritime Safety Committee by resolution MSC.215(82), as may be amended by the Organization, provided that such amendments are adopted, brought into force and take effect in accordance with the provisions of article VIII of the present Convention concerning the amendment procedures applicable to the Annex other than chapter I.”*

and

*“4 Maintenance of the protective coating system shall be included in the overall ship’s maintenance scheme. The effectiveness of the protective coating system shall be verified during the life of a ship by the Administration or an organization recognized by the Administration, based on the guidelines developed by the Organization. \*”*

**Interpretation**

1. For single-hull oil tanker conversion into double-hull oil tanker, SOLAS Regulation II-1/3-2 as adopted by resolution MSC.216(82) is to apply to dedicated water ballast tanks if constructed with all structural members being entirely new. If converting existing spaces into water ballast tanks with part of the existing structural members remaining in place, revised SOLAS Regulation II-1/3-2 (MSC.216(82)) need not be applied. However, dedicated sea water ballast tanks are to have an efficient corrosion prevention system such as hard protective coatings or equivalent and be of light colour.
2. For single-hull oil tanker conversion into bulk carrier, SOLAS Regulation II-1/3-2 as adopted by resolution MSC.216(82) is to apply to dedicated water ballast tanks and double-side skin spaces of bulk carriers if constructed with all structural members being entirely new. If converting existing spaces into dedicated water ballast tanks or double-side skin space of bulk carriers with part of the existing structural members remaining in place, revised SOLAS Regulation II-1/3-2 (MSC.216(82)) need not be applied. However, dedicated sea water ballast tanks are to have an efficient corrosion prevention system such as hard protective coatings or equivalent and be of light colour.

**1.1.31.3 Access to and within spaces in, and forward of, the cargo area of oil tankers and bulk carriers SOLAS Ch. II-1 Reg. 3-6 (as amended by MSC.194(80))**

**Interpretation**

**1. For single-hull oil tanker conversion into double-hull oil tanker**

1.1 Permanent means of access contained in table 1 of the Technical provisions for means of access for inspections (resolution MSC.158(78)) need not apply. However, if, in the course of conversion, substantial new structures are added, these new structures are to comply with the regulation.

1.2 The term "substantial new structures" means hull structures that are entirely renewed or augmented by new double bottom and/or double-side construction (e.g., replacing the entire structure within cargo area or adding a new double bottom and/or double-side section to the existing cargo area).

1.3 Additionally, an approved Ship Structure Access Manual is to be provided.

**2. For single-hull oil tanker conversion into bulk carrier**

2.1 Permanent means of access contained in table 2 of the Technical provisions for means of access for inspections (resolution MSC.158(78)) need not apply. However, if, in the course of conversion, substantial new structures are added, these new structures are to comply with the regulation.

2.2 The term "substantial new structures" means hull structures that are entirely renewed or augmented by new double bottom and/or double-side skin construction (e.g., replacing the entire structure within cargo area or adding a new double bottom and/or double-side section to the existing cargo area).

2.3 Additionally, an approved Ship Structure Access Manual is to be provided.

**1.1.31.4 Towing and Mooring Equipment SOLAS Ch. II-1 Reg. 3-8 (as amended by MSC.194(80))**

**Interpretation**

**For single-hull oil tanker conversion into double-hull oil tanker or bulk carrier**

This regulation is to be applied when equipment and fittings for mooring/towing are replaced, modified or the safe working load of the existing equipment and fittings is known. Where the latter cannot be ascertained, alternative compliance with SOLAS Regulation II-1/3-8 is to be sought (e.g., the equipment is to be replaced, tested or modified).

**1.1.31.5 Subdivision and stability SOLAS Ch. II-1 Part B and Part B-1 (as amended by MSC.216(82))**

**Interpretation**

**1. For single-hull oil tanker conversion into double-hull oil tanker**

Oil tankers complying with damage stability requirements contained in Annex I to MARPOL 73/78 (except for combination carriers with type B freeboards) may be excluded from the damage stability requirements contained in SOLAS Ch. II-1, part B-1.

**2. For single-hull oil tanker conversion into bulk carrier**

2.1 A bulk carrier which is assigned a B reduced freeboard complying with damage stability requirements contained in regulation 27 of the 1966 Load Line Convention, and resolutions A.320(IX) and A.514(13); or regulation 27 of the 1988 Load Line Protocol, may be excluded from the damage stability requirements contained in SOLAS Ch. II-1, part B-1.

2.2 For a bulk carrier which is assigned a B freeboard, SOLAS Ch. II-1, Parts B and B-1 are to be applied.

**1.1.31.6 Repairs, alterations, modifications and outfitting SOLAS Ch. II-2 Reg. 1.3 SOLAS Ch. II-2, Reg. 1.3**

**'Repairs, alterations, modifications and outfitting':**

"3.1 All ships which undergo repairs, alterations, modifications and outfitting related thereto shall continue to comply with at least the requirements previously applicable to these ships. Such ships, if constructed before 1 July 2002, shall, as a rule, comply with the requirements for ships constructed on or after that date to at least the same extent as they did before undergoing such repairs, alterations, modifications or outfitting.

3.2 Repairs, alterations and modifications which substantially alter the dimensions of a ship or the passenger accommodation spaces, or substantially increase a ship's service life and outfitting related thereto shall meet the requirements for ships constructed on or after 1 July 2002 in so far as the Administration deems reasonable and practicable."

**Interpretation**

For single-hull oil tanker conversion into double-hull oil tanker or bulk carrier, new and converted parts are to comply with the latest applicable requirements.

**1.1.31.7 Alterations and modifications of a major character SOLAS Ch. III Reg. 1.4.2**

**SOLAS Ch. III, Reg. 1 'Application':**

"4 For ships constructed before 1 July 1998, the Administration shall:

- .1 .....; and
- .2 ensure that when life-saving appliances or arrangements on such ships are replaced or such ships undergo repairs, alterations or modifications of a major character which involve replacement of, or any addition to, their existing lifesaving appliances or arrangements, such life-saving appliances or arrangements, in so far as is reasonable and practicable, comply with the requirements of this chapter. However, if a survival craft other than an inflatable liferaft is replaced without replacing its launching appliance, or vice versa, the survival craft or launching appliance may be of the same type as that replaced."

**Interpretation**

For single-hull oil tanker conversion into double-hull oil tanker or bulk carrier, this to be considered as an alteration or modification of a major character.

**1.1.31.8 Survival craft and rescue boats SOLAS Ch. III Reg. 31.1.8**

*SOLAS Ch. III, Reg. 31 ‘Survival craft and rescue boats’:*

“1.2 In lieu of meeting the requirements of paragraph 1.1, cargo ships may carry:

- .1 one or more free-fall lifeboats, complying with the requirements of section 4.7 of the Code, capable of being free-fall launched over the stern of the ship of such aggregate capacity as will accommodate the total number of persons on board; and
- .2 in addition, one or more inflatable or rigid liferafts complying with the requirements of section 4.2 or 4.3 of the Code, on each side of the ship, of such aggregate capacity as will accommodate the total number of persons on board. The liferafts on at least one side of the ship shall be served by launching appliances.”

and

“1.8 Notwithstanding the requirements of paragraph 1.1, bulk carriers as defined in regulation IX/1.6 constructed on or after 1 July 2006 shall comply with the requirements of paragraph 1.2.”

**Interpretation**

1. For single-hull oil tanker conversion into double-hull oil tanker, this regulation is not relevant.

2. For single-hull oil tanker conversion into bulk carrier, SOLAS Regulation III/31.1.8 is to be met as for new ships, except where the space available for fitting and/or launching a free-fall lifeboat in accordance with regulation III/31.1.2.1 is not adequate, in which case the Administration is to be contacted to determine whether or not existing arrangement may be accepted.

**1.1.31.9 Navigation bridge visibility SOLAS Ch. V Reg. 22**

**Interpretation**

For single-hull oil tanker conversion into double-hull oil tanker or bulk carrier, the level of visibility possessed by the ship prior to the conversion at the ballast loading condition is to be maintained after the conversion. Where a conversion involves the modification of structural arrangements used to establish minimum bridge visibility, the provisions of SOLAS Regulation V/22 is to apply.

**1.1.31.10 Damage stability requirements applicable to bulk carriers SOLAS Regulation XII/4, structural strength of bulk carriers SOLAS Regulation XII/5.1 and 5.2, structural and other requirements for bulk carriers SOLAS Regulation XII/6.1, XII/6.2, XII/6.3 (MSC.216(82) Annex 1) and XII/6.4 (MSC.216(82) Annex 1), survey and maintenance of bulk carriers SOLAS Regulation XII/7.1 and XII/7.2, information on compliance with requirements for bulk carriers SOLAS Regulation XII/8, Requirements for bulk carriers not being capable of complying with regulation 4.3 due to the design configuration of their cargo holds SOLAS Regulation XII/9, Solid bulk cargo density declaration SOLAS Regulation XII/10, Loading instrument SOLAS Regulation XII/11, Hold, ballast and dry space water ingress alarms SOLAS Regulation XII/12, Availability of pumping systems SOLAS Regulation XII/13, Restrictions from sailing with any hold empty SOLAS Regulation XII/14**

**Interpretation**

1. For single-hull oil tanker conversion into double-hull oil tanker, these regulations are not relevant.

2. For single-hull oil tanker conversion into bulk carrier, the provisions of chapter XII applicable for ships constructed on or after the date on which conversion occurs, are to be applied as for a new ship to the entire bulk carrier, i.e. all new and existing parts and spaces, as indicated in the table below.

**1.1.31.11 Table of application of the Regulations of SOLAS Ch. XII to the conversions of Single Hull Tankers to Bulk Carriers/Ore Carriers**

Reg.	Applicability	Note
4.1	Applicable	-
4.2	Applicable, based on the Unified interpretations of SOLAS regulations XII/4.2 and XII/5.2 (MSC.1/Circ.1178).	-
4.3	Not applicable	-
4.4	Not applicable	This regulation is referred to within regulations 4.1 and 4.2
4.5	Not applicable	-
4.6	Applicable	-
4.7	Applicable	-
5.1	Applicable	-
5.2	Applicable, based on the Unified interpretations of SOLAS regulations XII/4.2 and XII/5.2 (MSC.1/Circ.1178).	-
6.1	Not applicable	-
6.2	Applicable	-
6.3	Applicable	-
6.4	Applicable	-
7.1	Not applicable. However, SOLAS regulation XI-1/2 is applicable.	-



Reg.	Applicability	Note
7.2	Applicable	-
8.1	Applicable	-
8.2	Not applicable	-
8.3	Not applicable	-
9	Not applicable	-
10.1	Applicable	-
10.2	Not applicable	-
11.1	Applicable	-
11.2	Not applicable	-
11.3	Applicable	-
12.1	Applicable	-
12.2	Applicable	-
12.3	Not applicable	-
13.1	Applicable	-
13.2	Not applicable	-
14	Not applicable	-

IACS UI SC226

## 1.2 TECHNICAL DOCUMENTATION

Below given list provides general definitions of technical documentation categories and types based on the understanding of the *Register*<sup>6)</sup>.

Specific requirements for documentation submission may be additionally agreed for particular project.

### 1.2.1 General documentation (OD):

- .1 Outline specification of a ship.
- .2 General arrangement.
- .3 Capacity plan.
- .4 Plan of ship's lines (including offset table).
- .5 Docking plan.

### 1.2.2 Hull (TR):

- .1 Midship section, including typical sections and general specifications.
- .2 Longitudinal section.
- .3 Shell expansion.
- .4 Decks.
- .5 Cargo hatchways.
- .6 Double bottom.
- .7 Watertight/oiltight bulkheads.
- .8 Pillars and girders.
- .9 Structural strengthening.
- .10 Ship's end structures with posts.
- .11 Propeller shaft struts and bossings.
- .12 Engine and thrust bearing seatings.
- .13 Superstructures and deckhouses.
- .14 Side, bow and stern doors.
- .15 Arrangements on bottom plating for in-water survey (if IWS class notation is requested).
- .16 Attachment of masts, posts and cranes to deck structure, including support structure.

- .17 Bilge keels (material grades, welded connections and detail design).
- .18 Welding and welds non-destructive test plan.
- .19 Corrosion control and protection, ballast tanks and cargo spaces (scheme for the selection, application and maintenance of the corrosion prevention system for seawater ballast tanks).
- .20 Manuals and plans (preliminary and final), as follows, as far as applicable:
  - a) Loading Manual (typical loading and discharging sequences).
  - b) Loading Manual for grain loading.
  - c) Loading Manual related to ballast water exchange and Ballast Water Management Plan (BWMP).
  - d) Damage Control Plan.
  - e) Damage Control Booklet.
  - f) Cargo Securing Manual.
  - g) Ship structure access manual.
- .21 Functional testing program.
- .22 Internal forces components calculation (bending moments, shear forces, etc.) for still water.
- .23 Geometrical properties calculation of ship's transverse sections (moments of inertia, etc.).
- .24 In case of direct calculations:
  - a) a description of structural modelling,
  - b) a summary of analysis parameters including properties and boundary conditions,
  - c) details of the loading conditions and the means of applying loads.
- .25 Arrangements of permanent and movable means of access to structure to enable close-up examination of the structure in a safe and practical way (only for ships comprising the requirements from SOLAS 74, Reg. II-1/3-6, as amended with IMO Res. MSC.151(78)). Requirements of IACS UI SC191 (Application of amended SOLAS Reg. II-1/3-6 (Res. MSC.151(78)) and revised Technical provisions for means of access for inspections (Res. MSC.158(78))) should be taken into account also.
- .26 Coating Technical File, for ships subject to compliance with the IMO Performance Standard for Protective Coatings (PSPC) as a class requirement under the IACS Common Structural Rules.
- .27 For ships, except for those defined in SOLAS I/3, Ship Construction File (SCF) shall be prepared by the shipyard and shall be available on board prior delivery.

**NOTE:** Oil tankers of 150 meters in length and above and bulk carriers of 150 meters in length and above, constructed with single deck, top-side tanks and hopper side tanks in cargo spaces, excluding ore carriers and combination carriers and for which:

- building contract has been placed on or after 1st July 2016;

<sup>6)</sup> It is to be noted that submitted document may cover more than one of the listed requirements, and that single requirement may be covered by more than one submitted document.

- in the absence of building contract, the keels of which are laid, or which are at similar stage of construction on or after 1st July 2017; or
- the delivery of which is on or after 1st July 2020;

are to comply with IMO standard "Goal-based ship construction standard for bulk carriers and oil tankers (GBS)". Also, with the amendments of SOLAS (MSC.290(87)), new Chapter II-1, Reg. 3-10 has been added making compliance with GBS requirements mandatory.

As a part of this Regulation requirement for keeping Ship Construction File (SCF) on board and ashore has become mandatory also.

For the information to be included in the Ship Construction File refer to IMO MSC.1/Circ.1343. The Ship Construction File is to be updated whenever any modification of the documentation included occurs.

The Ship Construction File should be available to the *Register* and to the Flag State Administration throughout ship's life, while during regular Annual, Intermediate and Renewal surveys management conditions of the plans and documents contained therein should be verified by the *Register*.

### 1.2.3 Hull equipment (OT):

- .1 Calculation of equipment number.
- .2 Steering gear system (including rudder, stock, tiller, bearings and nozzle).
- .3 Anchoring and mooring handling arrangements.
- .4 Towing gear, including emergency towing gear (for oil and chemical tankers with not less than 20,000 tons deadweight, according to SOLAS, Reg. II-1/3-4).
- .5 Signal masts.
- .6 Openings and closing arrangements for shell, decks and bulkheads (scuttles, watertight doors, hold and tank hatch covers).
- .7 Scheme of means to different compartments, decks, etc., with indicated emergency exits and escape ways.

### 1.2.4 Stability (PL):

- .1 Inclining test report.
- .2 Trim and stability book.
- .3 Damage stability calculation (if **SD** class notation is requested).

### 1.2.5 Machinery installation (ST):

- .1 General arrangement of engines, boilers and installations in machinery spaces, including specification.
- .2 Plan of seatings and arrangements of holding down bolts for boilers, engines, thrust block, pressure vessels, generators and other important auxiliary engines.
- .3 Propeller shaft oil gland.
- .4 Shafting alignment calculation.
- .5 Plan of sternpost tubes with details.
- .6 Plan of shafts (propeller shaft, intermediate shaft, thrust shaft).
- .7 Plan of shaft coupling.
- .8 Plan of supporting and thrust bearing.
- .9 Calculation of shaft and couplings.
- .10 Calculation of loading and shaft bearing (not subject to approval).
- .11 Calculation of pulling in of the ship's propeller and coupling.
- .12 Propeller plans (not subject to approval).

- .13 Torsional vibration calculations for the dynamic systems formed by internal combustion engines, generators and auxiliary engines (of power exceeding 1500 [kW]), flexible couplings, gearing, shafting and propeller where applicable including all branches. For turbine and electric drives the *Register* will specially consider the necessity of calculation submission in each particular case.
- .14 General plan of shaft lines.
- .15 Propeller blade calculation and attachment of blade to the propeller boss.
- .16 Controllable pitch propeller main element plan (hydraulic cylinder, rod, piston, guide, etc.) and scheme of governing piping.
- .17 Drawing of special type propelling machinery (nozzle propellers, side thruster, etc.).
- .18 Documentation for assignment of **IGS** additional character of class:
  - schematic diagram of inert gas system, including water supply and discharge piping;
 and as applicable plans for:
  - inert gas generating plant;
  - sectional view through gas cooling and cleaning device;
  - sectional view through non-return valves;
  - sectional view through pressure-vacuum breaking device;
  - piping arrangement for inert gas distribution and tank ventilation;
  - documentation related to instrumentation and automation (including computer based control and monitoring);
  - instruction manual (covering operational safety requirements and guidelines to be followed in the event of failure of inert gas system).
- .19 Documentation for assignment of **COW** additional character of class:
  - schematic diagram of crude oil washing system, including dimensions and materials;
  - schematic diagram of the stripping and drainage arrangement;
  - shadow diagrams showing the tank areas covered by direct impingement from the washing machines (not required for tanks or cargo holds without internal structure);
  - documentation showing number, location, make and type of washing machines with nozzle diameters;
  - drawings showing installation and supporting arrangement for the washing machines;

- drawings showing the anchoring of piping for crude oil washing;
- drawings showing exact position and arrangement of dipping and gas sampling locations;
- operation and equipment manual;
- documentation related to instrumentation and automation (including computer based control and monitoring).

**1.2.6**

## Piping (ST):

- .1 Bilge ballast system.
- .2 Ballast system.
- .3 Scheme of piping for heel and trim leveling.
- .4 Scheme of cargo piping, stripping piping and installations for gas freeing of cargo tanks.
- .5 Scheme of sounding pipes, vents and overflow pipes.
- .6 Exhaust gas system.
- .7 Ventilation system in machinery spaces and cargo holds.
- .8 Oil fuel piping system.
- .9 Lubricating oil system.
- .10 Engine cooling (fresh and sea-water) system.
- .11 Compressed air system.
- .12 Feed water and condensate system.
- .13 Steam piping system.
- .14 Scheme of blowing off boiler piping and other installations.
- .15 Hydraulic and pneumatic control piping system.
- .16 Fresh and drinking water piping system.
- .17 Sanitary piping and discharges system.
- .18 Ship side valves and fittings (suction and discharge valves or cocks, blow-down valves or cocks and gratings).
- .19 Scheme of remote control on quick closing valves.
- .20 Waste water treatment system.
- .21 Crude oil washing system (equipment, piping, fittings).
- .22 Arrangement of inert gas piping system together with details of inert gas generating plant including all control and monitoring devices.

**1.2.7**

## Refrigerating plant (ST):

- .1 Thermal and energetic balance of the refrigerating plant.
- .2 General arrangement of refrigerating plant and specification.
- .3 Description of ventilation and emergency ventilation in refrigerating machinery compartment, and number of air changes.
- .4 Primary refrigerant gas and liquid circuit diagrams, brine circuit diagrams with particulars of piping, and arrangement of thermostate refrigerant control, manual control or thermostatically operated refrigerant control valves.

- .5 Plan of air coolers.
- .6 General arrangement of the equipment in refrigerating machinery compartment.
- .7 General arrangement of the equipment in insulated chambers (brine or direct expansion grids, construction and attachment).
- .8 General arrangement of insulated chambers with detailed specification of insulation materials, and materials of attachment and linings on all surfaces.
- .9 Scheme and description of a temperature remote control/measuring station, and arrangement of thermometers in chambers.
- .10 Plan of safety devices and alarm system.
- .11 Air cooler defrosting arrangements.
- .12 Description of the scheme of remote or automatic control.

**1.2.8**

## Electrical equipment (EL):

- .1 General arrangement plan of major electrical equipment (main and emergency generators, main and emergency switchboards, emergency service motors and batteries).
- .2 Generators - type of prime movers, rated power ([kVA] and [kW]), transient and sub-transient reactance (for total power of all generators greater than 500 [kW] and for generators powered by the main propulsion system e.g. shaft generators, construction details including fittings).
- .3 Power converters - type, rating [kVA] and voltage (primary/secondary).
- .4 General arrangement of electrical equipment and installations in hazardous zones and spaces including details of type and equipment, type of protection, temperature class, certifying authority and certificate number.
- .5 Calculation of short circuit currents at main and emergency switchboard (if total power of all generators is greater than 500 [kW]) including symmetrical component and peak value of short circuit current.
- .6 Power consumption (load balance) for normal operating loads on the system estimated for the different operating conditions expected (service at sea, in harbour, while manoeuvring, emergency situations, etc.).
- .7 Single line diagram of all power distribution boards, which is to include:
  - a) arrangement and rating of consumers,
  - b) connected load ([kW] or [A]),
  - c) type and size of cables,
  - d) make, type and rating of circuit breakers and fuses,
  - e) for automatic circuit breakers switch on/breaking power and relay initial setting value.
- .8 For main and emergency switchboards and large motor control centers (MCC equal or greater than 100 [kW]) the following particulars are to be submitted:

- a) arrangement drawings with panel front view,
  - b) diagrams of all control circuits, type and size of cables and make, type, size for all equipment,
  - c) bus-bars details including cross section and insulation material of bus-bars support,
  - d) make, type, rating of fuse and switch-gear including breaking/making capacity for all circuit breakers used,
  - e) fuse and switchgear release characteristics with regard to the selective action of the protective devices,
  - f) calculation of mechanical stress on bus-bars due to short circuit current, if the calculated short circuit current is greater than 50 [kA] (r.m.s.).
- .9 Schematic diagrams of following systems and equipment:
- a) starters for essential motors,
  - b) starters for thrusters,
  - c) static converters (SCR-units) for essential equipment).
- .10 Documentation of distribution board for refrigerating equipment.
- .11 General arrangement of main cable track.
- .12 Main lighting - cable diagram.
- .13 Emergency lighting - cable diagram.
- .14 Documentation of electrical propulsion system (if fitted).
- .15 Signal and navigation lights - cable diagram.
- .16 Internal communication and signalling system.
- .17 Fire detection and alarm system.
- .18 Diagram of cable routes.
- .19 For passenger ships - general arrangement plan of the ship showing the vertical fire zones and location of equipment and cable routes of:
- a) emergency lighting,
  - b) fire detection, alarm and extinction system,
  - c) public address system,
  - d) general alarm,
  - e) watertight doors,
  - f) system for emergency stop of fuel oil pumps and fans.
- .20 Location and technical characteristics of batteries.
- 1.2.9 Automation (EL):**
- .1 List of systems (control, alarm, safety) including component maker and type.
  - .2 List of monitored, control and alarm points.
  - .3 Arrangement scheme of systems and components.
  - .4 Location and details of control panels and consoles.
  - .5 Essential block diagrams for control, alarm and safety system of the following:
    - a) main propelling machinery including essential auxiliaries,
    - b) bilge and ballast systems,
    - c) oily water separators,
    - d) electric generating plant,
    - e) boilers and incinerators,
    - f) air compressors,
    - g) cargo pumping systems for tankers,
    - h) cargo and ballast pumps in hazardous areas,
    - i) controllable pitch propeller and side thrusters,
    - j) inert gas generators,
    - k) steering gear,
    - l) oil fuel transfer and storage systems (purifiers and oil heaters),
    - m) any other automated system (e.g. lifts, evaporatory and distilling systems, etc.).
- .6 Details of the overall alarm system linking the main control station, subsidiary control stations, the bridge and accommodation area.
- .7 Flow charts for programmable electronic systems including configuration details and system requirement specification.
- .8 Test schedules which should include methods of testing and test facilities provided.
- 1.2.10 Fire protection (PZ):**
- .1 General arrangement plan showing the main fire zones, escape stairways and the fire compartmentation bulkheads and decks within the main fire zones, including details of construction of the fire protection bulkheads, decks, fire doors and the particulars of any surface laminates employed.
  - .2 General arrangement plan showing disposition of all the firefighting equipment including the fire main, the fixed fire extinguishing systems in the cargo holds, on deck and in the machinery spaces, the disposition of the portable and non-portable extinguishers and the types used and the position and details of the firemen's outfits.
  - .3 Plan showing the layout and construction of the fire main, including the main and emergency fire pumps, isolating valves, pipe sizes and materials, the international shore connections and the cross connections to any other system.
  - .4 Plan showing details of each fixed firefighting system, including calculations for the quantities of the media used and the proposed rates of application.
  - .5 Ventilation plans showing the ducts and any dampers in them, and the position of the controls for the stopping the system.
  - .6 Plan showing the location and arrangement of the emergency stop for the oil fuel

unit pumps and for closing the valves on the pipes from oil fuel tanks.

- .7 Plans showing sprinkler and/or detection system, fire alarm system and remote control for the fire doors as and if applicable.

#### 1.2.11 Carriage of chemicals:

For additional documentation see the *Rules, Part 27 - Chemical tankers*.

#### 1.2.12 Floating docks:

The following documentation for docks of caisson type, as well for docks of the pontoon type should be submitted:

- .1 General arrangement plan, showing the arrangement of compartments and tanks.
- .2 Drawings of longitudinal and transverse sections, showing all scantlings and the position of longitudinal and transverse girders, and of watertight bulkheads.
- .3 Drawings of the wing walls with top deck and safety deck, bottom caisson or non-contiguous pontoons.
- .4 Drawings of the structural elements of pontoon decks which transfer the forces pontoon - wing wall-pontoon in way of the pontoon gaps.
- .4 Admissible loads and deflections according to the dock Operating Instructions.
- .5 Pumping diagram showing the differences in pressure between the inside water and the outside water over the total docking procedure.
- .6 Strength calculations for the various longitudinal and transverse load conditions as well as proof of local strength.
- .7 Plans of machinery and electrical installations.
- .8 Plans of piping systems and of fire protection and extinguishing appliances.
- .9 calculations showing the stability of the dock when supporting a ship.

#### 1.2.13 Documentation for assignment of **FIR** additional character of class:

- .1 Schematic diagram of the fixed self-protection water spraying system.
- .2 Structural fire protection plan of exterior boundaries of the ship.
- .3 Schematic diagram of water fire extinguishing system for fighting of external fires.

In the case of ships equipped with foam fire extinguishing system for fighting external fires, in addition to above stated the following is to be submitted, also, but only in the case of fitting of fixed low expansion foam fire extinguishing system.

- .4 Schematic diagram of foam fire extinguishing system for fighting of external fire.

#### 1.2.14 Documentation for assignment of **PC xx** additional character of class refer to the *Rules, Part 29 – Polar Class Ships and Ice Class Ships*.

#### 1.2.15 Documentation for assignment of **PMON** additional character of class refer to the *Rules, Part 7 – Machinery installation*.

#### 1.2.16 Documentation for assignment of **PW-CA** additional character of class:

- .1 Arrangement, design and equipment specification for accommodation spaces (general design, sleeping accommodation, sanitary spaces, public spaces, mess rooms, sanitary spaces, domestic spaces, medical spaces).
- .2 General arrangement of fixed and removable rails, handrails and life lines including specification and design details.
- .3 General arrangement of stairways, platforms and ladders including specification and design details.
- .4 Disposition of ladders and gangways.
- .5 Thermal and acoustic insulation plan (including calculations and design details).
- .6 General arrangement of ventilation, air conditioning and heating (including calculations and design details).
- .7 Illumination (lighting) level (design details and testing results).
- .8 Noise prevention (design details and testing results).
- .9 Vibration prevention (design details and testing results).

### 1.3 SURVEY DURING CONSTRUCTION OF HULL, BUILDING IN OF MACHINERY, INSTALLATIONS AND EQUIPMENT

#### 1.3.1 This survey shall verify:

- .1 That the construction and scantlings of the ship complies with the requirements of the Rules and approved plans and that the required materials are used.
- .2 That the materials, components and equipment, intended for the installation on the ship, have been supervised during construction in accordance with the Rules, and that they have appropriate certificates.
- .3 That satisfactory functional testing has been carried out to the extent and in the manner prescribed by the approved Testing Program and the requirements of the Rules.
- .4 That the work carried out (including fabrication tolerances) is in compliance with the applicable Rules, standards and good shipbuilding practice. IACS Recommendation No. 47 - "Shipbuilding and Repair Quality Standard", SARQS should be taken as an example of an acceptable standard.
- .5 That the Class Certificate, record books, operating manuals and other instructions and documentation specified in the Rules,

relevant to the Class Certificate, have been placed on board the ship.

**1.3.2** If subsequent information gives objective evidence that the works performed are not in compliance with requirements stated in 1.3.1, the *Register* reserves the right to revoke survey during construction.

## 1.4 REQUIREMENTS FOR TESTING DURING CONSTRUCTION

### 1.4.1 Testing procedures of watertight compartments

**1.4.1.1** Procedures for tank testing and testing of boundaries are to confirm the watertightness of tanks and watertight boundaries, the structural adequacy of tanks and weathertightness of structure / shipboard outfitting. Subject testing should be performed on:

- .1 New ships prior delivery, and
- .2 Structure involved in, or affected by, major conversions or repairs (repair affecting structural integrity) on existing ships.

**1.4.1.2** For detailed requirements on the application and testing procedures refer to the Rules, Part 2 - Hull, 11.6, 11.7 and 11.8, or IACS UR S14, Rev.6 - "Testing procedures of watertight compartments", depending on the type of the ship:

- .1 SOLAS ships (including CSR Bulk carriers and CSR Tankers);
- .2 Non-SOLAS ships, ships exempted from SOLAS, Ch. II-1, Reg. 11 and ships performing testing deemed equivalent to the requirements of SOLAS, Ch. II-1, Reg. 11 by the Flag State Administration.

*IACS UR S14*

### 1.4.2 Anchor windlass testing

**1.4.2.1** Each anchor windlass is to be tested under normal working conditions to demonstrate satisfactory operation.

Each required anchor handling unit is to be tested for braking, clutch functioning, power lowering, hoisting, and proper riding of the chain through hawse pipe, over the chain wheel, through the chain pipe, and stowing in the chain locker. Also, it is to be demonstrated that the windlass is capable of lifting each anchor with 55 meters (2 lengths) length of chain, starting from the moment when 82.5 meters (3 lengths) length of chain is submerged and hanging free (minimal winding up velocity is not to be less than 9 [m/min]). If the available water depth is insufficient, the proposed test method will be specially considered.

### 1.4.3 Testing of machinery installation

**1.4.3.1** Requirements for testing during construction related to machinery installations are stated in the *Rules, Part 9 - Machines* and *Part 7 - Machinery Installation*.

### 1.4.4 Testing of steering arrangements

1.4.4.1 Requirements for survey during manufacture and testing including sea trials testing are stated in the *Rules, Part 9 - Machines*.

### 1.4.5 Testing of boilers, heat exchangers and pressure vessels

1.4.5.1 Requirements for testing during construction related to boilers, heat exchangers and pressure vessels are stated in the *Rules, Part 10 - Boilers, Heat Exchangers and Pressure Vessels*.

### 1.4.6 Testing of piping

1.4.6.1 Requirements for testing during construction related to piping are stated in the *Rules, Part 8 - Piping*.

### 1.4.7 Testing of welded joints

1.4.7.1 Requirements for testing of welded joints are stated in the *Rules, Part 26 - Welding*.

### 1.4.8 Metallic materials

1.4.8.1 Requirements for materials and their testing are stated in the *Rules, Part 25 - Metallic Materials*.

### 1.4.9 Non-metallic materials

1.4.9.1 Requirements for non-materials and their testing are stated in the *Rules, Part 24 - Non-metallic Materials*.

## 2 INITIAL CLASS ENTRY SURVEY OF EXISTING SHIPS - ADMISSION TO CLASS

### 2.1 GENERAL

**2.1.1** This Section of this Chapter of the Rules is applicable to all existing ships or floating units of whatever type, self-propelled or not, irrespective of the age or navigation area, and not being built under supervision of the *Register* if applying to be admitted to *Register's* class for the first time.

For that purpose the *Register* is to perform an Initial class entry survey in order to verify whether the ship is eligible to be classed on the basis of the Rules.

**2.1.2** Initial class entry survey is a complete inspection of a ship before it is put into service, comprising inspection of all the items relating to the Certificate of class (and class notations) in order to ensure that the relevant requirements are complied with, and that these items are satisfactory for the service and navigation area for which the ship is intended.

**2.1.3** Initial class entry survey should consist of:

- .1 An examination of the ship's particulars related to the structure, machinery and equipment installed on the ship to verify compliance with the requirements of the Rules, relevant to the Certificate of class and class notations.
- .2 An inspection of the structure, machinery and equipment to ensure that they have been properly maintained and in satisfactory condition and are fit for the service for which the ship is intended, and that there have been no unauthorised changes.
- .3 A check that the Certificate of class, record books, operating manuals and other instructions and the documentation specified in the requirements of the Rules, relevant to the Certificate of class and class notations have been placed on board the ship.

**2.1.4** Request for the classification of the ship not constructed under the survey of the *Register* is to be addressed to Head Office of the *Register* in writing. It is to be accompanied with the ship particulars and information on the previous class status and period of class, as well as about any conditions of class imposed by the classification society from which the class is being transferred.

**2.1.5** When the Owner (or the Company) applies for admission to class, the *Register* will process the application depending on whether the ship is:

- .1 Classed with the Recognized classification society or a Society subject to verification of compliance with IACS QSCS, or
- .2 Not classed with the recognized classification society.

**2.1.6** As a rule, ships not constructed under the survey or not being classed by the Recognized classification society

will not be admitted for classification if their hull consists of fibre-reinforced plastics. Notwithstanding before stated, in exceptional cases and for ships not to be engaged on international voyages the *Register* may accept admission to class of such ships providing they comply with the requirements of the Rules for technical supervision of ships made of wood, aluminium alloys and reinforced plastics.

### 2.2 SHIPS NOT SUBJECT TO IACS PR1A OR PR1B

#### Surveys

**2.2.1** In the case of existing ships over 100 GT of whatever type, age, self-propelled or not, restricted or unrestricted service and not being subject to provisions of IACS PR1A ("Procedure for transfer of class") or PR1B ("Procedure for Adding, Maintaining or Withdrawing Double or Dual Class"), requirements of IACS PR1D ("Procedure for Class Entry of Ships not subject to PR1A or PR1B") will be applied.

Whenever the *Register* is requested by an Owner to accept an existing vessel into class, the *Register* shall immediately notify the Owner in writing on relevant requirements stipulated by IACS PR1D with an Initial class entry survey to be carried out as follows:

- .1 Renewal survey of hull, including thickness measurement.
- .2 Renewal survey of machinery installation.
- .3 Dry-docking survey.
- .4 Tailshaft survey(s).
- .5 Boiler survey(s) and survey(s) of pressure vessels.

The *Register* may also request further examinations, tests and measurements, including, but not limited to material testing, non-destructive testing, hydraulic and hydrostatic tests and sea-trials.

Where the vessel, during any portion of the five year period prior to the request for the classification being received, been previously classed by the Recognized classification society or a Society subject to verification of compliance with IACS QSCS and has not been subject to alteration or modification since class was withdrawn, the survey requirements may be specially considered but are not to be less than the following:

- .1 For vessels previously classed with the Recognized classification society - all overdue surveys and overdue conditions of class, or
- .2 For vessels previously classed with a society subject to verification of compliance with IACS QSCS - surveys should be the same as those required by 2.3.

#### IACS PR1D

**2.2.2** Additionally to 2.2.1, the survey is to be carried onboard for assessment of compliance with the submitted plans, including trials and/or functional testing when and if deemed necessary. All surveys which are to be carried out, are to include workmanship, material and scantling survey.

Dispensation to the scope of surveys to be carried out on board ship for the purpose of assessment of compliance of the ship with submitted drawings and workmanship,

material and scantling survey, may be given to ships classed with a society being a Recognized Organization according to EU Regulation 391/2009 and EC Directive 2009/15/EC and in the cases when the ship has been previously classed with the Recognized classification society.

**2.2.3** Where appropriate within reasonable limits, for ships having  $GT \leq 100$  and not engaged in international voyages, a proven service record of satisfactory performance during a period of adequate length may be used as a criterion of equivalence (as a rule this period of adequate length should in no case be less than five years). Special consideration will be given to ships of recent construction.

#### Documentation to be submitted

**2.2.4** As a rule, the following plans are to be submitted to the *Register*, in order to be checked for compliance with the applicable Rules of the *Register*:

- .1 Main plans
  - a) general arrangement,
  - b) capacity plan,
  - c) hydrostatic curves,
  - d) loading manual, where required,
  - e) documentation related to stability (trim and stability book and damage stability calculation, if applicable).
- .2 Steel plans
  - f) midship section,
  - g) ship's body lines with offset tables,
  - h) scantling plan,
  - i) decks,
  - j) shell expansion,
  - k) transverse bulkheads,
  - l) rudder and rudder stock,
  - m) hatch covers,
  - n) stern frame.
- .3 Machinery (as applicable)
  - a) machinery arrangement,
  - b) intermediate, thrust and screw shafts,
  - c) propeller,
  - d) main engines, propulsion gears and clutch systems (or manufacturer make, model and rating information),
  - e) for steam turbine vessels, main boilers, superheaters and economisers (or manufacturer make, model and rating information) and steam piping,
  - f) bilge and ballast piping diagram,
  - g) steering gear systems piping and arrangements and steering gear manufacturer make and model information.
- .4 Torsional vibration calculations:
  - a) for ships less than 2 (two) years old torsional vibration calculations are to be submitted.
- .5 Additional documentation for ships with ice class notation:
  - a) plans for flexible couplings and/or torque limiting shafting devices in the propulsion line shafting (or manufacturer make, model and rating information).
- .6 Additional documentation for oil tankers:
  - a) pumping arrangement at the forward and after ends and drainage of cofferdams and pump rooms.
- .7 Additional documentation for ships with unattended machinery space:
  - a) instrument and alarm list,
  - b) fire alarm system,
  - c) list of automatic safety functions (e.g. slowdowns, shutdowns, etc.),
  - d) function testing plan.

Submittal and plan appraisal <sup>7)</sup> by the *Register* with satisfactory results is considered as a prerequisite for issuing an Interim or full term Certificate of class.

In cases where the vessel has been previously classed with the Recognized classification society, the submission of plans may be specially considered subject to confirmation of no alterations / modifications to the vessel.

In cases where the vessel has been previously classed by the Recognized classification society or a society subject to verification of compliance with IACS QSCS, extent of plan appraisal may be specially considered subject to confirmation of no alteration/modification to the vessel.

Where issues remain outstanding, the *Register* may impose a condition of class for a limited time period in accordance with IACS PR35 ("Procedure for Imposing and Clearing Conditions of Class").

However, having made a good faith effort to obtain the information, if it proves not practicable to acquire certain documents, equivalent/alternative technical data should be provided to the *Register* prior issuing full term Certificate of class.

Additional information may be necessary according to the requirements of the Flag State Administration.

Alternative technical data may be accepted by the *Register* in lieu of specific items of the listed documentation not being available at the time of the transfer.

*IACS PR1D*

**2.2.5** The *Register* reserves the right to ask for additional documentation which considers necessary in each particular case. For installations or equipment covered by specific service and/or class notation, the *Register* will determine the scope of additional documentation to be submitted.

**2.2.6** In addition to 2.2.5 the *Register* may base its judgement upon documentation such as certificates issued or accepted by the former classification society, if any, and statutory certificates issued by the Flag State Administration, or by a Recognized organization on its behalf.

**2.2.7** The *Register* is not to issue an Interim Certificate of class, or other documents enabling the ship to trade under its classification:

- .1 Until all required surveys are satisfactorily completed.
- .2 Until the appraisal of the plans listed in 2.2.4 as required by the *Register* to verify compliance with the Rules, has been carried out.

<sup>7)</sup> Plan appraisal means the process of plan and document review and/or approval as required by the applicable Rules of the *Register*.



- .3 Before giving the opportunity to the Flag State Administration to provide any further instructions within three (3) working days (in compliance with the requirements of Art. 10.5 of the Regulation (EC) No. 391/2009, as amended).

IACS PR1D

## 2.3 SHIPS CLASSED WITH THE RECOGNIZED CLASSIFICATION SOCIETY OR WITH A SOCIETY WHICH IS SUBJECT TO VERIFICATION OF COMPLIANCE WITH IACS QSCS

### Surveys

**2.3.1** For vessels, classed with the Recognized classification society or with a classification society which is subject to verification of compliance with IACS QSCS, and having GT > 100 of whatever type, self-propelled or not, having restricted navigation area or not, when transferring a class, the requirements of IACS Transfer of Class (TOC), according to IACS PR1A "Procedure for transfer of class" will be applied.

Whenever the *Register* is requested by an Owner to accept an existing vessel into class, the *Register* shall immediately notify the Owner in writing on relevant requirements stipulated by IACS PR1A.

**2.3.2** According to 2.3.1, and notwithstanding the records indicating that all surveys are up-to-date, the *Register* is to hold an Initial class entry survey<sup>8)</sup>, the extent of which is to be based on the age of the vessel<sup>9)</sup> and on the losing classification society's class status.

The *Register* is not to issue an Interim Certificate of class, or other documents enabling the vessel to trade:

1. Until all overdue surveys and all overdue conditions of class previously issued against the subject vessel as specified to the Owner by the losing society<sup>10)</sup>, have been completed and rectified by:
  - a) the gaining society, for vessels less than 15 years of age;
  - b) the losing society, for vessels 15 years of age and above; and
2. Until all relevant surveys have been satisfactorily completed. However, when facilities are not available in the first port of survey, an Interim Certificate of class may be issued to allow the vessel to undertake

<sup>8)</sup> Class entry surveys may be, but are not required to be, credited as periodical surveys for maintenance of classification. Conditions of class due for compliance at a specified periodical survey for maintenance of classification need not to be carried out/complied with at a class entry survey, unless class entry survey is credited as the specified periodical survey for maintenance of classification or the condition of class is overdue.

<sup>9)</sup> To be calculated from the date of delivery to the "Date Request for Class was Received" in Form G, Part A – Survey Status Request

<sup>10)</sup> "Losing society" means the classification society from which class is being transferred. In the case of vessels classed by more than one Society, "losing society" means all classification societies from which class is being transferred

a direct voyage to a port where facilities are available to complete required surveys. In such cases the surveys specified in 2.3.2.1 and 2.3.2.2 are to be carried out to the maximum extent practicable at the first port of survey, but in no case less than the scope of annual hull survey and machinery surveys as required in 2.3.2.2.

3. Before giving the opportunity to the Flag State Administration to provide any further instructions within three (3) working days (in compliance with the requirements of Art. 10.5 of the Regulation (EC) No. 391/2009, as amended).

The validity of the Interim Certificate of class and the subsequent full term Certificate of class is subject to any outstanding conditions of class previously issued against the vessel being completed by the due date and as specified by the losing classification society.

Any outstanding conditions of class with their due dates shall be clearly stated on the Interim Certificate of class (or in an attachment to the Interim Certificate of class); and/or in class survey record available on board; and ship survey status when the full term Certificate of class is issued.

**2.3.2.1** Hull class entry survey is to be held in an extent as follows:

- a) For ships of age less than 5 (five) years the survey is to be held at the extent of Annual survey.
- b) For ships between 5 (five) and 10 (ten) years of age the survey is to include an Annual survey and inspection of a representative number of ballast spaces.
- c) For ships of 10 (ten) years of age and above, but less than 20 (twenty) years of age, the survey will include an Annual survey and inspection of age, the survey will include an Annual survey and inspection of a representative number of ballast spaces and cargo spaces, except for:

For gas carriers, in lieu of internal inspection of cargo spaces, the following applies<sup>11)</sup>:

- inspection of surrounding ballast tank(s) and void spaces, including external inspection of independent cargo tank(s) and associated supporting systems as far as possible,
- review of cargo log books and operational records to verify the correct functioning of the cargo containment system.

For chemical carriers of 10 years of age and above but less than 15 years of age, in lieu of an internal inspection of cargo tanks without internal stiffening and framing, inspections of surround-

<sup>11)</sup> Informative reference only, as the *Register* does not provide classification for liquefied gas carriers.

- ing ballast tank(s) and void spaces and deck structure, are to be applied.
- d) For ships with affixed ESP notation, (vessels subjected to IACS UR Z10.1, Z10.2, Z10.3, Z10.4 or Z10.5) which are 15 (fifteen) years of age but less than 20 (twenty) years of age, a full Renewal or Intermediate survey is to be carried out, whichever is due next.
- e) For all ships, which are 20 (twenty) years of age and above, a full Renewal survey is to be carried out <sup>12)</sup>.
- f) In lieu of the requirements in items a) through e), the following apply for site specific purpose built floating and/or storage vessels:
- for vessels of age less than 5 years, the survey is to have the scope of an Annual survey,
  - for vessels of age between 5 and 10 years, the survey is to include an Annual survey and inspection of twenty percent of ballast spaces,
  - for vessels of age between 10 and 20 years, the survey is to include an Annual survey and inspection of twenty percent of ballast spaces and twenty percent of cargo spaces,
  - for vessels over 20 years of age, the survey is to have the scope of a Renewal survey.
- g) For site specific floating production or storage vessels which have been converted from other vessels, the survey is to take the form of an Annual survey and also include inspection of twenty percent of ballast spaces and twenty percent of cargo spaces until 20 years have elapsed since conversion. After 20 years the survey is to have the scope of renewal survey.
- h) In the context of applying of 2.3.2.1 d) and 2.3.2.1 e), if a dry docking survey is not due at the time of transfer, consideration can be given to carrying out an underwater examination in lieu of dry docking.
- i) in the context of applying items e) and f), as applicable, the anchors and anchor chain cables ranging and gauging for vessels over 15 years of age is not required to be carried out as part of the class entry survey unless the class entry survey is being credited as a periodical survey for maintenance of class. If the class entry survey is to be credited as a periodical survey for maintenance of class, consideration may be given by the *Register* to the acceptance of the anchors and anchor chain cables ranging and gauging carried out by the losing society provided they were carried out within the applicable survey window of the periodical survey in question.
- j) In the context of applying items 2.3.2.1 a) to 2.3.2.1 h), as applicable:
- If the class entry survey is to be credited as a periodical survey for maintenance of class consideration may be given by the *Register* to the acceptance of thickness measurements taken by the losing society provided they were carried out within the applicable survey window of the periodical survey in question.
  - If the class entry survey is not to be credited as a periodical survey for maintenance of class, consideration may be given by the *Register* to the acceptance of thickness measurements taken by the losing society provided they were carried out within 15 months prior to completion of class entry survey when it is in the scope of a Renewal survey, or within 18 months prior to completion of class entry survey when it is in the scope of an Intermediate Survey.
- In both cases, the thickness measurements are to be reviewed by the *Register* for compliance with the applicable survey requirements, and confirmatory gauging are to be taken to the satisfaction of the *Register*.
- k) In the context of applying 2.3.2.1 c) to 2.3.2.1 h), as applicable, tank testing for vessels over 15 years of age is not required to be carried out as part of the class entry survey unless the class entry survey is being credited as a periodical survey for maintenance of class. If the class entry survey is to be credited as a periodical survey for maintenance of class, consideration may be given by the gaining society to the acceptance of the tank testing carried out by the losing society provided they were carried out within the applicable survey window of the periodical survey in question.
- l) In the context of applying 2.3.2.1 a) to 2.3.2.1 h), as applicable, compliance with IACS URs that require compliance at the forth coming due periodical surveys (such as IACS UR S26 and UR S27) are not required to be carried out/completed as part of the class entry survey unless the class entry survey is

<sup>12)</sup> The requirement under item e) is also applicable to vessels having their hull under continuous survey.

credited as a periodical survey for maintenance of class.

**2.3.2.2 Machinery class entry survey** is to be held as a general examination of all essential machinery, and is to include:

- a) Examination under working conditions of oil fuel burning equipment, boilers, economisers and steam/steam generators. The adjustment of safety valves of this equipment is to be verified by checking the records on the ship.
- b) All pressure vessels.
- c) Insulation resistance, generator circuit breakers, preference tripping relays and generator prime mover governors are to be tested and paralleling and load sharing to be proved.
- d) In all cases, navigating lights and indicators are to be examined and their working and alternative sources of power verified.
- e) Bilge pumps, emergency fire pumps and remote controls for oil valves, oil fuel pumps, lubricating oil pumps and forced draught fans are to be examined under working conditions.
- f) Recirculating and ice clearing arrangements, if any.
- g) The main and all auxiliary machinery necessary for operation of the ship at sea together with essential controls and steering gear is to be tested under working conditions. Alternative means of steering are to be tested. A short sea trial is to be held at the Surveyors discretion if the ship has been laid up for a long period.
- h) Initial start arrangements are to be verified.
- i) In the case of oil tankers, the cargo oil system and electrical installation in way of hazardous spaces are to be checked for compliance with the Rules requirements. Where intrinsically safe equipment is installed, the Surveyors are to satisfy themselves that such equipment has been approved by a recognised authority. The safety devices, alarms and essential instruments of the inert gas system are to be verified and the plant generally examined to ensure that it does not constitute a hazard to the ship.

**NOTE:** For the transfer of class or adding class at ship's delivery items c) and i) may be verified by reviewing ship's record.

**2.3.3** For ships with expired or extended certificate of class issued by the Recognized classification society, the inspection of the structure, machinery and equipment including tests when necessary, is to be carried out in extent as prescribed for the Renewal survey.

**2.3.4** In the case of Initial class entry survey for the purpose of **adding dual class** to a ship already classed with the Recognized classification society, specific procedure as stipulated by **IACS PR1B, Section A** applies.

In the case of **adding dual class** to a vessel classed with the Recognized classification society at vessel's **delivery**<sup>13)</sup>, specific procedure as stipulated by **IACS PR1B, Section B** applies.

**2.3.5** For **transfer of class at delivery**, specific procedure as stipulated by IACS PR1A, para. A.3 applies.

The *Register* is not to issue an Interim Certificate of class, or other documents enabling the vessel to trade:

- .1 Until all relevant surveys specified in 2.3.2.1 and 2.3.2.2 have been satisfactorily completed; and
- .2 Before giving the opportunity to the Flag State Administration to provide any further instructions within three (3) working days (in compliance with the requirements of Art. 10.5 of the Regulation (EC) No. 391/2009, as amended).

**2.3.6** In the case of Initial class entry survey for the purpose of **adding double class**, specific procedure as stipulated by IACS PR1B, **Section A** applies.

#### Documentation to be submitted

**2.3.7** Before full term Certificate of class is issued, the Owner is to submit to the *Register* the following documentation:

- .1 Documentation related to hull:
  - Main plans
    - a) general arrangement,
    - b) capacity plan,
    - c) hydrostatic curves,
    - d) loading manual, where required,
    - e) documentation related to stability (trim and stability book and damage stability calculation, if applicable).
  - Steel plans
    - f) midship section,
    - g) ship's body lines with offset tables,
    - h) scantling plan,
    - i) decks,
    - j) shell expansion,
    - k) transverse bulkheads,
    - l) rudder and rudder stock,
    - m) hatch covers,
    - n) for CSR vessels. plans showing, for each structural element, bot as-built and renewal thicknesses and any thicknesses for "voluntary addition".
- .2 Documentation related to machinery:
  - a) machinery arrangement,
  - b) intermediate, thrust and screw shafts,
  - c) propeller,

<sup>13)</sup> At vessel's delivery means that the new construction survey process is completed, the first Certificate of Class is delivered and the vessel has not departed from the yard

- d) main engines, propulsion gears and clutch systems (or manufacturer make, model and rating information),
  - e) for steam turbine vessels, main boilers, superheaters and economisers (or manufacturer make, model and rating information) and steam piping,
  - f) bilge and ballast piping diagram,
  - g) steering gear systems piping and arrangements and steering gear manufacturer make and model information.
- .3 Torsional vibration calculations:
- a) for ships less than 2 (two) years old torsional vibration calculations are to be submitted.
- .4 Additional documentation for ships with ice class notation:
- a) plans for flexible couplings and/or torque limiting shafting devices in the propulsion line shafting (or manufacturer make, model and rating information).
- .5 Additional documentation for oil tankers:
- a) pumping arrangement at the forward and after ends and drainage of cofferdams and pump rooms,
  - b) general arrangements of cargo piping in tanks and on decks,
  - c) plan of hazardous areas.
- .6 Additional documentation for ships with unattended machinery space:
- a) instrument and alarm list,
  - b) fire alarm system,
  - c) list of automatic safety functions (e.g. slowdowns, shutdowns, etc.),
  - d) function testing plan.
- .7 Additional documentation required for approval of alternative design and arrangements:
- a) Document(s) of approval of alternative design, if any.

**NOTE:** Additional information may be necessary according to the requirements of the Flag State Administration.

**2.3.8** Alternative technical data may be accepted by the *Register* in lieu of specific items of the listed documentation not being available at the time of the transfer.

*IACS PR1A*

## 2.4 SHIPS OF LESS THAN 100 GROSS TONNAGE

**2.4.1** For ships of less than 100 gross tonnage, special consideration will be given to the scope of class entry survey and documentation to be supplied.

## 2.5 DATE OF INITIAL CLASSIFICATION FOR EXISTING SHIPS

**2.5.1** Upon completion of Initial class entry survey the assigned period of class is never to exceed 5 (five) years. The five year period is granted only upon satisfactory outcome of class entry survey with the scope of a Renewal survey.

Therefore, as a principle, in the case of existing ships the date of completion of Initial class entry survey is to be considered as a date of initial classification with the *Register*.

**2.5.2** Notwithstanding stated in 2.5.1, if a ship was previously classed with the Recognized classification society, the assigned period of class is never to go beyond the due date of the Renewal survey assigned by the losing society. However, this does not apply to ships with expired or extended certificate of class.

**2.5.3** In addition to provisions stated in 2.5.2, and in the case of a ship previously classed with the Recognized classification society, and:

- .1 if the Initial class entry survey has been completed under provisions of IACS PR1A, and
- .2 if such survey has been completed in the scope of Renewal survey, and
- .3 if such survey has been completed within 3 (three) months before the Renewal survey expiry date imposed by the losing society, and
- .4 if such survey is credited for class Renewal survey,

the next period of class will start from Renewal survey expiry date imposed by the losing society. For surveys completed more than 3 (three) months before Renewal survey expiry date imposed by the losing society, the period of class will start from the completion date of Initial class entry survey.

**2.5.4** For ships which were not previously classed with the Recognized classification society, the assigned period of class will be counted from the date of completion of Initial class entry survey.