QRS Class
QUALITAS REGISTER of SHIPPING

VOLUME II

Rules for the Classification and Construction of Ocean-Going Vessels

The present edition of the Rules for the *Classification and Construction of Ocean-Going Vessels Part I Classification*, has been approved by the General Manager and will enter in force on May 15, 2023.

The present edition of Rules for the *Classification and Construction of Ocean-Going Vessels Part I Classification* is based on the 2016 edition taking into account the amendments developed immediately before publication.

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FOR THE CLASSIFICATION AND CONSTRUCTION OF OCEAN-GOING VESSELS

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Rules for the Classification and Construction of Ocean-Going Vessels of Qualitas Register of Shipping (QRS) has been approved in accordance with established approval procedures and has come into force on 15 May 2023.

The present edition of the Rules is based considering the amendments and additions developed immediately before publication.

The procedural requirements, unified requirements, unified interpretations, and recommendations of the International Association of Classification Societies (IACS) and the relevant resolutions of the International Maritime Organization (IMO) have been considered.

REVISION HISTORY[1]
(purely editorial amendments are not included in the Revision History)

1 Amended paras/chapters/ sections	Information on amendments	Entry-into-force date
Para 1.1.1	Definition ″Place of refuge″ has been specified	01.02.2023
Table 2.2	In Note 7, requirements for indicating operation conditions of berth-connected ships have been specified. Editorial amendment: Preamble has been specified; in item 8, the requirement regarding sequence of other notations in the class notation has been specified	01.02.2023
Para 2.2.3.3.1	Reference to Part III "Equipment, Arrangements and Outfit" of these Rules has been specified	01.02.2023
Para 2.2.7	Para has been amended regarding the description of distinguishing mark **OMBO**	01.03.2023
Para 2.2.42.2	Para has been supplemented with the requirements regarding conditions for assignment of mandatory distinguishing mark **COMF(N – S)**	01.01.2023
Para 2.2.54	New para containing requirements for assignment of distinguishing mark **ETW** (Effective Tank Washing) has been introduced	01.01.2023
Chapter 2.5	Table 2.5 has been completely reformatted and references to the Rules for the Equipment of Ocean-Going Vessels have been specified	01.03.2023
Table 2.5	In item 1.18, for descriptive notation **Berth-connected ship**, brief description has been specified New item 1.33 containing requirements for assignment of mandatory distinguishing mark COMF (N – S) has been introduced. In item 2.24, for distinguishing mark **COMF (N – 1** or **2**, or **3)**, the references to the In item 2.4 for distinguishing mark **OMBO**, the brief description and references to the New item 2.30 containing description of distinguishing mark **ETW** (Effective Tank Washing) has been introduced	01.02.2023
Para 3.1 (2)	Para has been amended regarding the scope of documentation to be submitted	01.02.2023
Para 3.1 (5)	Para has been amended regarding results of technical documentation review	01.02.2023
Para 3.1 (9)	New para containing requirements for operational documentation has been introduced	01.02.2023
Chapters 3.2 — 3.5	Chapter 3.2 has been completely revised and presented in a tabular form. Existing Chapters 3.2, 3.3 and 3.4 have been deleted.	01.02.2023

Section

Section 1
General

1.1 Definitions and explanations

Definitions and explanations pertinent to the general terminology used in the normative documents of QRS are given in Part I "General Regulations.

For the Rules of Classification and Construction of Ocean-Going Vessels the following definitions and explanations have been adopted (unless expressly provided otherwise in particular parts of these Rules).

1.1.1 Definitions

Barge is a non-self propelled cargo ship designed to be towed or pushed.

Barge carrier (lighter carrier) is a dry cargo ship carrying cargo in shipborne barges (lighters).

Unmanned non-self-propelled barge (UNSP barge) is a barge that is not propelled by mechanical means, carries no oil, has no machinery fitted that may use oil or generate oil residue (sludge), has no oil fuel tank, lubricating oil tank, oily bilge water holding tank and oil residue (sludge) tank, is not used for holding sewage during transport, has no arrangements that could produce sewage, has no systems, equipment and/or machinery fitted that may generate emissions, has no crew on board and is not intended for the carriage of persons and/or living animals.

Tug is a ship specially intended for the towage and pushing of other ships and floating facilities.

Displacement of a light ship means the displacement of a ship without cargo, fuel oil, lubricating oil, ballast, fresh and boiler feed water in its tanks, provisions, consumable stores, crew and their effects.

Cargo ship is any ship which is not a passenger ship (dry cargo ship, tanker, refrigerating transport ship, icebreaker, tug, pusher, salvage ship, vessel of dredging fleet, cable layer, special purpose ship and other non-passenger ship).

Hopper barge is a self-propelled or non-self-propelled ship intended for the carriage of spoil.

Reid vapour pressure is the pressure of liquid vapour established by standard procedure in the Reid tester at the temperature of 37.8 °C and at the gas to liquid volume ratio of 4:1.

Deadweight means the difference between the displacement of a ship at the load waterline corresponding to the summer freeboard assigned for the water with a density of 1,025 t/m^3 and the displacement of a light ship.

Standby vessel is a supply vessel intended to carry out rescue and standby services in offshore areas of hydrocarbon production.

Dredger (suction dredger) is a self-propelled or non-self-propelled ship intended for extraction of spoil using dredging gear (buckets, suction pipes, grabs, etc.) and having no holds for the storage or carriage of spoil. They include trailing suction hopper dredger (non-self-propelled trailing suction dredgers), multi-bucket dredgers, dipper dredgers, grab dredgers, rock dredgers, floating river-training technical units.

Cable laying barge is a non-self-propelled barge intended for cable laying on the sea bottom.

Cable laying vessel is a self-propelled vessel intended for cable laying on the sea bottom.

Catamaran is a ship with two hulls connected by means of deck or truss centre body.

Combination carrier is a ship intended for the carriage of crude oil and petroleum products in bulk, as well as bulk cargoes (by these ships are meant ore/oil carriers, oil/bulk dry cargo carriers and similar ships).

Container ship is a ship intended for the carriage of goods in containers of the international standard and provided with the cellular guides in the holds.

Crane ship is a construction similar to the floating crane, but on a floating hull with ship lines or lines of a similar shape.

Icebreaker is a self-propelled ship intended for various types of icebreaking operations to maintain navigation in the freezing seas.

Timber carrier is a dry cargo ship intended for the carriage of deck timber cargo.

Pilot boat is a boat intended for transportation and safe embarkation/disembarkation of pilots from one board to another.

Buoy vessel is a vessel intended for laying of floating aids to navigation (navigation marks) in the port approaches and in the harbour, their maintenance in the harbour and retrieval as well as to perform a range of auxiliary functions.

Place of refuge is any naturally or artificially sheltered aquatorium which may be used as a shelter by a ship under conditions likely to endanger the safety of the ship.
Bulk carrier is a ship which is intended primarily to carry dry cargoes in bulk, including such types as ore carriers and combination carriers. To apply the term "bulk carrier" correctly, one should be guided by the provisions of IMO resolution MSC.277(85).
Roll-on/roll-off (ro-ro) ship is a ship which has one or more decks either closed or open and cargo spaces intended for loading and unloading the cargo by roll-on/roll-off, subdivided in any way and extending to either a substantial length or the entire length of the ship, spaces in which motor vehicles with fuel in their tanks for their own propulsion, and/or goods packaged (in tare or in bulk, on rail or road cars, vehicles (including road or rail tanks), trailers, containers, pallets, demountable tanks or similar enlarged units, or other tanks) are normally loaded and unloaded in a horizontal direction.

Note. At transportation of road vehicles, it is also recommended to follow the provisions of IMO resolution MSC.479(102) "Revised Guidelines for Securing Arrangements for the Transport of Road Vehicles on Ro-Ro Ships".

Tanker is a ship intended for the carriage of liquid cargoes in bulk, including:
special tanker is a ship intended for the bulk carriage of liquid cargoes other than oil and petroleum products. The precise purpose of the special tanker is stated by the descriptive notation in the class notation in accordance with *2.5*;
NLS tanker is a ship constructed or adapted to carry a cargo of noxious liquid substances (NLS) in bulk and includes an ″oil tanker″ as defined in *Annex I to MARPOL 73/78* when certified to carry a cargo or part cargo of noxious liquid substances in bulk;
oil tanker is a ship constructed or adapted primarily to carry oil in bulk in its cargo spaces and includes combination carriers, any NLS tanker and any gas carrier as defined in regulation *3.20 of Chapter II-1 of SOLAS-74* (as amended), when carrying a cargo or part cargo of oil in bulk;
oil tanker (>60°C) is a sea-going ship intended for the carriage of petroleum products having a flash point over 60°C in bulk;
oil tanker (>55°C) is a ship of inland navigation intended for the carriage of petroleum products having a flash point over 55°C in bulk;
oil recovery vessel is a ship intended for recovery of crude oil and petroleum products having a flash point of 60°C or below from the sea surface;
oil recovery vessel (>60°C) is a ship intended for recovery of crude oil and petroleum products having a flash point above 60°C from the sea surface;
bilge water removing ship is a ship designed to remove the bilge water from the machinery spaces of ships.
Passenger is every person other than the master and the members of the crew or other persons employed or engaged in any capacity on board a ship (special personnel) on the business of that ship, and a child under one year of age.
Passenger ship is a ship intended for or carrying more than 12 passengers.
Roll-on/roll-off passenger ship (ro-ro passenger ship) is a passenger ship with enclosed or open cargo spaces which is loaded/unloaded in the horizontal direction or with special category spaces defined in *1.5.4.3* and *1.5.9, Part VI "Fire Protection"*.
Floating crane is a crane structure on a floating hull of pontoon or similar type, which is intended for cargo handling or other working operations (mounting, undersea, hydraulic engineering, salvage, pipe laying, etc.) and may be also used for the carriage of cargoes on deck and/or in the hold.
Lightship is a non-self-propelled ship having special equipment (light appliances, fog signaling arrangements, radar beacons, etc.) intended for bounding navigational hazards and ships orientation to ensure safety of navigation.
Semi-submersible ship (Docklift ship) is a dry cargo ship designed for the carriage of heavy and/or bulky cargoes for loading/unloading of which the docking method (FLO/FLO — float-on/float-off) is used.
Crew boat is a boat intended for travelling and for the carriage of not more than 12 passengers and which is not a passenger ship or a pleasure craft.
Ore carrier is a ship primarily designed for the carriage of ore, the structure of which includes longitudinal bulkheads separating the central double bottom ore hatches from the side ones.
Fishing vessel is a vessel used directly for catching or for catching and processing the catch (fish, whales, seals, walrus or other living resources of the sea).
Self-propelled ship is a ship fitted with an operating propulsion plant.

A salvage ship is a self-propelled ship intended for rendering assistance to ships in distress at sea.

Special personnel means all persons who are not passengers or members of the crew or children of under one year of age and who are carried on board in connection with the special purpose of that ship or because of special work being carried out aboard that ship. Special personnel include the following:

scientists, technicians and expeditionaries on ships engaged in research, non-commercial expeditions and survey;

personnel engaged in training and practical marine experience to develop seafaring skills suitable for a professional career at sea;

personnel who process the catch of fish, whales or other living resources of the sea on factory ships not engaged in catching;

salvage personnel on salvage ships, cable-laying personnel on cable-laying ships, seismic personnel on seismic survey ships, diving personnel on diving support ships, pipe-laying personnel on pipe layers and crane operating personnel on floating cranes and crane ships;

other personnel similar to those referred to above who, in the opinion of the Flag State Maritime Administration, may be referred to this group.

A berth-connected ship is a non-self propelled floating facility, having the pontoon-type or ship-type hull, which is in operation either when lying at anchor or bottomed or when moored at quay. These ships include floating docks, floating hotels and hostels, floating workshops, floating power plants, floating warehouses, floating oil storages, etc.

LNG bunkering ship is a gas carrier engaged in transportation of liquefied natural gas (LNG) and intended to ensure the transfer of LNG on board the ships using LNG as a fuel.

Anchor handling vessel is a supply vessel equipped for servicing (handling, heaving up and shifting) anchors.

Deck carrier is a ship designed for the carriage of general cargoes on the open deck.

Supply vessel is a vessel designed basically for the carriage of supplies and cargoes to the mobile and fixed offshore units intended for the different purposes, and fitted generally with a forward superstructure and an after weather cargo deck for processing of the cargo at sea.

General dry cargo ship is a dry cargo ship intended primarily for the carriage of different package cargoes and goods (products) that are carried in packages. Such ships may periodically (i.e. not primarily) carry cargoes in bulk provided the applicable provisions of QRS rules for the carriage of bulk cargoes and, if applicable, IMO resolution MSC.277(85), as amended, are met. The ships in which the cargo loading operations are performed preferably in a horizontal direction, shall also comply with the requirements applied for a roll-on/roll-off ship (ro-ro ships). The ships in which the cargo loading operations are performed preferably in a vertical or combined direction (lo-lo ships (lift on/lift off ships), lo-ro ships) shall comply with the requirements of QRS rules, IACS and IMO normative documents related to bow, side, stern doors, ramps and inner doors and relevant requirements for ro-ro ships (as applicable). Such ships are multipurpose ships.

Ship intended primarily to carry dry cargo in bulk is a ship classified as a bulk carrier and her loading conditions are primarily related to bulk cargoes transportation (carriage, loading and discharge).

Waste disposal collector vessel (collector ship, surface debris collector, etc.) is a ship intended for reception from other ships oil residues, oily bilge waters, sewage, dry garbage and other waste for their subsequent discharge into the shore-based reception facilities.

A ship of river-sea navigation is a self-propelled cargo ship intended for the carriage of cargoes by sea and by inland waterways.

Special purpose ship is a mechanically self-propelled ship which, by reason of its function, carries on board more than 12 special personnel, including passengers (the later shall not exceed 12 passengers, otherwise such ship should not be considered a special purpose ship as it is a passenger ship). Such ships include research, expedition, hydrographic, training ships; whale and fish factory ships, factory ships and other ships engaged in processing of living resources of the sea and not engaged in catching; salvage ships, cable laying vessels, seismic survey ships, diving support ships, pipe laying vessels, floating cranes and crane ships.

Technical and auxiliary fleet vessel is a ship designed for maintenance of ships and waterways, port facilities, underwater mining etc. (dredgers, suction dredgers, rock dredgers, snag boats and river-training ships, hopper barges, multicats, buoy vessels, buoyance vessels and crew boats designed for navigation support, ecological monitoring and analysis of water environment, bottom soil and ambient air).

A shipborne barge (lighter) is a nonself-propelled cargo ship unmanned and appropriated for transportation in specially equipped ships (barge and lighter carriers) and for towing (pushing) within the specified restricted area of navigation.

A dry cargo ship is a ship intended for the carriage of different cargoes (general cargoes, containers, timber, bulk cargoes, etc.), except for the liquid bulk cargoes.

A pontoon is a non-self-propelled unmanned ship intended for the carriage of deck cargo and having no hatches on deck, except for small manholes for access into the hull, which are closed by covers with seal gaskets.

Pipe laying barge is a non-self-propelled barge intended for laying the pipelines on the seabed.

Pipe laying vessel is a self-propelled vessel intended for laying the pipelines on the seabed.

Hopper dredger is a self-propelled or non-self-propelled ship intended for the extraction of spoil using dredging gear (buckets, suction pipes, grabs, etc.) and having holds for the storage or carriage of spoil.

Crew means all persons carried on board the ship to provide navigation and maintenance of the ship, its machinery, systems and arrangements essential for propulsion and safe navigation or to provide services for other persons on board.
Crew of a fishing vessel means persons engaged in any business on board a ship connected with its purpose.
Environmental monitoring vessel is a ship intended for monitoring of coastal zone of water basins.
Escort tug is a tug intended for escort service (steering, braking and otherwise controlling the assisted ship).

Definitions of particular types of ships, high-speed craft, dynamically supported craft, gas carriers, chemical tankers, pleasure craft, small craft are given in the relevant QRS rules for such types of ships.

The list of QRS rules is given in *1.3* of the General Regulations for the Classification.

1.1.2 Explanations.

For the purpose of the present Rules Classification means development, publication and application of the Rules continuous compliance with which will, along with the proper maintenance of the ship by the owner or by the operator, ensure:

structural strength and integrity of the hull and its elements including structural fire protection;
seaworthiness (stability) of the ship under all specified loading conditions and under particular sea and wind conditions;
safe and reliable operation of its propulsion plant, systems and devices for ship control, other systems, auxiliary machinery and equipment including fire-fighting equipment,
and thereby permit safe operation of the ship in accordance with its purpose.

Date of contract for construction of a ship.

.1 The date of "contract for construction" of a ship is the date on which the contract to build the ship is signed between the prospective owner and the shipbuilder. This date and the construction numbers (i.e. hull numbers) of all the ships included in the contract shall be declared to QRS by the party applying for the assignment of class to a newbuilding.

.2 The date of "contract for construction" of a series of ships, including specified optional ships for which the option is ultimately exercised, is the date on which the contract to build the series is signed between the prospective owner and the shipbuilder.

Ships built under a single contract for construction are considered a "series of ships" if they are built to the same approved plans for Classification purposes. However, ships within a series may have design alterations from the original design provided:

.a such alterations do not affect matters related to Classification; or

.b if the alterations are subject to Classification requirements, these alterations shall comply with the Classification requirements in effect on the date on which the alterations are contracted between the prospective owner and the shipbuilder or, in the absence of the alteration contract, comply with the Classification requirements in effect on the date on which the alterations are submitted to QRS for approval.

The optional ships will be considered part of the same series of ships if the option is exercised not later than 1(one) year after the contract to build the series was signed.

.c If a contract for construction is later amended to include additional ships or additional options, the date of "contract for construction" for such ships is the date on which the amendment to the contract is signed between the prospective owner and the shipbuilder. The amendment to the contract shall be considered as a "new contract" to which the above explanations apply.

.4 If a contract for construction is amended to hange the ship type, the date of "contract for construction" of this modified ship or ships is the date on which revised contract or new contract is signed between the shipowner, or shipowners and the shipbuilder.

Additional requirements are the requirements caused by the object features or its operational conditions, which are not provided for by the rules imposed by QRS in writing to ensure the safety of objects under technical supervision.
Measurement of distances - unless explicitly stipulated otherwise in the text of the regulations in *SOLAS, Load Line and MARPOL Conventions* and any of their mandatory *Codes*, as well as in the text of *QRS* rules and guidelines, distances (such as tank length, height, width, ship (or subdivision or waterline) length, etc.) shall be measured by using moulded dimensions.
QRS class (class) is a combination of conventional characters and descriptive notations assigned to the ships, other floating facilities, which define their structural features, purpose and operational conditions stipulated by the Rules.
Operator is a physical person or legal entity operating a ship on the basis of a contract concluded with an owner or shipowner.
Rules (QRS Rules) are the set of the regulating and technical requirements for objects under technical supervision.
QRS Rules are listed in *1.3*, *General Regulations for the Classification*.

Recognized standards are national and international standards referred to in the appropriate parts of QRS rules.
Owner is a physical person or legal entity having proprietary rights to a ship irrespective of the fact whether he (she) or it operates the ship on his (her) or its own, or has placed it in the operation of another person or entity whether on the fiduciary or some other legal basis.
Dual class is a class of a ship classed with two societies entered into Dual Classification Agreement.
Agreed standards are national and international standards, as well as standards of firms (organizations) specified in QRS approved technical documentation on materials and products and agreed upon by QRS in compliance with the requirements of *Part II "Technical Documentation*" of the Rules.
Special consideration is the determination of the extent, to which an object under technical supervision meets the additional requirements.
Ship under construction is a ship during a period from the keel laying date till the date of issuing the documents for a ship.

Keel laying date means: the date (day, month, year) on which the installation at the building berth of a base section or block (island) in section or block (island) construction respectively, or such a stage of construction at which construction identifiable with a specific ship begins and assembly of that ship has commenced comprising at least 50 or 1 % of the estimated mass of all structural materials, whichever is less.

For fiber-reinforced plastic (FRP) ships, the keel laying date shall be interpreted as the date that the first structural reinforcement of the complete thickness of the approved laminate schedule is laid either in or on the mould.
A ship in service is a ship which is not under construction.
A shipowner is a physical person or legal entity operating a ship on his (her) or its own behalf irrespective of the fact whether he (she) or it is the owner or is operating the ship on some other legal basis.

1.2 Application

1. Rules for the Classification and Construction of Ocean-Going Vessels apply to:
.1 self-propelled cargo ships with the main engines of output 55 kW and upwards;
.2 non-self-propelled ships of 80 gross tonnage and upwards, and in case of availability of machinery and equipment of total power output of prime movers 100 kW and upwards — irrespective of their gross tonnage;
.3 materials and products that shall be installed on the above ships (lists of relevant materials and products are given in the appropriate parts of these Rules);
.4 ship refrigerating plants.

2. These Rules also apply to the following types of ships to the extent specified in the relevant rules for their Classification and construction:
.a gas carriers (refer to the Rules for the Classification and Construction of Ships Carrying Liquefied Gases in Bulk and Rules for the Classification and Construction of Ships Carrying Compressed Natural Gas);
.b chemical tankers (refer to the Rules for the Classification and Construction of Chemical Tankers);
.c high-speed craft (refer to the Rules for the Classification and Construction of High-Speed Craft);
.d manned submersibles, ship's diving systems (refer to the Rules for the Classification and Construction of Manned Submersibles and Ship's Diving Systems);
.e small sea fishing vessels (refer to the Rules for the Classification and Construction of Small Sea Fishing Vessels);

.3 These Rules apply to special purpose ships of not less than 500 gross tonnage. On agreement with QRS, the requirements of these Rules may also apply as far as reasonable and practicable to special purpose ships of less than 500 gross tonnage.

.4 These Rules set down the requirements regulating the assignment of class to a ship or a shipboard refrigerating plant.

.5 Confirmation of compliance with the requirements of QRS rules is QRS prerogative and is carried out in accordance with the procedure established by it.

Any statements to the effect a supervised item complies with QRS rules requirements, which are made or documentally supported by a body other than QRS and which are not confirmed by the latter in accordance with the established procedure, cannot be considered as evidence of such a compliance.

1.3 Compliance with statutory requirements

As far as practicable, the Rules consider the requirements of international conventions and codes coming within QRS terms of reference.

SECTION 2
Class of a ship

2.1 General

.1 Assignment of QRS class to a ship is a confirmation by QRS that the ship construction complies with the applicable requirements of QRS Rules. The ship is registered with QRS for a specified period with performing the surveys stipulated by Rules for the Classification Surveys of Ships for this period.

.2 QRS may assign a class to a ship proceeding from the results of survey during its construction, as well as assign or renew a class to an existing ship.

.3 Renewal of a ship's class means confirmation by QRS that the ship and her technical condition comply with the provisions based on which a class has been previously assigned as well as issuance of QRS documents for a period as required by the Rules for the Classification Surveys of Ships in Service.

.4 Class of a ship is, generally, assigned or renewed by QRS for 5 years, however, in sound cases QRS may assign or renew a class for a lesser period.

.5 If a ship has the valid QRS class, this means that the ship's technical condition in full measure or to a degree considered adequate by QRS complies with the requirements of QRS rules, which apply to it according to its purpose, operating conditions and class notation. The validity of the ship's class shall be confirmed by the valid Classification Certificate on board.

.6 Classification Certificate becomes invalid and Classification is automatically suspended in the following cases:

.a When the ship as whole or her separate elements have not been subjected to scheduled periodical or occasional surveys in specified terms.

.b If the annual survey has not been completed within three (3) months of the due date of the annual survey.

.c If the intermediate survey has not been completed within three (3) months of the due date of the third annual survey in each periodic survey cycle.

.d Unless the ship is under attendance for completion of the relevant survey if in QRS rules it is not required otherwise.

.e After an accident the ship shall be submitted for occasional survey at port where the accident took place or at the first port of call, if the accident took place at sea.

.f When alterations not agreed with QRS have taken place in the ship structure, equipment and arrangements.

.g When repair or conversion of a ship has taken place without approval and technical supervision by QRS.

.h When a ship navigates with a draught exceeding that specified by QRS for specific conditions as well as in case of operation of a ship in conditions which do not comply with the requirements for assigned class of a ship or the restrictions specified by QRS.

.i When the prescribed specific requirements, which during previous survey of the ship were the conditions for assignment or retainment of QRS class, have not been fulfilled within the specified period.

.j When the process of surveying the ship by QRS has been suspended on the shipowner's initiative or through his (her) or its fault.

.11 In case of the ship's seizure by pirates.

.12 After the ship was abandoned by the crew.

QRS shall notify the Flag Registry and the shipowner, of suspension of a ship's class and Classification Certificate.

.7 Ship class and Classification Certificate may be suspended following a decision made by QRS when the commitments to QRS (including those on payment for its services) fail to be performed or are improperly performed as well as in other cases specified in QRS rules.

.8 Suspended class of a ship may be reinstated based on satisfactory results of the appropriate periodical or occasional survey carried out by QRS in the case of ship to be submitted for survey. In so doing when the ship is taken out of service for a long period (more than 3 months), the scope of survey for reinstatement of a ship's class shall be specially established by QRS considering the age and condition of the ship as well as the period for which she is taken out of service.

During the period from suspension of class to its reinstatement or renewal, the ship is considered to have been lost QRS class. In case of class suspension, the Classification Certificate becomes invalid.

.9 The class of a ship is withdrawn by QRS in the following cases.

.a Upon expiration of the maximum term of class suspension.

.b When QRS and/or shipowner consider reinstatement of the class suspended to be impossible.

.c Upon transfer of the ship to the class of another Classification body.

.d At the request of the shipowner.

.e Due to ship's loss or her decommissioning as well as in case of obtaining information from the shipowner on the ship demolition or selling for scrapping.

Withdrawal of the ship's class means termination of technical supervision by QRS and invalidation of the Classification Certificate.

.10 After assignment of class, QRS introduces the sea-going self-propelled ships of 100 gross tonnage and upwards into QRS of Ships and excludes them in case of withdrawal of class.

2.2 Class notation of a ship. Mandatory and optional descriptive notations in the class notation assigned by QRS

Ships complying fully or to a degree considered adequate by QRS with the relevant requirements of QRS rules, are assigned QRS class with the class notation as specified below.

The class notation assigned by QRS to a ship consists of the character of Classification, descriptive notations and mandatory/optional notations defining structure and purpose of a ship.

The character of Classification, descriptive notations and mandatory notations stipulate requirements for the following:

availability of main functions and the safety of installations supporting the main functions.

structural strength and integrity of essential parts of the ship's hull.

safety of machinery installations, systems, mechanisms and equipment supporting non-main functions that constitute possible hazards to personnel and ship.

Optional notations include requirements to safety levels and availability of equipment beyond those of the character of Classification and mandatory descriptive notations.

The sequence of descriptive notations as well as mandatory and optional notations being added in the class notation of a ship is set down by the provisions of this Chapter.

Table 2.2
Example of class notation

Sequence of indication of descriptive notations in class symbol	QRS Descriptive notations
1. Character of Classification	**HM**
2. Construction symbol of ship classed with QRS, ACS[1] or without supervision by a CS[2]	❖ **( )**
3. Ice class mark (if any).	**(<ice class mark>)**
4. Subdivision distinguishing mark	1, 2, 3,
5. Notation for restricted areas of navigation (if any)	**R1**
6. Distinguishing automation mark (if any)	**AUT2**
9. Descriptive notation (as applicable)	**Supply vessel (OS)** **Tug**
10. Notations related to survey arrangement	**(ESP), TMS** etc.

1. If the scope of QRS rules requirements which a ship complies with allows, two and more descriptive notations may be stated in the class notation of a ship.

2. For self-propelled ships, when adding descriptive notations to the character of Classification such as **Chemical tanker, Oil tanker, Bulk carrier, Self-unloading bulk carrier, Ore carrier** or their combinations, the distinguishing mark (**ESP**) shall be mandatory added after the descriptive notation.

3. For oil tankers and bulk carriers fully complying with the requirements of the Common Structural Rules for Bulk Carriers and Oil Tankers1, the distinguishing mark **CSR** shall be mandatory added after descriptive notation.

4. When scope of QRS rules requirements, serving as the basis for introduction of the appropriate notations, is met only under limitations specified by QRS, the limitations, exceeding which these notations will become invalid, shall be indicated in the class notation in brackets after such notations.

5. In the class notations of gas carriers, chemical tankers, high-speed craft, small sea fishing vessels, sea-going pleasure craft, the descriptive notations shall be inserted in conformity with the provisions of rules for the Classification and construction of the relevant types of ships.

6. For ships with descriptive notation Berth-connected ship, operation conditions (one of the following conditions: aground **(G)** — ground or moored at quay **(S)** — shore, or when at a water area distanced from the shore **(W)** — waters) are indicated in brackets, and the descriptive notation Berth-connected ship is followed by the statement of ship purpose from those listed in the definition "Berth-connected ship". If the berth-connected ship complies with the relevant requirements of these Rules for different operation conditions, the operation conditions are listed in brackets after the descriptive notation and separated by comma. Descriptive notation **Berth-connected ship (‹operation condition›) floating oil storage** may be added in each particular case upon agreement with QRS Head Office and, if necessary, upon agreement with the Flag State Maritime Administration in the class notation of a ship complying

with the requirements for an oil tanker, which cannot be classified as FSO in accordance with the Rules for the Classification according to IMO resolution MEPC.311(73)), and intended only for loading/unloading and storage of oil and petroleum products. Previously assigned descriptive notation may be retained at the shipowner's discretion provided QRS requirements relating to such descriptive notation or distinguishing mark are complied with.

2.2.1 The character of Classification assigned by QRS to a ship or floating facility consists of notations:

HM❖; **HM; (HM) —** for self-propelled ships
H❖; **H; (H) —** for other non-self-propelled ships

2.2.2. Depending on the rules based on which a ship was surveyed, and the Classification society which carried out the survey, the character of Classification is established as follows:
.1 Ships according to the rules of and surveyed by QRS are assigned a class notation with the character of Classification: **HM❖; H❖** .
.2 Ships built according to the rules of ACS — IACS member and surveyed by that society during their construction and classed by the same or different ACS — IACS member during their service, when classed by QRS are assigned a class notation with the character of Classification: **HM** or **H**.
.3 Ships which were as a whole (or their hull or machinery installation, or machinery, or equipment) built and/or manufactured without being surveyed by ACS — IACS member or without being surveyed by any Classification society and which were not classed by ACS — IACS member during their service, when classed by QRS, are assigned a class notation with the character of Classification: **(HM)** or **(H)** (refer to 2.2.1). For Classification of such ships the provisions of *1.2.3 of Part II "Survey Schedule and Scope"* of the Rules for the Classification Surveys of Ships in Service shall apply.
.4 Ships built according to QRS rules and the rules of ACS — IACS member, and classed with QRS along with ACS — IACS member (dual class), are assigned a class notation with the character of Classification: **HM** or **H**. Under the dual class arrangement, each Classification society acts on behalf of the other Classification society in accordance. The scope of work and the authority of each society during approval of design documentation, certification of materials and products, survey during construction, initial survey after construction, including issuance of statutory certificates (if applicable) are regulated by the Dual Classification Agreement.

2.2.3 QRS ice class marks.

1 Ice class marks are assigned to ice class ships in compliance with the requirements of this Part.

2 Ice class ships are ships intended for independent ice navigation including motion in fractures between floes, surmounting of ice isthmuses and portions of relatively thin compact ice, or navigation in ice with icebreaker escort.

3 The following definitions are used for the description of ice navigation conditions:

ice concentration is a measure of ice continuity, which is characterized by the ratio of the area covered by ice to the total water area using 10 number scale.
open floating ice is ice of concentration 4 - 6, where most of the floes do not touch each other.
close floating ice is ice of concentration 7 - 8 where most of the floes touch each other forming ice isthmuses;
very close floating ice is ice of concentration 9 or over, but less than 10; compact ice is ice of concentration 10;
multi-year is ice of thickness more than 3,0 m, which has survived at least two summers' melt;
second-year ice is ice of thickness from 2,0 to 3,0 m, which has survived only one summer's melt;
first-year ice is ice of thickness from 0,3 to 2,0 m, of not more than one winter's growth;
ice cake is any relatively flat piece of sea ice less than 20 m across.

2.2.3.4 Register ice classes

1 If a self-propelled ice class ship complies with the relevant requirements of these Rules, one of the following ice class marks is added to its character of Classification: **Ice1, Ice2, Ice3** and compliance of hull (hull) and machinery installation (machinery) with the requirements of these Rules in full scope is indicated in brackets.

In case the ship hull corresponds to one ice class and the machinery installation corresponds to another ice class, the applicable ice classes shall be specified separately.

Where a non-self-propelled ship complies with the requirements for ice class, a mark (hull) shall be added to its character of Classification.

2 QRS ice classes and their descriptions are given in Table 2.2.3.4.2

Ice class	Description
Ice3	Regular voyage in open floating ice-cake ice of non-arctic seas up to 0,7 m thickness
Ice2	Regular voyage in open floating ice-cake ice of non-arctic seas up to 0,5 m thickness
Ice1	Episodical voyage in open floating ice-cake ice of non-arctic seas up to 0,4 m thickness
Notes: 1 The possibility of operation of a vessel in a particular area is determined depending on the season, current weather conditions, actual ice conditions, presence of assistance for navigation in ice and this is the responsibility of the shipowner.	

3 For tugs, depending on their compliance with the requirements of these Rules for ice class, one of the following ice class marks is added to the character of Classification: **Ice2, Ice3**.

Determination of possible periods and areas of navigation as well as regimes of navigation with icebreaker escort is within the shipowner's.

2.2.4 Subdivision notations.

Ships complying with the applicable requirements of *Part V "Subdivision"* and fully complying with the requirements of *Section 3* of the above Part in the case of flooding of any one compartment or any two adjacent compartments over complete length of the ship in the case of design side damage specified in *3.2 of Part V "Subdivision*" are assigned subdivision distinguishing mark 1 or 2, added to the character of Classification, respectively.

2.2.5 Notations for restricted areas of navigation.

1 Ships complying with these Rules requirements provided for ships operating only in restricted areas of navigation are assigned one of the following notations: **R1, R2, R2-RSN, R2-RSN(4,5), R3-RSN** or **R3** added to the character of Classification to clarify restrictions of the ship navigation as follows:

.a **R1** — navigation in sea areas at seas with a wave height of 8,5 m with 3 % probability of exceeding level and with the ships proceeding not more than 200 miles away from the place of refuge and with an allowable distance between the places of refuge not more than 400 miles;

.b **R2** — navigation in sea areas at seas with a wave height of 7,0 m with 3 % probability of exceeding level with ships proceeding not more than 100 miles away from the place of refuge and with an allowable distance between the places of refuge not more than 200 miles;

.c **R2-RSN** — river-sea navigation at seas with a wave height of 6,0 m with 3 % probability of exceeding level with ships proceeding from the place of refuge:

in open seas up to 50 miles and with an allowable distance between the places of refuge not more than 100 miles;

in enclosed seas up to 100 miles and with an allowable distance between the places of refuge not more than 200 miles;

.d **R2-RSN(4,5)** — river-sea navigation at seas with a wave height of 4,5 m with 3 % probability with ships proceeding from the place of refuge:

in open seas up to 50 miles and with an allowable distance between the places of refuge not more than 100 miles;

in enclosed seas up to 100 miles and with an allowable distance between the places of refuge not more than 200 miles;

.e **R3-RSN** — river-sea navigation at seas with a wave height of 3,5 m with 3 % probability of exceeding level with due regard for particular restrictions on the area and conditions of navigation resulting from the wind and wave conditions of the basins with determination of a maximum allowable distance from the place of refuge which in no case shall be more than 50 miles;

.f **R3** — harbor, roadstead and coastal navigation in a 20-mile coastal zone with a wave height up to 2,5 m with 3 % probability of exceeding level with ships proceeding from the place of refuge in accordance with *Table 2.2.5.1.6* or with restrictions imposed on the distance from the places of refuge and the height of the wave with 3 % probability based on the justifications submitted to QRS taking into account the wind and wave conditions in specific restricted sea areas.

Particular restrictions for operation of floating cranes (cargo-handling operations and navigation with carriage of cargoes on deck and/or in the hold) shall be imposed by QRS in each particular case.

Table 2.2.5.1.6

Nos.	Basin, geographical restrictions	Permissible distance from place of refuge, in miles[1]
1	The Adriatic Sea, the Sea of Azov, the East Siberian Sea, the Black Sea, the Laptev Sea	50
2	The Baltic Sea	20 (50)
3	The Barents Sea	(20)
4	The Bering Sea	(10)
5	The Ionian Sea, the Aegean Sea	15 (45)
6	The Kara Sea	35 (50)
7	The Caspian Sea	20 (50)
8	The Sea of Okhotsk	(25)
9	The Mediterranean Sea	
9.1	The Mediterranean Sea to the east of 28°30'E	30 (50)
9.2	Northwestern part of the Mediterranean Sea to the north of 39°30'N, to the west of 9°30'E	(45)
10	The Tyrrhenian Sea	10 (45)
11	The Sea of Japan	(40)

[1] Permissible distances from the place of refuge assigned subject to confirmation of the stability of a ship of restricted area of navigation **R3** under weather criterion in accordance with the requirements of *Part IV "Stability"* for river-sea navigation ships **R3-RSN** are given in brackets.

2 The restrictions provided for by *2.2.5.1* define the allowable conditions of ship's navigation resulting from ship's stability and strength which are indicated in the Seaworthiness Certificate and in the Classification Certificate (if issued on behalf of the Flag State MA).

3 Particular restrictions on the area and conditions of navigation for ships of river-sea navigation **R3-RSN** are determined as the geographical place names of basins or their parts with the indication, where necessary, of the geographical boundary of the navigation area within the basin, the restrictions on proceeding from the place of refuge and the restrictions of ship navigation by calendar periods, or an indication of voyage between the terminal ports. In this case, the restrictions with due regard to the wind and wave conditions of the basins shall be determined by using the data of *Table 2.2.5.3* or the data from the submitted to QRS justifications of possibility of ship's navigation in the certain area or passage, made in accordance with the procedure approved by QRS.

Table 2.2.5.3

Basin	Geographical restrictions	Navigation season
The Adriatic Sea	To the south of 42°N, 20-mile coastal area along eastern and western coasts, crossing the sea in Strait of Otranto in area of port of Brindizi, the port of Bar, as well as in the area of Cape San Francesco — Lastovo Island; 40-mile coastal area to the north of 42°N, along the eastern coast with calling at ports of the western coast	Throughout the year
The Sea of Azov	No restrictions	Throughout the year
The Baltic Sea	No restrictions, including the Gulf of Bothnia, the Gulf of Finland and the Gulf of Riga; the Strait of Zund, the Great Belt and the Little Belt Straits, the Kattegat Strait to the south of 57°45'N	Throughout the year
The Bering Sea	20-mile coastal area of the Gulf of Anadyr in the following areas: the sea port of Anadyr — the sea port of Beringovsky; the sea port of Anadyr — the sea port of Egvekinot — the sea port of Provideniya — the Gulf of Lavrentiya	July — September
The Ionian Sea	The Gulf of Corinth; the Gulf of Patraikos; 20-mile coastal area from the Gulf of Patraikos to the Strait of Otranto; the Strait of Otranto	Throughout the year
The Caspian Sea	To the north of 44°30'N as well as to the south of 44°30'N within 20-mile coastal area along the eastern coast up to the port of Turkmenbashi (port of Bekdash)[2] and along the western coast up to the port of Makhachkala; 20-mile coastal area from the port of Baku to Anzali, with permissible distance from the coast up to 25 miles in the area from Shakhovaya Spit (39°50'N, 50°20'E) to Kurinskaya Spit (39°00'N, 49°44'E); sea crossing line from the eastern coast in the area of the port of Turkmenbashi (port of Bekdash) — southern extremity of the Krasnovodsky Gulf to the western coast in the area of Shakhovaya Spit.	March — November
The Barents Sea	10-mile coastal area to the east of Cape Kanin Nos along the coast of the Kanin Peninsula, and to the south of 68°00'N	June — August
The White Sea	The Gulf of Onega, the Gulf of Dvina and the Gulf of Kandalaksha; 20-mile coastal area to the south of 66°45'N	May — October
The East Siberian Sea	Coastal area along southern coast within the limits up to 15-meter isobath curve from the mouth of the Kolyma River to sea port of Pevek with permissible distance from the coast up to 7 miles in the area of Letyatkina Cape, Bolshoy Baranov Cape, Malaya Baranikha Cape, mouth of the Milkera River and north-western coast of Ayon Island	August - September[1]
The Sea of Marmora	No restrictions from Bosporus to Dardanelles Straits	Throughout the year
The Persian Gulf (the Arabian Sea)	Eastern part: from Ormus Strait to 54°E; central part: the coastal area along the western coast in the area restricted by 54°E, parallel 28°59'N and a line connecting islands Abu-Musa, Khalul, Al-Kharkus, Failaka; northern part: from parallel28°59'N	Throughout the year
The North Sea	Kattegat to the south of parallel 57°45'N; Helgoland Bay to the south of parallel 54°02'N and to the east to 7°5'E Skagerrak Strait to the east of the line of Cape of Skagen — Oslo-Fjord and to the south of parallel 59°N and also along the coast of Sweden in Sekken and Single-Fjord Straits	Throughout the year
The Persian Gulf (the Arabian Sea)	Coastal area along the southern coast in the zone of traffic separation from the Helgoland Bay to the port of Antwerp	March — October
Eastern part of the Mediterranean Sea	20-mile coastal area along the eastern coast from Rhodes Strait to the ports of Izrael inclusive with calls at the ports of Cyprus Island	May — August April — November
The Black Sea	20-mile coastal area along the northern, western and eastern coasts from the port of Batumi to the Strait of Bosphorus	Throughout the year
The Aegean Sea	From the Dardanelles to Karpathos and Kithira Straits to the north of 36°N; Passage to the Ionian Sea through the Gulf of Saronikos, Corinth Canal, Gulf of Corinth, Gulf of Patraikos	Throughout the year
The Sea of Japan and the Sea of Okhotsk	The Tatar Strait and the Amur Firth to north of line connecting sea port of Sovetskaya Gavan and Uglegorsk to the line connecting Cape Menshikova and Cape Tamlavo.	June — October

2.2.6 Distinguishing automation marks

Ships fitted with automation equipment complying with the requirements of *Part XV "Automation"* are assigned one of the following notations added to the character of Classification, namely:

.1 **AUT1** — where the automation extent is sufficient for the machinery installation operation with unattended machinery spaces and the main machinery control room;

.2 **AUT2** — where the automation extent is sufficient for the machinery installation operation by one operator at the main machinery control room with unattended machinery spaces;

.3 **AUT3** — where the automation extent is sufficient for the machinery installation operation of a ship with the main machinery power output not more than 2250 kW with unattended machinery spaces and the main machinery control room;

.4 **AUT1-C, AUT2-C** or **AUT3-C** — where automation is based on computers or programmable logic controllers meeting the requirements of *Section 7 of Part XV "Automation"*;

.5 **AUT1-ICS, AUT2-ICS** or **AUT3-ICS** — where automation is made with the use of a computerized integrated monitoring and control system meeting the requirements of *Section 7 of Part XV "Automation.*

2.2.7 **Notation for a ship equipped to enable one man bridge operation under normal conditions.**

If a ship is equipped in compliance with the requirements of *Section 27 of Part XVII "Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships*", the distinguishing mark **OMBO** may be added to the character of Classification..

2.2.8 **Notation for ships carrying equipment for fire fighting aboard other ships**.

If a ship carries supplementary systems, equipment and outfit for fire fighting aboard other ships, offshore drilling units, floating and shore facilities and if the ship is in full compliance with the relevant requirements of the Rules in respect to those appliances, notations **FF1WS, FF1, FF2WS, FF2, FF3WS** or **FF3** are added to the character of Classification proceeding from the degree of the ship equipment with these appliances.

The degree of the ship equipment for fire fighting in other structures is determined on the basis of the list of fire fighting equipment and systems prescribed *by 6.6, Part VI "Fire Protection"*.

2.2.9 **Notation for ships fitted with a dynamic positioning system**.

If a ship is fitted with a dynamic positioning system complying with the requirements of *Section 8, Part XV "Automation"*, one of the following notations: **DYNPOS-1, DYNPOS-2 or DYNPOS-3** is added to the ship's character of Classification, depending on the redundancy of the dynamic positioning system.

2.2.10 Notation of availability of position-keeping/position mooring systems.

Ships equipped with the position-keeping system/automated control system for power equipment of position mooring or thruster assisted position mooring systems, are assigned one of the following notations added to the character of Classification:

.1 **POSIMOOR-FIX** — if the position-keeping system meets the requirements of *21.1.1.1, Part XVII "Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships"*;

.2 **POSIMOOR** — if the position mooring system meets the requirements of *21.1.1.2, Part XVII "Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships"*;

.3 **POSIMOOR-TA** — if the position mooring system meets the requirements of *21.1.1.3, Part XVII "*Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships*"*

2.2.11 Notation for a ship intended for carriage of refrigerated cargo.

Ships intended for carriage or storage of refrigerated cargo or catch in ship's cargo spaces and/or in thermal containers with the use of a refrigerating plant available on board and classed in compliance with *Section 4* of the present Part of the Rules and meeting the requirements of *Part XII "Refrigerating Plants"* are assigned the distinguishing mark **REF** added to the character of Classification.

Ships intended for carriage or storage of refrigerated cargo or catch in ship's cargo spaces and/or in thermal containers and using non-classed refrigerating plant for maintaining the required temperature, complying with the relevant requirements of *Part XII "Refrigerating Plants*", are assigned the distinguishing mark **(REF)** added to the character of Classification.

2.2.12 Notation for ships fitted with the main electric propulsion plant.

If a ship is fitted with the main electric propulsion plant complying with the requirements *of Section 17, Part XI "Electrical Equipment",* the distinguishing mark **EPP** is added to the character of Classification.

2.2.13 Notation for ships fitted with equipment for icing protection.

If a ship is fitted with equipment providing effective icing protection in compliance with the requirements of *Section 4 of Part XVII "Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships*", the distinguishing mark **ANTI-ICE** is added to the character of Classification.

2.2.14 Notation for ships fitted with a loading instrument/onboard software for stability calculations.

If a ship is fitted with a loading instrument complying with the requirements of *1.4.9.4 and Appendix 2, Part II "Hull"*, the distinguishing mark **LI** is added to the character of Classification.

If a ship is provided with onboard software for stability calculations complying with the requirements of *1.4.12 of Part IV "Stability*" of these Rules the distinguishing mark **SI** is added to the character of Classification.

2.2.15 Notation for ships fitted with a cargo vapour discharge system.

If a ship is fitted with a cargo vapour discharge system complying with the requirements of *9.9, Part VIII "Systems and Piping"*, the distinguishing mark ***VCS*** is added to the character of Classification.

2.2.16 Notation for ships fitted with an inert gas system.

If a ship is fitted with an inert gas system complying with the requirements of *9.16, Part VIII "Systems and Piping"*, one of the following notations is added to the character of Classification:

.1 **IGS-IG** if a system uses an oil-burning inert gas generator as the inert gas source and the requirements of *9.16.9, Part VIII "Systems and Piping"* are complied with;

.2 **IGS-NG** if a system uses a nitrogen generator as the inert gas source and the requirements of *Part VIII "Systems and Piping"* are complied with;

.3 **IGS-Pad** if an inert gas system is only intended for forming an insulating pad in cargo tanks and the requirements of *Part VIII "Systems and Piping"* are complied with. This distinguishing mark may be used where systems with inert gas supplied from cylinders are installed as well as for systems using inert gas and nitrogen generators whose capacity is insufficient for assigning the notations **IGS-IG or IGS-NG**.

2.2.17 Notation for ships fitted with a crude oil washing system.

If a ship is fitted with a crude oil washing system complying with the requirements of *9.12, Part VIII "Systems and Piping"*, the distinguishing mark **COW** is added to the character of Classification.

2.2.18 Notation for ships fitted with a centralized cargo control system.

If a ship is fitted with a cargo control room complying with the requirements of *3.2.11, Part VII "Machinery Installations"*, the distinguishing mark **CCO** is added to the character of Classification.

2.2.19 Notations for ships of high ecological safety.

Ships complying with the requirements of *Section 3 of Part XVII "Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships*" are assigned with one of the following notations added to the character of Classification:

.1 **ECO** — if a ship meets the requirements for controlling and limiting operational emissions and discharges, as well as requirements for prevention of environmental pollution in case of emergency, as specified in *3.5 of Part XVII "Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships*";

.2 **ECO-S** — if a ship meets more stringent requirements than those for assignment of the distinguishing mark **ECO** in the class notation, as specified in *3.6 of Part XVII "Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships*".

2.2.20 Notations for ships complying with ballast water management requirements.

If a ship performs ballast water management through ballast water exchange at sea and, as appropriate, carries Ballast Water Management Plan approved by QRS (*refer to 1.4.13, Part IV "Stability"),* and the ship ballast systems comply with the requirements of *8.7, Part VIII "Systems and Piping"*, one of the following notations is added to the character of Classification: **BWM(E - S), BWM(E - F), BWM(E - D), BWM(E - SF), BWM(E- SD), BWM(E - FD) or BWM(E - SFD). BWM** means that the ship performs ballast water management; **E** means that ballast water management is performed through ballast water exchange at sea; **S** means that sequential method is used; F means that flow-through method is used; **D** means that dilution method is used; **SF, SD, FD** and **SFD** mean that combined ballast water exchange method is used being a combination of the above methods.

Note. Above mentioned notations shall not be applied to ships the keels of which are laid or which are at a similar stage of construction on or after 8 September 2017 in accordance with the revised regulation B-3 of the BWM Convention, and may be applied to ships the keels of which are laid or which are at a similar stage of construction on or after 8 September 2017, and shall remain in the class notation of these ships until the date when the ship complies with the regulation D-2 of the BWM Convention but not later than 8 September 2024.

2.2.21 Notation for ships fitted with ballast water treatment system.

If a ship performs ballast water management through the ballast water management system (BWMS) having the Type Approval Certificate of Ballast Water Management System issued in accordance with IMO resolution MEPC.174(58), MEPC.279(70) or Code for Approval of Ballast Water Management Systems (BWMS Code, IMO resolution MEPC.300(72)), as applicable, and carries the approved operations, maintenance and safety manual for the BWMS specific to the ship, a distinguishing mark **BWM (T)** is added to the character of Classification. BWM means that

the ship performs ballast water management in accordance with the approved Ballast Water Management Plan, which complies with the requirements of regulation B-1 of the **BWM** Convention, and **T** means that ballast water management through treatment of the ballast water within the BWMS is carried out in compliance with the ballast water performance standard in regulation D-2 of the BWM Convention.

2.2.22 Notation for a ship to carry out cargo operations at offshore terminals.

Oil tankers to carry out cargo operations at offshore terminals in compliance with the requirements of *Section 5 of Part XVII "Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships"* are assigned one of the following notations added to the character of Classification:

.1 **BLS-SPM** — if a ship is fitted with the bow loading system and fully complies with the requirements for equipment of oil tankers to carry out cargo operations at offshore terminals;

2.2.23 Notation for a ship equipped to use gas as fuel.

Ships equipped for using gas as fuel as well as gas carriers carrying liquefied methane, using cargo as fuel and complying with the requirements of the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code) and the Rules for the Classification and Construction of Ships Carrying Liquefied Gases in Bulk, are assigned the distinguishing mark **GFS** added to the character of Classification.

2.2.24 Notation for a planned maintenance scheme for machinery applied on board the ship.

If a planned maintenance scheme for machinery (PMS) is applied on board the ship in compliance with the requirements of *2.7 of Part II "Survey Procedure and Scope"* of the Rules for the Classification Surveys of Ships in Service, the distinguishing mark **PMS** may be added to the character of Classification.

2.2.25 Notation for ships fitted for possible carriage of the international standard containers.

If a ship without a descriptive notation Container ship in the class notation is fitted for carriage of cargo in international standard containers on deck and/or in appropriate holds, the distinguishing mark **CONT** is added to the character of Classification and the container transportation area is specified in brackets (deck) (cargo hold(s) No.).

2.2.26 Notation for ships fit for carriage of dangerous goods.

If a ship complies with the requirements of *Section 7 of Part VI "Fire Protection"* of these Rules, was duly surveyed according to *2.1.5 of Part III "Survey of Ships in Compliance with International Conventions, Codes, Resolutions and Rules for the Equipment of Ocean-Going Vessels*" of the Guidelines on Technical Supervision of Ships in Service, and is recognized fit for carriage of dangerous goods, the distinguishing mark **DG** is added to the character of Classification with the following specified in brackets depending on the type of dangerous goods: (**bulk**) — in bulk, **(pack**) — packaged.

If a ship is recognized fit for carriage of dangerous goods in bulk and packaged form, the notations for carriage of dangerous goods are allowed to be combined **DG (bulk, pack).**

2.2.27 Notation for implementation of modified survey of the shafting.

If a modified survey of the shafting in compliance with the requirements of *2.11.2.7 of Part II "Survey Schedule and Scope*" of the Rules for the Classification Surveys of Ships in Service is accepted for a ship, the distinguishing mark **TMS** is added to the character of Classification.

2.2.28 Notation for marine diesel engine to comply with Tier III limit according to Regulation 13 of Annex VI to MARPOL.

If nitrogen oxides emissions from marine diesel engines comply with Tier III limit and Regulation 13 of Annex VI to MARPOL, which is endorsed by the Engine International Air Pollution Prevention Certificate (EIAPP Certificate), the distinguishing mark **DE-Tier III** is added to the character of Classification.

2.2.29 Notation for ships fitted with boiler plant monitoring system.

If ships are fitted with boiler plant monitoring system that allows to carry out internal surveys of steam boilers without participation of QRS surveyor at the shipowner's discretion, the distinguishing mark **BMS** may be added to the character of Classification.

2.2.30 Notations for ships complying with the requirements for indoor hygiene and sanitary conditions.

If ships comply with the indoor climate requirements at the shipowner's discretion, the distinguishing mark **COMF(C)** may be added to the character of Classification. If ships comply with the requirements for sanitary vibration level in ship's spaces the distinguishing mark **COMF (V – 1** or **2**, or **3**) may be added to the character of Classification, where grades **1, 2, 3** indicate permissible sanitary vibration comfort level in ship's spaces.

2.2.31 Notation for ships fitted with a system of prompt access to computerized shore-based emergency response services (ERS) on damage stability and residual structural strength calculations.

If a ship is fitted with a system of prompt access to computerized shore-based emergency response services (ERS) on damage stability and residual structural strength calculations, the distinguishing mark **ERS** may be added to the character of Classification.

2.2.32 Notation for a ship equipped to use methanol and ethanol as fuel.

Ships equipped to use methanol and ethanol as fuel in compliance with the requirements of Section 23 of Part XVII "Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships", the distinguishing mark **LFLFS (Me)** or **LFLFS (Et)** (Low Flashpoint Liquid Fuelled Ship (Methanol) or (Ethanol)) may be added to the character of Classification.

2.2.33 Notation for a ship complying with the requirements for stability under icing.

Ships whose stability has been checked at full ice weight allowance in compliance with the requirements of *2.4.6 of Part IV "Stability"* are assigned the distinguishing mark **IcingSTAB (full)** added to the character of Classification.

Ships whose stability has been checked at ice weight allowance reduced by half are assigned the distinguishing mark **IcingSTAB (half)** added to the character of Classification.
steerable propellers (azimuth thrusters) being a part of the propulsion plant.

If the propulsion plant includes a steerable propeller (azimuth thruster) with a podded drive, the distinguishing mark **A-Thruster(E)** is added to the character of Classification.
If the propulsion plant includes a steerable propeller (azimuth thruster) with mechanical transmission of power to the propeller, the distinguishing mark **A-Thruster(M)** is added to the character of Classification.

2.2.34 Notation for ship's fitness for long-term operation without dry-docking.

UWILD (underwater inspection in lieu of dry-docking) — a distinguishing mark assigned to a berth-connected ship designed in such a way as to provide the possibility to replace surveys of the outside of the ship's bottom (bottom surveys) in dry dock with underwater inspection (in-water surveys using underwater television). For assignment of distinguishing mark **UWILD**, the requirements specified in *Section 20 of Part XVII "Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships*".

Where, for a berth-connected ship with distinguishing mark **UWILD**, a possibility of performing any types of maintenance and surveys is provided without interrupting the ship's normal operation for the intended purpose, in the class notation an entry — S (the possibility provided by the design for the ship to remain in operation during the maintenance of bottom and side valves, and for systems and mechanisms using temporarily isolated bottom and side valves, to remain operational using the redundancy of isolated components of sea water systems) is added after the distinguishing mark **UWILD**.

2.2.35 Notation for Enhanced Survey Programme.

The distinguishing mark (**ESP**) means the necessity to survey certain ship types based on the Enhanced Survey Programme in accordance with the International Code on the Enhance Programme of Inspections during Surveys of Bulk Carriers and Oil Tankers (if applicable) and *Sections 1 — 6 of Part III "Additional Surveys of Ships Depending on Their Purpose and Hull Material*" of the Rules for the Classification Surveys of Ships in Service. Such ships include bulk carriers, oil tankers, combination carriers, ore carriers, chemical tankers and self-unloading bulk carriers. To ensure a uniform and correct interpretation, the definitions of types of ships subject to Enhanced Survey Programme (ESP) are given in *2.2 of Part I "General Provisions"* of the Rules for the Classification Surveys of Ships in Service.

2.2.36 Notations confirming application of protective coatings or utilization of alternative means of corrosion protection in ship's spaces.

COAT (PSPC) is a distinguishing mark added to the character of Classification of ships of all types of 500 gross tonnage and upwards as well as bulk carriers of 150 m in length and above covered by regulation II-2/3-2 of SOLAS 74 as amended by IMO resolution MSC.216(82), and on board which the protective coating is applied in accordance with IMO resolution MSC.215(82).

COAT (PSPC-COT) is a distinguishing mark added to the character of Classification of crude oil tankers of 5000 t deadweight and above covered by regulation II-1/3-11 of SOLAS 74 as amended by IMO resolution MSC.291(87), and on board which the protective coating is applied in accordance with IMO resolution MSC.288(87).

CORRES is a distinguishing mark added to the character of Classification of crude oil tankers of 5000 t deadweight and above covered by regulation II-1/3-11 of SOLAS 74 as amended by IMO resolution MSC.291(87), and on board which the alternative means of corrosion protection or corrosion resistant materials are utilized to maintain the required structural integrity for 25 years in accordance with IMO resolution MSC.289(87).

COAT is a distinguishing mark added to the character of Classification of ships covered by regulation II-2/3-2 of SOLAS 74 as amended by IMO resolution MSC.47(66), and on board which the protective coating is applied in accordance with IMO resolution A.798(19)

2.2.37 Notation for tankers and combination carriers equipped with an effective cargo tank washing system.

If tankers with descriptive notation Chemical tanker and/or Oil tanker and combination carriers (Oil/bulk/ore carrier or Oil/bulk carrier or Oil/ore carrier) are equipped with an effective cargo tank washing system in compliance with the requirements of *Section 26 of Part XVII "Decriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships*", the distinguishing mark **ETW** (Effective Tank Washing) may be added to the character of Classification.

2.3 Descriptive notation in the class notation of a ship.

Ships complying with a definite scope of requirements of QRS rules taking account of their structural particulars and service conditions are assigned the appropriate descriptive notation (designation of ship type and purpose) added to the character of Classification of a ship.

The current QRS rules cover certain requirements the fulfilment of which makes possible introducing of the descriptive notations specified in *2.5* in the class notation.

2.4 Additional entries in the Classification certificate

2.4.1 When complying with definite requirements of QRS rules stipulated by the structural features or operational characteristics of the ship the fulfilment of which is not reflected by notations and descriptive notation in the class notation, the confirmation of compliance of the ship with such requirements is certified by the entry in Section "Other characteristics" of the Classification Certificate stating, for example, that the ship is equipped for occasional loading/unloading of cargoes in a horizontal direction — by a roll-on/roll-off; the ship is suitable for escort operations, towing and serving oil tankers and/or oil recovery ships; the ship may operate in oil harbor water areas; the ship may occasionally carry bulk cargoes; the ship may carry heavy bulk cargoes (with indication of bulk cargo density), and other entries stipulated by QRS rules.

2.4.2 Section "Other characteristics" of the Classification Certificate for supply vessels (OS) and other ships serving offshore oil and gas fields (except for mobile offshore drilling units, floating cranes, pipe laying barges and floating hotels), which comply with the requirements of the Code for the Transport and Handling of Hazardous and Noxious Liquid Substances in Bulk on Offshore Support Vessels (OSV Chemical Code), IMO resolution A.1122(30), shall have an entry reading as follows: "The ship is fit to carry hazardous and noxious liquid substances in bulk, as stated in the Certificate of Fitness".

2.5 Summary information on descriptive notations in the class notation of a ship.

Table 2.5 contains notations divided into mandatory and optional ones, descriptive notations and references to additional requirements of QRS rules that are relevant to a specific distinguishing mark, descriptive notation. Overall, the ships shall comply with the general provisions of applicable QRS rules relating to cargo ships, self-propelled or non-self-propelled, structures of steel or other materials, as applicable.

If the relevant requirements of QRS rules for descriptive notations and mandatory notations are not met, the ship's class cannot be assigned, retained, confirmed or renewed.

If the relevant requirements of QRS rules for a specific optional distinguishing mark are not met, such an optional distinguishing mark cannot be assigned, retained, confirmed or renewed.

Table 2.5

Summary information on descriptive notations in the class notation of a ship

1 Mandatory class notations

1.1 Character of Classification

Notation	Brief description	References to QRS requirements
HM	Refer to 2.2.1	Provisions of QRS rules applicable to self-propelled ships
H	Refer to 2.2.1	Provisions of QRS rules applicable to non-self-propelled ships
HM❖ **H❖**	Refer to 2.2.1	Applicable provisions of QRS rules concerning Classification and construction
(HM)	Refer to 2.2.2	
(H)	Refer to 2.2.2	

Subdivision notations:

Subdivision distinguishing mark with number one is added to the character of Classification of ships complying with the applicable requirements for subdivision and damage stability when any single compartment is flooded at extent of side damage specified in the relevant QRS rules.

The distinguishing mark is mandatory for the following types of ships:

- Fishing vessels of 100 m in length and above carrying 100 persons or more
- Lightships
- Oil tankers of more than 150 m in length but not exceeding 225 m
- Chemical tankers **type 2** of 150 m in length or less
- Chemical tankers **type 3** of 125 m in length or more but not exceeding 225 m
- Gas carriers **type 2G** of 150 m in length or less

- Gas carriers **type 2PG**
- Gas carriers **type 3G** of 80 m in length or more

Notations for restricted areas of navigation or navigation conditions

R1 Notation for restricted area of navigation for Ocean-Going Vessels: navigation in sea areas at seas with a wave height of 8,5 m with 3 per cent probability of exceeding level and the ships proceeding not more than 200 miles away from a place of refuge, with an allowable distance between places of refuge not more than 400 miles.

R2 Notation for restricted area of navigation for Ocean-Going Vessels: navigation in sea areas at seas with a wave height of 7,0 m with 3 per cent probability of exceeding level and with the ships proceeding not more than 100 miles away from a place of refuge, with an allowable distance between places of refuge not more than 200 miles.

R3 Notation for restricted area of navigation for Ocean-Going Vessels: harbor, roadstead and coastal navigation within the limits prescribed by QRS in each case.

Notations for restricted area of navigation for ships of river-sea navigation:

R2-RSN River-sea navigation at seas with a wave height of 6,0 m with 3 per cent probability of exceeding level and with the ships proceeding from the place of refuge: in open seas up to 50 miles, with an allowable distance between the places of refuge not more than 100 miles; in enclosed seas up to 100 miles and with an allowable distance between the places of refuge not more than 200 miles.

R2-RSN(4,5) River-sea navigation at seas with a wave height of 4,5 m with 3 per cent probability of exceeding level and with the ships proceeding from the place of refuge: in open seas up to 50 miles and with an allowable distance between the places of refuge not more than 100 miles. In enclosed seas up to 100 miles and with an allowable distance between the places of refuge not more than 200 miles;

R3-RSN River-sea navigation at seas with a wave height of 3,5 m with 3 per cent probability of exceeding level, with due regard to particular restrictions on the area and conditions of navigation resulting from the wind and wave conditions of the basins, with determination of a maximum allowable distance from the place of refuge, which in no case shall be more than 50 miles.

GFS (Gas Fuelled Ship): The mark is assigned if a ship is equipped for using gas as fuel, as well as to gas carriers carrying liquefied methane, using cargo as fuel and complying with the requirements of the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code) and the Rules for the Classification and Construction of Ships Carrying Liquefied Gases in Bulk.

RLU (Reliquefaction unit): A gas carrier is fitted with a reliquefaction unit for cargo vapours.

RGU (Regasification unit): A gas carrier is fitted with a regasification unit for cargo export to shore.

EPP A ship is fitted with the main electric propulsion plant.

A-Thruster A ship is equipped with a propulsion plant that includes a steerable propeller (azimuth thruster)

ERS Ship is fitted with a system of prompt access to computerized shore-based emergency response services (ERS) on damage stability and residual structural strength calculations. The distinguishing mark is mandatory for oil tankers of deadweight exceeding 5000 t.

CSR For oil tankers and bulk carriers fully complying with the requirements of the Common Structural Rules. The distinguishing mark is added after descriptive notation

When adding the descriptive notation Bulk Carrier, for bulk carries of 150 m in length and above provided the appropriate requirements of these Rules or the Common Structural Rules are complied with, one of the following marks shall be added after the descriptive notation:

BC-A For ships designed to carry bulk cargoes having a density of 1,0 t/m^3 and above with specified holds empty at the maximum draught.
BC-B For ships designed to carry the bulk cargoes having a density of 1,0 t/m^3 and above with all holds loaded.
BC-C For ships designed to carry the bulk cargoes having a density less than 1,0 t/m^3.

- For notations BC-A or BC-B, an entry shall be made if maximum cargo density is less than 3,0 t/m3.
- For the distinguishing mark BC-A the allowed combination of specified empty cargo holds shall be additionally entered.
- For the distinguishing mark BC-A, if the ship is intended to operate in alternate block load condition, any two adjacent cargo holds shall be loaded with the next holds being empty, an entry (block loading) shall be made.

- When the bulk carrier has not been designed for loading and unloading in multiple ports, an entry (no MP) shall be added.

For bulk carriers having one of the notations **BC-A** or **BC-B** in the class notation, and with cargo holds designed for loading/unloading by grabs in compliance with the requirements of the Common Structural Rules, the distinguishing mark **GRAB(X)** shall be mandatory added after the above notations, where instead of X an unladen grab weight shall be indicated, taken not less than:

35 t for ships with $L \geq 250$ m;
30 t for ships with $200 \text{ m} \leq L < 250$ m;
20 t other wise.
For all other bulk carriers, the addition of the distinguishing mark **GRAB(X)** is voluntary.

HighPRESS(pressure) If membrane LNG cargo tanks of LG carrier are capable to withstand vapour pressure exceeding 25 kPa but not more than 70 kPa, the distinguishing mark **highPRESS(pressure)** shall be added to the character of Classification where a maximum allowable vapour pressure, in kPa.

ESP The distinguishing mark is mandatorily added to the character of Classification of self-propelled ships with descriptive notations **Chemical tanker**, **Oil tanker**, **Bulk carrier**, **Self-unloading bulk carrier**, **Ore carrier** or the word combinations (**Oil/bulk carrier**, **Oil/ore carrier**, etc.) after the descriptive notation.
Also applied when adding descriptive notation **FSO** or **FPSO** to the character of Classification (added after the descriptive notation for self-propelled ships). This means the necessity to survey these ships based on the Enhanced Survey Programme.

IcingSTAB The Stability of the Ship has been checked at half and full weight allowance.

COAT(PSPC) Added to the character of Classification of ships of all types of 500 gross tonnage and upwards as well as bulk carriers of 150 m in length and above covered by regulation II-2/3-2 of SOLAS 74 as amended by IMO resolution MSC.216(82), and on board which the protective coating is applied in accordance with IMO resolution MSC.215(82).

COAT(PSPC-COT) Added to the character of Classification of crude oil tankers of 5000 t deadweight and above covered by regulation II-1/3-11 of SOLAS 74 as amended by IMO resolution MSC.291(87), and on board which the protective coating is applied in accordance with IMO resolution MSC.288(87).

CORRES Crude oil tankers of 5000 t deadweight and above covered by regulation II-1/3-11 of SOLAS 74 as amended by IMO resolution MSC.291(87), and on board which the alternative means of corrosion protection or corrosion resistant materials are utilized to maintain the required structural integrity for 25 years in accordance with IMO resolution MSC.289(87).

VCS Added to the character of Classification of a chemical tanker and oil tanker fitted with a cargo vapour discharge system.

COW Added to the character of Classification of an oil tanker if it is fitted with a crude oil washing system.

IGS Added to the character of Classification of oil tankers and chemical tankers fitted with an inert gas system.

BWM Added to the character of Classification of a ship covered by regulation B-3 of IMO resolution MEPC.297(72). The distinguishing mark means that a ship performs ballast water management through the ballast water management system (BWMS) and carries the operation, maintenance and safety manual of the BWMS.

DE Added to the character of Classification of any ship where NOx emissions from marine diesel engines comply with Tier III limit according to Regulation 13 of Annex VI to MARPOL. In the class notations of ships where marine diesel engines are not covered by Regulation 13 but comply with it, the distinguishing mark may be added by the shipowner's written request.

CONT Added to the character of Classification of ships adopted for carriage of cargo in international standard containers on deck and/or in hold/holds except for container ships.

DG Added to the character of Classification of ships recognized fit for carriage of dangerous goods in bulk (bulk) and/or packaged form (pack).

REF Added to the character of Classification of ships fitted with a classed or unclassed refrigerating plant.

ICE Ocean-Going Vessels complying with QRS ice class requirements.

AUT1	The automation extent is sufficient for machinery operation unattended.
AUT2	One Operator.
AUT3	The automation sufficient for operation with output not more than 2250 kW.
AUTC	Automation based on Computers.
OMBO	A ship is equipped to enable one man bridge operation under normal conditions.
FF1, FF2, FF3	A ship carries supplementary systems, equipment and outfit for firefighting aboard other ships, offshore drilling units, offshore installations and shore facilities.
DYNAPOS 1, 2, 3	A ship is fitted with a dynamic positioning system with relevant redundancy.
POSIMOOR	A ship is equipped with a position-keeping system/automated control system for power equipment of position mooring or thruster assisted position mooring systems.
ANTI-ICE	A ship is fitted with equipment providing effective icing protection.
CCO	A ship is fitted with a cargo control room.
BMS	Ship is fitted with a boiler plant monitoring system that allows to carry out internal survey of steam boilers without participation of QRS surveyor.
HMS(STR)	Availability of a system intended for monitoring of strength parameters.
HMS(STAB)	Availability of a system is intended for monitoring of stability parameters.
HMS(STR-STAB)	Availability of a system is intended for monitoring of strength and stability parameters.
C	Availability of connection to the onboard computer software for calculation of ship's strength and stability.
TS	Availability of connection to the ship system for the propeller shaft(s) torque measurement and recording.
GRS	Ship is prepared for conversion for the use of gas fuel. Depending on the ship's readiness for conversion to use gas fuel, the distinguishing mark **GRS** or one of the following notations or their combination shall be added to the character of Classification: **GRS-D**, **GRS-H**, **GRS-T**, **GRS-P**, **GRS-E.**
Open Cargo Hatch	Notation assigned to general cargo ships, the cargo hatches of which may be completely or partially open, or the hatch covers of which are temporarily removed during sea voyage; container ships and ships equipped for the carriage of containers designed such that one or more cargo holds are not fitted with hatch covers.
ETW	The mark is assigned to tankers with descriptive notation **Chemical tanker** and/or **Oil tanker** and combination carriers (**Oil/bulk/ore carrier** or **Oil/bulk carrier** or **Oil/ore carrier**) equipped with an effective cargo tank washing system.

Vessel Type Descriptive Notations:

Bulk Carrier

Container Ship

Deck carrier

Dredger

Escort tug

Fishing vessel

General dry cargo ship
Ro-ro ship

Hopper Barge, Hopper Dredger

Oil Tanker If an oil tanker complies with the requirements for the ships, which carry petroleum products having flash point above 60 °C, this temperature shall be indicated in the descriptive notation. For example: **Oil tanker (> 60 °C)**.

Oil/bulk carrier If an oil tanker complies with the requirements for the ships, which carry petroleum products having flash point above 60 °C, this temperature shall be indicated in the descriptive notation. For example: **Oil/ore carrier (> 60 °C)**.

Oil/bulk/ore carrier If an oil tanker complies with the requirements for the ships, which carry petroleum products having flash point above 60 °C, this temperature shall be indicated in the descriptive notation. For example: **Oil tanker (> 60 °C)**.

Ore carrier

Oil/ore carrier If an oil tanker complies with the requirements for the ships, which carry petroleum products having flash point above 60 °C, this temperature shall be indicated in the descriptive notation.

Self-unloading bulk carrier

Timber Carrier

Yacht for commercial service The descriptive notation is assigned to yachts of 24 m in length and above, intended for commercial use, not carrying cargoes and more than 12 passengers.

Pilot ship: The descriptive notation is assigned to ships intended for transportation and safe embarkation/disembarkation of pilots from one board to another.

Unmanned barge: The descriptive notation is assigned to unmanned non-self-propelled barges.

High-Speed Craft

- HSC (high-speed craft)
- ACV (air-cushion vehicle)
- SES (surface-effect ship)
- Hydrofoil craft
- MHC (multi-hull craft)
- Crew boat
- Light ship

LNG bunkering ship: For gas carriers engaged in transportation of LNG and intended to ensure the transfer of LNG on board the ships using LNG as a fuel, the descriptive notation LNG bunkering ship shall be added in the class notation.

Gas carrier LG

- **Gas carrier type 1G**
- **Gas carrier type 2G**
- **Gas carrier type 2PG**
- **Gas carrier type 3G**

The descriptive notation is added to the character of Classification of gas carriers carrying liquefied gases in bulk (LG):

- Gas carriers **type 1G**;
- Gas carriers **type 2G**;
- Gas carriers **type 2PG**;
- Gas carriers **type 3G**.

If an LG carrier is intended for the carriage of one specific cargo only, the name of cargo, its design temperature, in °C, and design density, in kg/m3, may be additionally indicated in brackets after the descriptive notation **Gas carrier**.

For LG carriers intended for the carriage of liquefied natural gas (LNG), an entry **(methane)** shall be additionally added after the descriptive notation **Gas carrier**.

Gas carrier CNG: Ships intended for the carriage of compressed natural gas

SFV (small fishing vessel): For small sea fishing vessels having the length of 12 up to 24m and with the power from 55 to 375 kW

Chemical tankers

- **Chemical tanker type 1**
- **Chemical tanker type 2**
- **Chemical tanker type 3**

2.6 Alteration of marks in the class notation

2.6.1 QRS may delete or alter any mark in the class notation in the case of any alteration of, or non-compliance with the requirements defining the insertion of this mark in the class notation.

SECTION 3
Technical documentation

3.1 General

1 The present Part of the Rules contains lists of the plan approval documentation to be submitted to QRS for review and approval.

2 Prior to the commencement of a ship construction, technical documentation proving that all requirements of QRS applicable to the ship concerned are complied with shall be submitted to QRS for review. The documentation for review shall be submitted to QRS in electronic form in PDF format, providing its autonomous timeless storage and stamping with the results of documentation review.

Two practical alternatives of documentation submission and approval are allowed:

.a submission of plan approval documentation at least within the scope specified in column ″PAD″ in tables of Chapter *3.2*, taking into account the peculiarities and type of the ship without further approval of detailed design documentation;

.b submission of technical design documentation at least within the scope specified in column ″TD″ in tables of Chapter 3.2, taking into account the peculiarities and type of the ship with further approval of detailed design documentation (refer to column ″DD″ of the above-mentioned tables). Chapter *3.2* covers only the minimum scope of detailed design documentation to be submitted to QRS. If necessary, the scope of detailed design documentation may be revised by agreement with QRS for each project individually depending on the extent and nature of changes in relation to the technical design.

The technical design documentation approved by QRS does not constitute grounds for assignment of class to the ship. This documentation is reviewed by QRS exclusively as the basis for further detailed design.

Note: The additional technical documentation required by Part XVII ″Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships″ shall also be submitted in the set of technical documentation depending on the distinguishing mark or descriptive notation in the class notation of the ship, and taking into account the requirements of *number 9* of this Part.

3 Documentation, containing the results of calculations, performed using software, shall contain the reference on the name and version of such software.

4 When the earlier approved documentation is used for construction of a similar ship according to a new contract for construction, the scope of documentation to be submitted may be reduced based on QRS analysis of compliance with the requirements of QRS normative documents that came into force on or after the date of signing of the previous contract for construction for which the documentation was approved.

5 Depending on the type of documentation, the results of the technical documentation review by QRS are finalized by appropriate stamping of the documents.

Information on stamps for different types of documentation is given in *3.2* and *3.3* of this Part.

6 Requirements for the scope of technical documentation of a ship under conversion, repair or renovation, transfer of class, as well as during the initial survey of ship not built under the technical supervision of QRS or another Classification society, are given in *Part I "General Provisions"* of the Rules for the Classification Surveys of Ships in Service.

At the same time, technical documentation for conversion of single-hull tankers to double-hull tankers or bulk carriers shall meet the relevant requirements of these Rules taking into account IACS UI SC226 (Rev.1 Dec 2012).

7 Requirements for the scope of technical documentation of materials and products for ships are given in the relevant parts of these Rules.

8 When alternative design and arrangements being applied on board, deviate from the Classification requirements of QRS rules, an engineering analysis shall be submitted for approval by QRS with technical justification demonstrating that the alternative design and arrangements provide an equivalent level of safety to that stipulated by QRS requirements.

During the review of alternative design and arrangements under SOLAS Convention (IMO resolution MSC.216(82)), one should be guided by the provisions of regulations II-1/55, II-2/17 and III/38 of SOLAS 74 with regard to IMO circulars MSC.1/Circ.1002 and MSC.1/Circ.1212.

9 The technical documentation specified in *Section 3* of this Part does not cover operational documentation which is necessary for assignment of class to the ship. With regard to the requirements for operational documentation, the requirements of *4.6* shall be met.

3.2 DESIGN DOCUMENTATION

Letter identification and abbreviations:
A - Approved;
AG - Agreed;
FI - For information;
TD - Technical design;
PAD - Plan approval documentation;
DD - Detailed (design) documentation.

3.2.1 Ship's general documentation.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	Ship specification	FI	●		●
.2	General arrangement plan	FI/A	●		●
.3	List of deviations from QRS rules (with references to the relevant QRS letters of their approval, refer to 1.3.4 of the General Regulations for the Classification, if any)	AG	●	●	●
.4	Engineering analysis of the alternative design and arrangements — if any	AG	●		●
.5	Engineering analysis of the capability of a ship to return to port in case of an accident in accordance with 2.2.6 and 2.2.7 of Part VI "Fire Protection", considering interpretations of IMO circular MSC.1/Circ.1369	AG	●		●
.6	Tonnage calculations in accordance with the International Convention on Tonnage Measurement of Ships, 1969 (for ships of 24 m in length and above) or the Rules for the Tonnage Measurement of Ocean-Going Vessels (for ships of less than 24 m in length).	AG	●	●	●
.7	Tonnage calculations in accordance with the Regulations for the Measurement of Tonnage for the Suez Canal and/or the Rules for Measurement of Vessels for the Panama Canal (if necessary, issue of appropriate tonnage certificates)	AG	●	●	●
.8	Plan showing the location of the IMO ship identification number (IMO number) marking (in compliance with the requirements of regulation XI-1/3 of SOLAS-74 as amended; applicable to all cargo ships of 300 gross tonnage and above; ships not covered by this regulation shall comply with the provisions of IMO resolution A.1117(30) as amended).	A		●	●

3.2.2 Hull documentation.

All constructional drawings shall indicate the scantlings of the hull members, their material with indication of grades according to Part XIII "Materials", as well as typical sections and details, types and dimensions of fillet welds.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	Hull members scantlings determination, longitudinal strength and buckling stability of members, for all specified loading conditions.	AG	●		●
.2	Midship section plan and the typical transverse sections (with indication of spacing between the main longitudinal and transverse members, main particulars of the ship and their ratios, class notation of a ship and values of design still water bending moments)	A	●		●
.3	Constructional profile (with indication of frame spacing, boundaries of the portions of a ship length, position of the watertight bulkheads, pillars, arrangement of superstructures and deckhouses)	A	●		●
.4	Shell expansion (with indication of the ship hull boundaries, positions and dimensions of openings in shell plating. For ships strengthened for ice, upper and lower edges of ice belt and corresponding forward and aft draughts, arrangement of frames.	A	●		●
.5	Deck and platform plans with indication of design loads, including loads induced by lift trucks and containers, positions and dimensions of openings, their strengthening, structures of side coamings.	A	●		●
.6	Double bottom plan (the plan shall contain: sea chest sections; boundaries of watertight compartments. For bulk carriers an allowable load on the inner bottom plating shall be indicated).	A	●		●
.7	Drawings of longitudinal and transverse bulkheads, tank wash bulkheads with the heights of overflow and air pipes.	A	●		●
.8	Hull typical structural details with fore and aft end framing	A		●	●
.9	Drawing of superstructures and deckhouses	A	●		●
.10	Drawings of sections and assemblies of superstructures and deckhouses	A		●	●
.11	Hull blocks plan	AG		●	●
.12	Drawings of bulwark, sternframe and stem	A	●	●	●
.13	Drawings of engine and boiler casings, coamings, and other guards of openings in the ship's hull	A	●	●	●
.14	Drawings of propeller shaft brackets, bossings, fixed nozzles, tunnel, recesses and emergency escape.	A	●	●	●
.15	Drawings of sections and assemblies of the main hull: decks, transverse and longitudinal bulkheads, sides, bottom, double bottoms.	A		●	
.16	Drawings of seatings for the main engine and boilers, including bottom construction with type and model of the equipment and seating.	A	●	●	●
.17	Drawings of seatings for equipment, arrangements, machinery with statical load on deck >50 kN, or resulting statical bending moment on deck >100 kN m, deck mechanisms with breaking load of a rope or chain >150 kN or SWL >30 kN; the drawings shall be provided with type and model of equipment and that the seating complies with the requirements of the supplier.	A	●	●	●
.18	Drawings of seatings for mooring, anchor and towing equipment and confirmation of compliance with supplier.	A	●	●	●

No.	Description of documentation	Stamp	TD	DD	PAD
.19	Plan of weld control	A	●	●	●
.20	Table of the main hull and superstructure welding containing name and thickness of hull structural members to be joined; of edge preparation; brands and grades of base metal; welding processes; grades of welding consumables.	A	●	●	●
.21	Plan of testing the hull	A	●	●	●
.22	Construction Monitoring Plan (for ships with the distinguishing mark **CSR** in the class notation)	AG	●	●	●
.23	Specifications of protective coatings (according to 6.5 of Part XIII ″Materials″)	A	●	●	●
.24	Basic parameters of the hull protection by damping from damages when mooring.	A	●	●	●
.25	Detailed description of the hull construction process, including materials data, methods of forming the structural items, necessary conditions required during hull construction, as well as hull local scantlings and hull girder strength report.	A	●	●	●
.26	Loading Manual (for ships of 65 m in length and above refer to 1.4.9 of Part II "Hull")	AG	●	●	●

3.2.3 Documentation on arrangements, equipment and outfit.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	General arrangement plans of openings in hull, superstructures, deckhouses, bulkheads, coamings height and type of closing appliances	A	●	●	●
.2	Drawings of essential assemblies and parts of closing appliances of openings in hull, superstructures, deckhouses and bulkheads	A		●	●
.3	Strength calculations of bow, side and stern closing appliances in the ship's hull	AG	●		●
.4	General arrangement plans of machinery and actuators of rudder and steering gear	A	●		
.5	General arrangement plans of rudder and steering gear with indication of essential assemblies and parts	A		●	●
.6	Strength calculation of essential assemblies and parts of rudder and steering gear	AG	●		●
.7	Calculation of efficiency of rudder and steering gear	AG	●		●
.8	General arrangement plan of hatch covers of cargo holds	A	●		
.9	General arrangement plan with essential assemblies and parts of hatch covers of cargo holds	A		●	●
.10	Strength calculations of hatch covers of cargo holds	AG	●		●
.11	General arrangement plans of anchor, mooring and towing arrangements	A	●		
.12	General arrangement plans with essential assemblies and parts of anchor, mooring and towing arrangements	A		●	●
.13	Calculations of anchor, mooring and towing arrangements	AG	●		●
.14	Drawings of signal masts and rigging	A	●	●	●
.15	Calculations of signal masts and rigging	AG	●		●
.16	General arrangement plans of guard rails	A	●		
.17	General arrangement plans with essential assemblies and parts of guard rails	A		●	●
.18	General arrangement plans of means of access for inspections of cargo and other spaces on oil tankers, bulk carriers and gas ships	A	●		
.19	General arrangement plans with details of access for inspections of cargo area and other spaces on oil tankers, bulk carriers and gas ships	A		●	●
.20	Means of access manual (for oil tankers and bulk carriers)	A	●		●
.21	General arrangement plan of catwalk on oil tankers and ships carrying liquefied gases in bulk	A	●		
.22	General arrangement plan with essential assemblies and parts of catwalk on oil tankers and ships carrying liquefied gases in bulk	A		●	●
.23	General arrangement plans of guide members for containers in cargo holds	A	●	●	●
.24	Calculations of essential assemblies and parts of guide members for containers in cargo holds	AG	●		●
.25	General arrangement plans of ladders including accommodation, pilot ladders, and gangways.	A	●	●	●
.26	General view of hoisting gear of shipborne barges	A	●	●	●
.27	Calculation of hoisting gear of shipborne barges	AG	●		●
.28	Plan of escape routes	A	●		●
.29	List of emergency outfit	AG	●		●

3.2.4 Documentation on stability.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	Lines drawing, coordinate table of lines	AG	●		●
.2	Corner point coordinate table for compartments and tanks	AG	●		●
.3	Preliminary calculation of stability containing:	AG	●		●
.3.1	tables of hydrostatic particulars				
.3.2	tables of cross-curves of stability, including drawing of the buoyant hull				
.3.3	mass tables for various loading conditions and cargo handling operations with indication of distribution of cargoes, fuel oil, fresh water and liquid ballast in tanks, as well as data on ship's displacement, centre of gravity and trim				
.3.4	diagrams of windage area of a ship and calculations of heeling moments				
.3.5	calculations of icing, angles of flooding, corrections for free surface effect of liquid cargoes and stores				
.3.6	sketch showing the location of solid ballast with a specification containing information on the weight of each ballast group and the coordinates of the centre of gravity				
.3.7	righting lever curves and results of stability verification in compliance with the requirements of Part IV ″Stability″				
.4	Freeboard plan containing: maximum draught of the ship; arrangement of openings and closing appliances, which contribute to the watertight integrity of the ship external boundaries, with an indication of the height of coamings and type of closing appliances, external doors, cargo hatches, service hatches; bow, stern and side doors and ramps; scuttles and windows, scuppers and freeing ports, bottom and side valves of sea water systems, and sewage system; air pipes and ventilation heads, closures of ventilation ducts, and engine room skylights; arrangement plan of means for protection of the crew (bulwark, guard rails, gangways, and passageways.	AG			
.5	Freeboard calculation and drawings of the load line mark	AG	●	●	●
.6	Drawing for the ship's hull marking with the load line mark, deck line, lines to be used with the load line mark, mark of assigning Authority etc.	A	●		●

3.2.5 Documentation on subdivision.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	Documents on probabilistic assessment of subdivision (if required)	AG	●		●
.2	Damage trim and stability calculations, including righting lever curves	AG	●		●
.3	Subdivision plan showing all watertight structures and openings with indication of types of closing appliances, as well as arrangements used for equalizing heel and trim of a damaged ship	AG	●		●
.4	Calculations of sectional areas of cross-flooding fittings and of uprighting time of a ship	AG	●		●
.5	Documents on installation of flooding detection sensors of water ingress into compartments of bulk carrier, containing:				
.5.1	flooding detection system specification	AG	●	●	●
.5.2	documents with indication of the flooding detection system location	A	●		●

3.2.6 Documentation of fire protection.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	Documents on structural fire protection: structural fire protection plan, including arrangement of doors and other openings in fire-fighting divisions with indication of categories of spaces in accordance with Part VI ″Fire Protection″.	A	●		●
.2	Structural drawings of pipe and duct penetrations and cable transits in fire-fighting divisions	A		●	●
.3	Documents on structural fire protection: insulation plan, scheme of linings and ceilings, deck coverings plan, schemes or description of facings and other finishing materials	A	●		●
.4	Structural drawings of insulation, linings and deck coverings	A		●	●
.5	Documents on structural fire protection: calculations required by 2.1.1.4 and 2.1.1.10 of Part VI ″Fire Protection″	AG	●		●
.6	Diagrams of fire extinguishing systems and a sample extraction smoke detection system	A	●		●
.7	Structural drawings of assemblies and equipment of fire extinguishing systems	A		●	●
.8	Calculations of fire extinguishing systems confirming compliance with the requirement of Part VI ″Fire Protection″	AG	●		●
.9	List of fire-fighting outfit	AG	●		●
.10	Arrangement plan of fire-fighting outfit	A		●	●
.11	List of spare parts and tools	AG		●	●
.12	Electrochemical protection scheme or drawing in oil tankers	A	●	●	●
.13	Preliminary fire plan	AG	●		●

3.2.7 Documentation on machinery and boiler plant.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	General arrangement plans of machinery and equipment in the machinery spaces of category A, as well as in the emergency diesel generator spaces (refer to 1.2 of Part VII "Machinery Installations") with indication of escape routes	A	●		●
.2	Drawings of seating and attachment fittings of the main machinery, boilers and shaft bearings	A		●	●
.3	Diagram of remote control of the main machinery	A	●		●
.4	Description of remote control of the main machinery (completed with information on equipment of remote control stations fitted with controls, indicating instruments and alarm devices, means of communication and other devices)	AG	●		●
.5	Drawings of fuel and oil tanks location	A	●	●	●
.6	Calculation of power of the main machinery for **Ice2** ice class ships in compliance with the requirements of 2.1 of Part VII "Machinery Installations" to the minimum value of power delivered to the propeller shafts of the ships	AG	●		●

3.2.8 Documentation on shafting.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	General view of shafting	A	●	●	●
.2	Drawing of sterntube and parts of sterntube arrangement (bushes, bearings, sealings), drawing of casing protecting the area between the sterntube and propeller boss	A	●	●	●
.3	Drawings of shafts (propeller, intermediate and thrust)	A	●	●	●
.4	Drawings of shaft connections and couplings	A	●	●	●
.5	Drawings of journal and thrust bearings of shafting and their fastening to the seatings	A	●	●	●
.6	Strength calculation of shafts and their fastening parts	AG	●		●
.7	Calculation of the number of shaft supports, their position and loads carried	AG	●		●
.8	Calculation of fitting of propeller and shafting couplings	AG	●		●
.9	Torsional vibration calculations in compliance with the requirements of Section 8 of Part VII "Machinery Installations". In some cases, calculation of axial vibration may be required	AG	●		●
.10	Calculation of parameters of shafting alignment	AG		●	●
.11	Sterntube bearing and sterntube seal lubrication and cooling diagrams	A	●		●
.12	Calculation of bending vibration of shafting in compliance with the requirements of Section 5 of Part VII "Machinery Installations"	AG	●		●

3.2.9 Documentation on propeller.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	General view of propeller.	A	●	●	●
.2	Strength calculation of propeller blade (for detachable-blade propellers and controllable-pitch propellers (CP-propellers), also calculation of fastening of blades to the boss).	AG	●		●
.3	Drawing of propeller attachment to propeller shaft.	A		●	●
.4	Description of pitch actuating mechanism (PAM) and its control system.	AG	●		●
.5	Diagrams of pitch actuating mechanism (PAM) and its control system.	A	●		●
.6	Drawings of CP-propeller and detachable-blade propeller: blade, boss, cone, as well as items for their securing.	A	●	●	●
.7	Drawing of pitch control unit as assembled.	AG		●	●
.8	Drawings of the main parts of the pitch control unit, including shaft of the pitch control unit, hydraulic cylinders, push-pull rods, pistons, slides, oil distribution boxes, lubricating oil supply tube to hydraulic cylinder in hub.	A		●	●

3.2.10 Documentation on active means of the ship's steering (AMSS).

No.	Description of documentation	Stamp	TD	DD	PAD
.1	Drawings of AMSS installation and securing	AG	●	●	●
.2	Data to confirm compliance of the AMSS construction with operational conditions	AG	●		●
.3	Calculation of loads acting on AMSS and its basic elements	AG	●		●
.4	AMSS main characteristics, material specification for essential assemblies and parts, service and maintenance manual	AG		●	●
.5	AMSS test programme (prototype and pilot specimen)	A		●	●
.6	General view of AMSS with necessary sections	A	●	●	●
.7	Drawings of bearings and seals of AMSS elements	A	●	●	●
.8	Calculations of propellers (or impellers of water-jets) of AMSS elements, shafts, couplings, pinions and gear wheels of steerable propellers, water-jets and thrusters (when CP-propeller is used, refer to 3.2.7.9)	AG	●	●	●
.9	Drawings of propellers of AMSS elements (or impellers of water-jets), shafts, couplings, pinions and gear wheels of steerable propellers, water-jets and thrusters (when CP-propeller is used, refer to 3.2.7.9)	A	●	●	●
.10	Strength calculations of the input drive shaft of rotor, blade, gear of AMSS vertical-axis propellers	AG	●	●	●
.11	Drawings of shafts, gearing, rotors, blades and pitch control gear of AMSS vertical-axis propellers	A	●	●	●
.12	Calculation of connections	AG	●	●	●
.13	Drawings of propeller nozzles and tunnels, including information on acceptable clearance between ready-fitted propeller and tunnel (nozzle)	A	●	●	●
.14	Hull member drawings and drawings of reversible-steering gear of AMSS water-jets	A	●	●	●
.15	Diagrams of cooling, lubricating and hydraulic turning systems for steerable propellers (blades of CP-propellers) of AMSS, as well as particulars of piping of the above mentioned systems	A	●	●	●
.16	Calculations of electric drives for electrically driven AMSS	AG	●	●	●
.17	Diagrams of electric drives for electrically driven AMSS	A	●	●	●
.18	Documentation on monitoring, control, and protection systems of AMSS	A	●	●	●
.19	Torsional vibration calculations (for main AMSS and dynamic positioning systems) and service life calculation of rolling bearings	AG	●	●	●
.20	Rotational and pendular vibration calculations for steerable propellers if used as main AMSS	AG	●	●	●

3.2.11 Documentation on automation equipment.

3.2.8.1 General documentation.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	Technical description of automation systems and devices with indication of their purpose and principle of operation	AG	●		
.2	Technical description of automation systems and devices with indication of their purpose, principle of operation, their functions, configuration, self-diagnosis principles, with mandatorily designated system integrator (shipyard or, by cooperation, contracted alternative organization/supplier) for each system as well as consoles and control and monitoring switchboards in the main machinery control room and on the navigation bridge	AG			●
.3	List of controlled parameters with indication of unique identifier, parameter description, type of signal (i.e. analogue/digital, input/output, etc.), distribution by automation systems and devices depending on the signal intended functional purpose (control, alarms, protection, indication), distribution by automation equipment groups	A	●		●
.4	General arrangement plans of automation equipment in the main machinery control room and on the navigation bridge	A	●		●
.5	Diagrams of power supply for automation systems: alarm and monitoring systems (AMS), centralized monitoring systems and integrated control systems and AMS, remote automated control systems for main machinery and propellers, automation systems of auxiliary engines and electric power plant, automation systems of boiler plant, automation systems of compressor plants, automation system of bilge and ballast systems, remote level indicating systems	A	●	●	●
.6	Technical background containing the design intent of a dynamic positioning system with indication of the equipment redundancy level for ships with notations **DYNPOS-2** or **DYNPOS-3** in the class notation, with substantiation of the worst-case failure design intent when, after occurrence of the worst-case failure, the ship will be able to keep heading and/or position in the specified environmental conditions	AG	●		●
.7	General arrangement plan of the dynamic positioning system equipment, including thrusters, switchboards and panels of dynamic positioning system with indication of main and back-up (if any) control stations, position reference systems and external force sensors	A	●		●
.8	Drawings of cable runs (power and control cables) with indication of their penetrations through watertight and fire-fighting bulkheads of ships with distinguishing mark **DYNPOS-3** in the class notation	A	●		●

3.2.12 Documentation on individual automation systems, consoles and control and monitoring switchboards.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	Functional diagrams of AMS, centralized monitoring systems, computer-based and integrated control systems and AMS, including diagrams of power supply	A	●		
.2	Technical documentation on alarm and monitoring systems (AMS), centralized monitoring systems and integrated control systems and AMS, including functional diagrams, face panels of consoles and control and monitoring switchboards with indication of all devices, diagrams of power supply	A			●
.3	Technical documentation on remote automated control for main engines and propellers: including functional diagrams, remote automated control console panels with indication of all devices, diagrams of power supply of remote automated control	A	●		●
.4	Technical documentation on automation of auxiliary engines and electric power plant, functional diagrams and face panels of consoles and control and monitoring switchboards for electric power plant with indication of all devices	A	●		●
.5	Technical documentation on automation of boiler plant: functional diagrams and face panels of consoles and control and monitoring switchboards with indication of all devices	A	●		●
.6	Functional diagrams of automation of compressor plants	A	●		●
.7	Functional diagrams of automation and remote control of bilge and ballast systems	A	●		●
.8	Functional diagrams of remote level indicating systems	A	●		●
.9	Diagrams of electric connections for automation systems and equipment: alarm and monitoring systems (AMS), centralized monitoring systems and integrated control systems, remote automated control systems for main machinery and propellers. Automation system of auxiliary engines, electric power plant, boiler plant, compressor plants, bilge and ballast systems, and remote level indicating systems.	A		●	●
.10	Drawings of face panels of consoles and control and monitoring switchboards in the main machinery control room and on the navigation bridge with indication of all devices	A			●
.11	Technical background with description of operating conditions, principle of operation, operating modes, with substantiation of dynamic positioning system redundancy level according to a distinguishing mark to be added to the class notation	AG			●
.12	Drawings of panels of main and back-up (for **DYNPOS-3**) control stations of dynamic positioning system with indication of location of controls, thruster emergency stops, alarm devices, indicators and internal communications	A	●		●
.13	Failure mode and effects analysis (FMEA) (refer to Part XV "Automation") of dynamic positioning system	AG	●	●	●
.14	List of critical components of dynamic positioning system	AG	●	●	●
.15	Blackout recovery procedure for dynamic positioning system	AG		●	●
.16	Capability plots demonstrating ship's position keeping capacity at least for fully effective dynamic positioning system and post worst-case failure condition for particular environmental conditions	AG		●	●
.17	Functional diagrams of computer-based dynamic positioning control system with indication of inputs and outputs with feedbacks and power supplies	A		●	●

3.2.13 Documentation on systems and piping.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	Documentation on ship's systems: calculations of systems for bilge, ballast, vapour emission control; calculations of ventilation of battery rooms, cargo pump rooms, enclosed spaces and holds intended for the carriage of motor and road vehicles	AG	●		●
.2	Bilge system diagram and Drawings of bilge pipes	A	●		●
.4	Drawings of position and details of attachment of valves at the collision bulkhead	A		●	●
.5	Ballast system diagram	A	●		●
.6	Drawings of ballast pipes	A		●	
.7	Heel and trim system diagrams and diagrams of devices (automatic and manually controlled) for ship equalization by cross-flooding	A	●		●
.8	Drawings of heel and trim system, diagram of devices (automatically and manually controlled) for cross-flooding equalization	A		●	
.9	Air, overflow and sounding pipes diagrams	A	●		●
.10	Drawings of air, overflow, soundings, liquid level indicators, remote level gauging system in fuel oil, cargo and slop tanks of tankers	A		●	
.11	Diagrams of ventilation and air conditioning systems of accommodation, service, cargo, machinery and production spaces with indication of watertight and fire-fighting bulkheads, arrangement of fire dampers, closures of ventilation ducts and openings	A	●		●
.12	Drawings of ventilation ducts of accommodation, service, cargo, machinery and production spaces, with indication of design of fire dampers and of means of closing the ventilation ducts and openings required to ensure fire safety of the ship	A		●	
.13	Drawings of vent pipes and venting equipment, flame arresters, flame screens, pressure/vacuum valves and high velocity vents.	A	●	●	●
.14	Diagrams of sewage, sanitary and domestic waste water systems, scuppers with indication of watertight bulkheads, freeboard deck and distances from waterline or freeboard deck to the relevant discharge openings, as stated in Part VIII "Systems and Piping"	A	●		●
.15	Drawings of pipelines of sewage, and sanitary and domestic waste water systems and scuppers	A		●	
.16	Diagrams of pipelines of cargo and stripping systems	A	●		●
.17	Drawings of pipelines of cargo heating system	A		●	
.18	Diagrams of pipelines of fueling and fuel transfer system	A	●		●
.19	Diagram of thermal liquid system	A	●		●
.20	Drawings of pipelines of thermal liquid system	A		●	
.21	Diagrams of heating for sea-chest, side valves, liquids in tanks, steaming system for tanks	A	●		●
.22	Diagram of compressed air system for typhons, for blow down of the sea chests	A	●	●	●
.23	Diagrams of systems for hydraulic drives of mechanisms and arrangements	A	●		●
.24	Drawings of special systems for oil tankers and combination carriers	A		●	

3.2.14 Machinery installation systems.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	Diagrams of live and waste steam systems, of blow-down systems for boilers, machinery and steam pipes	A	●		●
.2	Drawings of live and waste steam systems, of blow-down systems for boilers, machinery and steam pipes	A		●	
.3	Diagram of feed water and condensate systems	A	●		●
.4	Drawings of pipes of feed water and condensate systems, evaporating plant	A		●	
.5	Diagram of fuel oil system	A	●		●
.6	Calculation of fuel oil service tank capacity of emergency diesel-generator	AG	●		●
.7	Drawings of pipelines of fuel oil system	A		●	
.8	Diagram of lubricating oil system	A	●		●
.9	Drawings of pipelines of lubricating oil system	A		●	
.10	Diagrams of fresh water and sea water cooling systems	A	●		●
.11	Drawings of pipelines of fresh and sea water cooling system	A		●	
.12	Diagram of fuel oil, water and lubricating oil heating systems; structural drawings of assemblies and connections of heating elements	A	●		●
.13	Drawings of pipelines of fuel oil, water and lubricating oil heating systems; structural drawings of assemblies and connections of heating elements	A		●	
.14	Diagram of starting air system	A	●		●
.15	Calculation of starting air system	AG	●		●
.16	Drawings of pipelines of compressed air system	A		●	
.17	Diagram of exhaust gas pipes and uptakes	A	●		●
.18	Drawings of silencers and spark arresters of exhaust gas pipes and uptakes	A		●	●
.19	Drawings of pipelines of exhaust gas and uptake systems	A		●	
.20	Drawing of equipment of sea chests and ice boxes	A	●	●	●
.21	Drawings of position and details of attachment of bottom and side valves	A		●	●
.22	Calculation of air pipes and ventilator pipes on open deck spaces	AG	●		●
.23	Drawings of air pipes and ventilator pipes on open deck spaces	A	●	●	●
.24	Drawings of pipelines and ventilation ducts penetrations through the watertight bulkheads, fire-fighting divisions, decks and platforms	A		●	●

3.2.15. Documentation on electrical equipment.

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General documentation.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	Diagrams of power generation and distribution from the main and emergency sources of electrical power: power networks, lighting networks (up to distribution switchboards) and navigation lights	A	●		●
.2	Single-line diagrams and general view of the main and emergency switchboards, control desks and other switchboards of non-standard design	A	●		●
.3	Calculation results of necessary output of the ship's electric power plant to ensure the operating conditions specified in 3.1 of Part XI "Electrical Equipment", substantiation of the choice of the number and power output of generators, as well as calculation of capacity of emergency sources of electrical power	AG	●		●
.4	Circuit diagrams of the main current, excitation, control, monitoring, signalling, protection and interlocking of the electric propulsion plant	A	●		
.5	Detailed diagrams of the main current, excitation, control, monitoring, signalling, protection and interlocking of the electric propulsion plant	A		●	●
.6	Calculation results of cross-sections of cables with indication of their types, types of currents and protection	AG	●		●
.7	Calculation results of necessary power output of electric propulsion plant generators to ensure normal operation under all operating conditions	AG	●		●
.8	Results of short-circuit current calculations and analysis of selective properties of protective devices for rated current of the generators or the generators operating in parallel in excess of 1000 A	AG	●		●
.9	Calculation results of illumination intensity for areas and spaces	AG	●		●
.10	Diagrams of internal communication and signalling according to Section 7 of Part XI "Electrical Equipment"	A	●		●
.11	Documentation on fixed electrical measuring instruments and alarm systems for ultimate concentration of dangerously explosive and noxious gases	A		●	●
.12	Diagrams of the protective, lightning protection and antistatic earthing	A	●	●	●
.13	Arrangement diagram of cable runs with indication of spaces which they pierce, including information on power supply cables for services required for operation under fire conditions in case of their transit routing through high fire risk spaces (refer to Part XI "Electrical Equipment")	A	●		●

.14	Capacity calculation results for accumulator batteries of emergency lighting, navigation lights, general alarm system, fire alarm system and fire smothering appliances, starting arrangements of the emergency diesel generators	AG	●		●
.15	Results of calculation of the expected total harmonic distortions (non-sinusoidality) for different parts of the ship mains when using power semiconductor units, as well as harmonic distortion calculation results following the harmonic filters failure during their installation in the ship's electrical distribution system	AG	●		●
.16	Calculation of expected efficiency of overload protection of generator sets by means of disconnection of the part of consumers with explanations of the number of disconnection steps and the list of disconnected consumers in every step	AG	●		●
.17	Diagram and drawing of disconnection and blocking system of electrical equipment, which is not used in the oil recovery ship operations on elimination of oil spills	A	●	●	●
.18	List of electrical equipment installed in dangerous zones containing information on spaces and areas where it is installed with indication of zones and spaces according to 19.2.3.1 of Part XI "Electrical Equipment", and information on this equipment with indication of type of explosion protection and number of certificate on safe-type electrical equipment issued by a special competent body	AG	●		●
.19	Calculation of voltage drop when a consumer with the maximum starting power is switched on	AG	●		●
.20	Drawings of cable runs and their penetrations through watertight, gastight and fire-fighting bulkheads, decks and platforms	A		●	●
.21	List of measures to ensure the electromagnetic compatibility of a ship equipment	A	●	●	●
.22	Diagrams and drawings of devices to ensure the electromagnetic compatibility	A		●	●
.23	Diagrams of the main and emergency lighting in the spaces and places of arrangement of essential devices, along the escape routes, at survival craft muster and embarkation stations on deck and outboard (supplying from distribution switchboards)	A	●	●	●
.24	Drawings of layout and installation of essential electrical equipment	A	●	●	●
.25	Diagrams and installation and layout drawings of electrical apparatus and facilities for measuring non-electric values (level, pressure, temperature gauges, etc.)	A	●	●	●
.26	Technical background containing substantiation for distinguishing mark **EPP** (if applicable) in the class notation	AG	●		●
.27	Drawing of dangerous spaces and zones (only for oil tankers, oil recovery ships, ships carrying liquefied gases in bulk and ships carrying compressed natural gas, chemical tankers, ships, other than LG carriers, using gases or other low flashpoint fuels and ships carrying dangerous goods)	A	●		●
.28	Drawing of main and emergency switchboards arrangement with indication of structural dimensions, passageways width and distance from the hull elements, equipment and pipelines to these switchboards	A	●	●	●

3.2.16 Documentation on certain types of electrical equipment.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	Circuit diagrams of essential electric drives (according to 1.3.2.1 and 1.3.2.2 of Part XI "Electrical Equipment")	A	●		
.2	Diagrams of essential electric drives (according to 1.3.2.1 and 1.3.2.2 of Part XI "Electrical Equipment") with indication of cable types and places of installation of all elements of the diagrams	A		●	●
.3	Diagrams of lubrication systems for electrical machines and air cooling systems for the main electrical machines	A	●	●	●
.4	Failure mode and effects analysis (FMEA) for all electric and hydraulic components of the podded azimuth thrusters used as the rudder and steering gear	AG	●	●	●
.5	Diagrams of electric connections (for systems and equipment specified in 3.2.10.1.1, 3.2.10.1.2, 3.2.10.1.5, 3.2.10.1.10 and 3.2.13.2) with indication of cable types and places of installation of all elements of the diagrams	A	●	●	●
.6	Documents on portable electrical measuring instruments and alarm systems for ultimate concentration of dangerously explosive and noxious gases	A	●	●	●
.7	Assembly drawings of the main and emergency switchboards, electric propulsion plant switchboards, control stations and panels, special switchboards, power and lighting switchboards	A	●	●	●

3.2.17 Documentation on arrangements and equipment for the prevention of pollution from ships.

For ships of all types.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	Arrangement plan of oil fuel tanks	A	●	●	●
.2	Calculation confirming protective location of oil fuel tanks relative to shell plating (Regulation 12A of Annex I to MARPOL 73/78), if applicable	AG	●		●
.3	Calculation of required capacity of oil residue (sludge) holding tanks, oily bilge water holding tanks and their arrangement plans, as well as calculation of capacity of sewage holding tanks and garbage receptacles	AG	●		●
.4	Diagram of bilge water piping	A	●	●	●
.5	Diagram of oil residue (sludge) piping	A	●	●	●
.6	Diagram of sewage piping	A	●	●	●
.7	Calculation of the discharge rate of untreated sewage	A	●		●
.8	Energy Efficiency Design Index Technical File (EEDI Technical File) in accordance with the Guidelines 2014 on Survey and Certification of Energy Efficiency Design Index (IMO resolution MEPC.254(67) as amended), if applicable	AG	●		●
.9	Calculation of required Energy Efficiency Existing Ship Index (required EEXI), if applicable	AG	●		●
.10	Diagram of incinerator system piping and garbage processing device	AG	●	●	●

3.2.18 ETW (Effective Tank Washing).

No.	Description of documentation	Stamp	TD	DD	PAD
.1	Cargo tanks arrangement and capacity diagram with indication of distance from the side and bottom shell to the tanks, including information on the materials used and coverings	A	●	●	●
.2	Effective cargo tank washing system diagram with indication of technical and operational characteristics of the system equipment	A	●		●
.3	Shadow diagrams of the washing system for each cargo tank (may be included in the system diagram)	A	●		●
.4	Cargo system diagram	A	●		●
.5	Technical characteristics of permanently installed and portable washing machines	FI	●		●

3.2.19 For oil tankers

No.	Description of documentation	Stamp	TD	DD	PAD
.1	Calculation of slop tanks capacity	AG	●		●
.2	Calculation of accidental oil outflow (regulation 23 of Annex I to MARPOL 73/78)	AG	●		●
.3	Arrangement plan of cargo and slop tanks and calculation confirming their protective location relative to shell plating (regulation 19 of Annex I to MARPOL 73/78)	AG	●	●	●
.4	Calculation confirming protective location of cargo pump room relative to shell plating (regulation 22 of Annex I to MARPOL 73/78), if applicable	AG	●		●
.5	Diagram of emergency rapid cargo transfer system (if applicable in accordance with regulation 23 of Annex I to MARPOL 73/78)	A	●	●	●
.6	Diagram of crude oil washing system and shade diagram (if applicable)	A	●	●	●
.7	Arrangement plan of discharge outlets	A	●	●	●
.8	Diagram of transfer of oil residues and tank washings from cargo tank areas into slop tanks	A	●	●	●
.9	Diagram of ballast and washing water discharge monitoring and control system (if applicable)	A	●	●	●

3.2.20 For tankers carrying noxious liquid substances

No.	Description of documentation	Stamp	TD	DD	PAD
.1	Calculation of size of underwater discharge outlet	AG	●		●
.2	Diagram of cargo tank ventilation systems (if applicable for tank cleaning)	A	●	●	●
.3	Arrangement plan of discharge outlets	A	●	●	●

3.2.21 Documentation on cargo handling gear.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	General view of cargo handling gear with indication of its principal characteristics, arrangement on board the ship and securing of the cargo handling gear in the stowed for sea position	FI	●		●

3.2.22 Documentation on refrigerating plants.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	Refrigerating capacity calculation with indication of cooling load from each refrigerated cargo space and cold consumer	AG	●		●
.2	Diagrams of a refrigerating plant with indication of refrigerating equipment and piping arrangement on board the ship, places for installation of temperature control devices and devices of atmosphere control system	A	●		●
.3	Installation drawings of refrigerating equipment with indication of equipment arrangement in the refrigerating machinery space, and escape routes	A		●	
.4	Circuit diagrams of main and emergency ventilation systems of refrigerating machinery space and other spaces containing equipment under a refrigerant pressure with indication of the watertight and fire-fighting bulkheads, as well as the number of air changes per hour	A	●		●
.5	Circuit diagrams of refrigerant, secondary refrigerant, cooling water systems with indication of places for installation of indicating and measuring instruments and automatic devices	A	●		●
.6	Drawings of pipelines of refrigerant, secondary refrigerant, cooling water systems with indication of places for installation of indicating and measuring instruments and automatic devices	A		●	
.7	Air cooling diagram with indication of watertight and fire-fighting bulkheads	A	●		●
.8	Drawings of pipelines of air cooling system with indication of watertight and fire-fighting bulkheads	A		●	
.9	Circuit diagram of water-screen system of refrigerating machinery space (for Group II refrigerant)	A	●		●
.10	Drawings of pipelines of water-screen system of refrigerating machinery space (for Group II refrigerant)	A		●	
.11	Tables of the values of the bounding surface areas of the refrigerated cargo spaces with data on calculated heat-transfer factor for each surface and averaged heat-transfer factor for the insulating structure of refrigerated spaces	AG	●		●
.12	Drawings of cargo cooling air ducts to thermal containers with indication of the layout on board	A	●	●	●
.13	Drawings of air duct insulation with technical data of insulating materials	A		●	●
.14	Arrangement plan of emergency discharge system of refrigerant	A	●	●	●

3.2.23 Documentation on accommodation spaces.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	Plans of accommodation spaces containing the following information on: location and size of each space; ventilation, heating, and hot and cold running fresh water in accommodation spaces; location of furniture and equipment, including electrical equipment, in cabins (sleeping rooms); location of equipment in sanitary spaces, dining rooms (mess rooms), recreation rooms and medical rooms.	A	●		●

Documentation for assignment of notations in the class notation specifying structural and operational particulars of ships.

3.2.24 Escort tug.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	Towing arrangement plan required for escort service, including towing line path and minimum breaking strength of towing line components and strength of appropriate structures	A	●		●
.2	Preliminary calculation of maximum steering pull of the tug at the escort test speed of 8 and/or 10 knots, including propulsion components of the escort tug for balancing of oblique angular position of the tug	AG	●		●
.3	Preliminary tug stability calculations	AG	●		●
.4	Plan of full scale trials	AG	●		●

3.2.25 ECO and ECO-S.
Technical documentation in respect of air pollution prevention.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	Drawings of exhaust gas cleaning system, if applicable, which shall be approved in accordance with the IMO Guidelines	A	●	●	●
.2	Incinerator systems diagram	A	●	●	●
.3	Refrigerating systems diagrams, list of refrigerants used	A	●	●	●
.4	Fire-fighting systems diagrams, list of fire extinguishing media used in these systems	A	●	●	●
.5	Energy Efficiency Design Index (EEDI) Technical File and/or Energy Efficiency Existing Ship Index (EEXI) Technical File	AG	●	●	●

3.2.26 Technical documentation in respect of marine environment pollution prevention.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	Ship's general arrangement plan and tanks plan	FI	●		●
.2	Documentation confirming compliance of the oil tanker with the requirements for double hull construction in accordance with regulation 19 of Annex I to MARPOL 73/78	A	●	●	●
.3	Documentation confirming compliance of the ship with the requirements for protective location of fuel oil tanks (refer to Section 3 of Part XVII ″Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships″)	A	●	●	●
.4	Ship's Guidelines for Safe Water Ballast Exchange at Sea (where applicable)	A	●	●	●
.5	Sewage system diagram	A	●	●	●
.6	Diagrams of manifolds in cargo areas, as well as branch pipes and flanges for fuel oil and oil bunkering, oil residues and oily water discharge indicating the trays and appliances for prevention of spillage of oil and noxious liquid substances carried in bulk	A	●	●	●
.7	Diagrams and drawings of fuel oil, bilge, oil discharge, flushing water, ballast water systems.	A	●	●	●
.8	Sanitary and domestic wastewater system diagram	A	●	●	●

3.2.27 ANTI-ICE.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	List of technical solutions applied onboard the ship and ensuring compliance with the requirements of Section 4 of Part XVII ″Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships″	AG	●		●
.2	Arrangement plan of de-icing and anti-icing means with indication of their heating capacity	A	●	●	●
.3	Calculations of heating capacity of anti-icing systems equipment	AG	●		●
.4	Electrical single-line diagram of anti-icing systems with heating cables (if any)	A	●	●	●
.5	Circuit diagrams of steam and/or thermal liquids anti-icing systems (if any)	A	●	●	●

3.2.28 GFS.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	Drawings of fuel tanks arrangement with their distances from side plating and the bottom specified	A	●		●
.2	Drawings of supports and other structures to ensure fastening and limiting shifting of fuel tanks	A	●	●	●
.3	Calculations of heat emission from the flame which may occur during the fire affecting gas fuel tanks and other equipment and spaces related to gas fuel	AG	●		●
.4	Drawings and diagrams of systems and piping for gas fuel specifying such assemblies as compensators, flange joints, stop and control valves and fittings, drawings of quick-closing arrangements of the gas fuel system, diagrams of gas fuel preparation, heating and pressure control	A	●	●	●
.5	Calculations of stresses in piping containing gas fuel at a temperature below - 110 °C	AG	●		●
.6	Drawings of safety and vacuum safety valves of fuel storage tanks	A	●	●	●
.7	Drawings and descriptions of all systems and arrangements for the measurement of fuel amount and characteristics, and for gas detection	A	●	●	●
.8	Diagrams of gas fuel pressure and temperature control and regulating systems	A	●	●	●
.9	Drawings of bilge and ballast systems in gas-hazardous spaces	A	●	●	●
.10	Calculations of bilge and ballast systems in gas-hazardous spaces	AG	●		●
.11	Diagrams of gas-dangerous spaces ventilation	A	●	●	●
.12	Calculations of gas-dangerous spaces ventilation	AG	●		●
.13	Diagrams of gas-freeing system	A	●	●	●

.14	Calculations of gas-freeing system	AG	●		●
.15	Circuit diagrams of electric drives and control systems for fuel preparation plants, ventilation of hazardous spaces and airlocks	A	●	●	●
.16	Circuit diagrams of electric measurement and alarm systems for equipment related to the use of gas fuel	A	●	●	●
.17	General arrangement drawings of electrical equipment related to the use of gas fuel	A	●	●	●
.18	Drawings of cable laying in hazardous spaces and areas	A	●	●	●
.19	Drawings of earthing for electrical equipment, cables, piping located in gas-dangerous spaces	A	●	●	●
.20	Technical background of electrical equipment fitness	AG	●		●
.21	General arrangement drawings of gas-containing equipment	A	●	●	●
.22	Analysis of risks related to the use and storage of gas fuel and possible consequences of its leakages according to IACS Recommendations No. 146. The analysis shall consider the risks of damage of hull structural members and failure of any equipment after accident related to the use of gas fuel. The results of risk analysis shall be taken into account in the operating manual	AG	●		●
.23	Drawings of liquefied natural gas (LNG) tanks arrangement	A	●	●	●
.24	Calculation of liquefied natural gas (LNG) tanks arrangement in compliance with the requirements of the International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels (IGF Code)	AG	●		●
.25	Drawing of compressed natural gas (CNG) tanks	A	●	●	●
.26	Calculation of CNG tanks in compliance with the requirements of the Rules for the Classification and Construction of Ships Carrying Compressed Natural Gas	AG	●		●
.27	Calculation of permissible pressure when using standard cylinders	AG	●		●

3.2.29 LNG bunkering ship RE/IG-Supply

No.	Description of documentation	Stamp	TD	DD	PAD
.1	General arrangement of the ship with indication of LNG bunkering station, bunkering control station and escape routes	FI	●	●	●
.2	Diagram of the cargo system; drawings of hose lines, swivels and transfer arms (where applicable)	A	●	●	●
.3	Description of the cargo system, LNG vapor return transfer system; documentation for the reliquefaction system (where applicable)	AG	●		●
.4	Diagram of LNG vapor return transfer system	A	●	●	●
.5	Calculation of maximum allowable bunkering flow	AG	●		●
.6	Technical documentation for ESD bunkering system (ESD — emergency shutdown system)	AG	●	●	●
.7	Electrical single line diagrams for all intrinsically-safe circuits	A	●	●	●
.8	General arrangement plan of electrical equipment in hazardous areas related to bunker operations	A	●		●
.9	Technical documentation for fire detection and alarm system as well as gas detection system of the bunkering installation, including location of gas detectors, connection lines, valves and sampling points on board the ship	A	●	●	●
.10	Technical documentation for gauging, alarm and pressure indication system in the cargo tanks and piping	A	●	●	●
.11	Technical documentation for control and alarm system of cargo pumps	A	●		●

3.2.30 IWS.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	Drawing of the marking on the side and bottom plating to identify the tanks	A	●	●	●

3.2.31 Anchor handling vessel.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	Arrangement plan of anchor handling equipment: anchor handling winches, shark jaws, towing pins, stern rollers, cargo handling gear, where available, including standard cargo placing on the deck (anchors, cables, chains, etc.) indicating the towing line path, extreme sectors, maximum design towing pull, maximum design load for each component	FI	●		●
.2	Drawings of foundations and supports for winches, shark jaws, stern rollers and towing pins indicating the maximum design load	A		●	●
.3	Electrical power supply circuits and control system configuration of towing equipment and anchor handling equipment	A	●	●	●
.4	Arrangement plan of operator control stands (user interface) of towing equipment control systems and anchor handling equipment	A	●	●	●
.5	Technical specification of operator control stands (user interface) of towing equipment control systems and anchor handling equipment	AG	●		●
.6	Arrangement plan of communication means between the anchor operations control station and wheelhouse	A	●	●	●
.7	Technical specification of communication means between the anchor operations control station and wheelhouse	AG	●		●
.8	Bollard pull estimation	FI	●		●
.9	Bollard pull test procedure	A		●	●
.10	Design criteria, including design loads and characteristics of emergency quick release system of towing line indicating the response time and remaining holding force after release)	FI	●		●
.11	Strength calculation of winch drum with flanges, shaft couplings, housing and brakes	AG	●		●
.12	General view	A	●		●
.13	Assembly drawing	A		●	●

3.2.32 GRS.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	Technical background indicating general ship's data after conversion	FI	●		●
.2	Drawings of components of systems and machinery required for the use of gas fuel to be installed during the ship's conversion	A	●	●	●
.3	Drawings of components of systems and machinery required for the use of gas fuel to be installed during the ship's construction	A	●	●	●
.4	Drawings of hull structures that may be changed during the ship's conversion	A	●	●	●
.5	Calculation of hull structures that may be changed during the ship's conversion	AG	●		●
.6	Drawings of hull structures and foundations required for machinery subject to installation during the ship's conversion	A	●	●	●

3.2.33 BMS.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	Instruction on maintaining boiler water and chemistry quality in accordance with 16.3.2 of Part XVII ″Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships″	AG	●		●

3.2.34 HMS (STR) (STAB) (STR-STAB) + BS/C/DD/N/RPM/SL/SW/TS/ThS/TVS/W.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	Technical description	AG	●		●
.2	Schematic diagram	AG	●		●
.3	Function block diagram	AG	●		●
.4	List of measuring channels	AG	●		●
.5	Arrangement plan with indication of measuring instrument locations, cable laying and hardware installation	A	●		●
.6	General electrical diagram	A	●		●
.7	Schematic circuit diagram	A	●	●	●
.8	Permissible values of parameters used for monitoring in sensor location points	AG	●		●
.9	Technical description of software, including procedure for calculation of parameters used for monitoring, based on results of measurements	AG	●		●
.10	Monitoring system operating manual	AG	●		●
.11	Maintenance instruction manual, including calibration procedure	AG	●		●
.12	Installation drawings	A		●	●
.13	Installation, commissioning and adjustment instruction	AG		●	●
.14	Programme of periodical surveys of the system in service	A	●		●

3.2.35 UWILD and UWILD-S.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	Technical background containing substantiation of the possibility of the ship operation without drydocking throughout the planned service life, periodical examinations of the shell plating from inside ensuring free passage for QRS surveyor along ship's structures in all directions during surveys	AG	●		●
.2	Description of means of access to structures from inside and outside (may be drawn up in the form of a manual on means of access), including description of procedures (with the use of divers and other technical means) for installation and securing of temporary blanks required for maintenance and survey of bottom and side valves, closing devices or other structures under water providing free access	FI	●		●
.3	Installation drawings for bottom and side valves and on board means ensuring maintenance of these valves without dry-docking	A	●	●	●
.4	Specification of protective coatings	A	●	●	●
.5	Information on installation of anode protection, instructions on the renewal of the installed anodes in the ship outer hull afloat (the submitted document shall be agreed upon with the coating manufacturer as regards compatibility), if applicable	FI	●		●
.6	Catholic protection specification as well as its installation scheme (the submitted document shall be agreed upon with the coating manufacturer as regards compatibility), if applicable	FI	●		●

3.2.36 POSIMOOR, POSIMOOR-FIX and POSIMOOR-TA.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	Calculation of anchoring system, including determination of the number of anchor lines which shall be used in operation of the ships and during emergency situations, as well as of the mass and type of anchor	AG	●		●
.2	Breaking strength calculation for the anchor line. Material specifications of the anchor line	AG	●		●
.3	Design and calculation of the anchor and anchor shackle unless they are of a type which has been previously approved	A	●		●
.4	Design of the anchor line stopper. Material specifications	AG	●		●
.5	Design of guiding devices of the anchor line. Material specifications	AG	●		●
.6	Design of chain/rope connections (if any). Type and design of connection of the rope and anchor shackle, if any. Material specifications	AG	●		●
.7	Foundations and supports of position mooring system	A		●	●
.8	Layout diagram of anchor lines and special components used as a part of anchor lines and anchor arrangements (buoyancy elements, weights, corrosion protection systems, shock-absorbing inserts, etc.), if any, with preliminary calculation	FI	●		●
.9	Design of special components used as a part of anchor lines and anchor arrangements (buoyancy elements, weights, corrosion protection systems, shock-absorbing inserts, etc.), if any	A		●	●
.10	Calculations of special components used as a part of anchor lines and anchor arrangements (buoyancy elements, weights, corrosion protection systems, shock-absorbing inserts, etc.), if any	AG	●		●

3.2.37 LFLFS (Me) or LFLFS (Et) (Low Flashpoint Liquid Fuelled Ship, Methanol or Ethanol).

No.	Description of documentation	Stamp	TD	DD	PAD
.1	Drawing of fuel tanks arrangement with indication of distance from bottom and side plating to methanol/ethanol fuel tanks	A	●		●
.2	Drawing of supports and other structures to ensure fastening and limiting shifting of methanol/ethanol fuel tanks	A	●	●	●
.3	Drawings and diagrams of systems and piping for methanol/ethanol specifying such assemblies as compensators, flange joints, stop and control valves and fittings, drawings of quick-closing arrangements of the fuel system, diagrams of fuel preparation systems	A	●	●	●
.4	Drawings of safety and vacuum valves of fuel tanks, where available	A		●	●
.5	Installation drawings of arrangements for measurement of fuel amount and characteristics, and for leakage detection	A		●	●
.6	Diagrams and calculations of gas-dangerous spaces ventilation	A	●		●
.7	Diagrams and calculations of gas-freeing system and inert gas system, drawings and calculations of bilge and ballast systems in cargo area, pump rooms, cofferdams, pipe tunnels and hold spaces	A	●		●
.8	Electrical diagrams for connection of drives and control systems for fuel preparation plants, ventilation of hazardous spaces and airlocks	A	●		●
.9	Electrical circuit diagrams for measurement and alarm systems for equipment related to the use of methanol/ethanol	A	●		●
.10	Arrangement drawings of electrical equipment related to the use of methanol/ethanol	A		●	●
.11	Drawings of cable laying in hazardous and gas-dangerous spaces and areas	A		●	●
.12	Drawings of earthing for electrical equipment, cables, piping located in gas-dangerous spaces	A		●	●
.13	Arrangement of hazardous areas diagram specifying the layout of methanol/ethanol storage tanks and any openings in them; spaces for fuel storage and preparation and any openings to them; doors, hatches and any other openings into hazardous spaces and areas; venting pipes and air inlet and outlet locations of a ventilation system of hazardous spaces and areas; doors, scuttles, companions, ventilation duct outlets locations and other openings in spaces adjacent to hazardous area	A	●		●
.14	Analysis of risks related to the use and storage of methanol/ethanol and possible consequences of its leakages. The analysis shall consider the risks of damage of hull structural members and failure of any equipment after accident related to the use of methanol/ethanol	AG	●		●
.15	Diagram of fire-protection water spray system, including piping, valves, nozzles and fittings, as well as diagram of dry powder fire extinguishing system and foam fire extinguishing system, their operating manuals and capacity calculation	A	●		●
.16	Description and plan of monitoring, control and alarm systems	A	●		●

3.2.38 Open cargo hatch.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	Assessment of seaworthiness and ingress of green water, containing, as a minimum, a report with the results of: computational modelling of motions in regular and irregular waves and ingress of green water; model tests of seaworthiness and ingress of green water in the ship model basin (model tests shall comply with 24.4 of part XVII ″Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships″), documentation of the process of carrying out model experiments shall be accompanied by a video recording to be attached to the report; freeboard calculation	AG	●		●
.2	Analysis of the conformity of the means for cargo hold bilge dewatering with the requirements of IMO circular MSC/Circ.608/rev.1	AG	●		●
.3	Stability and damage stability calculations taking into account the possible flooding of cargo holds	AG	●		●
.4	Calculations of longitudinal and local strength of the hull considering the possible flooding of cargo holds	AG	●		●
.5	Fixed water spray system diagram	A	●		●
.6	Structural drawings of assemblies and equipment of fixed water spray system	A		●	●

3.3 Design documentation on life-saving appliances, signals, radio and navigational equipment.

3.3.1 General documentation.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	Ship specification	FI	●		●
.2	List of spare parts	AG		●	●

3.3.2 Documentation on life-saving appliances.

No.	Description of documentation	Stamp	TD	DD	PAD
1	Arrangement plan/diagram of: lifeboats and rescue boats; liferafts; marine evacuation systems and their launching appliances; means of embarkation that provide access to survival craft in the water	A	●	●	●
.2	Drawings of securing of: launching appliances for survival craft and rescue boats, as well as their means of embarkation; hydrostatic release units	A	●	●	●
.3	Arrangement plan and drawings of securing of personal life-saving appliances	A	●	●	●
.4	Drawings of securing of survival craft and rescue boats in stowed-for-sea position	A		●	●
.5	Arrangement plan of survival craft muster and embarkation stations, means of illumination and means of protection from seas, as well as means to prevent any entry of water into the survival craft	A	●		●
.6	List of life-saving appliances, including their type and technical specifications	A	●		●

3.3.3 Documentation on signal means.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	Arrangement plan/diagram of: navigation lights and flashing lights; pyrotechnic and sound signal means	A	●		●
.2	List of signal means with indication of their principal characteristics	AG	●		●
.3	Arrangement plan and drawings of securing of signal means	AG		●	
.4	Connection circuits of navigation lights, flashing lights, as well as of electric sound signal means	A	●	●	●

3.3.4 Documentation on navigation bridge.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	Bridge layout drawings showing: bridge layout, including configuration and location of all bridge workstations, including workstations for additional bridge functions, indicating width of passageways, ceiling height, height of deckhead mounted equipment; configuration and dimensions of workstation consoles; chair arrangement at workstations	A	●	●	●
.2	Drawings of equipment location on navigation bridge showing: location of all units of radio and navigational and other equipment in workstation consoles; location of all units of radio and navigational and other equipment elsewhere on the navigation bridge; location of all units of radio and navigational equipment outside the navigation bridge functionally associated with it List Type and Model of all Bridge Equipment.	A		●	●
.3	Fields of vision drawings showing: horizontal fields of vision from various workstations, including the arc of individual blind sectors and the sum of blind sectors created by the cargo, handling equipment and other obstacles outside the wheelhouse that impede the view of the sea surface right ahead (over an arc of 180° from side to side forward of the beam); vertical field of vision over the bow to 10° on either side under the most unfavorable conditions of draught, trim and deck cargo location from the conning position and the navigation and maneuvering workstation, including the lines of sight under the upper edge of the window from standing position for a 1800 mm height of eye with pitching ±5°, and above the lower edge of the window from seated position; view of the ship's side from the navigation bridge wings; window arrangement, including inclination, dimensions, framing and height of lower and upper edge above bridge deck surface as well as the height of the deckhead	A	●	●	●
.4	List of radio and navigational equipment installed on board the ship with indication of: name; type; manufacturer	AG	●	●	●

3.3.5 Documentation on radio and navigational equipment.

No.	Description of documentation	Stamp	TD	DD	PAD
.1	Wiring diagram of radio and navigational equipment with indication of (if applicable): commutation of aerials. diagrams of power supply from main, emergency and reserve sources of electrical power (GMDSS accumulators); automatic circuit breakers; connection of chargers. connection of EPFS receiver (GPS, GLONASS etc.) to VHF/MF/HF radio installations, satellite communication equipment and other navigational equipment; interfacing of gyrocompass/transmitting heading device to other equipment; connection to VDR	A	●	●	●
.2	Antenna arrangement drawing with indication of all transmitting antennas, including location of antenna tuners; all receiving antennas. radar antennas (with indication of antenna rotation radius and vertical patterns, and any other ship structures or cargo (masts, derricks, containers, etc.), which can affect radio waves propagation or impair the radar system performance); satellite communication equipment antennas. EPFS receiver antennas; location of float-free EPIRB. location of the magnetic compass, location of fixed and float-free recording mediums of VDR; location of microphones of sound reception system	A	●	●	●
.3	Calculation of the capacity of reserve source of electrical power (accumulators) for supplying of GMDSS radio equipment	AG	●	●	●
.4	List of information to be recorded by voyage data recorder with indication of data sources	AG	●	●	●

3.4 Programmes of mooring and sea trials

1 Programmes of mooring and sea trials shall be approved by QRS prior to commencement of the relevant trials.

2 The scope of mooring and sea trials shall comply with the relevant requirements of the Guidelines on Technical Supervision of Ships under Construction.

3 Programmes of mooring and sea trials of ships with notations DYNPOS-2 or DYNPOS-3 in the class notation shall contain complete tests of the dynamic positioning system including the tests to verify FMEA provisions.

SECTION 4
Classification of refrigerating plants

4.1 General

4.1.1 For ensuring safety of a ship and preventing ozone-destructive effect of refrigerants on environment the refrigerating plants installed in ships classed with *QRS* are subject to surveys in the following cases:
.1 refrigerating plants working with Group II refrigerants in accordance with *Table 2.2.1, Part XII "Refrigerating Plants";*
.2 refrigerating plants working with Group I refrigerants and comprising the compressors with theoretical suction capacity 125 m/h and above;
.3 refrigerating plant ensures the functioning of systems affecting the ship safety.

4.1.2 From the number of the refrigerating plants stated in *4.1.1* QRS assigns a class to:
.1 refrigerating plants intended for developing and maintaining the required temperatures in refrigerated cargo spaces of transport ships, as well as in thermal containers to provide proper carriage of goods;
.2 refrigerating plants intended for developing and maintaining the required temperatures in refrigerated cargo spaces, for cold-treatment of sea products (cooling, freezing) and supplying the cold necessary for operation of process plants in fishing ships and other ships used for processing of the biological resources of sea;

Other refrigerating plants from the number of those stated in *4.1.1* subject to QRS supervision are considered unclassed.

1.2 Class of a refrigerating plant

1.2.1 General

1 QRS may assign a class to a refrigerating plant after the ship's construction, as well as assign, or renew a class of a refrigerating plant installed in a ship in service.

2 Assignment or renewal of a class means that the refrigerating plant fully or to a degree considered acceptable by QRS complies with the requirements of the relevant Rules. The fact of a class being assigned or renewed indicates that the refrigerating plant complies either fully or to a degree deemed acceptable by QRS, with the requirements of the relevant Rules and is taken under QRS supervision, and that the technical condition of the plant is in accordance with the provisions of design specifications included in the Classification Certificate for Refrigerating Plant.

3 Assignment or renewal of a class shall be confirmed by the issue of a Classification Certificate for Refrigerating Plant after the appropriate survey carried out.

1.2.2 Class notation of a refrigerating plant.

The character of Classification of a refrigerating plant consists of the following marks:
REF❖ — for a refrigerating plant built according to the Rules and surveyed by *QRS*;
REF❖ — for a refrigerating plant built according to the Rules of a Classification body recognized by *QRS*, surveyed by that Classification body and then classed by *QRS*;
(REF)❖ — for a refrigerating plant built without being surveyed by a Classification body recognized by *QRS* or without being surveyed by a Classification body at all, but subsequently classed with *QRS*;
REF* — for a refrigerating plant built according to the Rules of an ACS, surveyed by that Society during construction and subsequently classed by *QRS*, if the refrigerating plant does not fully comply with the requirements of *Part XII "Refrigerating Plants"*.

4.2.2.2 Mark of a capability to cargo refrigeration.

If the refrigerating plant has a capacity sufficient to refrigeration of a non-precooled cargo on shipboard during a period of time that provides preservation of that cargo, a distinguishing mark **PRECOOLING** shall be added to the character of Classification.

In such a case a note specifying the conditions of cargo cooling on shipboard shall be entered into the Classification Certificate for Refrigerating.

4.2.2.3 Mark of capability for cooling or freezing sea products.

The distinguishing mark **QUICK FREEZING** is added to the character of Classification i f the plant is intended for cooling or freezing sea products and is in accordance with the relevant requirements specified in *Part XII "Refrigerating Plants"*.

4.2.2.4 Notations of refrigerating plants.

1 If a refrigerating plant is intended for cooling of cargo transported in thermal containers and complies with applicable requirements of *Part XII "Refrigerating Plants"* the distinguishing mark **CONTAINERS** is added to the character of Classification of the plant.

.2 If, in addition to a refrigerating plant, a ship is equipped with atmosphere control system in refrigerated spaces and/or thermal containers which complies with applicable requirements of *Part XII "Refrigerating Plants"* the distinguishing mark **CA** is added to the character of Classification of the plant.
3 If a refrigerating plant is intended to maintain the required conditions for transportation of liquefied gas in bulk in a gas carrier and complies with applicable requirements of *Part XII "Refrigerating Plants"* the distinguishing mark **LG** is added to the character of Classification of the plant.

4.2.3 Additional characteristics.

Additional details of conditions for cooling cargoes on board, specified temperature conditions for transportation of cargoes and other details are indicated in the Classification Certificate for Refrigerating Plant and in QRS of Ships if it is found necessary by QRS to specify the purpose or structural features of the refrigerating plant.

Number of thermal containers served by the refrigerating plant is indicated in the Classification Certificate for Refrigerating Plant.

4.2.4 Alteration of marks in class notation.

QRS may delete or alter a mark shown in the class notation in case of any modification or noncompliance with the requirements which served as the basis for the insertion of that mark into the class notation.

4.3 Technical documentation of a refrigerating plant

4.3.1 Plan approval documentation of a classed refrigerating plant.

Prior to commencement of a ship's construction, plan approval documentation with a sufficient scope of information to prove that the requirements of QRS Rules for a refrigerating plant are complied with, shall be submitted to QRS for review:
.1 Technical description of a refrigerating plant.
.2 cooling capacity calculations with indication of thermal load from each refrigerated cargo space and cold consumer.
.3 General arrangement plans of a refrigerating plant on board the ship.
.4 Circuit diagrams of working and emergency ventilation systems in the refrigerating machinery spaces with indication of the watertight bulkheads and fire-proof divisions, as well as the number of air changes per hour.
.5 Circuit diagrams of refrigerant, cooling medium, cooling water systems with indication of places for installation of instruments and automatic devices.
.6 Air cooling diagram with indication of watertight bulkheads and fire-proof divisions.
.7 Arrangement plans of equipment in refrigerating machinery spaces with indication of escape routes.
.8 Arrangement plans of equipment in refrigerated spaces with indication of places for installation of temperature control devices.
.9 Construction plans of insulation of refrigerated spaces with specification of insulating materials.
.10 Diagram of water screen system in refrigerating machinery space (for refrigerant of Group II);
.11 General arrangement plans of freezing and cooling arrangements and other refrigerating processing equipment.
.12 Circuit diagrams of automatic control, protection and alarm systems.
.13 List of machinery, vessels and apparatus of refrigerating plant with indication of technical characteristics.
.14 List of control devices and measuring instruments, protection and alarm systems with indication of technical characteristics.
.15 Tables of the values of the bounding surface areas of the refrigerated cargo spaces and holds with data on calculated heat transfer coefficient for each surface.
.16 Drawings of cargo cooling air ducts in thermo insulated containers with an indication of the layout on board.
.17 Drawings of air duct insulation with technical data of insulation materials.
.18 Drawings of sealing and flexible joints with indication of details on materials
.19 General arrangement plans of atmosphere control installation.
.20 List of equipment of the atmosphere control system, including control and automatic devices.
.21 Drawings of installation and fastening of machinery, vessels and apparatus.
.22 Arrangement plans of piping of refrigerant, cooling medium and cooling water system with indication of places of their penetration through the bulkheads, decks and platforms.
.23 Arrangement plan of emergency discharge system of refrigerant outboard.

4.3.2 Test program.

4.3.2.1 Test program with indication of the method of design thermal load generation (including a calculation of the power of additional heaters to be used) and the method of determining the actual averaged heat-transfer coefficient for the insulating structure of refrigerated cargo spaces shall be approved by *QRS* prior to commencement of the relevant tests.

QRS Class

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