

**SHIPPING REGISTER OF UKRAINE**

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**GENERAL REGULATIONS FOR THE  
CLASSIFICATION AND OTHER  
ACTIVITY**

**RULES FOR THE CLASSIFICATION  
AND CONSTRUCTION OF SHIPS**

**PART I CLASSIFICATION**

**Volume**

**1**



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**Shipping Register of Ukraine.**

**General provisions on technical supervision activities.**

**Rules for classification and construction of ships. Part I "Classification". Volume 1**

This volume includes "General provisions on technical supervision activities" and Part I «Classification" of Rules for classification and construction of ships.

This edition of the said normative documents has been prepared on the basis of the 2014 edition and subsequent amendments and additions to them, taking into account the experience of their application, changes in the applicable international conventions and codes adopted by the IMO, and changes in the applicable resolutions of the United Nations Economic Commission for Europe and directives of the European Parliament and Council (see the Rules for the Classification and Construction of Sea-Going Ships, the Rules for the Equipment of Sea-Going Ships, the Rules for the Cargo Handling Gear of Sea-Going Ships, the Load Line Rules of Sea-Going Ships, the Rules for the Classification and Construction of Mixed Navigation Ships, the Rules for the Classification and Construction of Inland Navigation Ships, the Rules for the Classification and Construction of Small Craft and the Rules for Classification and Construction for Specialized Ships).

Documents have been approved in accordance with the established approval procedure and come into force on 1 January 2020.

The rules are published in Ukrainian and English. In case of discrepancies between the Ukrainian and English texts and doubts as to the interpretation of these documents, the Ukrainian text shall prevail..

**Official edition of the Shipping Register of Ukraine**



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## **GENERAL REGULATIONS FOR THE CLASSIFICATION AND OTHER ACTIVITY**

### **1. GENERAL PROVISIONS**

#### **1.1 APPLICATION**

**1.1.1** These General provisions on the technical supervision activities hereinafter referred to as General provisions apply to classification and other activities of classification society Shipping Register of Ukraine hereinafter referred to as the Register carried out during:

review and approval of technical documentation of ships and Fixed offshore platforms hereinafter referred to as FOPs in construction, repair, reequipment and modernization, manufacture of materials and products for ships and FOPs;

technical supervision over ships and FOPs in construction, repair, re-equipment and modernization;

classification of ships and FOPs;

technical supervision over ships and FOPs in operation.

#### **1.1.2** Definitions and explanations.

For the purpose of General Provisions the following definitions and explanations apply:

*Rules (Rules of the Register)* are a code of the normative and technical requirements for items of technical supervision (specified in **1.3**).

*Administration means* government of the state whose flag the ship is entitled to fly or under whose authority the ship is permitted to operate in a particular case.

*Register requirements* are requirements of the Register rules, international conventions and other documents of the International Maritime Organization (IMO), governments having granted Register the relevant authorization, as well as additional requirements.

*Owner* means registered owner, owner of the ship, shipowner or any other party responsible by law or by contract to keep the ship seaworthy or in service, with particular regard to the provisions regarding the maintenance of class in the Rules for the Classification of Ships or in the applicable provisions specified in the special rules.

*Additional requirements* are the requirements caused by the item features or its operational conditions, which are not stipulated by the Register rules and other Register normative documents imposed by the Register to ensure the safety of items of technical supervision. Under safety, in this particular case, is meant safe navigation of ships and stationary offshore platforms, safety of life at sea, safe carriage of goods, environmental protection.

*Interested party* means a party other than the Register that has an interest or responsibility in a ship, product, installation or system subject to classification or certification (such as the owner of the ship and his representatives, shipbuilder, engine manufacturer or supplier of parts subject to inspection) that requests the service or on whose behalf services are requested.

*Client* means an interested party and any other party requiring services.

*Items of technical supervision (items of supervision)* are ships and other floating facilities, fixed offshore platforms, other offshore installations specified in **1.2.11**, classified by the Register, and the objects specified in Appendix 1 "Nomenclature of objects of technical supervision of the Register" of Part 1 of the "Rules for technical supervision of the construction of ships and the manufacture of materials and products".

*Services* means classification and other activities carried out by the Register upon request or on behalf of an interested party.

*Ship* means ships, loanches, boats and other special installations such as offshore structures, floating equipment and submersibles.

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

review and approval (agreement) of technical documentation;

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

## **1.2 CLASSIFICATION AND OTHER ACTIVITY OF THE REGISTER**

**1.2.1** The Register is a national classification society that carries out technical supervision and classification of civil sea-going vessels, mixed and inland navigation vessels, small craft and FOPs.

In addition, the Registry, being authorized by the Government of Ukraine and Governments of Other Countries in accordance with the provisions of the International Code for Recognized Organizations, carries out surveys within its terms of reference for compliance with the requirements of international conventions, agreements and contracts to which the above governments are parties.

**1.2.2** The Register is an independent technical organization of experts. The Register is impartial and neutral.

Register is an inspection body certified in accordance with the provisions of the international standard ISO / IEC 17020, and has a quality management system that meets and is certified for compliance with the applicable requirements of the international standard ISO 9001, which is confirmed by the relevant certificates.

The Register is also involved in the implementation of national and international rules and standards in accordance with the mandate of governments.

**1.2.3** The Register establishes technical requirements ensuring safe operation of ships and offshore installations in accordance with their purpose, safety of life at sea and safe carriage of goods by sea and inland waterways as well as pollution prevention from ships; it carries out surveys for compliance with the above requirements, assigns class to ships and offshore installations, determines the net and gross tonnage of sea-going ships and offshore installations and the tonnage measurement characteristics of inland navigation ships in its registry.

**1.2.4** The Register activity is based on the rules published by that body and is aimed at determining whether the items of technical supervision comply with the rules and with additional requirements.

The rules developed by the Register reflect the level of its technical experience at the time of their publication. Therefore, the Register, although it is also obliged through its research and improvement of developments, to constantly update the Rules, does not guarantee that they comply with modern science and technology at the time of publication or that they comply with the developed technical requirements of the Register or otherwise.

The rules for the classification and construction of ships are published on the Register's website: [www.shipregister.ua](http://www.shipregister.ua).

The interpretation of the requirements of the Register rules and other normative documents is within the competence of the Register only.

**1.2.5** The interested party shall be familiar with the Rules on the basis of which services are provided. With a special regard to classification services, special attention is paid to the rules on suspension, withdrawal and renewal of class.

In case of doubt or inaccuracy, the interested party shall immediately contact the Register for clarification.

The application and fulfillment of the rules and additional requirements are the obligation of design bureaus, shipowners, shipyards and manufacturers of materials and products to which the requirements of the rules apply.

**1.2.6** The Register activity does not substitute for the state surveillance of merchant shipping carried out by executive power responsible for transport and fisheries, nor does it interfere with technical control by shipowners, shipyards or firms (manufacturers).

**1.2.7** Classification activity of the Register covers the following:  
development and publication of rules and other normative documents;  
review and approval (agreement) of technical documentation;  
surveys of ships and offshore installations during construction, surveys of products at manufacture and repair as well as surveys of materials for shipbuilding during manufacture thereof;

surveys of ships and offshore installations in service, including surveys during conversion, modernization and repair;

assignment, renewal, reinstatement and reassignment of class;  
drawing up and issue of the Register certificates.

**1.2.8** Other activity of the Register covers:

surveys of ships and offshore installations during construction and in service (including surveys at conversion, modernization and repair), surveys of products at manufacture and repair as well as surveys of materials for shipbuilding during manufacture for compliance with the provisions of international conventions and agreements;

initiative surveys of ships, including the deficiencies of the port State Control Authorities / the requirements of the Flag State;

other activity not connected with classification of ships and offshore installations.

**1.2.9** Confirmation or certification of compliance of ships and FOPs, as well as ship equipment, materials and products that are objects of technical supervision, to the requirements of the Rules and normative documents of the Register, is exclusively the Register's competence and is carried out in accordance with the procedure established by the Register's normative documents.

Compliance with the requirements of the Register Rules in the construction of a ship or FOP or in the manufacture of ship equipment, material and products is subject to technical supervision, confirmed or certified by the provision of relevant certificates of the Register.

Any statements of the compliance of an object with the requirements of the Register Rules, made or documented by an organization other than the Register, cannot be considered confirmation of such compliance without a proper Register confirmation.

**1.2.10** The application of the Rules for the Classification and Construction of Ships and FOPs does not apply to possible claims for protection of third parties rights.

**1.2.11** The Register carries out classification civil sea and river (sea, mixed (sea-river and river-sea) and inland navigation, small) vessels and FOPs and technical supervision of these ships and FOPs in construction and operation, except sport craft and vessels of the State Fisheries Agency (self-propelled ships with the main engines having an output of 55 kW and upwards and non-self-propelled ships of 80 gross tonnage and upwards), as well as except for: ships and floating crafts with the largest hull length up to 2.5 meters, except for jet skis; water attractions, including "bananas" and the like; surfboards, in particular with a sail or a drive; antique and historical ships and their copies, designated as such by the manufacturer; canoes, kayaks, gondolas and pedal boats.

The application of the Rules for the Classification and Construction of Ships to a particular ship, depending on her type and purpose, is carried out in accordance with their application in accordance with 1.3, Part I "Classification" of these Rules.

**1.2.12** The Register carries out surveys of ship refrigerating plants from the point of view of ship's safety, safe carriage of goods, absence of the ozone-destructive effect of refrigerants upon the environment, as well as the classification of ship refrigerating plants.

**1.2.13** The Register carries out surveys of ship cargo-handling gear of 1 t lifting capacity and upwards.

**1.2.14** Technological devices and special gears of fishing, cable, technical and special-purpose fleet vessels are not subject to supervision of the Register, except for equipment specified in the relevant parts of the Rules.

**1.2.15** The Register considers and approves standards and other regulatory documents related to its activities. Standards and regulations applied without prior approval of the Registers are considered by the Register for compliance with the applicable requirements of Rules within the scope of the technical documentation provide for approval.

**1.2.16** The Register may perform expertise and participate in examination of technical matters within the scope of its activities.

**1.2.17** The Register publishes the register book of ships, which contains information about vessels longer than 24 meters, regardless of type and purpose, and on passenger ships, icebreakers, tugs, pushers, floating



cranes, ships of industrial fleet, special purpose ships and vessels for the carriage of dangerous goods regardless of their length having the Register class.

**1.2.18** Works (services) of the Register are paid according to the rates determined in accordance with the current pricing of the Register. Works are also paid in cases where it turns out the impossibility of achieving the results that the client wants, including the classification of the vessel or FOP facility due to non-compliance with the established requirements, regardless of the date of establishment of the non-conformity. In the case of non-performance or improper performance of obligations to the Register, including payment of services the Register has the right to delay the issue of certificates and other documents not to assign the class or when the class is already assigned, suspend or cancel the class of the vessel for which the duty to the Register is not executed or executed improperly, including remuneration, and withdraw (make record on the IWS validity) documents issued by the Register.

## **1.3 RULES**

### **1.3.1 Applicable Rules.**

**1.3.1.1** The Register developed, approved, published and applies in its activity on technical supervision the following Rules:

**.1** Rules for classification and construction of vessels, consisting of Part I «Classification» and Rules:  
Rules for Classification and Construction of Sea-Going Ships;  
Rules for Classification and Construction of Combined Navigation Ships;  
Rules for Classification and Construction of Inland Navigation Ships;  
Rules for Classification and Construction of Small Craft;

**.2** Rules for Equipment Sea-Gong Ships;

**.3** Load Line Rules for Sea-Going Ships;

**.4** Rules for Cargo Handling gear of Sea-Going Ships;

**.5** Rules for Classification and Construction of High-Speed Craft;

**.6** Rules for the Classification and Construction of Ships Carrying Liquefied Gases in Bulk;

**.7** Rules for the Classification and Construction of Ships Carrying Compressed Natural Gas;

**.8** Rules for the Classification, Construction and Equipment of Mobile Offshore Drilling Units and Fixed Offshore Platforms;

**.9** Rules for the Classification and Construction of Manned Submersibles and Ship's Diving Systems;

**.10** Regulations for Pollution Prevention from Ships;

**.11** Rules for Carriage of Grain;

**.12** Rules for Construction of Ships Hulls and Floating Structures Using Reinforced Concrete;

**.13** Rules for the Tonnage Measurement of Sea-Going Ships and Mixed navigation Shis;

**.14** Rules for the Tonnage Measurement of Inland Navigation Ships;

**.15** Rules for Construction of Ships Using the Elements of the Donor Vessels, Which Were in Operation;

**.16** Rules for Reconstruction of Inland and Combined Navigation Vessels;

**.17** Rules for Technical Supervision over the Construction of Ships and Manufacture of Materials and Products;

**.18** Rules for Ships Survey;

**.19** Rules for Survey of Small Craft in Operation;

**.20** Guidance for Survey of Ships in Operation;

**.21** Guidance for Technical Supervision over Mobile Offshore Drilling Units and Fixed Offshore Platforms.

**1.3.1.2** In addition to the Rules mentioned in **1.3.1.1**, the Register also applies in its activities on technical supervision the following rules and other regulations, including Rules of foreign Classification societies:

- .1 Regulations for the Measurement of Tonnage for the Suez Canal;
- .2 Rules for Measurement of Vessels for the Panama Canal;
- .3 other external normative documents approved by the Register.

**1.3.1.3** The Register also develops, publishes and uses guidelines on survey of ships and offshore installations in service, on technical supervision during construction thereof, at manufacture of materials and products for shipbuilding as well as other guidelines and technical requirements regulating the Register activity in other spheres.

### **1.3.2 Application of the rules to ships and offshore installations under construction, materials and products.**

**1.3.2.1** Newly published rules and amendments thereto come into force on the date stated in the annotation on the back of the title page. Before that date they shall be considered a recommendation.

**1.3.2.2** For new ships and offshore installations, being built in accordance with projects, approved by the Register, the rules and amendments thereto in effect on the date of signing the contract for construction of a ship (a series of ships) or FOPs are generally applied.

If the ship/FOP design is submitted to the Register for approval before the date of signing the contract for construction and in the absence of the contract, the rules and amendments thereto in effect on the date of the customer's request for the design review are applied. In this case, if the new rules or amendments to the rules according to which the ship design was approved, have become effective on the date of signing the contract for construction of the ship/ FOP, its approved design shall be updated to comply with the above rules or amendments.

**1.3.2.3** New or modified Register rules' requirements coming into force subsequent to the date of contract for construction of a ship (series of ships) may apply in the following cases:

- .1 when a justified written request is received from the party applying for classification;
- .2 when the keel has not been laid yet but more than one year has passed from the date of signing the contract for construction;
- .3 where previously approved plans are intended to use for a new contract for construction.

**1.3.2.4** Materials and products, technical documentation on which is submitted to the Register for approval after coming into force of the rules or amendments thereto, shall comply with the requirements of the above rules and amendments.

### **1.3.3 Application of rules to ships in service (except for the Rules for the Classification Surveys of Ships in Service).**

**1.3.3.1** Ships and FOPs in operation are subject to the requirements of the amended Rules, according to which they were built, unless otherwise indicated in the following publications of Rules or bulletins of additions and amendments to the Rules issued after the publication of Rules.

**1.3.3.2** Having followed repairs, conversion or modernization, a ship as well as appropriate equipment, arrangements, etc. shall, as a minimum, comply with the requirements of the Register rules and, where applicable, international conventions, codes previously applied to the ship.

**1.3.3.3** For the purposes of this paragraph, the term "unless otherwise specified" means the requirements of the Register and / or additional requirements or national requirements of the Administration applicable to a particular ship, or, for ships engaged in the international voyages, the requirements of international conventions and codes and / or the Administration, which indicate to which ships in service, to what extent and from what date or time they are required to apply.

### **1.3.4 Deviations from the Register rules.**

**1.3.4.1** The Register may allow using materials and products, ship structures and their separate arrangements other than those required by the Register rules, provided an equivalent level of safety to the established Register classification requirements is ensured.

In such case, data shall be submitted to the Register enabling to ascertain the materials, structures and

products in question meet the requirements ensuring the ship safety, safety of life at sea, safe carriage of goods by sea and by inland waterways as well as ecological safety of the environment.

**1.3.4.2** Where the structure of a ship, FOP separate machinery, arrangements, equipment and outfit or the materials used cannot be recognized as being adequately verified in service, the Register may require special tests to be held during construction and, in case of a ship in service, may reduce intervals between periodical surveys or extend the scope of these surveys.

When deemed necessary by the Register, appropriate restrictive entries may be made in the classification or other documents issued by the Register and in the Register of Ships. The restrictions are withdrawn subsequent to satisfactory results obtained in service.

## **1.4 DOCUMENTS**

**1.4.1** As a result of its activity, the Register issues relevant certificates:

- .1** certificates confirming compliance with the requirements of Rules for the Classification and Construction of Sea-Going Ships and rules for the classification and construction of particular types of ships;
- .2** certificates conforming ship's compliance and provided by the Merchant Marine Code;
- .3** certificates stipulated by international conventions and codes;
- .4** survey reports serving as the basis for issuing relevant certificates;
- .5** certificates for products, materials, works, services and processes confirming their compliance with the requirements of the Register rules.

Any ship documents issued by the Register on behalf of the Flag Administration of the vessel are issued on the terms and in form that specified by the appropriate instructions or regulations under which these documents are issued.

**1.4.2** The document confirming compliance of the vessel with the provisions of the European Parliament and of the Council 2009/45/EC of 6 May 2009 concerning the rules and safety standards on passenger ships on inland waterways, sea (coastal) navigation, hereinafter Directive 2009/45 / EC, with signs of navigation area under Part I of **2.2.5.1.5** "Classification" Rules for classification and construction of vessels is Passenger Ship Safety Certificate.

The document confirming compliance with the provisions of Directive 2009/45 / EC of the highspeed passenger vessel, which under the Directive must meet the requirements of the Code of Safety for High Speed Craft with the implementation of the Rules for classification and construction of high-speed vessels is High-speed Vessels Safety Certificate and the document for such vessel, which must meet the requirements of the Code of Safety for Dynamically Supported Crafts is Safety construction, equipment and supply certificate for Dynamically Supported Craft.

The Administration of the Flag State pursuant to Article 13 of Directive 2009/45 / EC is issued a permit to operate a high-speed craft and permit to operate a dynamically supported craft.

The provisions of Directive 2009/45 / EC apply to the following passenger ships, regardless of their flag, operating inland sea (cabotage) voyages:

- new and existing passenger ships with a length of 24 meters and over;
- high-speed passenger craft.

The Directive does not apply to:

- passenger ships that are:
  - military ships or troop carriers;
  - sailing ships;
  - vessels that are not propelled by mechanical means;
  - traditional ships;
  - wooden ships of primitive construction;
  - originals or individual copies of historic ships that were designed before 1965, built primarily from original materials;
  - pleasure yachts;
  - ships used exclusively in harbour areas;
  - coastal service ships; or
  - tenders.

- high-speed passenger craft that are:  
military ships or troop carriers;  
pleasure craft;  
ships used exclusively in harbour areas;  
coastal service ships.

**1.4.3** The Register under the authority of the Government of Ukraine on inland vessels navigating on the Danube additionally issues:

**Ship Certificate** – for ships:

with maximum hull length of 20 m or more;

$L \times B \times T$  of which is the volume of 100 m<sup>3</sup> or over;

tugs and / or pushers intended for towing, pushing the vessels referred to above, or bring them in motion on the part of the side;

passenger,

intended for use on inland waterways in accordance with European rules of navigation and classified in accordance with the Rules of IWS, which allows for regulations adopted by the Resolution of 68th session of the Danube Commission (doc. SC /SES 68/7) and entered into force on 1 January 2008 ., "Recommendations on Technical Requirements for Inland Navigation Vessels" in the version of 2014 amended in 2014 (doc. DC/CEU), 2015 (doc. DC/CEU 84/9) and 2016 (doc. DC/CEU 87/6), adopted by the above-mentioned Resolutions of the Danube Commission and annexed to UNECE Resolution №61 «Recommendations concerning coordinated at European level technical requirements applicable to inland navigation vessels» (Revision 2 of the annex to the resolution, doc. ECE / TRANS / SC.3 / 172 / Rev.2, adopted by resolution №91 of 05.10.2018), with the exception of the provisions of Chapter 23 "Crews", except for section 23-9, and Annexes 3 (safety signs and signals), in addition to fire warning signs, and 5 (service book), in accordance with the 1948 Convention on the Regime of Navigation on the Danube.

except ferries;

If the application of the requirements of 10.1 of Part III "Equipment, Arrangements and Outfit", which takes into account the special safety needs of persons with reduced mobility, is difficult in practice or involves unacceptably high costs, the Register and Administration may derogate from these requirements. These exemptions shall be specified in the Ship's Certificate.

Register, as the competent authority for the survey of inland navigation ships in accordance with the powers delegated by the Government of Ukraine, issues Ship's Certificate and is the Administration for determining the above Recommendations. The INS Rules, taking into account the provisions of these Recommendations, are put into effect by the Register, as an Administration, and apply to a ship whose keel is laid or which is at a similar stage of construction on the date or after the date of entry into force of the corresponding edition of the INS Rules, which, as defined by the Recommendations, is a new ship.

**ADN Approval Certificate or ADN Interim Approval Certificate** – for the ship complying with the requirements of Part XIII "Ships for the Carriage of Dangerous Goods" of the INS Rules, which take into account the requirements for ships annexed to the "European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways" (new consolidated edition entered into force on January 1, 2019).

The Register, as recommended for recognition within the framework of ADN, the classification society and recognized by Ukraine, the classification society and the survey authority, competent in the construction and survey of ships, delegating to it the authority to issue ADN Approval Certificate and ADN Interim Approval Certificate , issues the named certificates in Ukraine according to the order of the Ministry of Infrastructure of Ukraine dated 04.04.2017 No. 126 "On Approval of the Rules for the Carriage of Dangerous Goods by Inland Waterways of Ukraine" after bringing the vessel in accordance with the requirements of Chapter 8.1 of Part 8 and Part 9 of the ADN Rules of with its presentation for survey in accordance with 12.3 of Part IV of the Rules for the survey of ships for the issuance of the ADN Certificate of Approval in accordance with 1.16.1 of Chapter 1.16 of Part 1 of the ADN Regulations.

**Certificate of Fitness of the radar for operation on the Danube, Certificate of Fitness for operation of the rate of turn indicator and Certificate for the Accuracy of Installation and Precision of Operation of Radar and Rate of Turn Operator** – to radars, rate of turn indicators and the ship equipped with them, in accordance with the "Recommendations on the basic technical and operational parameters of radar stations

used in navigation on the Danube";

**Suez canal special Tonnage Certificate** – for the ships measured in accordance with the Regulations for the Measurement of Tonnage for the Suez Canal;

**Tonnage certificate for Inland Navigation Ships** – for the vessel measured according to "The Convention on the Measurement of Inland Navigation Vessels", 1966 and "Rules of measurement of inland navigation vessels".

**1.4.4** Vessels intended for the carriage of goods on inland waterways of Ukraine, measured according to the «Rules of measurement of inland navigation vessels» with the issue of **Measurement certificate for Inland Navigation Vessels**.

**1.4.5** Upon adoption by the Government of Ukraine of a normative legal act on the implementation of Directive (EU) 2016/1629 of the European Parliament and of the Council of 14.09.2016 on the establishment of technical requirements for inland navigation vessels, which amends Directive 2009/100 / EC and repeals Directive 2006/87 / EU as amended, which establishes minimum technical requirements for inland navigation vessels in zones 1, 2, 3 and 4 according to the standard ES-TRIN 2017/1 and repeals Directive 2006/87 / EC from 7 October 2018, with the authority of the Register as the competent authority, carry out appropriate inspections of inland navigation vessels and issue an **Inland Navigation Vessel Certificate** in accordance with the provisions of the said Directive, the Register issues:

**Inland Navigation Vessel Certificate** – for ships:

- with maximum hull length of 20 m or more;

$L \times B \times T$  of which is the volume of 100 m<sup>3</sup> or over;

tugs and / or pushers intended for towing, pushing the vessels referred to above, or floating equipment, or bring them in motion on the part of the side;

- passenger;

- floating equipment,

which are intended for operation on the inland waterways of Ukraine and are classified in accordance with the INS Rules 2016 as amended and supplemented by the bulletin No. 1, 2017 and No. 2, 2018, taking into account the provisions of the ES-TRIN 2017/1 standard, taking into account the provisions of the said Directive, except ferries.

## 1.5 RESPONSIBILITY OF THE REGISTER

**1.5.1** The Register carefully selects its surveyors and all others which ensure that the Register performs its functions, and authorizes to provide services to professionals who have sufficient skills and perform their functions with due diligence.

**1.5.2** The Register is responsible for failure to perform or for improper performance of its commitments only when found guilty (by intent or carelessness).

The Register covers the losses to persons entering with it into contractual relations, as stipulated by the RS rules, and whose losses result from its failure to perform or improper performance of its contractual commitments due to carelessness, to the amount not exceeding the contract fees in accordance with the agreement (invoice) for the services provided by the Register and provided solely the causal relationship has been proved between such failure to perform or improper performance of contractual commitments by the Register and the suffered losses.

**1.5.3** The Register is not liable for losses of the client, incurred in connection with the use of his rights specified in **1.2.18**. The Register's responsibility to the client for indirect losses is excluded.

## 1.6 CONFIDENTIALITY

**1.6.1** Register maintains confidentiality regarding all documents and other information provided to it in connection with the submitted applications for the provision of services. Transfer of documents and information to third parties only with the written consent of the authorized persons in each case of the party filed an application, except in cases where such transfer associated with obtaining official permits and documents for the contract (agreement) or payment of taxes, other obligatory payments, and in cases stipulated by the current legislation governing the obligations of the Parties. The authority must be proved in each case.

Duties of the Register to the authorities of the Flag State in accordance with existing agreements between the Register and Flag State remain unaffected.

**1.6.2** Information on the status and validity of the class and valid certificates, including their changes, changes in signs, class suspension, withdrawal, class recommendations / conditions, operating conditions or restrictions issued for classified ships and other related information that may be required, may be published on the Register website or distributed by other means without the prior consent of the interested party.

Information on the status and validity of other certificates can also be published on the Register website or distributed by other means without the prior consent of the interested party.

**1.6.3** In the event of a class change, establishment of a dual class or withdrawal from a dual / joint class, the interested party undertakes to provide or allow the Register to provide another classification society with all construction plans and drawings, certificates, documents and information concerning the classified ship, including its history file that another classification society may require for the purpose of classification in accordance with its applicable provisions and the relevant procedure. It is the responsibility of the owner to ensure that, if necessary, the consent of the builder is obtained taking into account the provision of plans and drawings to the new company, or by appropriately securing in a construction contract or other transaction.

In the event that the ownership of a vessel, product or system subject to certification is transferred to a new owner, the latter should have the right to access all relevant drawings, specifications, documents or information provided by the Register or which has been notified to the Register when providing its services, if this concerns the period before the transfer of ownership.

### **1.7 TERMS OF PROVISIONS**

Invalidation of individual provisions of the General Conditions does not entail invalidation of other provisions and the General Conditions in general.

In case of doubt about the interpretation of provisions of these General Conditions text in Ukrainian shall prevail.

## **2. SURVEYS**

### **2.1 GENERAL**

**2.1.1** For the surveys to be carried out, the shipowners, administrations of shipyards, firms (manufacturers) and other organizations (firms) shall ensure that the Register representatives have the opportunity to carry out ship, FOP surveys, as well as free access to all places where materials and products are manufactured and tested, and shall provide all conditions for the surveys to be carried out.

Where necessary, the Register may require to provide the access to surveyed items as well as the conditions for performing the work by Register surveyors together with external auditors when the latter carry out audits of the Register quality management system.

**2.1.2** Shipowners, shipyards, design bureaus and firms (manufacturers) shall fulfil the requirements of the Register or its surveyors when they are in the course of their duty.

**2.1.3** Any alterations on the part of shipowners, shipyards, design bureaus and firms (manufacturers) in respect of ship, FOP structure, materials and products to which the requirements of the rules apply shall be approved by the Register before they are put into service.

**2.1.4** Any controversies on technical issues arising between the interested party and the Register surveyor in the performance of his functions shall be brought up in writing as quickly as possible to the Register, so that any differences of judgment or discussion can be rectified. Controversial issues arising in the course of the Register's activities and not being resolved in the Register's subdivisions may be submitted by ship-owners, shipyards, enterprises (manufacturers) and other organizations (enterprises) directly to the Register's management. The decision of the Register management is final.

**2.1.5** The Register may refuse from survey in case the shipyard or firm (manufacturer) systematically violates the Rules or if the other Party to a contract violates it.

**2.1.6** When a material or product proves defective under a valid certificate, the Register may require additional tests or relevant repair to be carried out, and where the defects cannot be repaired, may cancel the certificate.

**2.1.7** Surveys carried out by the Register include, but are not limited to, visual inspection and non-destructive testing. Unless otherwise required, surveys are carried out by selective techniques and do not consist of a comprehensive inspection or monitoring of the vessel or the facilities subject to certification. The surveys and inspections carried out by the Register on board the ship do not necessarily require the constant and continuous presence of the Register surveyor. The Register may also conduct laboratory tests, underwater surveys and other verifications under the responsibility of qualified service providers. Survey methods and procedures are determined by the Register on the basis of its experience and knowledge and in accordance with generally accepted industry technical standards.

**2.1.8** The class assigned to the ship, the relevant reports, certificates or any other document or information issued by the Register reflects the Register's conclusion of compliance, at the time of the service provision, of the ship or product subject to certification, by the applicable Rules (taking into account the intended use and during the relevant time period).

The Registry is not required to testify or provide information regarding elements or facts that are not part of a specific survey initiated by or on behalf of an interested party.

**2.1.9** Neither act, certificate, seal on a document, conclusion, Classification certificate, document or information issued or provided as part of a service provided by the Register has any legal effect or consequences other than reflecting that, on the basis of a survey carried out by the Register, the ship, construction, materials, equipment, machinery or any other item covered by such document or information complies with the Rules. Any such document shall be issued solely for the use of the Register, its services and clients or other duly authorized bodies and for no other purpose. Therefore, the Register may not be held liable for any act or document issued by other parties on the basis of evidence or information provided by the Register. The validity, application, content and interpretation of the Classification Certificate or any other document or information issued by the Register in connection with its services is regulated by the Rules of the Register, which is the only subject with the right to make such an interpretation.

**2.1.10** The classification of a ship or the issuance of a certificate or other document related to the classification or certification and, in general, the provision of services by the Register shall have the force granted in accordance with the Register Rules at the time of assigning a class or issuing a certificate; in no way does it mean a certificate or guarantee of seaworthiness, structural integrity, quality or suitability for a particular purpose or service of any ship, structure, material, equipment or machinery inspected or tested by the Register.

**2.1.11** Any document issued by the Register in connection with its activities reflects the state of the vessel or the subject of certification or other activities at the time of survey.

**2.1.12** The rules, surveys and actions carried out by the Register, reports, certificates and other documents issued by the Register are in no way intended to replace the powers and duties of other parties, such as Governments, designers, shipbuilders, manufacturers, repairmen, suppliers, contractors or subcontractors, owners, operators, charterers, insurers, sellers, or those specified to purchase a vessel or other surveyed product or system.

These documents and activities do not exempt such parties from any performance, warranty, liability, authority or obligation (also of a contractual nature) expressed or which is implied by, or in any way assigned to them, they also do not provide such parties with any right, claim or actions reason against the Register. With particular attention to the duties of the ship owner, the services provided by the Register do not relieve the owner of his obligation to ensure proper maintenance of the ship and ensure seaworthiness at all times. Likewise, the Rules, performed surveys, reports, certificates and other documents issued by the Register, which are not intended to insure the buyers of the vessel, its components or any other surveyed or certified products, do not relieve the seller from obligations arising from legislation or agreement regarding quality, commercial value or product characteristics that are the subject of the agreement.

Therefore, in no case does the Register assume the obligations of the aforementioned parties, even if these are consultations in connection with issues that do not fall within the scope of its Rules or other documents.

Taking into account the above, the interested party assumes the obligation to release and withhold the Register from any third party claim, as well as from any liability regarding the latter regarding the services provided.

Since they are not provided for in these General Regulations, the powers and obligations of the owner and interested parties in relation to the services provided by the Register are described in the Rules applicable to the specific service provided.

## **2.2 SURVEYS DURING THE MANUFACTURE OF MATERIALS AND PRODUCTS**

**2.2.1** The relevant parts of the Rules contain lists of materials and products the manufacture of which shall be surveyed by the Register, as well as technological processes specified by the Register.

By special agreement, the Register may carry out the surveys of materials and products not mentioned in the above lists.

**2.2.2** Materials and products within the Register terms of reference shall be manufactured in accordance with technical documentation approved by the Register.

**2.2.3** During surveys, the Register may check compliance with structural, technological and production standards and processes which are not regulated by the rules, but which may influence the fulfillment of the rules requirements.

**2.2.4** Application of new or for the first time provided to the Register materials, products or processes which are subject to supervision of the Register in the construction and repair of ships and FOPs, manufacturing materials and products must be approved by the Register. For this purpose, specimens of the material, product or the new process shall be tested in the scope agreed with the Register subsequent to their technical documentation being approved by the Register.

**2.2.5** The Register surveys during the manufacture of materials and products are carried out by Register surveyors, or may be entrusted by the Register to another classification society in accordance with an agreement on mutual substitution.

**2.2.6** In cases specified by the Register, the manufacturing works will be surveyed by the Register to inspect the facilities for manufacturing materials and products complying with the Register requirements.



**2.2.7** In the process of surveys during manufacture materials and products shall undergo the surveys and tests according to the procedures and within the scope prescribed by the Register.

**2.2.8** Materials and products manufactured in accordance with the Register requirements shall be provided with the documents specified by the Register and, where necessary, the brands and marking enabling to determine their compliance with the above documents.

**2.2.9** In sound cases, the Register may establish special conditions for the application of particular products.

### **2.3 SURVEYS OF SHIPS AND FOPs UNDER CONSTRUCTION, RECONSTRUCTION AND CONVERSION**

Surveys of ships and FOPs under construction, reconstruction and conversion are carried out by Register surveyors on the basis of technical documentation approved by the Register. The scope of examinations, measurements and tests during surveys is determined by the Register on the basis of current instructions and proceeding from the situation.

### **2.4 SURVEYS OF SHIPS AND FOPs IN SERVICE**

Surveys of ships and FOPs in service are carried out according to the Rules for the Classification Surveys of Ships in Service and other Register normative documents.

### **2.5 SURVEYS IN COMPLIANCE WITH THE REQUIREMENTS OF INTERNATIONAL CONVENTIONS AND AGREEMENTS**

#### **2.5.1 General.**

The requirements of the following international documents, as well as amendments thereto, are taken into account in the relevant Register rules and normative documents:

International Convention for the Safety of Life at Sea, 1974 (SOLAS 74), as amended by the Protocols of 1978, 1988 relating thereto;

International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78);

International Convention on Load Lines, 1966 (LL-66), as modified by the Protocol of 1988 relating thereto (revised in 2003);

International Convention on Tonnage Measurement of Ships (TONNAGE), 1969;

International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM Convention), 2004;

International Convention on the Control of Harmful Anti-fouling Systems on Ships (AFS Convention), 2001;

Occupational Safety and Health (Dock Work) Convention, 1979 (No. 152) and ILO Code of Practice on Safety and Health in Ports, 2005;

Convention regarding the regime of navigation on the Danube, 1975;

Convention on the Measurement of Inland Navigation Vessels, 1966;

Convention on the International Regulations for Preventing Collisions at Sea, 1972 (COLREGs);

Radio Regulations, 2012;

International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code);

International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code);

International Code of Safety for High-Speed Craft (HSC Code);

Code for the Construction and Equipment of Mobile Offshore Drilling Units (MODU Code);

Code of Safety for Special Purpose Ships (SPS Code);

Code of Safety for Diving Systems;

International Code on Intact Stability, 2008 (IS Code)

Stockholm Agreement (special requirements for the stability of ro-ro passenger ships), 1996 (Stockholm Agreement);

Code on Alerts and Indicators;

International Life-Saving Appliance Code (LSA Code);

International Code for Fire Safety Systems (FSS Code);

International Code for Application of Fire Test Procedures (FTP Code);  
 International Code of Safety for Ship Using Gases or Other Low-Flashpoint Fuels (IGF Code);  
 Code of Safe Practices for Ships Carrying Timber Deck Cargoes, 2011 p. (Timber Code).  
 International Code for the Safe Carriage of Grain in Bulk (International Grain Code);  
 Code of Safe Practice for Cargo Stowage and Securing 1991 (CSS Code);  
 International Code for Ships Operating in Polar Waters (Polar Code);  
 International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-level Radioactive Wastes on Board Ships (INF Code);  
 International Maritime Solid Bulk Cargoes Code (IMSBC Code);  
 International Maritime Dangerous Goods Code (IMDG Code);  
 Code of Safe Practice for the Carriage of Cargoes and Persons by Offshore Supply Vessels (OSV Code);  
 Code for the Transportation and Handling of Hazardous and Noxious Liquid Substances in Bulk on Offshore Support Vessels (OSV Chemical Code);  
 Code on noise levels on board ships 2012 (Noise Code);  
 Technical Code on Control of Emission of Nitrogen Oxides from Marine Diesel Engines, 2008 (NOx Technical Code);  
 International Ship and Port Facility Security (ISPS) Code 2003 (ISPS Code);  
 inter-governmental agreements on load lines in force;  
 The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN) 2000;  
 Directive 2009/45 / EC on safety rules and standards for passenger ships, 2009 (Directive 2009/45 / EC);  
 Directive 2003/25 / EC on specific requirements for the stability of ro-ro passenger ships, 2003 (Directive 2003/25 / EC);  
 Directive (EU) 2016/1629 laying down technical requirements for inland navigation vessels, 2016 (Directive (EU) 2016/1629);  
 Directive 2013/53 / EU on pleasure craft and passenger ships, 2013 (Directive 2013/53 / EU);  
 Directive 2014/90 / EU on marine equipment, 2014 (Directive 2014/90 / EU)  
 and a number of other normative documents used in international and judicial practice, including applicable resolutions of the United Nations Economic Commission for Europe and the Danube Commission, national requirements and documents of the Administrations.

The provisions of the said conventions, codes, agreements, resolutions and documents by the Administration are applied to ships in accordance with the requirements of the Rules and the provisions of these documents, national requirements and documents of the Administration.

**2.5.2** Surveys of items falling under the requirements of international conventions and agreements are carried out in conformity with approved technical documentation and Register normative documents considering the requirements of the above conventions and agreements.

Survey of ships in accordance with international conventions, agreements and directives with issue of relevant documents shall be carried out in accordance with the provisions of Part IV "Survey of ships in accordance with international conventions, codes and resolutions, as well as agreements, directives and resolutions for inland waterways of Europe".

# **RULES FOR THE CLASSIFICATION AND CONSTRUCTION OF SHIPS**

## **PART I. CLASSIFICATION**

### **1. GENERAL**

#### **1.1 RULES**

**1.1.1** The basis for classification and construction of vessels and other floating structures and technical devices that belong to them are:

- Rules for classification and survey of vessels of the Shipping Register of Ukraine, further the Register, applied in each case edition and

- Rules of construction relating to that ship, taking into account the type or the appropriate device in the edition in force at the time of approval of the ship's project by the Register or signing a contract for its construction according to **1.3.2.2** General provisions on technical supervision activities.

Rules for construction include rules for materials and welding, as well as other editions of the Register and in this case apply special rules listed in **1.3.1** General provisions on technical supervision activities.

This part of the Rules for classification and construction of vessels is common to:

- Rules for classification and construction of sea-going ships;
- Rules for classification and construction of mixed navigation ships;
- Rules for classification and construction of inland navigation ships;
- Rules for classification and construction of small craft, which are part of the Rules for classification and construction of vessels.

For special types of ships, namely: gas carriers, chemical carriers, high-speed craft, type A wip planes, mobile offshore drilling units, as well as for fixed offshore platforms (FOPs) and manned submersibles and ship's diving systems, the provisions of this part apply in accordance with the requirements of the Rules for classification and construction of these ships and FOPs.

**1.1.2** In Rules for classification and construction of vessels under classification should understand the development, publication and application of the Rules, the permanent implementation of which, with proper maintainance of the vessel by the ship owner or operator will provide:

structural strength and integrity of the hull and its parts, including structural fire protection, seaworthiness of the vessel (her stability) in all cases provided for under certain workload windwave conditions,

safe and reliable operation of its propulsive installation systems and ship control devices, other systems, auxiliary machinery and equipment, including fire-fighting, and

thus will safely operate the vessel in accordance with her purpose.

**1.1.4** Rules of the Register are not applied to ships and craft that is not subject to classification and technical supervision of the Register, namely military vessels, Derzhrybahenstva (self-propelled - with main engine capacity of less than 55 kW, not self-propelled - with gross tonnage of less than 80 register tons) sports crafts as well as vessels and boats under **1.2.11** of the General provisions on technical supervision activities and **1.3.4.2** of this Regulation.

**1.1.5** National rules such as the State Flag, remain intact relatively to Rules of classification. Various established in international agreements, requirements captured in the Rules (refer to **2.5.1** General regulations for the classification and other activity). In case of differences between the requirements of the Rules and international agreements priority for vessels that have to comply with international agreements is provided to these agreements if these requirements do not lower the safety level stipulated by the Rules.

#### **1.2 DEFINITIONS AND EXPLANATIONS**

##### **1.2.1 Definitions**

**1.2.1.1** For the purpose of the Rules for the Classification and Construction of Ships the following definitions and explanations have been adopted (unless expressly provided otherwise in particular Parts of the Rules):

*Antique or historic ship* (*Traditional ship* in the terminology of UNECE and EU regulatory documents) - a ship that, taking into account its service life, its technical characteristics or design, its rarity, its importance for the storage of traditional principles of navigation or inland navigation methods or its significance from the point of view of a given historical era, deserves to be preserved, and is exploited primarily for ostentatious purposes or in the form of an exact copy (refer to **1.2.11** of the General Provisions for Classification and Other Activities and **1.3.4.2**)

A *barge* is a non-self propelled cargo ship designed to be towed or pushed.

A *barge carrier* (*lighter carrier*) is a dry cargo ship carrying cargo in shipborne barges (lighters).

A *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, and also without passengers, crew and their effects.

A *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).

*Cargo - passenger ship* is a cargo ship, which is additionally equipped for transportation or carrying more than 12 passengers, including persons accompanying the present load. Cargo passenger ship shall meet the applicable integrated requirements for cargo and passenger vessels.

*Offshore industrial activities* are the construction, maintenance, operation or servicing of offshore facilities related, but not limited, to exploration, the renewable or hydrocarbon energy sectors, aquaculture, ocean mining or similar activities.

*Dump-scow* is a self-propelled or non-self-propelled ship designed for transporting soil.

*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<sup>3</sup> and the displacement of a light ship. Ships intended solely for navigation in areas with fresh water, displacement of the ship by cargo waterline accepted for waterline corresponding to designated freeboard for the area of navigation, stated in the class of the vessel, in water with a specific gravity of 1.0 t/m<sup>3</sup>.

*Crew* means all available on board individuals who provide navigation and maintenance of the vessel, her machinery, systems and appliances necessary for propulsion and safe navigation of the ship, or serving persons on board.

*Crew of a fishing vessel* means persons engaged in any business on board a ship connected with its purpose.

*Industrial personnel* means all persons who are transported or accommodated on board for the purpose of offshore industrial activities performed on board other vessels and/or other offshore facilities and meet the criteria set out below.

Such industrial personnel should not be considered or treated as passengers.

For the purpose of these Interim Recommendations, all industrial personnel should:

**.1** be not less than 16 years of age;

**.2** prior to boarding the ship, receive appropriate safety training, meeting the standard in paragraph 2.1 of section A-VI/1 of the STCW Code. Administrations may accept other industrial training standards such as those of the Global Wind Organisation (GWO), Offshore Petroleum Industry Training Organisation (OPITO), Basic Offshore Safety Induction and Emergency Training (OPITO accredited), if they consider these appropriate alternatives;

**.3** receive on board ship specific safety familiarization that includes, but is not limited to, the layout of the ship, and handling of the safety equipment, as appropriate. The standard in paragraph 1 of section A-VI/1 of the STCW Code, or equivalent, should be used as the standard;

**.4** be familiarized with specific procedures, e.g. transfer procedures on and off the ship while at sea, as appropriate;

**.5.1** be accounted for in the ship's life-saving equipment; and

**.5.2** be equipped with personal protective clothing and equipment suitable for the safety risks to be encountered both while on board the ship and being transferred at sea; and

.6 meet appropriate medical standards. The standard in section A-I/9 of the STCW Code, applicable to engineers, or equivalent, may be used as a standard.

IMO guidance (MSC-MEPC.7/Circ.10) or relevant industry standards should be taken into account, to the extent possible, when transferring industrial personnel at sea.

A *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.

A *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).

*Commercial carriage of passengers* means boat trips, excursions, tourism, cruises, regular and irregular voyages between berths or ports, the operation of a ship in at berth and other types of commercial operation of a ship with passengers on board, carried out on the basis of a license obtained for the carriage of passengers by water transport in accordance with current legislation.

Sea and inland navigation non-passenger vessel (pleasure, voyage, etc.) intended for the carriage of passengers may be used for the commercial carriage of passengers provided that its equipment complies with the requirements of the SS Rules, the Rules for the equipment of sea-going ships and the Load Line Rules of sea-going ships and INS Rules for passenger ships. At the same time, accounting for the established number of passengers (people) on the ship is the subject of special consideration by the Register. In this case, the requirements of Part XVI "Special Requirements Applicable to Pleasure Crafts" of the INS Rules do not apply.

A small craft intended for the carriage of passengers may be used for the commercial carriage of passengers subject to the requirements of Part XIII "Special requirements for ships for the commercial carriage of passengers" of SC Rules.

A *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.

*Container carrier* is a ship, which is not a container ship, but is intended for the carriage of goods in containers of the international standard

*Copy of an antique or historic ship* (Exact copy of a traditional ship in the terminology of UNECE and EU regulatory documents) - a ship which is constructed in the form of a corresponding traditional ship using mainly source materials and appropriate construction methods and on the basis of appropriate plans or models (refer to **1.2.11** of the General Provisions for Classification and Other Activities and **1.3.4.2**).

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

An *icebreaker* is a self-propelled ship intended for various types of icebreaking operations to maintain navigation in the freezing seas (for details refer to **2.2.3.1.1**).

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

A *small craft* is a ship classified in accordance with the Rules for the Classification and Construction of Small Craft

*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.

*Sea-going ship* is a ship which by her technical characteristics suitable and duly admitted to operation with a view of sea navigation on waterways and classified in accordance with the Rules for classification and construction of sea ships;

A *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). The term "bulk carrier" is interpreted with the understanding under this definition as follows:

- primarily to carry dry cargo in bulk. means primarily designed to carry dry cargoes in bulk and to transport cargoes which are carried, and loaded or discharged, in bulk, and which occupy the ship's cargo spaces exclusively or predominantly; and

- includes such types as ore carriers and combination carriers and constructed generally with single deck, top-side tanks and hopper side tanks in cargo spaces. means that ships are not considered outside the definition of bulk carriers on the grounds that they are not ore or combination carriers or that they lack some or all of the specified constructional features.

– For ships built before 1 July 2006, the following interpretation of the definition of "bulk vessel" has been adopted :

– A ship which design includes one deck, side tanks and side bilge tanks in cargo spaces and which is intended mainly for transportation of bulk cargoes; or

– Ore carrier; or

– Combined ship.

For this "ore carrier" means sea single-deck ship having two longitudinal bulkheads and double bottom area along the length of the cargo spaces for the carriage of ore only in the central compartment; "Combined ship" means a tanker designed to carry oil or dry bulk cargoes in bulk.

A *roll-on/roll-off ship* is a ship specially designed for transportation of various wheeled vehicles (cars, rolling stock, tracked vehicles, trailers with and without cargo), in which the cargo loading operations are performed preferably in a horizontal direction - by a roll-on/roll-off.

A *docklift ship* is a dry cargo ship adapted to carry out cargo handling operations using the docking principle in ports and protected water areas.

A *tanker* is a ship intended for the carriage of liquid cargoes in bulk, including:

a *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 **2.2.29**;

*an oil tanker* is a ship intended for the carriage in bulk of crude oil and petroleum products having a flash point 60°C and below for sea-going ships, with Reid vapour pressure being below atmospheric pressure;

*an 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;

*an oil recovery ship* 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;

*an oil recovery ship (>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;

*a bilge water removing ship* is a ship designed to remove the bilge water from the machinery spaces of ships.

A *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.

A *passenger ship* is a ship intended for or carrying more than 12 passengers.

A *roll-on/roll-off passenger ship (ro-ro passenger ship)* is a passenger ship with enclosed or open cargo spaces which are loaded/unloaded in a horizontal direction, or with special category spaces as defined in **1.5.4.3-1.5.4.4** and **1.5.9**, Part VI "Fire Protection" of the Rules for the classification and construction of sea-going ships.

Classed among passenger ro-ro ships are also ferries, i.e. ships loaded/unloaded in the horizontal direction which regularly carry passengers and which carry vehicles with fuel in their tanks and/or railway carriages on open and/or enclosed decks at ferry crossing.

A *berth-connected passenger ship* means a berth-connected ship used as a floating hotel or hostel, floating restaurant (bar, café, casino, disco, games room), berthing pontoon, floating jetty, a boat for training of specialists and crew of ships or other purposes with the provided accommodation of more than 12 passengers on vessel.

*Patrol ship* means a ship used by surveillance, police, customs, rescue and other government services.

*Floating craft* is either self-propelled or non-self-propelled floating object, including stationary, that is used to carry cargo, baggage and mail, passengers, fish or other marine or river craft, rescue people, towing other floating objects, hydraulic engineering, scientific, educational, sports, entertainment purposes, and is operated on water.

A *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.

A *lightskip* 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.

*Pleasure craft* is a ship, used on a non-commercial basis solely for recreation and has on board not more than 12 people.

A *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).

*Crew boat* is a self-propelled vessel designed and equipped for transportation and travelling of officials or ship's crew in quantity not exceeding 12 people, excluding crew.

An *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 one.

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

*Special personnel* all persons who are not passengers or crew members or children not older than one year and who are on board in connection with the special purpose of the ship or in connection with special work on board this ship, that is perform special responsibilities related to specific operational purpose of the vessel, which are prescribed and over the number of staff required to perform regular duties relating to navigation, operation and maintenance of vessel mechanisms or employed in services of people on board. The number of special personnel includes the number of passengers not more than 12 who are on board. In the presence on board of more than 12 passengers, the ship is considered as a passenger vessel.

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. Such training should take place in accordance with the training program approved by the Administration;
- 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.

Where a ship is used for special purposes, such as providing diving operations or conducting oceanographic research, the persons on board in connection with these special purposes should be treated as special personnel.

A *berth-connected ship* is a ship or floating facility, which is in operation when lying at a water area distanced from the shore or aground 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.

A *ship* means a self-propelled or not self-propelled floating structure that is used for navigation in sea areas and / or inland waterways that meet her class.

*Personnel ship* is a ship intended for the carriage of industrial personnel.

A *shipborne barge (lighter)* is a non-self-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.

*Inland navigation ship* means a vessel which by her characteristics fit and duly admitted in established order for operation at Inland Waterways and classified in accordance with the Rules for classification and construction of inland navigation vessels;

A *ship for the carriage of vehicles* cargo ship which carries cargo only in ro-ro spaces or spaces for the carriage of vehicles and which is designed to carry empty vehicles as cargo.

A *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. The ship may be used for towing operations provided the appropriate requirements of the Register rules are complied with.

*Ship engaged in harbour towing* means a ship engaged in an operation intended for assisting ships or other floating structures within sheltered waters, normally while entering or leaving port and during berthing or unberthing operations.

*Ship engaged in escort operation* means a ship specifically engaged in steering, braking and otherwise controlling of the assisted ship during ordinary or emergency manoeuvring, whereby the steering and braking forces are generated by the hydrodynamic forces acting on the hull and appendages and the thrust forces exerted by the propulsion units.

*Ship engaged in anchor handling operations* means a ship engaged in operations with deployment, recovering and repositioning of anchors and the associated mooring lines of rigs or other vessels. Forces associated with anchor handling are generally associated with the winch line pull and may include vertical, transverse, and longitudinal forces applied at the towing point and over the stern roller.

*Ship engaged in lifting operation* means a ship engaged in an operation involving the raising or lowering of objects using vertical force by means of winches, cranes, a-frames or other lifting devices.

*Ship engaged in coastal or ocean-going towing* means a ship engaged in an operation intended for assisting ships or other floating structures outside sheltered waters in which the forces associated with towing are often a function of the ship's bollard pull (MSC/Circ.884)).».

*Vessel with auxiliary aero-hydrodynamic equipment* is a vessel which is designed so that during the movement much of its mass is supported by aero-hydrodynamic forces generated by this equipment.

*The ship of mixed (sea - river) navigation* is a ship which by its characteristics is fit and duly admitted for operation in established order for navigation mainly on maritime waterways and the possibility of navigation on inland waterways and is classified in accordance with the Rules for classification and construction of sea vessels.

*The ship of mixed (river-sea) navigation (ship of mixed navigation)* is a ship classified under the Rules for classification and construction of vessels of mixed navigation which by her characteristics is fit and duly admitted in established order for operation on Inland Waterway with access to coastal marine areas.

*Hydrofoil (HV)* is a ship supported while driving above the water by hydrodynamic forces generated by foils.

*Hovercraft (HC)* is a ship in which all or a substantial part of her weight is supported by air pressure pumped in enclosed space underneath the ship, called the air skirt. HC can be amphibious (ACV) and skeep (SES) type.

A *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 people, 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 and other ships engaged in processing of living resources of the sea and not engaged in catching; salvage ships, cable-laying ships, seismic survey ships, diving support ships, pipe layers, floating cranes and crane ships.

*Industrial fleet ship* is a self-propelled or non-self-propelled vessel designed to carry out auxiliary work



that ensures navigation, or the extraction of sand, soil, stone, etc. (Dredgers, sand loaders, cranes, workshops, etc.).

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.

*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.

A *cargo ship* is a self-propelled or non-self-propelled ship intended for the carriage of goods and passengers.

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.

*Trimaran* is a ship in which the middle tonnage hull is connected by a special construction with two side hulls.

A *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.

*Standby boat* is a ship intended for rescue operations and standby service in areas of industrial activities at sea.

Definitions concerning specific types of ships (nuclear vessels and floating structures, atomic technological service vessels, high-speed crafts, dynamically supported vessels, WIG craft, gas carriers, chemical carriers, drilling ships, floating rigs and stationary offshore platforms, habitable underwater vessels and ship diving facilities) are provided in the relevant Rules for classification and construction of these types of vessels. The list of such Regulations is given in **1.3.1** of General provisions on technical supervision.

**1.2.1.2** In order to use the provisions of Directive 2009/45 / EC of the European Parliament and of the Council of 6 May 2009 on rules and safety standards for ships, which entered into force on 15 July 2009 (revised version as amended by Directive 2010/36 / EU of 01.06. 2010 (effective from 29.06.2010), Directive (EU) 2016/844 of 27.05.2016 (effective from 01.07.2017) and Directive (EU) 2017/2108 of 15.11.2017 (effective from 20.12. 2017), hereinafter Directive 2009/45 / EC (refer to **1.4.2** of the General Provisions for Classification and Other Activities) the following definitions apply:

**.1** *High-speed passenger craft* means a high-speed vessel, as defined in Regulation X/1 of the SOLAS 1974 Convention, in its up-to-date version, carrying more than 12 passengers, excluding passenger ships operating inland waters within a distance of not more than 20 miles from the shoreline, corresponding to the average tidal height if:

- their tonnage, which corresponds to the design waterline, is less than 500 m<sup>3</sup> and
- their maximum speed is less than 20 knots.

**.2** *Sailing craft* means a ship sailing, even if it is equipped with an engine for auxiliary and emergency purposes.

**.3** *A coastal service ship or a coastal service launch* means a ship / used used for the transport and accommodation of industrial personnel not engaged in work on board a ship / launch that is essential to its commercial activities.

**.4** *Pleasure craft* is any craft of any type of navigation used on non-commercial basis and intended solely for recreation.

**.5** *Tender* means a ship launch used to carry more than 12 passengers from a berth-connected ship to the shore and back.

**.6** *Traditional ship* means any historic passenger ship designed before 1965 and their copies made primarily from original materials, including those designed to stimulate and promote traditional skills and maritime navigation and also serve as living cultural monuments operated in accordance with traditional principles of navigation and technics.

### 1.2.2 Explanations

In addition to those given in 1.1.2 of the General Provisions for Classification and Other Activities, the following explanations are adopted:

*Alternative constructions and appliances* are constructions or measures and appliances that differ from those provided for by the requirements of chapters II-1, II-2 and III of the SOLAS international convention, but are suitable for meeting their objectives and approved by the Flag State Maritime Administration in accordance with the requirements of the convention. The term includes a wide range of facilities, including alternative ship structures and systems based on new or unique design solutions, as well as traditional ship structures and systems installed in alternative gears or systems.

*Deviation* is the use of equipment, material, arrangements, device or design solutions other than those prescribed by the classification requirements of the RU rules and duly approved by the Register.

*Measurement of distances* - unless explicitly stipulated otherwise in the text of the regulations in SOLAS Convention, International Convention on Load Lines and MARPOL Convention and any of their mandatory Codes, as well as in the text of the RS rules and guidelines, distances (such as tank length, height, width, ship (or subdivision or waterline) length, etc.) shall be measured by using moulded dimensions.

An 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.

*Date of contract for construction of a ship (series of ships).*

**.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 the Register 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:

**.2.1** such alterations do not affect matters related to classification; or

**.2.2** 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 the Register for approval.

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

**.3** 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 change 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.

*Notes* : By optional ships, ships are meant, which are included in the contract with the condition of the additional confirmation of their construction (order) by a prospective owner. This explanation became effective on 1 July 2009.

*Equivalence* is the use of equipment, material, arrangements, device or design solutions other than those prescribed by the international statutory requirements or approved by the Administration in compliance with the requirements of SOLAS, LLand MARPOL Conventions.

*Elements of the metal hull design* - except as described in the Rules of structural elements of ship's metal

hull definitions, their definitions are adopted in accordance with ISO 2337- for Ukrainian vessels and according to harmonized standards.

*Occasional navigation* - irregular operation of vessels in the area (area of navigation) of a higher level or in ice conditions that is allowed by the Register, subject to additional requirements for the design, freeboard, equipment, supply and limitations of navigation area, wind-wave mode, seasonality, ice conditions, etc.

*The Register class (class)* is a combination of conventional characters and descriptive notations assigned to the ships, other floating facilities, as well as to fixed offshore platforms, which define their structural features, purpose and operational conditions stipulated by the Register rules.

*An operator* is a physical person or legal entity operating a ship on the basis of a contract concluded with an owner or shipowner.

*Main dimensions of the vessel* - except as described in the Rules of ships main dimensions identifications, their definition is adopted in accordance with ISO 2355- for Ukrainian vessels and according to harmonized standards.

*Special consideration* is the determination of the extent, to which an object under technical supervision meets the additional requirements.

*Standards* - a term that concerning the Rules means various kinds of standards and other regulatory technical documents of any countries agreed or recognized by the Register.

*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.

*A 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 t 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.

*Dual class* is a class of a ship classed with two societies entered into Dual Classification Agreement.

### **1.2.3 Hydrometeorology for ships**

#### **1.2.3.1 General.**

**1.2.3.1.1** Characteristics of wind are adopted according to the Beaufort scale adopted by the World Meteorological Organization (WMO).

**1.2.3.1.2** The relationship between wind and waving with reference to the distance from the shoreline is adopted for ocean and marine areas based on the basic characteristics of fully developed waving over the spectrum of Pearson - Moskovyts listed in the Table 1.2.3.1.

#### **1.2.3.2 Terminology.**

**Wind** – horizontal air movement.

**Wind direction** - is determined on sides of the world of rumba under Rule: the wind blows in compass. Wind direction which changes frequently is called unstable. In terms of river wind that blows down, is called upper wind, from the bottom up - lower wind. The name of the wind is correct only for a particular area of the river.

**Wind speed** is expressed by the number of meters, passed by air mass in one second.

**Squall** - sudden appearance and strong wind, or abrupt temporary change of its direction, or a sharp increase in its speed.

**Waves on a water surface by origin (forces that cause waving)** are divided into the following types:

- **Anomobaric** arising from the recession and the surge of water, as well as sharp changes in atmospheric pressure;

- **Ripples** - waving that continues after the wind has died down, weakened, or that changed the direction and distributed by inertia in the form of free waves;

- **Wind waves**, generated by the wind. Wind waves are asymmetrical, their windward slope is sloping, leeward - steep; Mouth - that arise at the mouth of the rivers at their confluence in the sea, lakes and rivers in shallow areas (bar);

- **Dead wave** - waving that spreads by inertia in complete calm;

- **Tidal wave** arising under the forces of attraction of the Moon and the Sun;

- **Seiche** - free gravitational standing waves in closed or semi closed basins;

- **Ship waves** formed during the movement of the vessel;

- **Chopping** - chaotic accumulation of waves formed during direct meetings with the reflected waves;

- **The tsunami (seismic)**, resulting from earthquakes, volcanic eruptions and other dynamic processes in the Earth's crust.

The waves are characterized by the following parameters:

- **Wavelength ( $\lambda$ )** – the horizontal distance between adjacent crests of waves or soles, m;

- **Wave height ( $h$ )** — the vertical distance from the trough to the crest of the wave, m;

- **Wave steepness ( $\alpha$ )** - the angle of slope of the waves. Steepness of waves also characterizes the ratio of height  $h$  to its wave length  $\lambda$ , depending on the depth of water area and usually is less than 1/15 of the seas and oceans and less than 1/10 on reservoirs and lakes, the maximum value of 1.8;

- **Wave period, ( $\tau$ )** — period of time during which two adjacent crests of waves consistently pass through the same point  $s$ ;

- **Wave speed, ( $WS$ )** — distance which crest or trough pass per time unit in the direction of its movement;

- **Wave front** — line, perpendicular to the direction of the wave;

**Wave height** - the estimated height of wind waves with the probability adopted for the water basins of a given zone or a given water basin.

For the purpose of these Rules the following wave characteristics with definitions and designations have been adopted:

- significant waves height –  $h_{1/3}$ ;

- occasional waves height -  $h_{max}$ ;

- wave height with 1% probability -  $h_{1\%}$ ;

- wave height with 3% probability -  $h_{3\%}$ ;

- significant waves height (waves with 5% probability) -  $h_{5\%}$ ;

and applicable dependence:

$$h_{3\%} = 1,32 h_{1/3} \quad h_{1/3} = 1,08 h_{5\%} \quad h_{5\%} = 0,87 h_{1\%} \quad h_{1\%} = 0,66 h_{max}$$

**significant waves height ( $h_{1/3}$ )** - the average height of one-third of the highest waves from the entire set of wave heights during continuous long-term observation (within the quasi-stationarity of waves), which approximately corresponds to the wave height estimated by the observer in the experiment. Some waves will be twice this height.

**occasional waves height ( $h_{max}$ )** - is the height of the wave itself, that has been discovered during continuous long-term observation.

**wave height with 1% probability ( $h_{1\%}$ )** design height of irregular waves, when assigned, it is assumed that with continuous long-term observation 1% of actual waves may have a height equal to or higher than the design.

**wave height with 3% probability ( $h_{3\%}$ )** - design height of irregular waves, when assigned, it is assumed

that with continuous long-term observation, 3% of actual waves may have a height equal to or higher than the design.

**significant waves height (waves with 5% probability) ( $h_{5\%}$ )** - design height of irregular waves, when assigned, it is assumed that with continuous long-term observation, 5% of actual waves may have a height equal to or higher than the design.

For inland waterways with the highest significant wave heights, corresponding to 5% probability, in accordance with the annexed to UNECE Resolution 1661 of 16 March 2006, as amended, "Recommendations concerning technical regulations agreed at European level applicable to inland navigation ships" significant wave height "means the arithmetic mean of the highest wave heights measured from the base to the crest of the wave, the number of which is 10% of the total number of waves during short-term observation.

### 1.2.3.3 Evaluation of waving.

The degree of waving is measured at the 9-point scale waving developed by WMO, which is shown in the Table. 1.2.3.3.

A typical relationship between wind and waving is shown in Table. 1.2.3.1 and Fig. 1.2.3.3..

### 1.2.3.4 Evaluation of wind power and wind load.

Wind speed is measured by a 12-point wind scale at a height of 10,0m above the water surface according to the Beaufort scale of wind speed estimation given in Table. 1.2.3.4. Estimated wind pressure is defined as the amount of static (middle) and dynamic (pulsating) components. Estimated wind pressure is determined in relation to the height of the center of the vessel sails considering the height of wind waves defined by rules for ship navigation area that meets prescribed class of the Register as required in Parts IV «Stability ...." Rules of SGS, CNS, INS and SC.

#### 1.2.3.4.1 Determining the static pressure component of the wind.

The static component of wind load,  $W_S$  Pa is determined by the formula:

$$W_{CT} = 0,732k\nu_0^2 \quad (1.2.3.4.1)$$

where:

$\nu_0$  - wind speed at 10 meters above the water surface, taken as the average wind speed range specified in Table 1.2.3.4;

$k$  - factor that takes into account the change of wind pressure height, and is assumed to be:

0.75 for heights 5.0 m and less; 1.0 for heights of 10, 0 and more.

Intermediate values are determined by linear interpolation.

#### 1.2.3.4.2 Determination of dynamic component of wind pressure

Dynamic component of wind pressure,  $W_D$ , Pa, is determined according to the formula:

$$W_{DM} = W_{CT}\zeta\eta \quad (1.2.3.4.2)$$

where:

$\zeta$  - wind pressure pulsation rate, assumed to be:

0,85 - for heights 5,0 m and less;

0,76 - for height 10,0 m ;

0,69 - for height 20,0 m.

Intermediate values are determined by linear interpolation.

$\eta$ - the correlation rate of wind pressure pulsations adopted according to Table 1.2.3.4.2.

#### **Table 1.2.3.4.2. The correlation rate of wind pressure pulsation**

The length of the hull on the water line, m	The height of the center of ship sails above the waterline, m		
	2,5	5,0	10
0,1	0,95	0,92	0,88
5,0	0,89	0,87	0,84
10	0,85	0,84	0,81
20	0,80	0,78	0,76
40	0,72	0,72	0,70

*Note:* Intermediate values are determined by linear interpolation

Table 1.2.3.1 Main characteristics of fully developed waving (by Pearson - Moskovyts).

The force of the wind on the Beaufort scale at a height of 6,0m		Wind speed, m / s		Sea rough per 9-point WMO scale	Wave height		Wave period, s	Wave length, m	Wave acceleration length, miles	Wave acceleration time, hours
		Range	Measu-		$h^{1/3}$	$h^{3\%}$				
1 Calm		0,6 - 1,7	1,0	0	<0,05	<0,10	0,3-1,9	0,3	5	0,3
2 Light air		1,8 - 3,3	2,6	1	0,15	0,20	0,4-2,8	2,0	8	0,6
3 Light breeze		3,4 - 5,2	4,4 5,1	2	0,40 0,55	0,52 0,72	0,8-5,0 1,0-6,0	6,1 8,2	9,8 10	1,7 2,4
4 Gentle breeze		5,3 - 7,4	6,2 7,0	3 3	0,79 1,0	1,0 1,3	1,0-7,0 1,4-7,6	12 16	18 24	3,8 4,8
5 Moderate breeze		7,5 - 9,8	8,2 9,3 10,8	4 4-5 4-5	1,4 1,8 2,0	1,9 2,4 2,6	2,0-8,8 2,5-10,0 2,8-10,6	22 27 20	40 55 65	6,6 8,3 10,2
6 Strong breeze		9,9 - 12,4	10,3 11,3	5 5	2,2 2,7	2,9 3,5	3,0-11,1 3,4-12,2	35 40	75 100	10 12
7 Near (hard) gale		12,5 - 15,2	12,6 13,4 14,4	5-6 6 6	3,3 3,7 4,1	4,4 4,9 5,7	3,8-13,6 4,0-14,5 4,5-15,5	50 55 65	140 180 220	15 17 20
8 Gale		15,3 - 18,2	15,7 16,4 17,5	6-7 6-7 7	5,1 5,7 6,4	6,8 7,5 8,5	4,8-17,0 5,0-17,5 5,5-18,5	80 85 100	290 340 420	24 27 30
9 Strong gale		18,3 - 21,5	19,0 20,6	7-8 8	7,6 8,9	10,0 11,7	6,0-20,5 6,5-21,7	115 135	530 710	37 42

**Table 1.2.3.3. Sea state scale.**

(Grade)	(Wave height), $\lambda$	Description	Signs to determine the state of the water surface
0	0	calm-glassy	Sea like a mirror
1	0-0,1	calm- ripped	Ripples with appearance of scales are formed, without foam crests
2	0,1—0,5	smooth-wavelet	Small wavelets still short but more pronounced; crests have a glassy appearance but do not break
3	0,5—1,25	slight	Large wavelets; crests begin to break; foam of glassy appearance; perhaps scattered white horses
4	1,25—2,0	moderate	Small waves, becoming longer, fairly frequent white horses
	2,0-2,50		Moderate waves, taking a more pronounced form, many white horses are formed. Chance of some spray
5	2,50—4,0	rough	Large waves begin to form, the white foam crests are more extensive everywhere. Probably some spray
6	4—6	very rough	Sea heaps up and white foam from breaking waves begins to be blown in streaks along the direction of the wind
7	6—7,5	high	Moderately high waves of greater length; edges of crests break into spindrift; foam is blown in well-marked streaks along the direction of the wind
	7,5-9		High waves; dense streaks of foam along the direction of the wind; sea begins to roll; spray affects visibility
8	9—12,5	very high	Very high waves with long overhanging crests; resulting foam in great patches is blown in dense white streaks along the direction of the wind; on the whole the surface of the sea takes on a white appearance; rolling of the sea becomes heavy; visibility affected
	12,5-14		Exceptionally high waves; small- and medium-sized ships might be for a long time lost to view behind the waves; sea is covered with long white patches of foam; everywhere the edges of the wave crests are blown into foam; visibility affected
9	>14	phenomenal	The air is filled with foam and spray; sea is completely white with driving spray; visibility very seriously affected



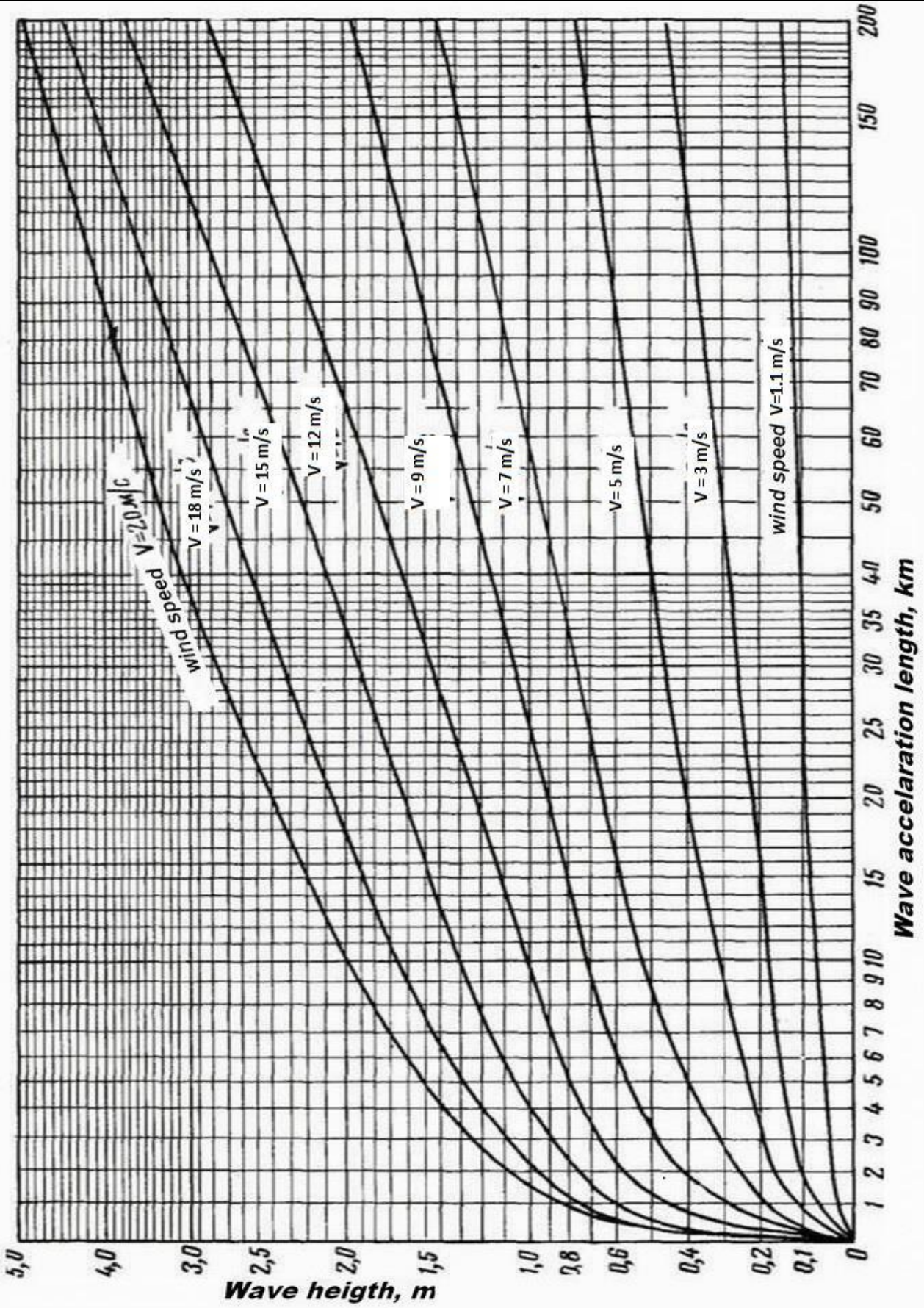


Fig. 1.2.3.3 Main characteristics of wind waves 1 percent provided in shallow water areas of inland waterways

**Table 1.2.3.4. Assessment of wind speed upon Beaufort 12-point scale at 10 m height**

Beaufort number	Description of wind	Wind speed m/s	Sea conditions	Land conditions
0	Calm	0 - 0,2/ (0)	Sea like a mirror	Smoke rises vertically
1	Light air	0,3 - 1,5/ (1,0)	Ripples with appearance of scales are formed, without foam crests	Direction shown by smoke drift but not by wind vanes
2	Light breeze	1,6 - 3,3/ (3,0)	Small wavelets still short but more pronounced; crests have a glassy appearance but do not break	Wind felt on face; leaves rustle; wind vane moved by wind.
3	Gentle breeze	3,4 - 5,4/ (5,0)	Large wavelets; crests begin to break; foam of glassy appearance; perhaps scattered white horses	Leaves and small twigs in constant motion; light flags extended
4	Moderate breeze	5,5 - 7,9/ (7,0)	Small waves becoming longer; fairly frequent white horses	Raises dust and loose paper; small branches moved.
5	Fresh breeze	8,0 - 10,0/ (9,0)	Moderate waves taking a more pronounced long form; many white horses are formed; chance of some spray	Small trees in leaf begin to sway; crested wavelets form on inland waters.
6	Strong breeze	10,1-13,8/ (12,0)	Large waves begin to form; the white foam crests are more extensive everywhere; probably some spray	Large branches in motion; whistling heard in telegraph wires; umbrellas used with difficulty
7	High wind, moderate gale, near gale	13,9-17,1/ (15,0)	Sea heaps up and white foam from breaking waves begins to be blown in streaks along the direction of the wind; spindrift begins to be seen	Whole trees in motion; inconvenience felt when walking against the wind.
8	Gale, fresh gale	17,2-20,7/ (19,0)	Moderately high waves of greater length; edges of crests break into spindrift; foam is blown in well-marked streaks along the direction of the wind	Twigs break off trees; generally impedes progress.
9	Strong/severe gale	20,8-24,4/ (23,0)	High waves; dense streaks of foam along the direction of the wind; sea begins to roll; spray affects visibility	Slight structural damage (chimney pots and slates removed)
10	Storm, whole gale	24,5-28,5/ (27,0)	Exceptionally high waves; small- and medium-sized ships might be for a long time lost to view behind the waves; sea is covered with long white patches of foam; everywhere the edges of the wave crests are blown into foam; visibility affected	Seldom experienced inland; trees uprooted; considerable structural damage.
11	Violent storm	28,6-32,0/ (31,0)	Exceptionally high waves; small- and medium-sized ships might be for a long time lost to view behind the waves; sea is covered with long white patches of foam; everywhere the edges of the wave crests are blown into foam; visibility affected	Very rarely experienced; accompanied by widespread damage
12	Hurricane	Over 32,0	The air is filled with foam and spray; sea is completely white with driving spray; visibility very seriously affected	Devastation

## 1.3 APPLICATION

### 1.3.1 Rules for the Classification and Construction of Sea-Going Ships.

**1.3.1.1** Rules for the Classification and Construction of Sea-Going Ships, hereinafter in this part SS Rules, apply to sea-going and mixed sea-river navigation ships:

**.1** Passenger ships and tankers, ships for carriage of dangerous goods, as well as tugs, regardless of length, power of main engines and gross tonnage;

**.2** Self-propelled ships not listed in **1.3.1.1.1**, with the largest hull length of 24 meters or more and main engines power 55 kW or more;

**.3** Ships not listed in **1.3.1.1.1** and **1.3.1.1.2**, with the largest hull length of 24 meters or more gross tonnage of 80 or more, or are equipped with machinery and equipment with total power of the primary engines of 100 kW or more;

**.4** Materials and articles intended for installation on vessels specified above, the manufacture of which must be carried out under the supervision of the Register (lists of materials and products are given in the relevant parts of the SS Rules):

**.5** Ship refrigerating plants stated in **5.1.1** of this Part.

*Note.* Marine pushers, icebreakers, stationary vessels with over 12 passengers on board, floating cranes and ships of industrial fleet (floating workshops, dredgers, etc.), not depending on specified in **1.3.1.1.2** and **1.3.1.1.3** maximum length and vessels with the largest hull length of 24 meters or more, regardless of the specified in **1.3.1.1.2** and **1.3.1.1.3** power and gross tonnage, are subject to classification and technical supervision in accordance with the Rules for classification and construction of sea vessels.

**1.3.1.2** Requirements of Rules SV are also applied to the following types of ships and FOPs in the degree in which it is stipulated in the relevant rules for classification and construction of ships:

**.1** 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);

**.2** chemical tankers (refer to the Rules for the Classification and Construction of Chemical Tankers) (being developed);

**.3** mobile offshore drilling units and fixed offshore platforms (refer to the Rules for the Classification, Construction and Equipment of Mobile Offshore Drilling Units and Fixed Offshore Platforms);

**.4** high-speed craft (refer to the Rules for the Classification and Construction of High-Speed Craft);

**.5** type A WIG craft (refer to the Rules for the Classification and Construction of Type A WIG Craft) (being developed);

**.6** manned submersibles, ship's diving systems (refer to the Rules for the Classification and Construction of Manned Submersibles and Ship's Diving Systems).

**1.3.1.3** The SV Rules are applied to ships of mixed (river-sea) navigation of all types and purposes, including chemical and gas carriers, in addition to vessels to which the "Rules for classification and construction of mixed navigation ships", namely except displacement cargo ships (self and non-self propelled, including tankers, fuelers, water suppliers, oil collectors, including oily water, support ships) and tugs, including pushers. For these vessels SS Rules and other rules are applicable under the provisions of "Rules for classification and construction of mixed navigation ships".

**1.3.1.4** SS Rules are applied to sea and mixed (sea-river and river-sea) navigation ships engaged in domestic sea (coastal) voyages, depending on navigation area limit sign in the symbol of ship's class under **2.2.5.1.5** with regard to the classification of passenger ships under the European Parliament and Council Directive 2009/45 / EC with application for ships:

with signs **A**, **A-R1**, **A-R2**, **A-R2-S** and **A-R2-RS** (Class A of sea area pursuant to Directive 2009/45 / EC) - of the requirements of SV Rules for vessels respectively to unrestricted navigation area and with signs of restricted areas of navigation **R1**, **R2**, **R2-S** and **R2-RS** with separately specified in the SS Rules, Rules for the equipment of sea-going ships, Load Line Rules of sea-going ships and Rules for cargo handling equipment of sea-going ships, additional requirements for the signs **A**, **A-R1**, **A-R2**, **A-R2-S** and **A-R2-RS**;

with signs **B-R3-S** i **B-R3-RS** (Class **B** sea area pursuant to Directive 2009/45 / EC) – of the requirements of SS Rules for vessels respectively with signs of restricted areas of navigation **R3-S** and **R3-RS** with separately specified in the SS Rules, Rules for the equipment of sea-going ships, Load Line Rules of sea-going ships and Rules for cargo handling equipment jf sea-going ships, additional requirements for the signs **B-R3-S** and **B-R3-RS**;

with signs **C-R3-S** i **C-R3-RS** (Class **C** sea area pursuant to Directive 2009/45 / EC) – of the requirements of SS Rules for vessels respectively with signs of restricted areas of navigation **R3-S** and **R3-RS** with separately specified in the SS Rules, Rules for the equipment of sea-going ships, Load Line Rules of sea-going ships and Rules for cargo handling equipment jf sea-going ships, additional requirements for the signs **C-R3-S** and **C-R3-RS**;

with signs **D-R3-S** i **D-R3-RS** (Class **D** sea area pursuant to Directive 2009/45 / EC) – of the requirements of SS Rules for vessels respectively with signs of restricted areas of navigation **R3** and **R3-IN** with separately specified in the SS Rules, Rules for the equipment of sea-going ships, Load Line Rules of sea-going ships and Rules for cargo handling equipment jf sea-going ships, additional requirements for the signs **D-R3-S** and **D-R3-RS**.

Passenger ships and high-speed passenger ships, built by July 1, 2008 and after that date must meet the requirements of SV Rules concerning safety of persons with reduced mobility.

With confirmation of compliance with Directive 2009/45/EC passenger ships and high-speed passenger ships, which are used as public transport, the keel of which was laid or which were at a similar stage of construction on Oct. 1, 2004 or after that date must meet the requirements of this SV Rules, concerning safety of persons with reduced mobility. For the purpose of modifying ships and high-speed craft used as public transport, the keel of which was laid or which were at a similar stage of construction before 1 October 2004, Member States shall apply these requirements as far as is economically feasible.

When these ships are engaged in the international voyages, as well as ships to which, according to **1.4.2** of the General Provisions on Classification and Other Activities, Directive 2009/45 / EC does not apply, the requirements of SS Rules shall apply without regard to the requirements for ships with signs in accordance with **2.2 .5.1.5** of this part of the Rules.

**1.3.1.5** Personnel ships (refer to **1.2.1**) according to the recommendations adopted by MSC.418 (97) shall be consistent with the Special Purpose Ships Safety Code adopted by Res. MSC.266 (84), as amended (SPS Code 2008) and the relevant requirements of the SS Rules or, in agreement with the Register, the provision of other standards, provided that they secure an equivalent level of safety acceptable to the Register and the Administration, taking into account the number of people on board the ship. At the same time, high-speed personnel ships shall comply with the requirements of Part XX "Ships for the carriage of industrial personnel" of the Rules for the Classification and Construction of High-Speed Craft.

SS Rules apply to special purpose ships of 500 gross tonnage and over. For special purpose ships with a gross tonnage of less than 500, the requirements of SS Rules are applied to the extent appropriate and practically possible with the agreement of the Register.

If case of special requirements of the ship's Flag Administration for ships of less than 500 gross tonnage, for example, the requirements of the Administration of the Republic of Palau specified in the document PALAU INTERNATIONAL SHIP REGISTRY «CODE OF SAFETY FOR CARGO SHIPS OF LESS THAN 500 GROSS TONNAGE», such requirements apply to ships flying the flag of this Administration without compromising the level of safety that is provided for such ships by the SS Rules. By agreement with the Register, the safety level can be reduced to the level of the requirements of the document of the ship's Flag Administration for the ship flying its flag.

**1.3.1.6** In the classification of passenger ships and mixed (sea-river and river-sea) navigation ships engaged on domestic voyages, subject to classification according to Directive 2009/45/EC, in addition to the terms and their definitions in accordance with **1.2.1.2**, the following terms and their definitions are used:

*GMDSS* means the Global Maritime Distress Safety System as is set out in Chapter IV of SOLAS Convention 1974, as amended, and in Rules for the equipment of sea-going ships;

*significant wave height* means the average height of the one-third of highest waves observed over a given period;

*sea areas*-means areas identified in accordance with 2.2.5.1.5 of this Part I "Classification" of Rules for the classification and construction of ships.

However, for the use of provisions on radio communication, the definitions of sea areas will be accepted those specified in the 1.2 of general provisions of part IV «Radio Equipment" Rules for equipment of sea-going ships and Rule 2 of Chapter IV of SOLAS 1974 Convention, as amended;

*persons with reduced mobility* means persons who have some difficulty using public transport, including the elderly, persons with disabilities, persons with sensory impairments and wheelchair users, pregnant women and persons accompanying small children;

*harbor area* means an area other than sea areas, see above, as defined by the State Party having jurisdiction over Directive 2009/45 / EC, extending to the outermost permanent berths forming an integral part of the port system or to the limits defined by natural geographical features which protect the mouth or such a protected area.

**1.3.1.7** 7 Rules for classification and construction of sea-going ships consist of this part I "Classification" and following parts:

Part II "Hull";

Part III "Equipment, Arrangements and Outfit";

Part IV "Stability";

Part V "Subdivision";

Part VI "Fire Protection";

Part VII "Machinery Installations";

Part VIII "Systems and Piping";

Part IX "Machinery";

Part X "Boilers, Heat Exchangers and Pressure Vessels";

Part XI "Electrical Equipment";

Part XII "Refrigerating Plants";

Part XIII "Materials";

Part XIV "Welding";

Part XV "Automation";

Part XVI "Structure and Strength of Fiber-Reinforced Plastic Ships";

Part XVII «General Rules for the Construction of Bulk Carriers and Oil Tankers" (under development).

When classifying vessels according to the SS Rules the following rules are applied:

Rules for the Equipment of sea-going ships, consisting of the following parts:

I «Provisions on supervision";

II «Life-saving appliances";

III «Signal means";

IV «Radio Equipment";

V «Navigation equipment";

Rules of construction of ship hulls and floating structures using reinforced concrete;;

Load Line Rules for Sea-Going Ships;

Rules for the Cargo Handling Gear of Sea-Going Ships;

Rules for Carriage of Grain;

Rules for the Prevention of Pollution from Ships, consisting of the following parts:

I «Requirements for the construction of ships and their equipment to prevent oil pollution";

II «Requirements for the construction of ships, their equipment and devices to prevent pollution during transportation of hazardous substances in bulk";

III «Requirements to equipment and appliances of vessels to prevent sewage pollution";

IV «Requirements for prevention of garbage pollution ";

V «Requirements for prevention of air pollution";

VI «Requirements to Anti-fouling Systems";

VII «Requirements to ship's equipment for compliance with marks ECO and ECO-S in class symbol";

VIII «Requirements to equipment of tankers for cargo operations at sea.

Measurement of sea-going ships is carried out in accordance with the Rules for the Tonnage Measurement of Sea-Going Ships and Mixed navigation Ships.

### 1.3.2 Rules for classification and construction of mixed navigation ships.

**1.3.2.1** Requirements of Rules for classification and construction of mixed navigation vessels, further in this part the MNS Rules are applied to displacement cargo vessels (self-propelled and non-propelled, including tankers, bunkers, water suppliers, oil collectors, collectors of oily water, support vessels) and tugs (including pushers) of mixed (river-sea) navigation.

For the classification and construction of ships of other types and purposes, including passenger ships, gas carriers (for the carriage of compressed (compressed) natural gas), the requirements of the Rules for the Classification and Construction of Sea-Going Ships are applied.

The requirements of the MNS Rules are applicable to ships engaged in the carriage of dangerous goods, subject to the requirements specified in **1.3.2.4.3** and **1.3.2.4.4**.

Requirements of MNS Rules are applied to materials and articles intended for installation on vessels specified above, the manufacture of which must be carried out under the supervision of the Register (lists of materials and products are given in the relevant parts of the MNS Rules).

**1.3.2.2** Requirements of MNS Rules set out in respect of ships with sign of area of navigation **B-R4-RS** in the ship's character of class, shall fully apply to ships with the sign **R4-RS** ((without the sign **B**) in the ship's character of class, unless otherwise indicated.

#### 1.3.2.3 Definitions

Terms relating to common terminology are set out in 1.2 of this Part of the Rules and in the "General provisions on technical supervision activities.

For the purposes of MNS Rules the following terms and definitions are additionally adopted:

**.1** *aves height* means the estimated height of the wind waves with probability accepted for water areas of such category.

**.2** *Cargo ship* means a ship designed for the carriage of cargo (dry cargo, liquid, combined, refrigerated, etc.).

**.3** *Coastal voyage* means every voyage that is not international.

**.4** *International voyage* is a voyage from the port of the country, which is a party to the international conventions to the port located outside this country, or vice versa.

**.5** *International voyage with restrictions* is an international voyage with restrictions of wave height of 3 to 3.5% probability and distance from the shore, agreed with classification authority for each area of navigation separately, but in each case no more than 40 miles.

**.6** *Pusher* is a ship that has a quick coupler and is intended for towing by pushing other vessels and floating structures.

#### 1.3.2.4 Applicable rules

In the performance of requirements of MNS Rules, in addition to the instructions contained in their respective units and sections, as appropriate, depending on the purpose of the ship and the area of navigation, is necessary to be guided by the requirements of the Rules of the Register, International Conventions and Codes, namely:

**.1** For all vessels of mixed (river-sea) navigation referred to in **1.3.2.1**, to the requirements of:

- .1.1** Part IX "Machinery";
- Part X "Boilers, Heat Exchangers and Pressure Vessels";
- Part XI "Electrical Equipment";
- Part XII "Refrigerating Plants";
- Part XIII "Materials";
- Part XIV "Welding";
- Part XV "Automation";
- Part XVI "Structure and Strength of Fiber-Reinforced Plastic Ships";
- Part XVII «General Rules for the Construction of Bulk Carriers and Oil Tankers" (under development);

**.1.2** Rules for the Cargo Handling Gear of Sea-Going Ships;

**.1.3** Rules for the Prevention of Pollution from Ships;

**.1.4** Rules for classification and construction of inland navigation ships set out in Part XIV "Appliances for the Prevention of Pollution from Ships";

**.1.5** Rules for the Tonnage Measurement of Sea-Going Ships and Mixed navigation Ships;

**.1.6** Rules for the Tonnage Measurement of Inland Navigation Ships ((ships engaged on the international voyages on European inland waterways, including inland waterways of Ukraine);

**.1.7** Additional and / or other requirements set forth in the documents, applicable on European inland waterways of the area of operation of the vessel.

**.2** For any ship of mixed (river-sea) navigation, engaged on international voyages in (from) seaport located outside Ukraine, to requirements:

**.2.1** set out in **1.3.2.4.1**;

**.2.2** The International Convention for the Safety of Life at Sea (SOLAS 74/78/88), as amended;

**.2.3** The International Code for the Protection of Ships and Port Facility (ISPS Code), as amended;

**.2.4** 4 The International Load Line Convention (LLC-66/88), as amended;

**.2.5** The International Convention for the Prevention of Pollution from Ships (MARPOL 73/78/97), as amended;

**.2.6** ILO Convention on Maritime Labour of 2006 on crews accomodation pursuant to Section 3 of the Rules and the Code of the Convention;

**.2.7** Occupational Safety and Health (Dock Work) Convention. C152-ILO and ILO Code of Practice, Occupational Safety and Health in Port Work, 2005.;

**.2.8** International Code on Intact Stability of ships (2008 IS Code);

**.2.9** International Life Saving Appliance Code (LSA Code)

**.2.10** Code on Alerts and Indicators; .

**.2.11** International Fire Test Procedures Code;

**.2.12** Circular letter SLS.14 / Circ.144 on the use of equivalent means of providing with life-saving appliances of ships of 100 m or less (except for oil tankers, chemical tankers and gas carriers) flying the flag of Ukraine.

**.3** For a shipof mixed (river-sea) navigation carrying dangerous goods on the European inland waterways, including the inland waterways of Ukraine with maritime navigable routes, which are used for the movement of these vessels in accordance with the national law of Ukraine (sea cabotage), requirements:

**.3.1** specified in **1.3.2.4.1**;

**.3.2** Set out in Part XIII «Vessels for carriage of dangerous goods" of the Rules for the classification and construction of inland navigation ships, and for ships with an Approval Certificate "Special requirements for ships carrying dangerous goods", which confirms the compliance of the vessel with the requirements of regulations II-2/19 or II-2/54 SOLAS-74, the requirements of Chapter 9.2 of the Rules annexed to the European Agreement on the International Carriage of Dangerous Goods by Inland Waterways , in the current edition, taking into account the requirements of the IMDG Code in accordance with .4.2 (taken into account in the MNS Rules);

**.4** For vessels of mixed (sea-river) navigation, which carry dangerous goods by sea, the requirements:

**.4.1** Set out in **1.3.2.4.1** and **1.3.2.4.2.3**;

**.4.2** International Maritime Dangerous Goods Code (IMDG Code), as amended (for the ship engaged in the international voyage);

**.4.3** International Maritime Solid Bulk Cargoes 2008 (IMSBC) Code;

**.4.4** International Code of construction and equipment of ships carrying Dangerous Chemicals in Bulk (BCH Code), as amended (for the ship engaged in the international voyage);

**.4.5** International Code of construction and equipment of ships carrying liquefied gases in bulk (IGC Code), as amended (for the ship engaged in the international voyage).

**.5** For supply vessels of mixed (river-sea) navigation requirements:

**.5.1** specified in **1.3.2.4.1**;

**.5.2** Resolution MSC.235 (82), as amended "Guidelines for the design and construction of offshore supply vessels";

**.5.3** Resolution A.863 (20), as amended "Code of Safe Practice for the Carriage of Cargoes and Persons by Offshore Supply Vessels";

**.5.4** Resolution A.673 (16), as amended "Guidelines for the Transport and Handling of Limited Amounts of Hazardous and Noxious Liquid Substances (LHNS) in Bulk in Offshore Support Vessels..

**.6** For vessel of mixed (sea-river) navigation transporting bulk cargo requirements:

**.6.1** specified in **1.3.2.4.1**;

**.6.2** Resolution MSC.23(59) «International Code for the Safe Carriage of Grain in Bulk», 1991 (Grain Code);

**.6.3** International Maritime Solid Bulk Cargoes (IMSBC) Code 2008.

**.7** For a mixed (river-sea) navigation ship carrying timber deck cargoes by sea, in addition to the requirements of Resolution A.1048 (27) "Code of Safe Practice for Ships Carrying Timber Deck Cargoes", 2011 (Timber Code).

**.8** For a mixed (river-sea) navigation ship carrying piece cargo by sea, in addition to the requirements of Resolution A.714 (17) "Code of Safe Practice for Stowing and Securing Cargo", 1991 (CSS Code)

**1.3.2.5** MNS Rules consist of this part I «Classification" and following parts:

II «Hull»;

III «Equipment, arrangements and outfit. Signal means»;

IV «Subdivision and free board»;

V «Fire protection»;

VI «Machinery Installations»;

VII «Systems and piping»;

VIII «Machinery»;

IX «Electrical equipment»;

X «Automation»;

XI «Radio equipment»;

XII «Navigation equipment».

### **1.3.3 Rules for classification and construction of inland navigation ships.**

**1.3.3.1** Requirements of Rules for classification and construction of inland navigation ships further in this part of the INS Rules applied to following inland navigation vessels:

**.1** Passenger and tank vessels, intended for the carriage of flammable and other dangerous cargo, tugs, pushers and pusher-tugs, cargo ships-pushers, regardless of the length of the pusher and pleasure crafts, with the characteristics of length and LxBxT product in accordance with **1.3.3.1.2** of the ship, irrespective of power of the main engines and gross tonnage;

**.2** Self-propelled ships with a maximum hull length of 24m or more not specified in **1.3.3.1.1**, with the power of the main engines 55 kW or more and for which the product of length L, width B and draft T is the volume of 100m<sup>3</sup> and more;

**.3** Ships with a maximum hull length of 24m or more not listed in **1.3.3.1.1** and **1.3.3.1.2**, with gross tonnage of 80 or more, or which are equipped with mechanisms and equipment with a total capacity of the primary engines of 100 kW or more, or for which the product of length L, width B and draft T is the volume



of 100m<sup>3</sup> and more;

**.4** Pleasure craft referred to in 1.3.3.1.1 and vessels listed in **1.3.3.1.2** with a maximum hull length of 20m or more but less than 24m intended for navigation on inland waterways in the European Community.

Values of L, B and T, specified in 1.3.3.1.1 and 1.3.3.1.2, are accepted in accordance with Part II of the "Hull" INS Rules.

**.5** Materials and articles intended for installation on vessels specified above, the manufacture of which must be carried out under the supervision of the Register (lists of materials and products are given in the relevant parts of the INS Rules).

**1.3.3.2** Requirements of the INS Rules 2016 as amended and supplemented by Bulletins No. 1, 2017 and No. 2, 2018, unless otherwise indicated, regarding the provisions for the issuance of an Inland Navigation Ship Certificate in accordance with the requirements of Directive (EU) 2016/1629 of the European Parliament and of the Council, refer to **1.4.5** of the General Provisions for the Classification and Other Activities, apply in full to ships, specified in **1.4.5**, taking into account the normative legal act referred to in **1.4.5**. However, in accordance with the provisions of Directive (EU) 2016/1629, it does not apply to:

ferries;

sea-going ships, including tugs and pusher that:

- are at sea or at the anchorage in the sea areas of rivers;
- are temporarily on inland waterways, if they have:

certificate of compliance with the provisions of the International Convention for the Safety of Life at Sea 1974 (SOLAS), certificate of compliance with the provisions of the International Load Line Convention 1966 and the International oil pollution prevention certificate of compliance with the provisions of the International Convention for the Prevention of Pollution from Ships 1973/78 (MARPOL), or for sea-going ships that are not subject to the said conventions, the corresponding certificates in accordance with the regulatory legal act of Ukraine, or for ships that are not covered by the named conventions (coastal navigation), a passenger ship safety certificate / certificate of safety of a high-speed craft, issued in accordance with Directive 2009/45 / EC, lays down rules and safety standards for ships, or for pleasure craft, which are not subject to the said conventions, certificate according to normative legal act of Ukraine.

**1.3.3.3** Ship equipment necessary to provide minimum manning shall comply with the requirements specified in **1.3.3.2** of the INS Rules, taking into account the requirements of Part XVII "Special requirements applicable to ships with a minimum crew".

#### **1.3.3.4** Definitions.

Terms relating to common terminology set out in Part **1.2** of these Rules and General provisions on technical supervision.

For the purposes of INS Rules, the following terms and definitions are additionally adopted:

*High-speedcraft* is a self-propelled vessel that can make navigation at speeds over 40 km/h relative to the surface of calm water.

*Floating equipment* is a floating structure on which working machinery is located, such as cranes, dredger equipment, copra or hoists.

*Work ship* is a ship properly constructed and equipped for use in various types of work, such as a soil barge, bunker or pontoon barge, pontoon or block stacker.

*Pleasure craft* is a ship with a maximum hull length of 20 m and more, which is not a passenger and which is intended for recreation without financial earning goals.

*The gross tonnage* is the dimensionless quantity determined based on the total volume in m<sup>3</sup> of all premises of the vessel by the formula:

$$GT = 0,353V,$$

where:  $V = LBd\delta + LB\alpha (D - d) + \Sigma lbh$ ;

$L, B, D, d$  – the estimated main particulars of the ship [length, width, depth, draft] m

$\delta$  – displacement rate;

$\alpha$  – cargo waterline rate;

$l, b, h$  – mean length, width and height of superstructures and deck houses respectively.

The wheelhouse volume is not included in the the gross tonnage calculation. The calculation of the gross tonnage for multihull ships, in terms of the hull tonnage, shall be carried out for each hull separately with the subsequent summation of the calculation results.

**1.3.3.5** The following parts of the Rules for the classification and construction of sea-going ships of the Shipping Register of Ukraine are also applied for inland navigation ships, in addition to the requirements of INS Rules:

Part X "Boilers, Heat Exchangers and Pressure Vessels"

Part XII "Refrigerating Plants"

Part XIII "Materials";

Part XIV "Welding";

Part XVI "Structure and Strength of Fiber-Reinforced Plastic Ships".

The following is applied for inland navigation ships:

Rules for the Cargo Handling Gear of Sea-Going Ships;

Rules for the construction of ships hulls and floating structures using reinforced concrete.

**1.3.3.6** INS Rules consist of this part I «Classification» and following parts:

II «Hull»;

III «Equipment, arrangements and outfit. Signal means»;

IV «Subdivision and free board»;

V «Fire protection»;

VI «Machinery Installations»;

VII «Systems and piping»;

VIII «Machinery»;

IX «Electrical equipment»;

X «Automation»;

XI «Radio equipment»;

XII «Navigation equipment»;

XIII «Ships for the carriage of dangerous goods»;

XIV «Means for the Prevention of Pollution from Ships»;

XV «Special requirements to ships utilizing liquefied natural gas as fuel»;

XVI «Special requirements to pleasure craft»;

XVII «Special requirements to ships with a minimum crew».

**1.3.3.7** Ships with the Register class, assigned according to the IWS Rules can be operated outside inland waterways of Ukraine and the Danube River Basin, on the relevant to the class European inland waterways referred to in this paragraph **2.2.5.6.2.4** of this part of the Rules, subject to compliance with additional and / or other requirements set out in documents that are in force on those inland waterways.

**1.3.3.8** Carriage of passengers on non-self-propelled inland navigation ships is not permitted.

### **1.3.4 Rules for classification and construction of small craft.**

**1.3.4.1** Requirements of Rules for classification and construction of small craft further in this part of SC Rules are applied, except specified in **1.3.4.2**, to ships and other floating structures and means which maximum hull length  $L_H$  is 2.5m or more and up to 24m and / or those crafts are designed for navigation on inland (not marine) waterways and the product of length  $L_H$ , breadth  $B_H$  and draft  $T$  of which is less than the volume of 100m<sup>3</sup> and which are not intended for: the carriage of more than 12 passengers on board, the transportation of dangerous goods, their use as passenger ships, icebreakers, tugs, pushers, floating cranes, and technical fleet ships (ships boats, rafts) and jet skis.

**1.3.4.2** SC Rules are not applied to crafts and vessels that are not subject to technical supervision of the Register, namely vessels and crafts with a maximum hull length of 2.5m, except water bikes; water rides, including "Bananas" and the like; surfboards, including those with sail or drive; antique and historical vessels

and their copies labeled as such by the manufacturer; canoes, kayaks and gondolas; pedal boats; amphibians; seaplanes.

**1.3.4.3** Alternatively, to the requirements of SC Rules, is allowed the use of the relevant requirements of ISO for small crafts (series 47.080: Small craft) to similar structures or requirements (the list of applied in development of SC Rules ISO standards listed in Appendix 1 to this part of the Rules).

For jet skis SC Rules are distributed subject to the requirements of ISO 13590: "Small craft. Craft for individual use. Water scooters. Requirements for the construction and installation of systems. " or the applicable ISO or EN standards.

SC Rules are applied to materials and products intended for installation on the above specified in 1.3.4.1 small craft, production of which shall be carried out under the supervision of the Register (a list of materials and products is given in the relevant parts of the SC Rules).

**1.3.4.4** Small crafts, except ferries, with length of 20 meters or more, intended for navigation on inland waterways in the European community, including river Danube in Ukraine, must satisfy the provisions of the "Recommendations on Technical Requirements for Inland Navigation Ships" adopted and put into effect since January 1, 2008 by the Danube Commission, as amended, "Recommendations concerning coordinated at European level technical requirements applicable to inland navigation vessels", adopted on March 16, 2006 by the Resolution 61 UNECE as amended and of the European Parliament and Council 2006/87 / EC, as amended by that IWS Rules, which take into account these recommendations and guidelines as stated in these INS Rules (refer also to **1.3.3.2**).

Small craft intended for operation in the marine environment shall meet the requirements of "Rules for the Prevention of Pollution from Ships," according to the instructions of Part XIV «Means for the Prevention of Pollution from Ships" of SC Rules.

#### **1.3.4.5** Definitions

Terms relating to common terminology are set out in 1.2 of this Part of the Rules and in the "General provisions on technical supervision activities."

For the purposes of SC Rules the following terms and definitions are additionally adopted:

*Launch* is a decked propelled or non-propelled vessel with capacity from 1 to 5 tons intended for carriage of goods and people, fishing.

*Undecked vessel* is a ship which over a length of less than  $2/3$  lengths  $L_H$  of the ship from the forward edge of the deck is a decked vessel and/or which has a cockpit (recession) with a total volume coefficient  $C_C \geq 1$  and / or cockpits (recess) do not satisfy **10.2** of Part II «Hull» SC Rules.

*Cargoship* is a propelled and non-propelled ship designed to transport various cargoes.

*Open vessel* is a decked ship, which hatches have no sufficient strength, rigidity and degree of water resistance or which hatches are open.

*Distance to the place of refuge* is maximum allowable distance in nautical miles (kilometers), measured along the shortest safe navigation in respect of the way from anywhere on the chosen route for navigation of the vessel to the nearest port or available place of refuge.

*Sailing boat* is an undecked sailing ship with lengths up to 6,0m inclusively.

*Water bike (private craft)* is a recreational craft with a hull of less than 4 m, which uses a propulsion installation, has a water cannon as the main source of motive power, and is designed to be operated by a person or persons in a sitting position while standing or on your knees on the hull, not inside it.

This term covers watercraft with the following names: water bike (water-byke), water scooter (scooter), jet (jet-byke / jet-ski), jet ski and the like.

*A glider* is a ship that, when moving at a certain speed, is supported mainly by hydrodynamic forces. The gliding mode corresponds to the speed of the ship, at which the Froude number in displacement:

$$Fr_{\Delta} = v / \sqrt{g \sqrt[3]{V_D}} > 1,5,$$

where:

$v$  – ship speed, in m/s;

$g$  – acceleration of gravity, in  $m/s^2$ ,  $g = 9,81 m/s^2$ ;

$V_D$  – ship volume displacement on the waterline, in  $m^3$ .

*Residential ship* - ship which has a fully enclosed cabin, equipped with rigid deck with one or more fixed or suspended beds, benches, hammocks or similar pieces of furniture that can be used for a sleep while the ship is under way. The vessel is also considered a "residential" if the tissue closing is used instead of rigid doors or cabin has walls of fabric. The ship is not considered "residential" if:

- a tent is stretched over an open cabin or

- open side of the cabin has a partial splash protective fence and not closed with cloth on all sides.

Sleeping places shall have minimum dimensions: diagonal length 1.5 m, width at the widest point of 0.4 m and a minimum height above the space for sleeping 0.4 m throughout. Recreation on the open deck and compartments designed only as a pantry under the Guidelines for the owner, are not places for a sleep.

*Protected waters* means a part of water area adjacent to the coast and protected from the wind and waving naturally or protected from waving by the hydrotechnic construction.

*The launch* is a motorized vessel, except vessels carrying sailing gear, with hull length from 4,0m to 6,0m including, having a deck at least 1/3 the length of the hull from the forward edge and the engine permanently installed in a closed compartment and decked motor vessels with length of more than 6,0m to 15m with an outboard or permanently installed engine. Vessels without decks mentioned above are related to motor boats.

*Catamaran* is a ship consisting of two hulls connected by a special bridge construction.

*Commercial carriage of passengers* means water trips, excursions, regular and irregular voyages between ports or moorings, operation of vessels vehicles at the mooring and other commercial exploitation of vessel with passengers on board, which is made under license in accordance with applicable law. Small craft intended for carrying passengers, can be used for commercial carriage of passenger subject to the requirements of Part XIII "Special requirements for ships for commercial carriage of passengers" SC Regulation.

*International carriage of passengers* is a carriage of passengers from the port of Ukraine to the port of another country or between ports of different countries outside Ukraine

*Motorboat* is a motor undecked boat with length up to 6.0 meters inclusive, in which the engine is installed open.

*Training ship* is a specially equipped vessel designed to carry out practical training of persons who had practical and theoretical training. At this vessel cadets, who are used as staff or as alternates, if their number is not more than 12 persons are considered special staff.

*Decked ship* is a ship in which the horizontal projection area limited by the side line, consists of any combination of: a watertight deck and superstructure, and / or those that meet the requirements of 2.8 part IV «Stability, floodability and freeboard" SC Regulation, quickly drained cockpit (recession) and / or waterproof cockpit (recession) with a total volume of less than  $L_H \times B_H \times F_M / 40$  and in which all closing with sufficient strength, rigidity and degree of water resistance, corresponding to section 9 of Part III "Equipment, arrangements and outfit" of SC Rules. The area of recession permitted for vessels of sea and coastal 1 areas and some ships of 2-4 coastal navigation areas, restricted in accordance with the requirements of 2.9 part IV «Stability, floodability and freeboard" of SC Rules.

*Passenger capacity* is the largest number of people allowed to locate on this vessel..

*Floating cottage (house boat)* is a propelled or non-propelled vessel, including moored vessel equipped for rest and / or people living on the water.

*Pontoon* is a non-propelled decked ship, which may be a cargo pontoon or used as a single pontoon or pontoons for equipment piers, floating passages and crossings, as part of refuler to support refuler pipelines and so on.

*Ferry* is transport ship for regular carriage of vehicles, people and goods from one bank to another.

*Pleasure boat* is a ship of any type, excluding jet ski, regardless of the driving force, with a maximum hull length of 2.5m to 24m, intended for leisure purposes (walking, relaxing, not industrial fishing, tourism, etc.) of people on water in an amount of not more than 12 passengers. (Definition of the term is harmonized with the same term of the European Parliament and EU Directive 2013/53 / EC).

*Refuler* is floating pipeline through which ground or sand mixture (slurry) is pumped from dredger.

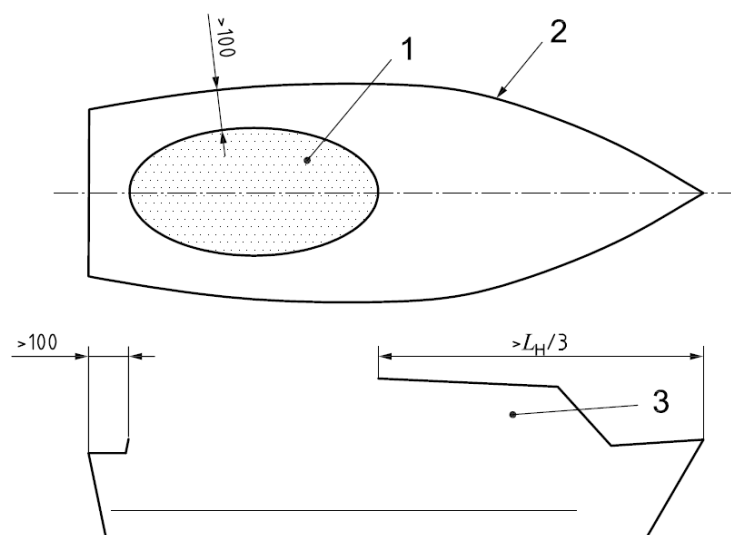
*Operating boat* is watercraft designed and equipped to perform offshore, mooring and other ancillary works.

*Tourist ship* is a ship which by her design and navigability characteristics is suitable for the implementation of a long voyage on the tourist route (routes);

*Partially enclosed ship* is a ship which does not meet the definition of the decked ship and where the projected area in terms of floor deck, cabin, weather shelter, niche of outboard engines or other hard covers are waterproof in accordance with Section 9 of Part III « Equipment, arrangements and outfit" of SC Regulation from which water drains directly overboard (not through drainage), and:

- Cover at least one-third of the projection area in terms of side line, and
  - Include all the space on the length  $L_H/3$  from the bow to the stern part, and
  - Include at least the width of 100 mm inside from the side line, except in the area of any watertight recession with a total volume of less  $(L_H \times B_H \times F_M) / 40$ , from which the water can drain through the drainage.
- These niches of outboard engines are considered those that ensure compliance with these purposes.

Illustration to definition is shown in Fig. 1.3.4.5.



1 - recess, opened on top (less than two-thirds of the total side line area of the projection);

2 - side line;

3 - open weather shelter or closed deck house.

**Fig. 1.3.4.5. Partly enclosed ship** (sizes in mm)

*The boat* is a rowing boat with capacity up to 1 ton, equipped with a tween or single blade oars.

*Yacht* is a pleasure-tourist vessel, except rowing boats, which has enclosed spaces designed to accommodate all persons provided on board.

*Motoryacht, motor-sailing yacht, sailing yacht, sailing-motor* is a yacht depending on the driving force or a combination of the driving forces, refer to **1.3.4.6**.

**The following terms are to facilitate the assignment of floating means to those requirements which do not apply SC Rules under 1.3.4.2, namely:**

*Amphibian* is a wheeled or tracked motor vessel, which is able to operate both on water and on solid ground.

*Water attraction* is the kind of recreational activities on the water, the water structure or device designed for entertainment.

Water attractions include: water skis and sledges; towed washers; craft such as "banana" and the like; water slides; roundabouts; ferris wheels (the list is not complete and may be supplemented by the Register)

*"Banana" and the like* are non-propelled inflatable craft towed by a motor craft and intended for brief water sports and recreational trips of passengers sitting on the equipped seats on the top of the inflatable craft hull;

*Kayak* is a small light closed vessel propelled by muscular strength using tween-blade oar, which is a sign that distinguishes canoe from other types of rowing boats and which has sharp hull (hull fullness factor of about 0.5 and a significant extension that always exceed the 5). Single canoe - kayak;

*Water bike* is a floating craft that moves through physical strength of man by propelling screw / screw or wheel / wheels and is designed to carry one or more persons who are at special sittings on the hull / hulls;

*Gondola* is a traditional Venetian rowing boat;

*Seaplane* is a airplane adapted for take off and landing on the water;

*Canoe* is a universal name of small rowing vessels (boats) without an oar crutch having typical way of rowing by a single paddle oar and differing in seating position (kneeling), method of rowing (one blade), the increased width of the hull and the shape of the seat;

*Passenger ship* is a ship, including moored ship, built and equipped for transportation or stay of more than 12 passengers;

*Ship boat (boat)* - a small vessel that is installed on board for different purposes and is her gear. Ship boats are divided by purpose into life boats, rescue boats, working boats, specially-cargo boats, towing boats, sounding boats, diving boats.

In SC Rules is used the term "gross tonnage" that (only to apply the Rules) means a dimensionless value determined based on the total volume of the vessel by the formula:

$$GT = 0,353 V,$$

where:  $V = LBT\delta + LB\alpha(D - T) + \Sigma lbh$

$L, B, D, T$  – Structural dimensions of the ship [length, width, depth, draft] m

$\delta$  - displacement rate at full load

$\alpha$  - waterline rate at full load

$l, b, h$  - mean length, width and height of superstructures and deck houses.

The wheelhouse volume is not included in the the gross tonnage calculation. The calculation of the gross tonnage for multihull ships, in terms of the hull tonnage, shall be carried out for each hull separately with the subsequent summation of the calculation results.

**1.3.4.6** The types of small craft, depending on the driving capacity provided:

*Motor* is a ship which movement is carried out by the machinery installation (propellers, paddle wheels, water cannon, propeller, etc.) with the primary engine;

*Sailing* is a ship which movement is carried out by the device using wind energy;

*Rowing* is a ship which movement is carried out by the physical strength of a man;

*Self-propelled* - motor, sailing and rowing ships;

*Non-self-propelled* is a ship for purposeful movement for which an object or a gear located outside the vessel is used;

*Berth-connected* is a ship intended for use in accordance with the purposes at berth.

When driving forces are combined (engine and sail, sail rowing, or sail-rowing-engine) the ship is considered as a motor boat and / or sailing and / or rowing depending on the following:

**.1** The vessel, at which translational motion is provided by the energy of the wind, is considered as sailing if the area of sail rigging meets the requirement  $m^2$ :

$$A_s \geq 0,07 \Delta_{\max}^{2/3}, \quad (1.3.4.6.1)$$

where:  $\Delta_{\max}$  – displacement at full load, kg.

With a smaller area of ship's sail rigging requirements of SC Rules concerning stability and freeboard of sailing ships are not applied.

Area of sail rigging  $A_s, m^2$ , is determined in accordance with **1.3.4.10.2.22** of this Part.

**.2** Rowing or motor ship of open type or open or inflatable boat or frame and fabric, equipped with sail rigging is regarded as a sailboat, regardless of the area of sail rigging.

**.3** Rowing or sailing vessel with an internal combustion engine is considered also as a motor (including motor-sailing), if the nominal power of engines of propulsive installation of the vessel satisfies the condition kW:

$$N_e \geq 5 (\Delta_{\max}/100)^{1/3}, \quad (1.3.4.6.3)$$

where:  $\Delta_{\max}$  – displacement at full load, kg.

At lower power of propulsive installation or an internal combustion engine installed not for purposes of motion, the ship is considered as sailing-motor vessel or rowing-motor vessel.

Motor-sailing ships must fully satisfy the requirements set as for motor ships and for sailing ships.

Rowing ships defined as motor must fully meet the requirements set as for motor ships and to the rowing boats.

Sailing-motor ships and rowing-motor vessels must fully meet the requirements provided accordingly to sailing or rowing vessels, as well as meet the requirements for ships on board which internal combustion engines are installed

**1.3.4.7** The ship is considered as high-speed, if she is a ship with dynamic principles of support, including gliding or ship capable to develop maximum speed in displacement condition, equal to or greater than the lesser of variables, determined by formulas, m/s:

$$v \geq 3,7 \Delta_{\min}^{1/6} \quad (1.3.4.7-1)$$

$$v \geq 2,7 L_{WL(\min)}^{1/2}, \quad (1.3.4.7-2)$$

where:  $\Delta_{\min}$  – ship's minimum operating displacement, see. 1.2 of Part IV "Stability, flodability and freeboard", t;  
 $L_{WL(\min)}$  - ship length on the waterline at  $\Delta_{\min}$ , m.

For multi hulls ships calculation according to formula 1.3.4.7-2 is performed for each hull.

**1.3.4.8** The following rules are applied to small crafts where applicable and appropriate, with special consideration of their requirements application :

**.1** Rules for classification and construction of ships, set out in the following sections of the SC Rules:

X «Boilers, heat exchangers and pressure vessels»;

XII «Refrigerators»;

XIII «Materials»;

XIV «Welding»;

XV « XVI "Structure and strength of fiber-reinforced plastic ships"."

**.2** Rules for classification and construction of high-speed craft.

**.3** Rules for the equipment of sea-going ships.

**.4** Rules for the cargo handling gear of sea-going ships.

**.5** Rules for construction of ship hulls and floating structures using reinforced concrete.

Floating piers and refulers, consisting of several small ships (pontoons, refuler pontoons), permanently interconnected to be used for the main purpose, which meet the requirements of the SC Rules (pipeline of the refuler is not subject to technical supervision), depending on area of operation, are subject to the additional requirements of the SS Rules and INS Rules are applied concerning the requirements arising and considering the excess total hull length of the floating pier or refuler, namely 24m or more and for inland vessels, which is LHxBHxT is a volume of 100m<sup>3</sup> and more with consideration of a floating pier and refuler as a single floating craft in accordance with the requirements of the SS Rules and INS Rules for its overall strength, including local strength of vessels' joints (pontoons), reliability of installation (anchor or mooring appliances), rescue and signaling means, gurd rails. These floating piers and refulers are classified in accordance with SC Regulation with setting the operation conditions on the basis of the lowest for vessels in the compound.

This provision does not apply to passenger floating piers designed for accomodation of more than 12 people, and other vessels that are not floating piers and refulers.

**1.3.4.9** SC Rules consist of Part I "Classification" and following parts :

II "Hull".

III "Equipment, Arrangements and Outfit".

IV "Stability, Floodability and Freeboard."

V "Machinery Installations. Machinery. Systems and Piping."

VI "Automation."

VII "Electrical Equipment."

VIII "Radio and Navigation Equipment."

IX "Life-Saving Appliances."

X "Fire Protection".

XI "Ships Trials."

XII "Materials".

XIII "Specific Requirements for Ships for Commercial Carriage of Passenger."

XIV "Means for the Prevention of Pollution from Ships."

#### **1.3.4.10 Basic information about the ship**

This section establishes the homogeneity of key definitions of particulars and data on the condition of loads of a small craft in accordance with the  $\Delta$ CTY EN ISO 8666 «Small crafts. Basic data» and the applicable ISO and EN standards and applied in the SC Rules. Thus considered relative definitions of standards  $\Delta$ CTY EN ISO 12217 and the applicable ISO and EN standards.

Symbols used in SC Rules, are indicated in brackets if they differ from  $\Delta$ CTY EN ISO 8666 and the applicable ISO and EN standards.

##### **1.3.4.10.1 Terms and definitions**

The terms in this section define the following:

*Waterline, WL* is a line crossing the plane, which coincides with the surface of calm water with the ship's hull, which is a straight line on the ship projections "side" or "hull" and has its real shape to the projection of "half-breadth plane";

*Reference Waterline,  $WL_{ref}$* , (KBJI) is a waterline of a ready-to-operation ship in full load condition;

*Side line* is a line of crossing of the upper deck surfaces with ship sides or their extensions when rounded connection of the deck with the side or side line upper position in the absence of the deck or the side protrudes above the deck, see also Fig. 1.3.4.10.2.7 in the determination of  $\Delta_{max}$  for side line position with hacking of connection between the deck and the side;

*The breadth of the transom, BT* is a maximum width of the hull on the upper edge of the transom, but not above the side line, excluding protruding parts (extension) of the hull, handrails and fittings. If the spray reflectors act as bilge or a part of gliding surface, then they are included in the breadth of the transom.

For vessel with rounded or pointed stern or transom width less than half the width of the largest vessel, transom width is defined as the greatest width of the hull through the side or below it in the stern of the ship at  $\frac{1}{4}$  the length of the hull to the bow;

*Displacement, ( $\Delta$ )* is the mass of water displaced by the ship's hull, including all fixed underwater protruding parts. Displacement is measured in kilograms or tonnes;

*Displacement at full load,  $m_{LDC}$* , ( $\Delta_{max}$ ) is the mass of water displaced ready for operation of the ship, including all protruding parts submerged in a state of full load according to 1.3.4.10.3.3;

*Volume displacement, VD* is the volume of water displaced by the ship's hull, which corresponds to the mass displacement of water as defined above,  $m^3$ . Where the density of water, which is used to calculate the volume of displacement does not correspond to salt water with density of  $1025 \text{ kg/m}^3$ , density of water that is used to calculate volume displacement is indicated;

*Tank capacity* is a useful volume of the tank of the motionless vessel on the construction waterline –  $WL_{ref}$ ,  $m^3$ .

Basic symbols (abbreviations) and their measurement units, used in different parts of SC Rules, are given in Table 1.3.4.10.1.

##### **Table 1.3.4.10.1 Symbols (abbreviations) and measurement units**



Symbol	Definitions	Measurement units	Symbol	Definitions	Measurement units
$A_S$	Area of sils	m <sup>2</sup>	$m_{LC} (\Delta_{min})$	Minimum displacement empty	kg, t
$B_H (B)$	Hull breadth (largest breadth)	m	$m_N$	Net mass	kg, t
$B_{max}$	Maximum breadth (overall breadth)	m	$m_p$	Performance trial mass	kg, t
$B_{WL}$	Waterline breadth	m	$m_L (DW)$	Maximum load (Deadweight)	kg
$B_T$	Transom breadth	m	$T$	Draft	m
$D_{max}$	Maximum depth	m	$T_C$	Constructive draft	m
$D_{L_{WL}/2} (D)$	Midships depth (depth)	m	$T_{max}$	Maximum draft	m
$F$	Freeboard	mm	$T_{min}$	Minimum draft	m
$F_A$	Aft freeboard	mm	$V_D$	Volume displacement	m <sup>3</sup>
$F_F$	Forward freeboard	mm	$V$	Volume	m <sup>3</sup>
$F_M$	Midships freeboard	mm	$V_H$	Hull volume	m <sup>3</sup>
$H_a$	Height above water	m	$V_S$	Superstructure volume	m <sup>3</sup>
$L_H$	Hull length (largest length)	m	WL	Waterline	
$L_{max}$	Maximum length (overall length)	m	WL <sub>ref</sub>	Reference waterline	
$L_{WL}(L_{B.I})$	Waterline length	m	$\beta$	Deadrise angle	° (degree)
$m_G$	Gross mass	kg, t			
$m_{LDC} (\Delta_{max})$	Maximum displacement in load	kg			

#### 1.3.4.10.2 Determination of ship's dimensions

.1 The dimensions of the ship are determined in the ship motionless condition without roll at flatwater in displacement in on construction waterline, unless otherwise indicated.

.2 The dimensions of the ship are measured perpendicular to midships, or diametrical plane or parallel to the main water line of the ship, as the distances between two perpendicular to the respective planes.

#### .3 Maximum length (overall length), $L_{max}$

This length includes all structural and integral parts of the hull, such as foreframe, sternpost, bulwark and other gears and structures attached to the hull.

If applicable, this length should include permanently attached parts, such as stationary rigging, bowsprit, platforms, encompass and rubbing strakes, stationary fenders, hinged control surfaces, outboard engine fixings, outboard driving units, water cannons and any other structures, such as platforms for swimming and / or embarkation on the ship.

Outboard driving units, water cannons and all moving parts must be in their normal operating mode at their maximum size along the ship when the ship is ready to move.

Outboard engine, as well as any other type of equipment that can be dismantled without tools are not included in maximum length.

Refer to Fig. 1.3.4.10.2.3-1 and 1.3.4.10.2.3-2 for measuring monohull and Fig. 1.3.4.10.2.3-3 for multiple hull ship measurements.

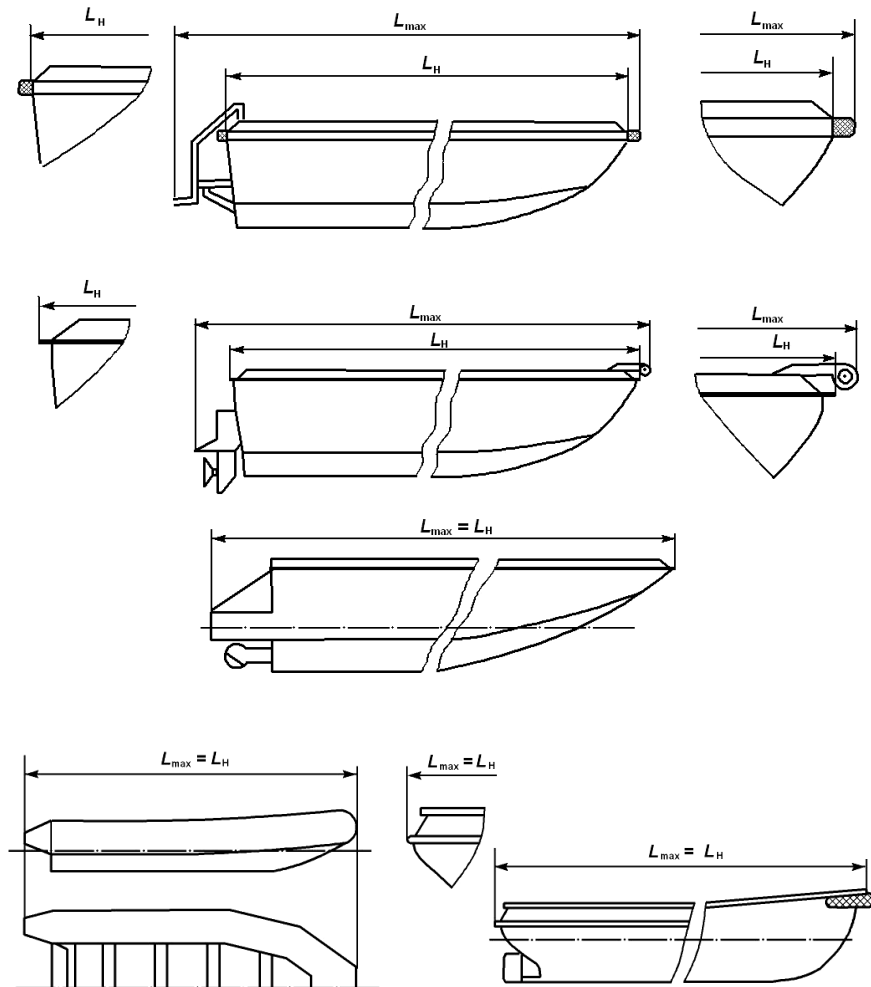


Fig. 1.3.4.10.2.3-1. Determination of  $L_{max}$  and  $L_H$  H for motor single-hull craft

#### .4 Hull length (maximum length), $L_H$

This length includes all structural and integral parts of the hull, such as wood, plastic or metal foreframes or aftframes, bulwarks and the hull and the deck connection.

This length excludes removable parts that can be removed without destroying manner, without affecting the structural integrity of the hull, for example, spar bowsprit, bulwarks and ship's platforms, stem fittings, rudders, outboard driving machines, overhead motors and their mounting platforms for swimming and embarkation on the ship rubbing strakes and fixed fenders.

This length does not exclude detachable hull parts that serve to ensure the maintenance of hydrostatic or dynamic support when the ship is under at rest or on the move.

Multiple hull vessels for each hull length should be measured individually.

The longest length of her hull shall be admitted as the length of the hull of the vessel.

Refer to Fig. 1.3.4.10.2.3-1 and 1.3.4.10.2.3-2 for measuring monohull and fig. 1.3.4.10.2.3-3 for multiple hull vessel measurementsa.

#### .5 Waterline length, $L_{WL}$

The length of the hull on the water line for the project ship is determined on the basis of .2.1 and .2.2 between the points of intersection of the bow and stern parts of the waterline that corresponds to the state project with the project different with diametrical plane. The length of the designed waterline is determined for the state of the vessel ready for operation with the largest project loads.

The waterline length of the multiple hull vessel is referred to the longest of the hulls.

#### .6 Maximum breadth (overall breadth), $B_{max}$

The maximum breadth is measured on the basis of .2.1 and .2.2 between perpendiculars to the main plane passing through the most remote parts of the breadth of the ship.

The maximum breadth includes all structural or integral parts of the vessel, of overhang type (crinoline) of the hull, hull connections with deck bulwark, rubbing strake, stationary fenders and guard rail and other protruding parts of the ship.

### .7 Hull breadth (maximum breadth), $B_H$

The breadth of the hull is measured taking into account .2.1 and .2.2 between perpendicular to the main plane passing through the most remote not removable breadth parts of the hull.

Hull breadth includes all structural or integral part of the vessel like hull extension (excessions), hull connections with the deck plating and bulwarks.

The breadth of the hull does not include removable parts that can be disconnected without destroying way without damage and breach of the integrity of the vessel, such as rubbing strakes, fenders, handrails and pillars that protrude over the ship's side and other similar equipment.

The breadth of the hull must include detachable hull parts that serve to ensure the maintenance of hydrostatic or dynamic support when the ship is at rest or on under way.

For multiple hull vessels the breadth of her hull is measured respectively for each single hull.

Refer to Fig. 1.3.4.10.2.7 a for measuring of a monohull and fig. 1.3.4.10.2.3-3 for multiple hull ships.

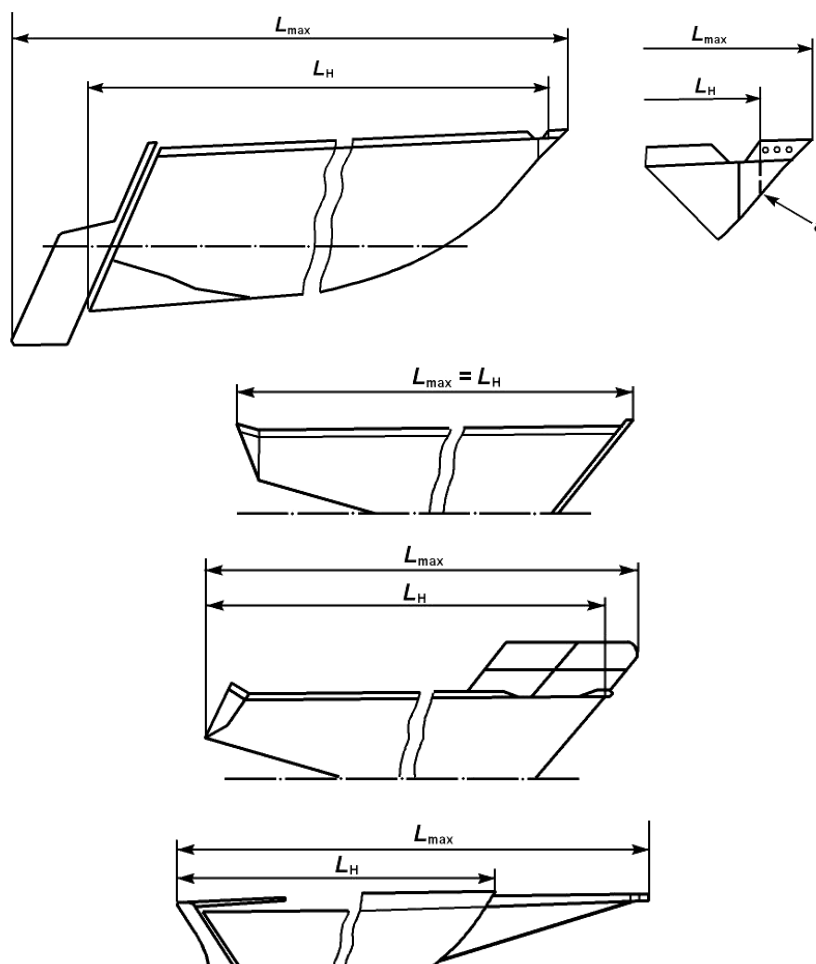


Fig. 1.3.4.10.2.3-2. Determination  $L_{max}$  and  $L_H$  for sailing monohull ships

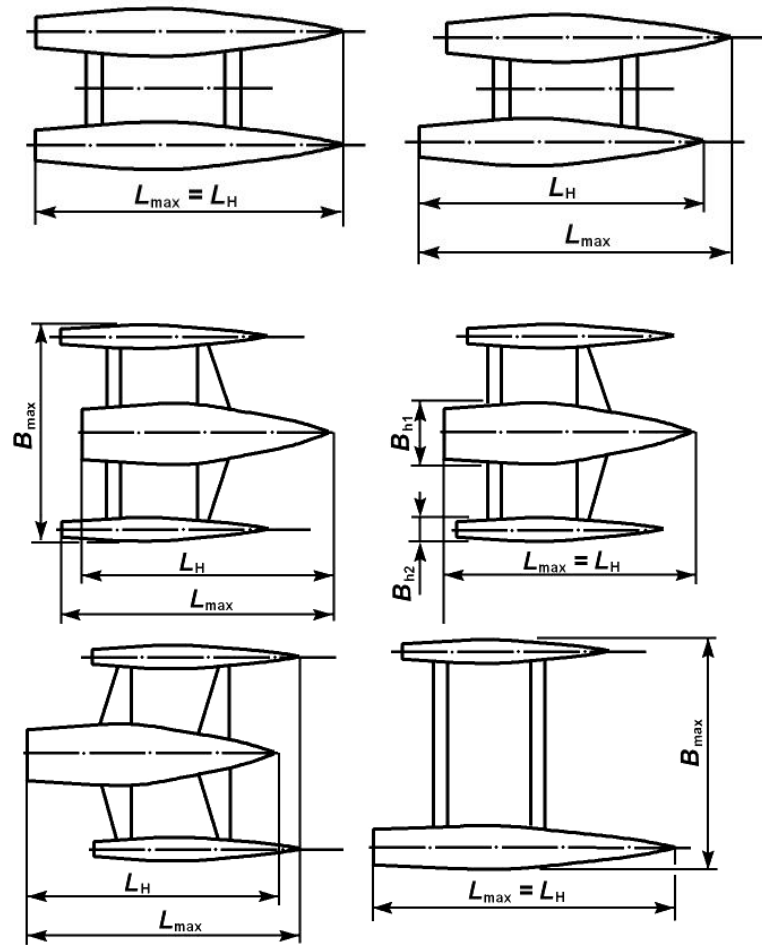


Fig. 1.3.4.10.2.3-3. Determination of  $L_{\max}$ ,  $L_H$ ,  $B_{\max}$  and  $B_H$  for multiple-hull ships

#### .8 Waterline breadth, $B_{WL}$ ( $B_{B,1}$ )

Waterline breadth is measured considering .2.1 and .2.2 as the maximum distance across the breadth between the points of intersection of the surface of the hull with waterline plane at a certain load condition of the vessel.

For multiple hull ships the breadth across the waterline should be set individually for each hull.

#### .9 Maximum depth, $D_{\max}$

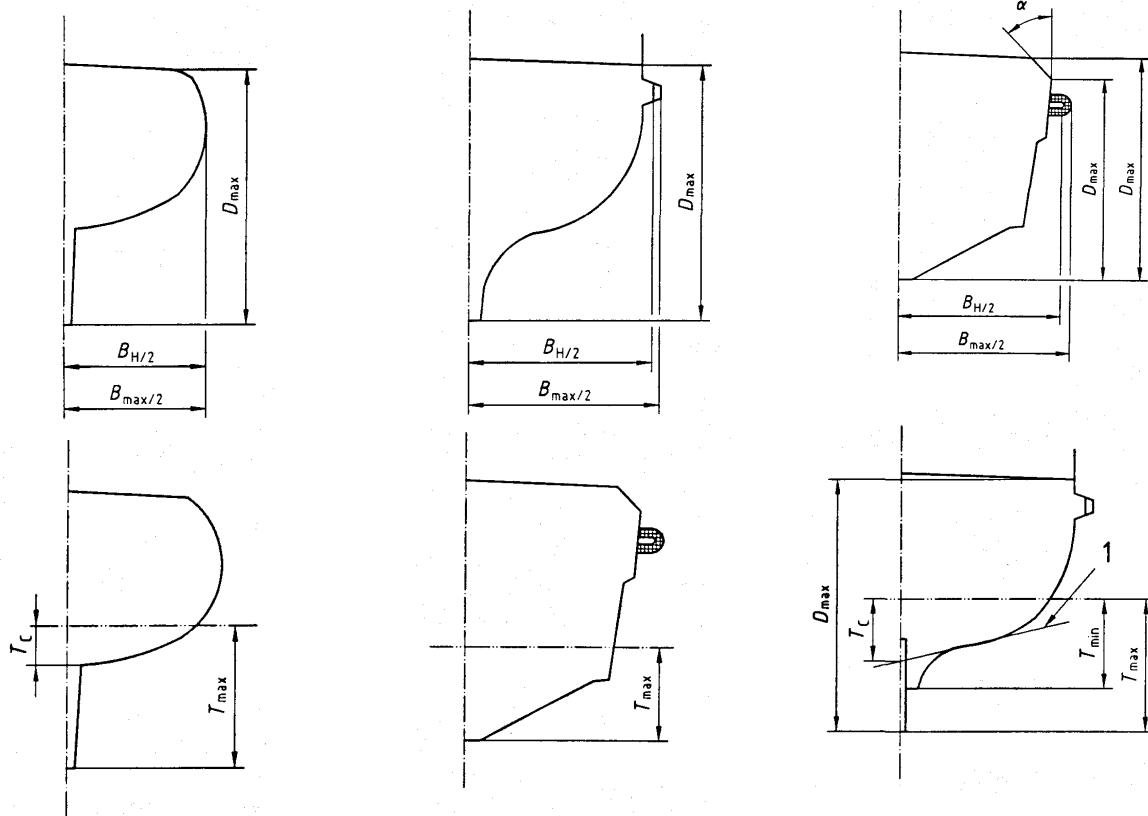
The maximum depth is measured as the vertical distance between the side line for half the length of the waterline,  $L_{WL}$  ( $L_{B,1}$ ) and the lowest point of the keel. This should take into account that the traditional ship with developed keel or with constructive trim the slope of the keel can increase the depth at the stern of the vessel and, accordingly, the very lowest point of the keel for this measurement will not be half the length of the hull or waterline.

#### .10 Midships depth (depth), $D_{L_{WL}/2}$ ( $D$ )

Depth is measured at the midships at half the designed waterline length as the distance between the side line and lowest point of the keel in the same section.

#### .11 Freeboard, $F$

The height of the freeboard is measured considering .2.1 as the shortest distance between the side line in a particular place along the waterline of the ship and waterline plane for a given loading condition of the ship.



**Fig. 1.3.4.10.2.7 Determination of  $B_{max}$ ,  $B_H$ ,  $D$  and  $T$ .**

*Note:* 1- tangent line to midships frame at the inflection point (if inflection). The upper position  $D_{max}$  depends on the slope angle of surface of connection fracture of the side/deck  $\alpha$  in area of the actual deck connection with the side. If  $\alpha \geq 45^\circ$  a lower position is adopted, and where  $\alpha < 45^\circ$  a higher position is applied.

#### **.12 Aft freeboard, $F_A$**

Height of freeboard at the stern of the vessel is measured according to the extreme point **.2.11** in line to board the stern of the ship.

#### **.13 Midships freeboard, $F_M$**

Height of freeboard at the midships is measured according to **.2.11** half the length of the designed waterline.

#### **.14 Forward freeboard, $F_F$**

Height of freeboard at the bow of the ship is measured according to **.2.11** in extreme forward part of the side/deck line.

#### **.15 Draft, $T$**

Draught is measured as the vertical distance between the waterline of the vessel in fully loaded condition ready for use and a defined point of the hull underwater (refer to Fig. 1.3.4.10.2.7).

#### **.16 Maximum draft, $T_{max}$**

Maximum draft is measured to the lowest point of the hull underwater part or attached gear, including keel, including retractable, retractable centreboard or centerboards in their lowest position.

#### **.17 Minimum draft, $T_{min}$**

Minimum draft is measured to the lowest point of the vessel or not attached retractable gear, whichever is lower. All retractable underwater parts should be raised to their highest position.

#### **.18 Constructive draft, $T_C$**

Constructive draught is measured between crossing of the hull with the diametrical plane of the vessel at the lowest point of the hull. In cases where the keel can not be easily separated from the body, constructive draft shall be determined at the point of intersection of the tangent to the surface of the hull closest to the horizontal plane with the diametric plane.

Constructive draught does not include protruding parts such as rudders and skegs.

**.19 Room height**

The height of the room is measured as the vertical distance from the highest plane of the cabin/compartment floor plating to the underside of the deck beam or deckhead sewing (whichever is below) in a particular place. The manufacturer can indicate the room height and in other places, such as above the beds.

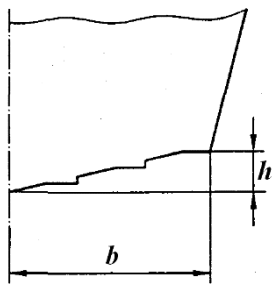
**.20 Air height,  $H_a$**

Air height is measured as the vertical distance from the surface of the water at ship' empty displacement to the highest point of the ship construction or mast.

The manufacturer may specify in the Manual for the owner of the ship the need to make a correction to the said air draft concerninc the installation of a masthead light and the possible installation of antennas (aerials).

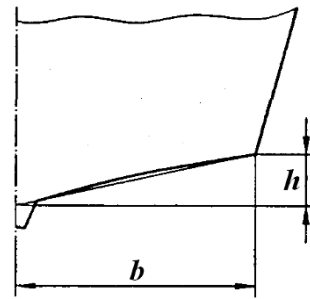
**.21 Deadrise angle,  $\beta$**

Deadrise angle means the slope angle of the bottom from horizontal position in a certain cross-section of the vessel, measured according to Fig. 1.3.4.10.2.21, in degrees.



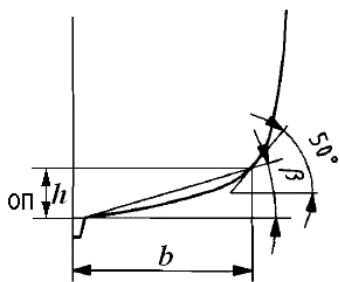
**a) Flat bottom**

Deadrise angle is measured excluding a planing step and other protruding parts



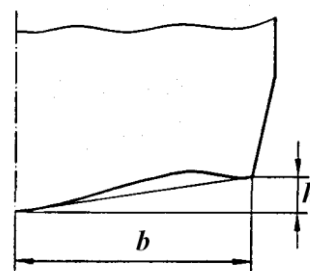
**b) Concave bottom with the keel**

Deadrise angle is measured between the points of intersection of the bottom with the keel and bilge



**с) Опукле днище**

Deadrise angle is measured at the point where the tangent to the outer plating is at an angle of 50 to the main plane



**d) Concave bottom with the wing**

Deadrise angle is measured between the main line and the outer end of the wing.

Calculation of deadrise angle:  $\beta = \arctg (h/b)$

**Fig. 1.3.4.10.2.21. Deadrise angle determination**

**.22 Sail area,  $A_s$**

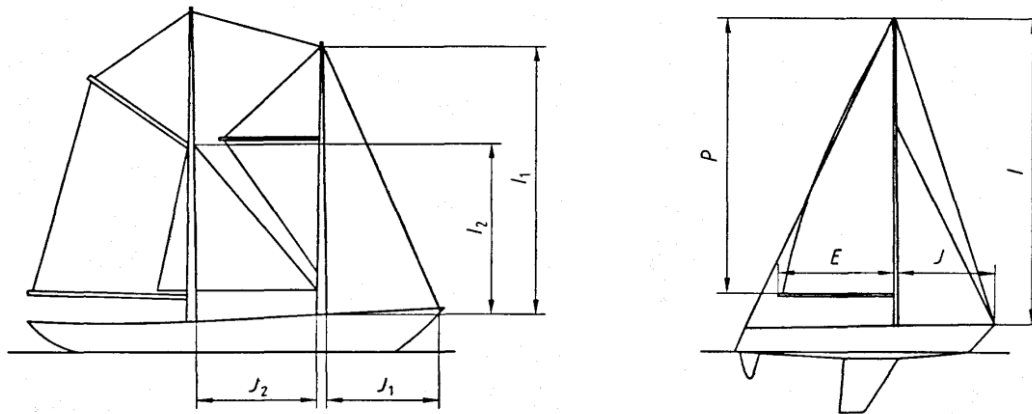
The project area ship sails, m2, defined as the sum of projected areas of horizontal sails that can be simultaneously installed by driving vehicles course "wind on the bow" and attached to booms, gaffs, bowsprits

or other masting, and area of fore and aft sails to the most remote forestays permanently attached during the operation of the ship (without imposing one to the other); while the fore and aft leeches of fore and aft sails are taken as straight lines.

The area of skew sail for each mast must be determined as  $I \times J/2$ , where  $I$  and  $J$  - the distances between the front side of the mast and feeding edge of forestay and deck line at the side as shown in Fig. 1.3.4.10.2.22.

If forestays between masts do not reach the deck, the area of fore and aft sails should be adopted, as shown in Fig. 1.3.4.10.2.22 (P and E), but just in case the sails are bearing that can be found on the availability of appropriate guys.

The area of the spars is not included in the design area of the sails, which is determined, except for masts with a wing profile.



*Note.* The mast, which has a wing profile is characterised by its cross-section, which has a smooth transition in the aft end part into the sail, thus, contributing to its driving force. Cross-sections of masts are usually oval, sometimes there are round or rectangular cross-sections.

**Fig. 1.3.4.10.2.22. Sail area determination**

### .23 Volume, $V$ :

Ship volume is determined in accordance with the following formula, in  $m^3$ :

$$V = V_H + V_S, \quad (1.3.4.10.2.23)$$

where:

$V_H$  - hull volume,  $m^3$ ;

$V_S$  - superstructure volume,  $m^3$ .

The volume of the vessel should be determined for each element of the maritime architecture by methods or according to rough estimates set out in .2.23.1 and .2.23.2.

Volume can be established by measuring the breadth of the hull in different cross-sections along its length, performed as indicated in Fig. 1.3.4.10.2.23.

#### .23.1 Hull volume, $V_H$

Using an approximate method, the hull volume can be determined by measuring the breadth of the hull in different cross-sections along its length, performed according to Fig. 1.3.4.10.2.23, by formula,  $m^3$ :

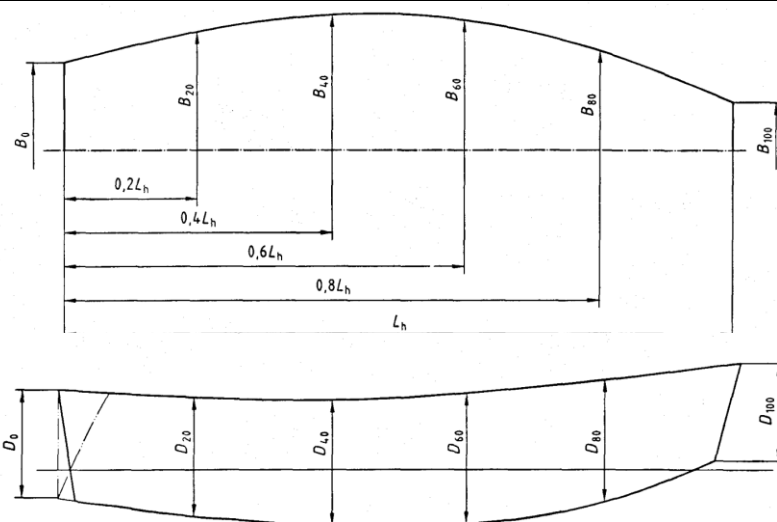
$$V_H = 0,15L_n(B_0D_0 + B_{20}D_{20} + B_{40}D_{40} + B_{60}D_{60} + B_{80}D_{80} + B_{100}D_{100}).$$

#### .23.2 Superstructure volume, $V_S$

Superstructure volume is determined as the sum of volumes for each part of the superstructure above the deck side line. Any space that is "open" not more than from one side, should be included in the calculation.

"Open" in this sense means that no more than 10% of the area may be closed by the construction of the superstructure.

Volumes less than  $0.05m^3$  may not be considered.



**Fig. 1.3.4.10.2.23. Measurements for ship hull volume determination**

**.24 Net mass,  $m_N$**

Ship transportation net mass includes all fixed and moving equipment supplied by the manufacturer to complete the vessel, but shall not include appliances used in transportation of the ship.

**.25 Gross mass,  $m_G$**

Ship transportation gross mass includes net mass in accordance with .24 and also adjusting, fixing and protection devices for transportation, such as stocks, supports, fastenings and protective closure.

**.26 Light condition mass,  $m_{LC}$**

**.26.1 Construction and equipment included in  $m_{LC}$ .**

Ship light condition mass includes:

**.1** All structural parts including ballast keel and / or retractable keel / centreboard / centreboards and helm / control surfaces;

**.2** Ballast - removable ballast (solid or liquid) that is delivered with the vessel and / or intended by the manufacturer for use in navigation of the ship;

**.3** Interior design and facilities, including: recesses and bulkheads, insulation, plating, built-in furniture, materials buoyancy units, windows, hatches and doors, cladding materials;

**.4** Engine and fuel / lubricant system.

*Engine and fuel / lubricating system installed permanently.*

Stationary mounted engine and fuel / lubricant systems are the engine(s), located inside the vessel, including all auxiliaries and control devices that are essential to her operation, and stationary fuel / lubricant systems, including their tanks;

*Outboard engines.*

- Ship mass should be specified with a mass of suspended engine(s), including:

- The mass of heaviest engine(s) recommended for use by the manufacturer of the vessel, regardless of whether that packaging of machinery and equipment is related to her, when shipping the vessel by the manufacturer may have carried out separately;

- The mass of any stationary fuel / lubricant system;

- Mass engine and steering control units;

**.5** Internal equipment, including:

- All the equipment, which is permanently installed on the ship, e.g. tanks (removable tanks and canisters), system / systems of waste and household water treatment, water-supply equipment, drainage system (systems), galley and heating appliances, refrigeration equipment, ventilation system (systems); - Electric installation and equipment, including rechargeable batteries;

- Installed navigation and electronic equipment;

- Fire-fighting equipment;

- Furnishing equipment and interior elements;



**.6 Internal equipment, including:**

- All the equipment, which is permanently installed on the ship, e.g. tanks (removable tanks and canisters), system / systems of waste and household water treatment, water-supply equipment, drainage system (systems), galley and heating appliances, refrigeration equipment, ventilation system (systems);

- Electric installation and equipment, including rechargeable batteries;
- Installed navigation and electronic equipment;
- Fire-fighting equipment;
- Furnishing equipment and interior elements.

**.26.2 Products, equipment and other, which masses are not included in mLC:**

- Not fixed internal equipment, like cutlery, crockery, galley utensils, bed and galley linen;
- Not fixed electronic and navigation equipment (e.g. mate maps, etc.);
- Tools, spare parts;
- Additional (spare) sails;
- Life-saving equipment, including personal;
- Foodstuff and other supplies, if they are provided in the documentation of the ship;
- Bilge water;
- Sewage;
- Drinking water;
- Fuel and oil;
- Personal belongings;
- Life raft;
- Ship boat;
- Crew and passengers;
- The cargo carried if it is provided by the ship documentation.

**.27 Ship performance trials mass,  $m_P$** 

- Ship performance trials mass includes all provided permanently installed equipment and products. In addition, the ship must be completed by all not permanently installed equipment and products needed for safe operation of the ship, such as: -

- Cables; -
- Anchors / chains / rigging; -
- Working sails; -
- Engine / motors; -
- Batteries.

In addition, the following should be included into the mass:

- People in a quantity necessary for the safe testing of the ship;
- Fuels, at least 25% but not more than 50% of the capacity of fixed fuel tanks or other portable tank for each engine, which will be filled at least 50% before each test of the vessel;
- Life-saving and safety equipment for all people on board the vessel.

Ship performance trials mass, if they do not need during the test should not include the following masses:

- Freshwater;
- Sewage;
- Provisions and other supplies;
- Not fixed internal equipment, like cutlery, cookware, galley dishes, spare parts, etc.

**.28 Maximum load (deadweight),  $m_L$  (DW)**

The term "maximum load" or "deadweight" should be understood as "recommended by the manufacturer value of the maximum load" determined based on accepted standards of stowage and cargo mass, kg: fuel, oil, water, provisions, different equipment and supply, people and their personal belongings, which are part of deadweight and for which the ship is designed.

Deadweight of the vessel should be defined and do not exceed the value of maximum load that can be added to the mass of the empty vessel, without violating the requirements for stability, freeboard and floodability, as defined in SC Rules considering the class of the ship or in the standards ISO 12217: considering the given ship project category and sailing conditions  $\alpha$ .

**.28.1 Definitions.**

*Seating area* is a place on the open part of the vessel or in a cockpit or in the premises of the vessel for sitting of each person with dimensions not less than 500 mm x 750 mm.

Ships of 2-5 coastal navigation areas (pursuant to SC Rules) and of design categories C and D (in accordance with Directive 2013/53 / EU and ДСТУ EN ISO 12217 and the applicable ISO and EN standards) deck area near the cockpit can be used for this purpose.

*Seats* means any surface, horizontal or almost horizontal, where people can sit with minimum dimensions of 400 mm x 750 mm. It is recommended to take a seat width of 500 mm.

### **.28.2 Maximum number of persons, $n_{max}$ .**

The maximum number of people staying on the vessel at the time of operation shall not exceed:

**.1** The number of people for which the ship meets the requirements for freeboard, stability and floodability, according to the requirements of SC Rules;

**.2** Number of people for which seating area defined by the manufacturer with the sizes specified in **.28.1**.

### **.28.3 Deadweight composition.**

The deadweight shall as minimum include the following masses:

**.1** The number of people under **.28.2** weighing 75 kg each person. When the project envisages the presence of children on board, the above maximum number of people can be exceeded provided that the weight of each child is not more than 37.5 kg and the maximum permissible mass of people has not been exceeded;

**.2** Main equipment of the vessel, defined as  $(LH - 2.5)^2$ , kg, but not less than 10 kg;

**.3** Supplies and cargo if it is provided by the documentation of the vessel, dry provisions, rare marine reserves (account materials, not specified in **.28.3.5** or **.28.3.4**) and different equipment, not included in the light mass of the vessel or **.28.3.2**;

**.4** Contents of all stationary tanks filled to 95% of their maximum capacity, including liquid marine reserves (drinking water, fuel, oil), waste and sewage, hydraulic systems oil, water with bait and water ballast tanks at 100% of their capacity;

**.5** Liquid marine reserves (drinking water, fuel, oil) in portable tanks filled to 95% of their maximum capacity;

**.6** Life raft (rafts), including provided over those required safety standards, or the ship's lifeboat with its engine if they are provided by the documentation of the ship;

**.7** Non-food supplies and equipment that are typically stored on board and are not included in the manufacturer of standard equipment, refer to **.26.2** and **.2** above, such as laptop internal machinery equipment, spare parts, tableware, kitchenware and cutlery, additional anchors and sails;

**.8** Yachting life rafts in part provided in **.6** in accordance with the calculation kg, within the value of  $(12 + 2n_{max})$  to twice this value, in accordance with the specification;

**.9** Personal belongings of people on living ships in accordance with the calculation of at least 20 kg per person;

**.10** Reserve for the greatest mass for optional equipment and fittings that are not included by the manufacturer into the basic supply.

### **.28.4** The information in the Guidance for the owner of the ship.

**.1** The manufacturer shall clearly specify in the owner Manual the maximum number of people under **.28.3.1**. If the vessel documentation provides the replacement of adult passenger by children under **.28.3.1**, any changes to the location of the seats, if required, shall also be specified in the Guidance for the owner of the ship.

**.2** The manufacturer shall clearly specify in the Guidance for the owner the maximum load recommended by him according to **.28.3**. Listed in **.28.3.1**, **.28.3.5** and **.28.3.6** shall be specified with a note that the maximum recommended deadweight includes only those products with indicating their common characteristics.

### **1.3.4.10.3 Ship loading conditions**

#### **1.3.4.10.3.1** Trial condition.

To determine the maximum speed and maneuverability characteristics of the vessel the ship must meet the ship mass specified in **1.3.4.10.2.27**.

**1.3.4.10.3.2** Ready to operation vessel load condition.

The ship is in a state ready for operation when she is fully equipped for a particular purpose with regard to the following:

- Completely filled fuel / lubricant tank;
- Completely filled tanks of fresh water;
- Filled with water bait tanks and living fish cages to their design values.

Liquid mass should be measured or calculated, taking into account the most useful volume of tank (tanks).

Masses of outboard engines and batteries must meet the largest rated power, for which the ship is designed.

**1.3.4.10.3.3** Ready to operation vessel maximum load condition.

The vessel equipped and loaded according to **1.3.4.10.3.2** and further comprising:

- Mass of people (75kg each person, refer to **.28.3.1**). Also in maximum amount for which the ship is designed under their normal location in the cockpit in a sitting position;
- Mass of personal equipment of the main equipment of the vessel, defined as  $(L_H - 2,5)^2$ , kg, but not less than 10 kg;
- Mass of life-raft and / or boat if it is provided in the documentation of the ship.

The designer / manufacturer should specify the appropriate mass and draft for this load condition of the ship.

**1.3.4.10.4** Permissible deviations from basic ship data**1.3.4.10.4.1** The published data.

Data are considered published if they are specified in the Guidance for the owner of the ship or in printed specification or the other printed material that is used in the sale of the ship.

The published data shall be within these following tolerances specified in the table 1.3.4.10.4.1.

**1.3.4.10.4.2** Попередня специфікація.

Previous specification. Previous specification of dimensions, displacement and mass should be identified by the corresponding term like "previous", "approximate", "estimated", "variable", etc. If applicable, the deviation values shall not exceed  $\pm 3\%$  for dimensions and  $\pm 15\%$  for mass, volume and tonnage.

**Table 1.3.4.10.4.1** Tolerance for published data

Data	Tolerance <sup>1</sup> , %
Linear dimensions of the ship with rigid hull	$\pm 1$
Linear dimensions of the ship with inflatable hull	$\pm 2,5$
Sail area	$\pm 5$
Displacement	$\pm 10$
Volumes	$\pm 5$
Masses	$\pm 5$
Speed <sup>2</sup>	$\pm 5$

<sup>1</sup> Some critical values can affect the tolerances, such as the maximum breadth or the maximum mass for transportation on trailer. In these cases, tolerances upwards are not applied.

<sup>2</sup> The speed of the ship with the load at performance trials under **1.3.4.10.2.27** unless other mass or load condition is stipulated specially.

**1.3.4.11** Guidance for the owner

**1.3.4.11.1** All small craft shall be provided with Guidance for the owner. This manual shall provide all necessary information for the safe operation of the ship, her equipment and supply, gears, systems and environmental protection, focusing on preparations for the operation, maintenance, operating conditions, prevention of risky actions and risk management.

Information shall not include information on technical maintenance in addition to the usual regular checks intended to perform actions on manning of the ship. Guidance may include a check-list that defines the procedure to be performed before the operation of the ship.

Guidance shall be made out in paper form, acceptable or necessary in the country of intended operation. Guidance shall be made up in language(s) easily understood by consumers and end-users, as determined by the countries concerned, including which made sales of vessel and acceptable to the Register in their differences. Guidance can be multilingual.

If the Guidance contains more than four pages, it must contain indicating page numbers. Information can be presented in the form of text, symbols and icons.

Guidance for the owner may also be in electronic form if the following conditions are met:

Data editing protection is provided;

Guidance installed into the intended for this computer connected to the main and emergency power supply and always available for use in the operation of the ship;

Brightness of data view on a computer monitor shall not interfere Watchkeeping at night;

The ship is backed up with Guidance on other electronic media.

**1.3.4.11.2** The following information, if applicable, should be reflected in the Guidance for the owner:

- Dimensions of the vessel;
- Dimensions of the hull;
- Draft (draft);
- Air height;
- The volume of reservoirs (tanks), including useful amounts and dead residue;
- Design sails area;
- Mass at speed trial (for motor vessels);
- The mass of the vessel for transportation on trailer (if applicable);
- Ship light condition mass;
- Ship load in fully ready for operation condition;
- Maximum load (deadweight).

The guidance also provides the necessary data from other parts of SC Rules.

### **1.3.4.12 The identification number and manufacturer's plate**

#### **1.3.4.12.1 General.**

The requirements of this section apply to pleasure crafts, built in the European Union (EU), as well as pleasure crafts, constructed in other countries, which are intended for use in the EU. The requirements of this section shall also apply to recreational crafts built outside the influence of EU regulations, and other types of small vessels under the scope of ISO 10087:, ISO 14945:, ISO 6185 and ISO 13590: in countries where national law provides for these standards ISO (in Ukraine - ДСТУ EN ISO 10087, ДСТУ EN ISO 14945, ДСТУ EN ISO 6185 and ДСТУ EN ISO 13590).

Small craft built on 1 December 2012 and after that date under the technical supervision of the Register should be marked with the identification number of the ship under **1.3.4.12.2**.

Small craft built under the technical supervision of the Register should be provided with the stationary plate of the manufacturer in accordance with **1.3.4.12.3**.

#### **1.3.4.12.2 ID number.**

Small craft shall be marked with the craft identification number (CIN), that in respect of the given vessel contains the following data:

- .1** Country manufacturer code;
- .2** Manufacturer-specific code assigned by the national body of the country;
- .3** Individual serial number;
- .4** Month and year;
- .5** Year model.

Small craft built in Ukraine under the technical supervision of the Register, must be marked with the identification number of craft, which relative to this ship contains the following data:

- .1** Country manufacturer code - UA;
- .2** The manufacturer's identification code as defined by the Register;
- .3** Serial number of the craft;
- .4** Code of the month of manufacture;
- .5** Last digit of the year of manufacture;
- .6** Year (last two digits of the planned year) of the model (the year when the craft is scheduled for selling).

The content of these data, taking into account the specified, and applying of permanent markings on the hull or on a plate, permanently fixed to the hull shall meet the requirements of ISO 10087: «Small crafts. Identification of the craft. The coding system» or the applicable EN standard (in Ukraine - ДСТУ EN ISO 10087 «Small craft. Hull identification. The coding system»).

**1.3.4.12.3** Manufacturer's plate.

**1.3.4.12.3.1** The small craft, including inflatable crafts of types IX and X on **10.1.3**, Part II of "Hull" of SC Rules and ДСТУ EN ISO 6185-4:2015 and the applicable ISO 6185-4:2011 or EN standards (concerning inflatable crafts of other types and water bikes, which are manufactured out of the action of the provisions of Directive 2013/53 / EU, refer to **1.3.4.12.3.2**), shall be provided with stationary plate of the manufacturer mounted separately from the identification number of the craft (refer to 1.3.4.12.2) containing the following information:

**.1** Manufacturer's name, registered trade name or registered trade mark, with contact address;

**.2** Marking "CE" for vehicles with a document confirmation in accordance with 3.4.2 (marking "EC" in accordance with the basic principles of Regulation (CE) № 765/2008 (Annex II) and Article 18 of Directive 2013/53 / EU with the Register identification number as Notified Body (if it is involved in the production control stage or assessment after manufacturing)<sup>3</sup>;

**.3** Design category / categories of vessel (if defined) and area of navigation<sup>1</sup>;

**.4** Maximum load<sup>2</sup>, recommended by the manufacturer, including the mass of outboard engine / engines (for vessels equipped with an outboard engine / motor) and excluding the mass of fuel and water tanks when filled (denoted with symbols "man", "suitcase" and outboard engine symbol);

**.5** Maximum number of persons<sup>2</sup>, for transportation of which the ship is designed, according to **1.3.4.10.2.28.2** (denoted with the symbol "man").

The manufacturer's plate must meet the requirements of ISO 14945: «Small craft. Manufacturer's plate.» or the applicable EN standard (in Ukraine - ДСТУ EN ISO 14945 «Small craft. Manufacturer's plate»).

**1.3.4.12.3.2** Inflatable small craft of types I-VIII on 10.1.3 of Part II of "Hull" of SC Rules and ДСТУ EN ISO 6185 or the applicable ISO or EN standards and water bike manufactured outside the action of the provisions of Directive 2013/53 / EU, shall be provided with a stationary plate of the manufacturer mounted separately from the identification vessel numbers (refer to 1.3.4.12.2) that meets the requirements of ДСТУ EN ISO 6185 or the applicable ISO or EN standards and, for water bikes ДСТУ EN ISO 13590 or the applicable ISO or EN standards and in accordance with these standards includes the following data:

**.1** For inflatable crafts number of corresponding part of ДСТУ EN ISO 6185 or the applicable ISO or EN standards and the type of ship;

**.2** Name of the manufacturer or importer and the country of origin;

**.3** Design category/categories of the ship (if determined) and area of navigation<sup>1</sup>;

**.4** For inflatable boats maximum engine power, kW (denoted by the symbol outboard engine);

**.5** Maximum number of persons<sup>2</sup>, for transportation of which the ship is designed, including for inflatable boats **6.9.3** of IV «Stability, floodability and freeboard" of SC Rules (denoted with the symbol "man");

**.6** Maximum load<sup>2</sup>, which the craft may accept specified by the manufacturer, taking into account, for inflatable boats **6.9.6** Part IV «Stability, floodability and freeboard" of SC Rules (denoted with symbols "man", "suitcase" and outboard engine symbol);

**.7** For inflatable boats recommended working pressure of inflatable hull (denoted by the symbol of pressure);

**.8** Maximum sail area if the rig provided (indicated with the symbol of a sailing vessel).

*Notes to 1.3.4.12.3.1 and 1.3.4.12.3.2.*

<sup>1</sup> Project category of the craft is indicated for recreational crafts built in the EU, as well as for recreational crafts built in other countries, intended for use in the EU and for ships built outside the influence of regulations of the EU, for which the design category of crafts is determined under the standard ISO 14945 (in Ukraine ДСТУ EN ISO 14945). For these and other small crafts, classified in accordance with the requirements of Sc Rules, are indicate (via a fraction, if any project category is assigned) assigned signs of navigation area and sailing restrictions in accordance with 2.2.5.7, for example: **M** (unrestricted navigation area), **MR1**, **MR2**, **ПМ1** or **П31** or **ПП1** or whether these signs with sign sailing restrictions: **2**, **3**, **4** or **5**.

<sup>2</sup> If the manufacturer assigns to ship more than one project category (for one navigation area), the display should be such that the maximum number of people and the greatest load are clearly identified for the particular project category (specific navigation area).

<sup>3</sup> Marking "CE" is indicated for recreational ships built in the EU, as well as for recreational vehicles built in other countries, intended for use in the EU. Register ID number as Notified Body, is applied solely by the Register in accordance with the requirements or by the manufacturer of the craft or his authorized representative or before the commissioning of the ship by the importer or the shipowner, if the manufacturer did not make an appropriate assessment and marking of the ship.

**1.3.4.12.3.3** The plate of the manufacturer should be made as a solid plate or a flexible label and fixed to

the hull in a manner that excludes the possibility of its removal without tools. Alternatively, the hull may be used for the application of manufacturer's information in the absence of reduction of the regulated sizes of the structure.

**1.3.4.12.3.4** Graphical symbols used for application on the manufacturer's plate must meet the recommended standards of ДСТУ ISO 7000 «Graphical symbols for use on equipment. Characters of registration "and ISO and ДСТУ EN ISO 11192 «Small craft. Graphical symbols» or the applicable ISO or EN standards.

Signs and other markings on the manufacturer's plate Manufacturer's plate be applied by the cutter, method of etching, engraving, burning, relief method using a stencil or printed by permanent plastic covering or other suitable means. As an alternative, graphical symbols Manufacturer's plate may be printed or engraved directly on the ship's hull. Signs should be clear, contrasting well recognizable on the main backdrop.

Paints used for labeling the plate must be resistant to fading.

Mandatory information shall be marked with signs of a minimum height of 5 mm.

Additional information is put with signs of at least 3 mm.

The icons and characters must be of a minimum height of 8 mm.

**1.3.4.12.3.5** Manufacturer's plate should be located in easily accessible, visible place, mainly in the cockpit or at the main steering station.

**1.3.4.12.3.6** Manufacturer's plate may contain additional information. Application of additional information should not be carried out at the cost of the required information, it is advisable to separate it from the required information with the line of the or otherwise.

### **1.3.4.13 Assignment of navigation area and hydrometeorology**

#### **1.3.4.13.1 Assignment of navigation area to a small craft**

**1.3.4.13.1.1** Assignment of navigation area should be carried out taking into account the following basic structural features of a small craft:

- .1 Structural type (sailing, motor, inflatable, decked, undecked, etc.);
- .2 Material, design and hull strength;
- .3 Main dimensions;
- .4 Stability, freeboard, floodability;
- .5 Propulsive units power (for motor crafts and boats);
- .6 Secured autonomy and range of navigation;
- .7 Established radio navigation equipment;
- .8 Life-saving appliances;
- .9 Fire protection;
- .10 Speed to place of refuge in conditions of assigned navigating area.

**1.3.4.13.1.2** A ship, depending on the design features mentioned in **1.3.4.13.1.1.1 - 1.3.4.13.1.1.3** i **1.3.4.13.1.1.5**, may be assigned navigation area accordance with designations of Tables 1.3.4.13.1-1, 1.3.4.13.1-2, 1.3.4.13.1-3 and 1.3.4.13.1-4.

**1.3.4.13.1.3** A vessel, to which navigation area is assigned according to **1.3.4.13.1.2**, shall meet the applicable requirements of the relevant parts of SC Rules taking into account design features mentioned in **1.3.4.13.1.1**.

**1.3.4.13.1.4** Navigation area, subject to set out in section **1.3.4.13.2** is determined by the maximum allowed for vessel, boat or craft distance from shore and place of refuge with limitation on sailing downwind and waving, including the waving caused by navigation.

#### **1.3.4.13.2 Hydrometeorology for small crafts**

##### **1.3.4.13.2.1 General**

**1.3.4.13.2.1.1** Principles of meteorology for small vessels, in addition to the above in **1.2.3** of Part I "Classification" of Rules are based on the following provisions:

- Height of the vessel's windage center position on calm water above the waterline with minimum deadweight for small vessels in operation is theoretically possible within  $0.2 \text{ m} \leq Z_s \leq 10,0\text{m}$ ;
- Wind pressure for small vessels will be determined according to **1.2.3.4** taking into account the height

of the vessel's windage center position above the waterline of the vessel, which is on top of the wave in relation to the permitted area of navigation;

- Small vehicles will be operated at waving with ratio of wave height  $h$  to its length  $\lambda$  less than 1.8 and will not be used on water area, where there are bumping, mouth waves or overturning waves in shallow water.

**1.3.4.13.2.1.4** Specifications of sea navigation areas are adopted pursuant to **2.2.5.1** of this part I «Classification" taking into account **1.3.4.13.2.1.1**.

**1.3.4.13.2.1.5** Specifications of inland waterways are adopted pursuant to **2.2.5.6.2** of this part I «Classification".

**1.3.5** The SS, INS and SC Rules apply to berth-connected ships in the part that are not stipulated by the Rules of specific requirements for them, depending on the conditions of the wind-wave regime of a restricted navigation area (navigation area sign) in accordance with the Rules in which the berthing place of the berth-connected ship is located. At the same time, and if the conditions of the wind-wave regime are exceeded at the berthing area of the characteristics established for a restricted navigation area, the actual conditions of the ship's berthing may be taken into account.

The valid conditions of anchorage of a berth-connected ship are established on the basis of the substantiation of the conditions for anchorage of a berth-connected ship approved by the Register (subject to special consideration). At the same time, seasonal restrictions on the anchorage of the ship in the anchorafe area and the possibility of moving the ship to a protected place of refuge.

**1.3.6** SS, MNS, INS and SC Rules in coordination with the Register, may be used for classification of ships and floating structures, including unusual design, not listed in the paragraphs of this Part governing the distribution of specified Rules, especially with the establishment by the Register of the special scope of Rules application.

**1.3.7** Rules define the requirements under which the vessel floating structure or vessel's refrigeration unit may be assigned a class of the Register.

**1.3.8** Taking into account the requirements of international documents.

The Rules of the Register take into account, as necessary, the requirements of international conventions, codes, agreements, directives, resolutions, standards and requirements of Administrations that are within the competence of the Register (refer to **2.5** of the General provisions for classification and other activities). Certain requirements are included directly in the text of the Register Rules; some requirements in the text of the Register Rules have corresponding references.









**Table 1.3.4.13.1-4 Assignment of navigation area to frame-fabric ships.**

Structural features		The applicable areas of operation								
		Seas and oceans		Coastal navigation						
Type of the ship	Main Engine power, N, kW	symbol	value	R1	R2	1	2	3	4	5
		Rowing	Without ME	$L_H$	$\leq 8$					
Sailing	Without ME	$A_S$	$\leq 6$							+
	Without ME	$A_S$	$\geq 6$					+	+	+
Sailing-motor	$P \leq 4,5$	$L_H$	$\leq 8$					+	+	+

Frame-fabric

## 2. CLASS OF A SHIP

### 2.1 GENERAL

**2.1.1** The Register class is assigned to ships and floating structures, including mobile offshore drilling units (MODU) and fixed offshore platforms (FOP), which fully or to the extent recognized by the Register as sufficient, comply with the requirements of the relevant Rules for Classification and Construction. The assigned Register class is indicated by the class notation in accordance with **2.2**.

Assignment of the Register class to a ship means confirmation by the Register that the ship construction complies with the applicable requirements of the Register rules and its technical condition complies with the conditions of the ship operation; the ship is registered with the Register for a specified period with performing the surveys stipulated by the Rules for the Classification Surveys of Ships for this period.

**2.1.2** The Register 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 a ship in service.

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

**2.1.4** Class of the vessel is assigned or renewed by the Register as a rule for:

**.1** Five years period for ships classified according to the requirements of the SS Rules and MNS Rules;

**.2** Six-year period for self-propelled vessels and eight-year period for non-propelled ships, classified in accordance with the requirements of INS Rules;

**.3** For ships classified in accordance with the requirements of SC Rules:

- for five-year period for motor and sailing ships with metal hull of sea areas of navigation (with signs **M**, **MR1** and **MR2**, refer to **2.2.5.7.1** and **2.2.5.7.2.1**) and coastal areas 1 and 2 of navigation in the sea ( with signs **ΠM1**, **ΠM2**, **Π31** and **Π32**, refer to **2.2.5.7.1** and **2.2.5.7.2.2**), and for any ships with non-metallic hull and ships with dynamic principles of support;

- for six-year period for motor and sailing ships with metal hull of navigation areas other than specified for five year period, except for ships with dynamic principles of support;

- for eight-year period for non-self-propelled, rowing and moored ships with a metal hull.

In sound cases the Register may assign or renew the class for the less period.

**2.1.5** If a ship has the valid Register class, this means that the ship's technical condition in full measure or to a degree considered adequate by the Register complies with the requirements of the Register 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.

The class of a small craft, classified in accordance with SC Rules, is certified by the valid Classification Certificate for ships:

- Entitled to navigate in the sea: self-propelled vessels with main engine capacity of 55kVt or more, except for water bikes and non-propelled vessels with a gross tonnage of 80 or more;

- Eligible only for internal (river) navigation, with hull lengths of 20m or more and, regardless of the length of the hull, fishing vessels and ferries;

- Engaged on the international voyages or flying the flag of other countries. On other ships validity of the of the current class of the ship is certified by the valid Certificate of Fitness of a small craft for navigation. On the floating dock or refueler pipeline, consisting of several small ships (pontoons), permanently interconnected to be used in accordance with their basic purpose, refer also to **1.3.4.8**, is issued one certificate of fitness of a small craft for navigation, indicating the number and type of connected ships;

- Engaged on the international voyages or flying the flag of other countries. On other small craft, the valid class of the ship is certified by the valid Certificate of Fitness of a small craft for navigation. For a floating berth or a refueling pipeline consisting of several small ships (pontoons) permanently interconnected for the purpose of use for the main purpose, refer also to **1.3.4.8**, one Certificate of Fitness of a small craft for navigation is issued, which indicates the number and type of connected ships.

**2.1.6** Classification Certificate becomes invalid and classification is automatically suspended in the

following cases:

when the ship as whole or her separate elements have not been subjected to scheduled periodical or occasional surveys in specified terms (if the special survey has not been completed or the ship is not under attendance for completion prior to resuming trading, by the due date); if the annual survey has not been completed within three (3) months of the due date of the annual survey; 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;

unless the ship is under attendance for completion of the relevant survey if in the Register rules it is not required otherwise;

if the owner /ship-owner does not notify the Register to provide the ship for survey after breakdowns or damage affecting the class;

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 or the arrival of a small craft at the base, place of berthing, if the accident took place at sea);

if repairs, re-equipment or structural changes and / or changes in the ship's outfit have been reduced from those prescribed by the Rules affecting the class, not approved by the Register, are performed either without an application for survey by the Register or do not satisfy its surveyor (for repairs on a voyage, refer to 7.3.23, Part I and the Rules for the Classification Surveys of Ships);

if, taking into account the identified deficiencies, the Register considers that the ship has no right to maintain its class, even on a temporary basis (until the necessary repairs or renewals, etc.);

when a ship navigates with a draught exceeding that specified by the Register 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 the Register;

when the prescribed specific requirements, which during previous survey of the ship were the conditions for assignment or retainment of the Register class, have not been fulfilled within the specified period;

when the process of surveying the ship by the Register has been suspended on the shipowner's initiative or through his (her) or its fault;

when the ship has been taken out of service for a long period (more than 3 months or for a small craft for a period exceeding the date of the next periodic survey, for fulfilment of the Register requirements (except the case when a ship is under repair for these purposes);

in case of the ship's seizure by pirates;

after the ship was abandoned by the crew.

Automatic suspension of the class is effective from the date on which the circumstances that led to the suspension occurred.

Suspension by decision of the Register comes into force from the moment when conditions for suspension of the class have appeared.

The suspension of the class will remain in effect until the class is renewed (as specified in **2.1.8**).

The ship's class may be suspended for a period not exceeding six months. A longer suspension may be granted at the discretion of the Register when the ship is not engaged on merchant voyages, as in the case of circumstances, pending a decision in the event of an accident or maintenance to recover.

Suspension and renewal of the class of dual-class ships.

In case of dual class, if the Register takes measures to suspend the class of the vessel for technical reasons, the Registry shall notify the "Other Society" (refer to note) of the reasons for such action and the full circumstances within five (5) working days.

If the Register is notified that the "Other Society" has suspended the class for technical reasons, the Register, upon receipt of such notification, shall also suspend the class of the ship if it cannot confirm by another document that such suspension is incorrect.

When the Register decides to renew the class, it informs the "Other Society".

*Note.* «Other Society» means another classification society participating in a class compatible with the Register.

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

**2.1.8** Suspended (as stated in **2.1.6**) class of a ship may be reinstated on the basis of satisfactory results of the appropriate periodical or occasional survey carried out by the Register 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 the Register taking into account the age and condition of the ship as well as the period for which she is taken out of service.

For the period from the suspension of the class to its renewal, regardless of the date specified in **2.1.6** notification to the ship-owner and the ship Flag Administration, the ship is considered to have lost the class of the Register.

**2.1.9** The class of a ship is withdrawn by the Register in the following cases:

- .1 if the reasons for suspension of the current class have not been rectified within the established period of its suspension;
- .2 upon expiration of the maximum term of class suspension;
- .3 when the Register and/or shipowner consider reinstatement of the class suspended as stated in **2.1.6** to be impossible;
- .4 upon transfer of the ship to the class of another classification body;
- .5 in case of transfer of ownership of the vessel, change of ship-owner, port of registration or name of the ship without providing it for surety in accordance with **4.7** of Part II of the Rules for the Classification Survey of Ships;
- .6 at the request of the shipowner.

Withdrawal of the ship's class means invalidation of the Classification Certificate and the Certificate of Fitness of a small craft for navigation. Withdrawal of class takes effect from the date on which circumstances that cause such withdrawal arise.

At the request of the owner, a ship that was previously classified by the Register and then the class was withdrawn, and which was not additionally classified, that is:

- has never resumed its operation;
- has not been classified by any other Classification Society,

the class may be reassigned by the Register, but the Register has the right to reject the application for reassignment of the class.

**2.1.10** The ship class is canceled due to ship's loss or her decommissioning.

**2.1.11** The Register specifically informs the ship-owner and for the ship in respect of which the Register is carrying out a statutory survey, the Flag Administration about the suspension of the ship's class and the validity of the Classification certificate or the certificate of fitness of the small craft for navigation, the withdrawal of the ship's class with the termination of the Classification certificate and the certificate of fitness of the small craft for navigation and class cancellation.

**2.1.12** With the assignment of the class, the Register includes the ship, except for small craft, in the Register book and excludes it when withdrawing or canceling the class.

## 2.2 CLASS NOTATION OF A SHIP

The class notation assigned by the Register to a ship or offshore installation consists of the character of classification, mandatory distinguishing marks and descriptive notations, and optional distinguishing marks defining structure and purpose of a ship or offshore installation.

The sequence of mandatory and optional (if any) distinguishing marks and descriptive notations being added to the character of classification of a ship is set down by the provisions of this Chapter as well as by relevant provisions concerning the class notation included in rules for the classification and construction of ships of special types, as listed under **1.3.1.2**.

Optional marks introduced by this Chapter do not establish necessary performance of requirements of parts of the Rules for the classification and construction of Ships (SS Rules , MNS Rules , INS Rules , SC Rules), and reflect compliance with the requirements established by corresponding parts of Rules.

**2.2.1** The character of classification assigned by the Register to a ship or offshore installation consists of distinguishing marks:

**KM**⊕, **KM**★, (**KM**)★ – for self-propelled ships and offshore installations, including small motor-sailing craft;

**KE**⊕, **KE**✦, **(KE)**✦ – for non-self-propelled ships and offshore installations with total power output of prime movers 100 kW and upwards, and for small non-self-propelled, sailing, sailing-motor, rowing-motor and berth ships with on-board power plant with primary engine;

**K**⊕, **K**✦, **(K)**✦ – for other non-self-propelled ships and offshore installations, including small sailing and rowing ships.

In the case the period of the assigned class is reduced compared to that specified in 2.1.4, the set reduced period is indicated in the character of class after the signs **KM**, **KE** or **K**, for example, **KM2**⊕.

**2.2.2** Depending on the rules on the basis of which a ship or a offshore installation was surveyed, and the classification society which carried out the survey, the character of classification is established as follows:

**.1** ships and offshore installations built according to the Rules of and surveyed by the Register are assigned a class notation with the character of classification: **KM**⊕, or **KE**⊕, or **K**⊕ (refer to **2.2.1**);

**.2** ships and offshore installations which were as a whole (or their hull or machinery installation, machinery and equipment) built according to the rules of another classification body recognized by the Register and surveyed by this classification body during their construction and manufacture, when classed with the Register are assigned a class notation with the character of classification: **KM**✦, or **KE**✦, or **K**✦ (refer to **2.2.1**);

**.3** ships and offshore installations which were as a whole (or their hull or machinery installation, machinery and equipment) built and/or manufactured without being surveyed by recognized by the Register classification body or without the supervision of the classification body at all, when classed with the Register, are assigned a class notation with the character of classification: **(KM)**✦, or **(KE)**✦, or **(K)**✦ (refer to **2.2.1**); ships and offshore installations which, machinery installation with the main machinery manufactured without the supervision of the classification body recognized by the Register or without the survey of the classification body at all, and the hull is built according to the Rules of the Register or the rules of the classification body recognized by the Register and surveyed by the Register or this classification body during their construction, when classed with the Register, are assigned a class notation with the character of classification: **K (M)**✦.

**.4** ships and offshore installations assigned the register class (with the character of classification according to **2.2.2.1** and **2.2.2.2**) with the class of Other Class Society (dual class), the character of classification ⊕ and ✦ are indicated in square brackets – [⊕] and [✦].

In this case, the classification societies shall act in accordance with the agreement on a dual class when performing classification surveys.

### **2.2.3 The Register ice class marks, polar class notations and the Baltic ice class notations.**

**2.2.3.1** The requirements for polar class ships apply to ships constructed of steel and intended for independent navigation in ice-infested polar waters, taking into account the provisions of the Polar Code on the basis of polar classes in accordance with the unified requirements of UR I MACT, in compliance with the relevant requirements of the SS Rules for ships of these classes.

*Note.* Polar Code means the International Code for Ships Navigating in Polar Waters, adopted by IMO Resolutions MSC.385 (94) and MERC.264 (68), taking into account the provisions of the amendments to the SOLAS-74 International Convention adopted by Resolution MSC.386 (94).

Signs of polar classes and their description are given in Table 2.2.3.1-1.

**Table 2.2.3.1-1 Polar class descriptions**

<b>Polar class</b>	<b>Ice description (based on WMO Sea Ice Nomenclature)</b>
<b>PC1</b>	Year-round operation in all polar waters <sup>1</sup>
<b>PC2</b>	Year-round operation in moderate multi-year ice conditions
<b>PC3</b>	Year-round operation in second-year ice which may include multi-year ice inclusions

<b>PC4</b>	Year-round operation in thick first-year ice which may include old ice inclusions
<b>PC5</b>	Year-round operation in medium first-year ice which may include old ice inclusions
<b>PC6</b>	Summer/autumn operation in medium first-year ice which may include old ice inclusions
<b>PC7</b>	Summer/autumn operation in thin first-year ice which may include old ice inclusions
<sup>1</sup> Polar waters (Arctic waters and the Antarctic region) according to SOLAS-74 regulations XIV / 1.3 and XIV / 1.2. <i>Note.</i> Ships with signs PC1-PC6 are category A ships as determined by the Polar Code. Ships with PC7 signs are category B ships as determined by the Polar Code. Category C ships as determined in the Polar Code are ships designed to operate in individual ice conditions or in less severe ice conditions than those specified for categories A and B.	

Baltic ice classes are assigned for ships intended for operation in the Baltic Sea in winter, taking into account the requirements of the Finnish-Swedish rules for ice class ships, 2017, in compliance with the relevant requirements of the SS Rules for ships of these classes.

Baltic ice classes and their description are given in Table 2.2.3.1-2.

**Table 2.2.3.1-2 Baltic ice class descriptions**

<b>Baltic ice class</b>	<b>Description</b>
<b>IA Super</b>	ships with such structure, engine output and other properties that they are normally capable of navigating in difficult ice conditions without the assistance of icebreakers
<b>IA</b>	ships with such structure, engine output and other properties that they are capable of navigating in difficult ice conditions, with the assistance of icebreakers when necessary
<b>IB</b>	ships with such structure, engine output and other properties that they are capable of navigating in moderate ice conditions, with the assistance of icebreakers when necessary
<b>IC</b>	ships with such structure, engine output and other properties that they are capable of navigating in light ice conditions, with the assistance of icebreakers when necessary
<b>II</b>	ships that have a steel hull and that are structurally fit for navigation in the open sea and that, despite not being strengthened for navigation in ice, are capable of navigating in very light ice conditions with their own propulsion machinery
<b>III</b>	ships that do not belong to the ice classes referred to above

For sea icebreakers and ice-class ships, including tugs, intended for operation outside polar waters (except for ships intended for navigation in Arctic waters in thin one-year ice) and the Baltic Sea, ice class of the Register is assigned in accordance with 2.2.3.2 and 2.2.3.3 of this part.

Polar class signs, signs of Baltic ice classes and ice class signs of the Register are applied at the request of the shipowner for ships that are supposed to be operated in appropriate ice and climatic conditions, provided by the Register after carry out of SS Rules requirements corresponding to the sign and are added to the character of class. At the same time, for icebreakers (signs of ice classes according to 2.2.3.2) intended for navigation in Arctic waters, and ships intended for navigation in Arctic waters in thin one-year ice (signs of ice classes Ice4, Ice5 and Ice6 according to 2.2.3.3) may be provided Register ice class, when executed, in addition to the requirements for the Register ice class for hull members, all requirements for the corresponding polar class.

**2.2.3.1.1 Icebreakers** are specialized ships intended for all kinds of icebreaking operations: escort of ships in ice, surmount of ice ridges, breaking of a navigable channel, towing, breaking of ice and rescue operations. There are two main regimes of ice navigation while performing icebreaking operations: continuous motion and ramming.

**2.2.3.1.2 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.

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

*multi-year* is ice of thickness more than 3,0 m, which has survived at least two summers' melt. It is divided into residual one-year ice, two-year ice and multi-year ice;

*first-year* ice is ice of thickness from 0,3 to 2,0 m, of not more than one winter's growth;

*medium-thick first-year ice* is first-year ice 0,7-1,2m thick;

*thin first-year ice* is first-year ice 0,3-0,7m thick;



*individual ice floes* means large navigable waters where the density of sea ice is less than 1/10 (1 point).

Ice of land origin is absent;

*ice cake* is any relatively flat piece of sea ice less than 20 m across.

*Note.* Ice classification has been adopted in accordance with «Sea Ice Nomenclature» of the World Meteorological Organization (WMO)

*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.

**2.2.3.1.4 A ship intended for operation in conditions of low air temperature** is a ship designed to operate in areas or through areas in which the lowest mean daily freezing temperature (MDFT) is below -10°C.

**Polar working temperature (PWT)** is a temperature set for a vessel intended to operate at low temperatures, which shall be set at least 10 ° C below the lowest MDFT for the intended season and area of operation in polar waters.

**2.2.3.2** If an icebreaker complies with the requirements of these Rules, one of the following ice class marks is added to the character of classification: **Icebreaker1; Icebreaker2; Icebreaker3; Icebreaker4**.

Icebreakers of the above ice classes have the following tentative service characteristics:

**Icebreaker1** – intended for ice breaking operations in harbour and roadstead water areas as well as in freezing seas where the ice is up to 1,5 m thick. Continuous motion capability in unbroken ice up to 1 m thick;

**Icebreaker2** – intended for ice breaking operations in the arctic seas on coastal routes during winter/spring navigation in ice up to 2,0 m thick and summer/autumn navigation in ice up to 2,5 m thick; in nonarctic freezing seas and mouths of rivers flowing into arctic seas in ice up to 2,0 m thick. Continuous motion capability in unbroken ice up to 1,5 m thick. The total shaft power not less than 11 MW;

**Icebreaker3** – intended for ice breaking operations in the arctic seas on coastal routes during winter/spring navigation in ice up to 3,0 m thick and summer/autumn navigation without restrictions. Continuous motion capability in unbroken ice up to 2,0 m thick. The total shaft power not less than 22 MW;

**Icebreaker4** – intended for ice breaking operations on coastal routes in arctic seas during winter/spring navigation in ice up to 4,0 m thick and summer/autumn navigation without restrictions. Continuous motion capability in unbroken ice over 2,0 m thick. The total shaft power not less than 48 MW.

### 2.2.3.3 Register ice classes.

**2.2.3.3.1** If a self-propelled ice class ship complies with the relevant requirements of SS Rules, one of the following ice class marks shall be added to its character of classification: **Ice1, Ice2, Ice3, Ice 4, Ice5, Ice6**, and the compliance of hull (**hull**) and machinery installation (**machinery**) with the requirements of SS Rules in full scope, e.g: **Ice6 (hull; machinery)**.

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, e.g: **Ice6 (hull) Ice3 (machinery)**. In such case, a ship with mark (**hull**) in the class notation shall comply with the requirements of Section 2, Part III "Equipment, Arrangements and Outfit" of these Rules and **3.1.3.3**, Part III "Signal Means" of the Rules for the Equipment of Sea-Going Ships, in addition to the requirements of Part II "Hull". A ship with mark (**machinery**) in the class notation shall comply with the applicable requirements of Parts VI "Fire Protection", VII "Machinery Installations", VIII "Systems and Piping" and IX "Machinery" of the Rules.

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

**2.2.3.3.2** Register ice classes and their reference descriptions are given in Table. 2.2.3.3.2.

**Table 2.2.3.3.2**

<b>Ice6</b>	In summer/autumn navigation in Arctic - voyage in open floating first-year ice up to 1,3 m thickness. In winter/spring navigation in Arctic - voyage in open floating first-year ice up to 1,1 m thickness. Year-round voyage in freezing non-arctic sea.
<b>Ice5</b>	In summer/autumn navigation in Arctic - voyage in open floating first-year ice up to 1,0 m thickness. In winter/spring navigation in Arctic - voyage in open floating first-year ice up to 0,8 m thickness. Year-round voyage in freezing non-arctic seas
<b>Ice4</b>	In summer/autumn navigation in Arctic - voyage in open floating first-year ice up to 0,8 m thickness. In winter/spring navigation in Arctic - voyage in open floating first-year ice up to 0,6 m thickness. Year-round voyage in freezing non-arctic seas in light ice condition
<b>Ice3</b>	Regular voyage in open floating ice-cake ice of non-arctic seas up to 0,7 m thickness
<b>Ice2</b>	Regular voyage in open floating ice-cake ice of non-arctic seas up to 0,5 m thickness
<b>Ice1</b>	Episodical voyage in open floating ice-cake ice of non-arctic seas up to 0,4 m thickness

**2.2.3.3.3** 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**, **Ice4**, **Ice5**.

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

**2.2.3.3.4** An ice class ship which is not an icebreaker in accordance with **2.2.3.2**, but occasionally involved in icebreaking operations, and complies with the relevant requirements of these Rules, may be assigned one of the following ice class marks added to the character of classification: **Icebreaker1** or **Icebreaker2**.

**2.2.3.3.5** Double acting ships, (DAS) are ice navigation ships fitted with podded propulsion units designed to operate stern first in ice.

If double acting ships comply at least with the requirements of **3.14**, Part II «Hull» of SS Rules the distinguishing mark **DAS (ice class mark)** may be added to the character of classification, where the Register ice class is indicated in brackets according to **2.2.3.3.1** or **2.2.3.3.4** in case of stern-first operation.

#### **2.2.3.4 Ice reinforcement mark for mixed river-sea navigation ship.**

**2.2.3.4.1** If a mixed navigation ship has ice reinforcements that meet the requirements of the relevant parts of the MNS Rules, the following mark is added to the character of classification: **Ice**.

If ice reinforcements are provided for a different ice thickness than regulated in **3.14**, Part II «Hull» of MNS Rules, then the thickness of the broken ice in centimeters, at which the operation of the ship is allowed in ice conditions, is recorded in character of classification, for example: **Ice20**.

**2.2.3.4.2** If a ship of mixed navigation has ice reinforcements that meet the higher requirements set out in the MNS Rules, then the corresponding mark specified in **2.2.3.3** of this part of the Rules is added to the character of classification.

#### **2.2.3.5 Ice reinforcement mark for inland navigation ship.**

**2.2.3.5.1 1** If a inland navigation ship has ice reinforcements that meet the requirements of the relevant parts of the INS Rules, the following mark is added to the character of classification: **Ice**.

If ice reinforcements are provided for a different ice thickness than regulated in **3.6** Part II «Hull» of INS Rules, then the thickness of the broken ice in centimeters, at which the operation of the ship is allowed in ice conditions, is recorded in character of classification, for example: **Ice20**.

**2.2.3.5.2** For inland icebreakers that meet the requirements of the relevant parts of the INS Rules, the mark **Icebreaker** is added to the character of classification after the navigation area mark.

If ice reinforcements are provided for a different ice thickness than regulated in **3.7** Part II «Hull» of INS Rules, then the thickness of the broken ice in centimeters, at which the operation of the ship is allowed in ice conditions, is recorded in character of classification, for example: **Icebreaker70**.

**2.2.3.5.3** If a ship of mixed navigation has ice reinforcements that meet the higher requirements set out in the SS Rules, then the corresponding mark specified in **2.2.3.3** of this part of the Rules is added to the character of classification.

### 2.2.3.6 Ice reinforcement mark for small craft

If a small craft has special ice reinforcements that meet the requirements of SC Rules or INS Rules, the **Ice** mark is added to the character of classification, after which the thickness of broken ice in cm is written into the class formula, at which the operation of the ship is allowed, for example **Ice10** or **Ice20**.

**2.2.3.7** The need to provide ice reinforcement for the ship is determined by the ship-owner depending on the expected operating conditions with the subsequent fulfillment of the applicable requirements of the Register Rules.

### 2.2.4 Subdivision distinguishing marks.

**2.2.4.1** Ships complying with the applicable requirements of Part V "Subdivision" and fully complying with the requirements of Section 2 of the above Part regarding the probabilistic assessment subhdivision, are assigned distinguishing mark **R** with value added to it (tenth and hundredth digits) with the required subdivision index, for example, **R68** – for subdivision index 0,68.

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 or three adjacent compartments over complete length of the ship in the case of design side damage specified in 3.2 are assigned subdivision distinguishing mark  $\boxed{1}$ ,  $\boxed{2}$  or  $\boxed{3}$  respectively.

**2.2.4.2** Mixed (river-sea) navigation ships engaged on the international voyages, complying with the applicable requirements of 2 Part V "Subdivision" of SS Rules in accordance with requirements of 2.2 Part IV «Stability, subdiviion and free board» of MNS Rules Part regarding the probabilistic assessment subhdivision, are assigned distinguishing mark **R** with value added to it (tenth and hundredth digits) with the required subdivision index, for example, **R68** – for subdivision index 0,68.

Mixed (river-sea) navigation ships engaged on the international voyages, complying with the applicable requirements of 3 Part V "Subdivision" of SS Rules Rules in accordance with requirements of 2.2 Part IV «Stability, subdiviion and free board» of MNS Rules for damaged trim and stability t in the case of flooding of any one compartment or any two or three adjacent compartments over complete length of the ship in the case of design side damage, are assigned subdivision distinguishing mark  $\boxed{1}$ ,  $\boxed{2}$  or  $\boxed{3}$  respectively.

If mixed (river-sea) navigation ship not engaged on the international voyages, remains afloat in a satisfactory state of equilibrium in the case of flooding of any one compartment or any two or three adjacent compartments specified in 2.3 Part IV «Stability, subdiviion and free board» of MNS Rules, a subdivision distinguishing mark  $\boxed{1}$ ,  $\boxed{2}$  or  $\boxed{3}$  is assigned respectively.

**2.2.4.3** If an inland navigation ship remains afloat in a satisfactory state of equilibrium in the case of flooding of any one compartment or any two adjacent compartments in accordance with Part IV «Stability, subdiviion and free board» of INS Rules, a subdivision distinguishing mark  $\boxed{1}$  or  $\boxed{2}$  is assigned respectively.

**2.2.4.4** If a small craft, the floodability of which is ensured by subdivision into watertight compartments, remains afloat in a satisfactory state of equilibrium in the case of flooding of any one compartment or more adjacent compartments in accordance with Part IV «Stability, subdiviion and free board» of SC Rules, a subdivision distinguishing mark  $\boxed{1}$  is assigned or the same mark in accordance with the figure indicating the number of adjacent compartments, when flooded, the ship fully meets the damaged trim and stability requirements.

For a ship, the floodability of which is ensured by the elements of buoyancy or the combination with the subdivision into watertight compartments in accordance with the requirements of Part IV «Stability, subdiviion and free board» of SC Rules, marks  $\boxed{0}$  or  $\boxed{H}$  are assigned respectively.

### 2.2.5 Distinguishing marks for restricted areas of navigation.

**2.2.5.1** Sea-going ships and mixed navigation ships, complying with these Rules requirements provided for ships operating only in restricted areas of navigation are assigned one of the following distinguishing marks:

**.1 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;

**.2 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;

**.3 R2-S** – sea and **R2-RS** 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.

**R2-S(5.0), R2-RS(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

Navigation areas of the vessel of mixed (sea-river) navigation with sign **R2-RS** comply under Chapter 20V of Resolution №61 UNECE with zones **RS 6,0** with restricted sailing in rough seas with wave height of 3% provided to 6,0m and **RS 4.5** with set sailing restrictions when sailing on rough seas with wave height of 3% provided to 4,5m;

**.4 R3-S** – sea and **R3-RS** – mixed (sea-river) navigation in rough seas with wave height of 3% provided 3,5m, taking into account the specific constraints caused by wind-wave modes of areas area, season and navigation conditions (refer to **2.2.5.3**), with maximum established distance from the place of shelter, which must not exceed 50 miles. **The distance from the place of refuge (refer to Information on Places of refuge) can be increased in the enclosed seas to 100 miles for a specific voyage provided favourable weather forecast, confirming that the ship established navigation restrictions are not exceeded, for the whole time of the ship's passage between places of refuge, taking into account the influence of forecast wave and wind direction on the speed of the ship and characteristics of the place (places) of refuge for the vessel on its passage depending on the wind directions. The ship shall navigate within area of coastal VHF / DSC radio installations if the ship is fitted with the radio equipment for A1 area or/ within the area of coastal MF / DSC radio installations if the ship is fitted with the radio equipment for A1 and A2 areas (highlighted in bold is entered in the section permanent restrictions of the ship, which has no greater (smaller in value) than the above navigation conditions restrictions).**

Navigation areas of the vessel of mixed (sea-river) navigation with sign **R3-RS** comply under Chapter 20V of Resolution №61 UNECE with zone **RS 3,5** with restricted sailing in rough seas with wave height of 3% provided to 3,5m and geographical and seasonal restrictions and conditions of maritime navigation according to Table 2.2.5.3-1 for sign **R3-S**;

**.5** For passenger sea and mixed (river-sea) navigation ships engaged on domestic voyages, except vessels, to which according to **1.4.2** of "General provisions on technical supervision activities", Directive 2009/45 / EC is not applied the following signs and restrictions appropriate to each sign are established:

**.5.1 A** – navigation outside the area of navigation of vessels inwith area restriction **B-R3-S, C-R3-S** and **D-R3-S** without additional limiting restrictions and restrictions of wave mode -unlimited navigation area;

**.5.2 A-R1** – navigation in conditions with waves height up to 3% provided 8,5m outside the area of navigation of vessels with area restrictions **B-R3-S, C-R3-S** and **D-R3-S**, with distance from place of refuge not more than 200 miles and allowable distance between places of refuge not more than 400 miles;

**.5.3 A-R2** – navigation in conditions with waves height up to 3% provided 7,0m outside the area of navigation of vessels with area restrictions **B-R3-S, C-R3-S** and **D-R3-S**, with distance from shelter place not more than 100 miles and allowable distance between places of refuge not more than 200 miles;

**.5.4 A-R2-S** – sea and **A-R2-RS** – mixed (sea-river) navigation in conditions with waves height up to 3% provided 6,0m outside the area of navigation of vessels with area restrictions **B-R3-S, C-R3-S** i **D-R3-S**, with distance 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.

Navigation areas of a vessel of mixed (sea-river) navigation with sign **A-R2-RS** comply under Chapter 20V of Resolution №61 UNECE with area **RS 6,0**;

**.5.5 B-R3-S** – sea and **B-R3-RS** – mixed (sea-river) navigation in conditions with waves height up to 3% provided 3,5m or more (a specific wave height 6,0m may be set) in which the vessel is not moved off shore more than 20 miles, with the average height of the tide, where the person affected by the accident with the ship can land on the shore, and no more than 50 miles from the place of refuge.

Navigation areas of a vessel of mixed (sea-river) navigation with sign **B-R3-RS** comply under Chapter 20V Resolution №61 UNECE with area **RS 4,5** with restricted sailing in rough seas with wave height of 3% provided to 4,5m and area **RS 3,5** with restricted sailing in rough seas with wave height of 3% provided to 3,5m and establishment for both areas of the specified above distance from the coast and place of refuge, and the establishment by the Flag State in accordance with Article 4 (2) of Directive 2009/45 / EC of maritime areas falling within its jurisdiction, with geographical and seasonal restrictions, which are within the jurisdiction of Ukraine specified in 2.2.5.4 for the sign **B-R3-S**;

**.5.6 C-R3-S** – sea and **C-R3-RS** - mixed (sea-river) navigation in sea areas where the probability of exceeding (frequency) significant waves height of 2.5 m or waves of 3% provided with height 3,3m is less than 10% in one year period of the operation of the vessel throughout the year, or within a specified limited period of the year for operation exclusively in this period (e.g. summer operation period), in which the vessel is not moved off more than 15 miles from the place of shelter and no more than five miles from coastline, corresponding to the average height of the tide, where the person affected by the accident with the ship can land on the coast.

Navigation areas of the vessel of mixed (sea-river) navigation with sign **C-R3-RS** comply under Chapter 20V of Resolution №61 UNECE with area **RS 3,5** with restricted sailing in rough seas with wave height of 3% provided to 3,3m and area **RS 3,0** with restricted sailing in rough seas with wave height of 3% provided to 3,3m and establishing for both areas specified above distance from the coast and place of refuge, and the establishment by the Flag State in accordance with Article 4 (2) of Directive 2009/45 / EC of maritime areas falling within its jurisdiction, with geographical and seasonal restrictions, which are within the jurisdiction of Ukraine specified in 2.2.5.4 for the sign **C-R3-S**;

**.5.7 D-R3-S** – sea and **D-R3-RS** – mixed (sea-river) navigation in sea areas where the probability of exceeding (frequency) significant wave height of 1.5 m or waves of 3% provided with height of 2, 0m is less than 10% over one-year period in the operation of the vessel throughout the year, or within a specified limited period of the year for operation exclusively in this period (e.g. summer operation period), in which the vessel is not moved off for more than 6 miles from the place of shelter and not more than 3 miles from the coastline, which corresponds to the average height of the tide, where the person affected by the accident with the ship can land on the coast.

Navigation areas of the vessel of mixed (sea-river) navigation with sign **D-R3-RS** comply under Chapter 20V of Resolution №61 UNECE with area **RS 2,0** with restricted sailing in rough seas with wave height of 3% provided to 2.0 m and establishing the specified above distance from the shore and place of refuge, and the establishment by the Flag State in accordance with Article 4 (2) of Directive 2009/45 / EC of maritime areas falling within its jurisdiction, with geographical and seasonal restrictions, which are within the jurisdiction of Ukraine specified in 2.2.5.4 for the sign **D-R3-S**.

For passenger ships with length less than 24m restricted navigation area **D-R3-S** or **D-R3-RS**, refer to 3.9.2.1, Part IV «Stability» of SS Rules.

High-speed passenger craft, are assigned area and navigation conditions restrictions in accordance with the "Rules for the Classification and Construction of High-Speed Craft";

**.6 R3** – sea and **R3-IN** – mixed (sea-river) navigation with limiting and seasonal restrictions and offshore and harbor navigation within the limits established by the Register in each case taking into account the conditions of wind-wave regime with probability (repeatability) sea rough with wave height 3 % provided 2.0 m less than 10% over one-year period in the operation of vessels throughout the year or within a specified limited period of the year for operation exclusively in this period.

Specific restrictions for floating cranes (carrying out of loading operations and navigation with the possible transport of cargo on deck and / or hold) are set by the Register in each case;

**.7 Berth-connected ship** – for ships outside Ukraine)-berth-connected vessels (indicating the coordinates of the place of mooring and geographic area of operation according to Fig. 4.3.3.6 of Part IV «Stability» of SS Rules.

**2.2.5.2** Restrictions provided in 2.2.5.1 determine allowable operating conditions of the vessel, due to her stability and strength that are listed in Classification certificate and a Certificate of seaworthiness.

**2.2.5.3** Specific restrictions on the area and conditions of navigation at sea for vessels with signs restricting navigation area **R3-S** and **R3-RS** are set as a geographic name of areas or their parts indicating where appropriate the geographical boundaries of the area inside the area of navigation, restrictions on the distance from the place of shelter and operational restrictions by calendar terms, or as indicating a voyage between end ports. Thus for setting restrictions that take into account wind-wave regimes of sea areas are used data of the Table 2.2.5.3-1 or data from provided for the Register backgrounds for ability to operate the ship within a certain area or in voyage, made by the method approved by the Register, including restriction of navigation conditions exceeding specified in **2.2.5.1.4**, e.g.  $h_{3\%} \leq 3,0$  m.

**Table 2.2.5.3-1 Geographical and seasonal restrictions for navigation**

Basin	Geographical restrictions	Navigation season
1	2	3
The Sea of Azov	Without restrictions	Throughout the year
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 Sea of Marmora	No restrictions from Bosphorus to Dardanelles Straits	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 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 Adriatic Sea	To the south of 42°N, 20-mile coastal area along the eastern and western coasts, crossing the sea in the Strait of Otranto in the area of the port of Brindizi (the port of Bari) _ the port of Bari, 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
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	April _ November
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	March _ November
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 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 parallel 28°59'N	Throughout the year

<sup>1</sup> Geographical and seasonal restrictions for navigation in the Baltic, White, Kara, Caspian, Okhotsk, North, East Siberian and Japanese Seas and the Laptev Sea are established by the Register at the request of the designer / shipowner separately.

**2.2.5.4** For passenger sea-going ships engaged in inland navigation, in accordance with Article 4 paragraph 2 of Directive 2009/45 / EC, each Flag State shall establish and update, if necessary, a list of sea areas under its jurisdiction, restricting the areas for year-round operation and, where expediently, zones with year-on-year restrictions for ship classes, applying the criteria for area restriction set out in **2.2.5.1.5**. On the basis of the specified list of sea areas, restrictions on areas and navigation conditions of a particular ship are established, depending on the sign in accordance with **2.2.5.1.5**.

The Ministry of Infrastructure of Ukraine, by order No. 362 dated 07.08.2018, established the "List of maritime restrictive zones within the jurisdiction of Ukraine" using the class criteria set out in part one of Article 4 of Directive 2009/45 / EC of the European Parliament and of the Council of 06 May 2009, regarding safety rules and standards for ships.

The named List establishes restrictive zones for Ukrainian passenger sea and mixed (sea-river) navigation of vessels engaged in domestic voyages, namely:

- for signs **B-R3-S** and **B-R3-RS** - a restrictive zone in the Ukrainian waters of the Black and Azov Seas in an area 20 miles wide from the coastline, bounded by points with coordinates in accordance with paragraph 1 "List of maritime restrictive zones within the jurisdiction of Ukraine" of the Appendix to the order of the Ministry of Infrastructure of Ukraine dated 07.08.2018 No. 362 (refer to the order and Notices to mariners);

- for signs **C-R3-S** and **C-R3-RS** - a restrictive zone in the Ukrainian waters of the Black and Azov Seas in a water area 5 miles wide from the coastline, bounded by points with coordinates in accordance with paragraph 2 of the "List of maritime restrictive zones within the jurisdiction of Ukraine" annexes to the order of the Ministry of Infrastructure of Ukraine dated 07.08.2018 No. 362, in the sea areas, at a distance from the

place of refuge / port of refuge and the seasonal period of restriction in accordance with paragraph 2 of the specified List (refer to the order and Notices to mariners);

for signs **D-R3-S** and **D-R3-RS** - restrictive zones in the Ukrainian waters of the Black and Azov Seas in geographical areas with coordinates in accordance with paragraph 3 "List of maritime restrictive zones within the jurisdiction of Ukraine" of the annex to the order of the Ministry of Infrastructure of Ukraine dated 07.08.2018 No. 362, at a distance from the port of refuge and the coastline and during the seasonal period of restriction in accordance with paragraph 3 of the specified List (refer to the order and Notices to mariners).

#### **2.2.5.5 Distinguishing marks of area and conditions of navigation restriction for ships of mixed navigation.**

**2.2.5.5.1** For ships of mixed (river-sea) navigation, which are classified in accordance with the MNS Rules, the main symbol in the class is attached with sign **B-R4-RS**, indicating that the operation of the vessel is allowed in coastal voyages in sea areas of navigation specified in the Tables 2.2.5.5.3-2 2.2.5.5.3-4 2.2.5.5.3-6 and in all areas of European inland waterways for inland navigation vessels listed in **2.2.5.6.2.4** of these Rules.

For ships that comply with additional requirements to ships engaged on international voyages in (from) seaport located outside Ukraine, according to **1.3.2.4** (incl. **1.3.2.2**), the main class symbol is added with sign **R4-RS** (without sign **B**, which indicates only the performance of cabotage voyages in Black and Azov Seas), which indicates that the operation of vessel is allowed in international voyages in sea areas of navigation specified in the Tables 2.2.5.5.3-1, and 2.2.5.5.3-3 2.2.5.5.3-5.

**2.2.5.5.2** A class notation after the signs **RS** is added with one of respective navigation conditions restriction marks, depending on ship's compliance with requirements of established by MNS Rules for the main area of operation of the vessel and wind-wave modes in areas of ship operation:

**3.0** - ship meets the requirements for operation in rough seas with wave height at 3% provided to 3,0m. Sea areas of operation and seasonal restrictions are listed in the tables 2.2.5.5.3-1 and 2.2.5.5.3-2. Navigation areas of mixed (river-sea) navigation vessel with this navigation conditions restriction sign 3.0 correspond in accordance with Chapter 20 V of Resolution №61 UNECE with area **RS 3,0** with restricted navigation in rough seas with wave height at 3% provided to 3,0 m and establishing of geographic and seasonal restrictions specified in the tables 2.2.5.5.3-1 and 2.2.5.5.3-2;

**2.5** - ship meets the requirements for operation in rough seas with wave height at 3% probability to 2.5m. Sea areas of operation and seasonal restrictions are shown in tables 2.2.5.5.3-3 and 2.2.5.5.3-4;

**2.0** – ship meets the requirements for operation in rough seas with wave height of 3% probability to 2.0 m. Sea areas of operation and seasonal restrictions are shown in tables 2.2.5.5.3-5 and 2.2.5.5.3-6.

Navigation areas of mixed (river-sea) navigation vessel with this navigation conditions restriction sign 3.0 correspond in accordance with Chapter 20V of Resolution №61 UNECE with area **RS 2,0** with restricted navigation in rough seas with wave height at 3% provided to 2,0 m and establishing of geographic and seasonal restrictions specified in the tables 2.2.5.5.3-5 and 2.2.5.5.3-6.

#### **2.2.5.5.3 Operating Areas**

MNS Rules provide operation of mixed (river-sea) navigation ships on European inland waterways in navigation Area 1 and areas of lower grades regardless of the vessel's class, established in accordance with the requirements of MNS Rules.

Operation of mixed (river-sea) navigation vessels in inland seas can be carried out according to the class of the vessel and set areas and seasonal restrictions in the following sea areas **with distance from the place of refuge not exceeding 50 miles (refer to Information on places of refuge). The distance from the place of refuge can be increased in the enclosed seas to 100 miles for a specific voyage provided favourable weather forecast, confirming that the ship established navigation restrictions are not exceeded, for the whole time of the ship's passage between places of refuge, taking into account the influence of forecast wave and wind direction on the speed of the ship and characteristics of the place (places) of refuge for the vessel on its passage depending on the wind directions. The ship shall navigate within area of coastal VHF / DSC radio installations** if the ship is fitted with the radio equipment for A1 area or/ **within the area of coastal MF / DSC radio installations** if the ship is fitted with the radio equipment for A1 and A2 areas ((highlighted in bold is entered in the section permanent restrictions of the ship, if the ship is not assigned restrictions exceeding specified in **2.2.5.5.2** in accordance with navigation conditions restriction sign). If the



ship is assigned greater (smaller in value), than specified in **2.2.5.5.2** in accordance with navigation conditions restriction sign, The Register may introduce additional seasonal and / or geographical restrictions of navigation areas on the basis of the justification provided by the shipowner and approved by the Register.

Sea areas for vessels with the sign **R4-RS3,0**, in which their navigation in rough seas is allowed with wave height of 3% provided to 3,0 m and seasonal restrictions are shown in table 2.2.5.5.3-1.

**Table 2.2.5.5.3-1 Sea areas for ships with the sign R4-RS3,0**

Seas and areas	Geographical boundaries of the area	Seasonal restrictions	Other restrictions
The Sea of Azov	Without restrictions		
Kerch Strait	Without restrictions		
The Black Sea	20-mile coastal area along the northern and western coast off the p. Sevastopol to Sulina mouth of the Danube	Throughout the year	
	10-mile coastal area around the Crimean Peninsula from the Kerch Strait to the p. Sevastopol	April-September	
	20-mile coastal area along the east coast of the Kerch Strait to the p. Novorossiysk	Throughout the year	
	20-mile coastal area along the northern and western coast from the Sulina mouth of the Danube to the p. Burgas	Throughout the year	Only for self-propelled cargo ships
	20-mile coastal area along the southern coast from p. Burgas to p. Zonguldak	April-October	
Bosporus Strait	Without restrictions		
The Sea of Marmora	Without restrictions from Bosporus to Dardanelles Straits	Throughout the year	
Sea areas are listed in Tables <b>2.2.5.5.3- 3</b> and <b>2.2.5.5.3- 5</b> .			

Sea areas for ships with the sign **B-R4-RS3,0**, in which their navigation in rough seas is allowed with wave height of 3% probability to 3,0 m and seasonal restrictions are shown in Table 2.2.5.5.3-2.

**Table 2.2.5.5.3-2 Sea areas for ships with the sign B-R4-RS3,0**

Seas and areas	Geographical boundaries of the area	Seasonal restrictions	Other restrictions
The Sea of Azov	The territorial waters of Ukraine		
Kerch Strait	The territorial waters of Ukraine		
The Black Sea	20-mile coastal area along the northern and western coast off the p. Sevastopol to Starostambulske mouth* of the Danube	Throughout the year	
	10-mile coastal area around the Crimean Peninsula from the Kerch Strait to the p. Sevastopol	April-September	
* For ships with documents for entrance the Sulina mouth and navigaton on the Danube, geographical restrictions are imposed on the Sulina mouth.			

Sea areas for vessels with the sign **R4-RS2,5**, in which their navigation in rough seas is allowed with wave height of 3% probability to 2,5 m and seasonal restrictions are shown in table 2.2.5.5.3-3.

**Table 2.2.5.5.3-3 Sea areas for ships with the sign R4-RS2,5**

Seas and areas	Geographical boundaries of the area	Seasonal restrictions	Other restrictions
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The Sea of Azov	Without restrictions	March - November	
Kerch Strait	North off the line passing through the edge of Tuzla spit	March - November	
	South off the line passing through the edge of Tuzla spit to the line connecting Cape Takil, anchorage with coordinates N 45°06'N, 36°33'E and Cape Panagia	April - November 20 March 21 - November 30	Only for self-propelled cargo ships with
The Black Sea	10-mile coastal area from Kerch strait to the p. Novorossiysk	April - October	
	Coastal areacbetween the lines connecting the point with the coordinates 45°05'30" N., 36°35'30" E with the Cape Panagia and the Cape Zheleznyi Rog	March - November	Only for self-propelled cargo ships with $h_{3\%} \leq 2,0m$
	10-mile coastal area around the Crimean Peninsula from the Strait of Kerch to the parallel 45°N from the west coast of the Crimean peninsula	April - September	
	20-mile coastal area in the north-western part to the north off 45°N from the Kalamyt Gulf to the p. Chornomorsk	April - October	
	10-mile coastal area from the p. Chornomorsk to Sulynskiy mouth	April - October	
	20-mile coastal area along the western coast from the mouth of Sulyna to p. Burgas	April - October	Only for self-propelled cargo ships
Sea areas, specified in Table 2.2.5.5.3-5.			nil

Sea areas for ships with the sign **B-R4-RS2,5**, in which their navigation in rough seas is allowed with wave height of 3% probability to 2,5 m and seasonal restrictions are shown in Table 2.2.5.5.3-4.

**Table 2.2.5.5.3-4 Sea areas for ships with the sign B-R4-RS2,5**

Seas and areas	Geographical boundaries of the area	Seasonal restrictions	Other restrictions
The Sea of Azov	Territorial waters of Ukraine	March - November	

Kerch Strait	North off the line passing through the edge of Tuzla spit	March - November	
	South off the line passing through the edge of Tuzla spit to the line connecting Cape Takil, anchorage with coordinates N 45°05'30"N, 36°35'30"E and Cape Panagia	April-November 20	
			March 21 - November 30
The Black Sea	10-mile coastal area around the Crimean Peninsula from the Strait of Kerch to the parallel 45°N from the west coast of the Crimean peninsula	April-September	
	20-mile coastal area in the north-western part to the north off 45°N from the Kalamyt Gulf to the p. Chornomorsk	April - October	
	10-mile coastal area from the p. Chornomorsk to Sulynskiy mouth* of the Danube	April - October	
* For ships with documents for entrance the Sulina mouth and navigation on the Danube, geographical restrictions are imposed on the Sulina mouth.			

Sea areas for ships with the sign **R4-RS2,0**, in which their navigation in rough seas is allowed with wave height of 3% probability to 2,0 m and seasonal restrictions are shown in Table 2.2.5.5.3-5.

**Table 2.2.5.5.3-5 Sea areas for ships with the sign R4-RS2,0**

Seas and areas	Geographical boundaries of the area	Seasonal restrictions	Other restrictions
The Sea of Azov	Taganrog Bay to the line Spit Dovga - Berdyansk spit - p. Berdyansk and 20-mile coastal area along the east coast to the parallel 45°21'N.	March - November	
	20-mile coastal area along the northwest coast off the port of Berdyansk to the port of Henichesk	March - November	
	20-mile coastal area along the south-western and southern coast from the port of Henichesk to the Kerch Strait	March - October	
Kerch Strait	North off the line passing through the edge of Tuzla spit	March - November	
	South off a line passing through the edge of Tuzla spit to the line connecting Cape Takil with coordinates 45°06'N, 36°33'E and Cape Panagia	April-November 20	With $h_{3\%}$ to 1,5m
The Black Sea	5-mile coastal area along the northwest coast off the port of Odessa to the Sulina mouth of the Danube river	March - October	
	5-mile coastal area along the northwest coast off the port of Odessa to the port of Skadovsk	March - November	

Sea areas for ships with the sign **B-R4-RS2,0**, in which their navigation in rough seas is allowed with wave height of 3% probability to 2,0 m and seasonal restrictions are shown in Table 2.2.5.5.3-6.

**Table 2.2.5.5.3-6 Sea areas for ships with the sign B-R4-RS2,0**

Seas and areas	Geographical boundaries of the area	Seasonal restrictions	Other restrictions
The Sea of Azov	Taganrog Bay to the line Spit Dovga - Berdyansk spit - p. Berdyansk	March - November	

	20-mile coastal area along the northwest coast off the port of Berdyansk to the port of Henichesk	March - November	
	20-mile coastal area along the south-western and southern coast from the port of Henichesk to the Kerch Strait	March - October	
Kerch Strait	North off the line passing through the edge of Tuzla spit	March - November	
	South off a line passing through the edge of Tuzla spit to the line connecting Cape Takil with coordinates 45°06'N, 36°33'E and Cape Panagia	April-November 20	With h <sub>3%</sub> to 1,5 m
The Black Sea	5-mile coastal area along the northwest coast off the port of Odessa to the Sulina mouth* of the Danube river	March - October	
	5-mile coastal area along the northwest coast off the port of Odessa to the port of Skadovsk	March - November	
* For ships with documents for entrance the Sulina mouth and navigaton on the Danube; For ships without these documents, geographical restrictions are imposed to the Starostambulske mouth.			

### 2.2.5.6 Distinguishing marks of navigation area and sailing areas of inland navigation ships.

#### 2.2.5.6.1 Signs of navigation area.

Depending on ship compliance with the requirements set by the INS Rules to the main operating area of the vessel, the main class symbol is added with one of the signs corresponding the area of navigation on inland waterways:

**B1** – ship meets the requirements for operation in Area 1 and can be operated in areas 2, 3 and 4;

**B2** – ship meets the requirements for operation in Area 2 and can be operated in areas 3 and 4;

**B3** – ship meets the requirements for operation in Area 3, and can be operated in Area 4;

**B4** – the ship meets the requirements for operation in Area 4

and in addition to these signs mark **R** – the ship has a certificate under the Convention on shipping on the Rhine.

#### 2.2.5.6.2 Navigation areas.

2.2.5.6.2.1 Division of inland waterways into navigation areas 1, 2, 3 and 4 (refer to 2.2.5.6.2.4) has been performed in accordance with the following provisions:

.1 Navigation area is determined by the maximum wave height at 5 percent probability:

Area 1 - waves up to 2.0 m;

Area 2 - waves up to 1,2m;

Area 3 - waves up to 0.6 m;

Area 4 - waves up to 0.3 m.

.2 Zone R - waterways listed in .1, which require the issuance of the Certificate in accordance with Article 22 of the revised Convention for the Navigation of the Rhine, using the wording of Article 22 from October 6, 2016.

2.2.5.6.2.2 Class of the ships operated continuously in a particular area shall comply with and be not lower than the corresponding Area.

2.2.5.6.2.3 Operation of ships in areas corresponding to a higher class, and the possibility and terms of ships' single voyages through higher grade areas are the subject of special consideration by the Register, taking into account: the duration of ship operation in the area of higher grade, duration of voyage, class and type of ship, her technical condition, compliance of equipment and construction with the requirements of the Rules.

In sound cases, the Register may require the ship-owner to provide backgrounds and measures to guarantee the safety of vessels in the areas relevant to a higher grade.

#### 2.2.5.6.2.4 Navigation areas

List of European inland waterways, geographically divided into areas 1, 2, 3 and 4 are listed in Appendix I of Recommendations annexed to Resolution №61 ECE UN with corrections and Annex I of the Directive of the European Parliament and of the Council 2016/1629. In this paragraph only relevant areas of inland waterways of Ukraine are specified.

**AREA 1****UKRAINE**

Dnieper-Buh estuary: to the port of Ochakov.

Southern Buh: following the Mykolaiv seaport.

Kakhovka reservoir: from the dam of Kakhovka HEP to the wharf of Bilen'ke (273 km).

Kremenchuh reservoir: from the dam of the Kremenchuh HEP to the village of Topylivka (626 km) .

**AREA 2****UKRAINE**

Dnieper: below the port of Kyiv\_(861 km), Kaniv reservoir above the city of Ukrainka (820 river km) and section from the mark of 943 river km to the inactive Teremtsy pier (951.5 river km).

Prypyat: Below the inactive Vydumka Pier (11.5 river km) to the mouth.

Southern Buh: from the village Ternuvate to Mykolaiv seaport.

Dniester estuary.

Dniester reservoir: from the dam to the village Dnistrovka (60 km from the dam).

Kakhovka reservoir: above the Bilen'ke village (273 km).

Dnipro reservoir.

Kremenchuh Reservoir: above the village Topylivka\_(626 km).

Kamyanske reservoir.

Kaniv Reservoir: from the dam of Kaniv HEP to the town Ukrainka (820 km).

Kiev reservoir.

Pechenizke reservoir.

Chervonooskilske reservoir.

Burshtyn reservoir.

Lake Svityaz.

**AREA 3****UKRAINE**

Dnipro: decommissioned Teremtsy pier (951.5 river km), section from the port of Kyiv (861 river km) to the dam of Kyiv HEP and the horn Staryi Dnipro (behind the island of Khortytsya).

Pripyat: above the decommissioned Vydumka pier (11.5 river km).

Desna and other navigable horns of the Dnipro.

Southern Buh, above the village Ternuvate (96 river km).

Dniestro, above the village Ustia (190 km from the dam).

The Danube.

Ladyzhynske reservoir.

Dniestro reservoir, from the village Dnistrivka (60 km from the dam) to the village Ustia (190 km from the dam).

Other navigable river waterways, not included in areas 1 and 2, according to the order of the Cabinet of Ministers of Ukraine of 12.06.1996 №640 with amendments and additions.

**AREA 4****UKRAINE**

All other (non-navigable and those not classified) inland waterways are not assigned to areas 1, 2 and 3.

**2.2.5.6.2.5 Areas with sea navigation mode**

On the part of specified in **2.2.5.6.2.4** areas of navigation countries administrations establish mouth areas with sea navigation mode.

In Ukraine, these areas are:

**AREA 1**

Southern Buh River from Mykolayiv sea port to the mouth.

Dnipro-Buh estuary: to the port of Ochakov.

**AREA 2**

The Dnipro River from the city of Kherson (Kherson cannery plant) to the mouth.

River Southern Buh from the parallel 46°59'8", passing to the east of the village Varvarivka to the Mykolayiv seaport.

**AREA 3**

The Danube.

**2.2.5.7 Distinguishing marks of area and navigation restrictions of small craft****2.2.5.7.1 Signs of navigation area**

**Sea** navigation area, refer to **2.2.5.7.2.1** – in class notation is marked with sign **M**.

**Coastal** navigation area - in a class notation is marked with the sign **II**, which is indicated in a composition of signs **IIM**, **IIP** or **II3**. Thus navigation area only within coastal sea is indicated with the sign **IIM** and navigation area only on inland waterways (refer to **2.2.5.6.2.4**) - with the sign **IIP**.

**Coastal mixed** navigation area (both at sea and on inland waterways) – in class notation is indicated with the sign **II3**.

**2.2.5.7.2 Signs of navigation restrictions**

Signs of navigation restrictions are specified in the character of class with the additional restrictions on wind-wave regime of navigation, seasonal area and distance from the shore or place of refuge.

**2.2.5.7.2.1 Signs of navigation restrictions in the sea area**

**Unrestricted sea area of navigation** – navigation restriction sign is not recorded into the class notation.

**1st and 2nd sea navigation areas** – in the class notation are marked with signs **R1** and **R2** respectively.

Characteristics of sea navigation areas are specified in **2.2.5.7.3**.

**2.2.5.7.2.2 Signs of navigation restrictions in the coastal and coastal mixed areas**

**1 coastal navigation area** - is indicated in the class notation with arabic numeral **1**. For this coastal area in the class notation may be additionally specified restriction on wave height, which is indicated in parentheses after the area sign, for example **(4.0)**. Restrictions on wave height are recorded in the character of class if the ship is allowed navigation in rough seas with waves at 3% provided less than 6,0m ; but may not be assigned wave height at 3% provided less than 3,5m.

**2 or 3 or 4 or 5 coastal navigation area** - are indicated in the class notation with arabic numerals **2** or **3** or **4** or **5**.

Characteristics of sea navigation areas are specified in **2.2.5.7.3**.

**2.2.5.7.2.3** If a small craft of mixed navigation (sign **II3**) complies with the requirements of INS Rules ( $L_{HX} B_{HX} T$  is 100m<sup>3</sup> and over), then with the sign of area and navigation restrictions of a small craft navigation area sign is indicated as for inland navigation vessel according to **2.2.5.6.1** of this part of the Rules, for example:  $\frac{II31}{B1}$ . Similarly are indicated signs for the small vessel of sea navigation area that meets the

requirements of the INS Rules for navigation on inland waterways, for example:  $\frac{R1}{B1}$ .

**2.2.5.7.2.4** If a small craft of river navigation (sign **IIP**) meets the requirements of the INS Rules see **1.3.4.4** (small craft except ferries with length of 20 meters or over, intended for navigation on inland waterways in the European community, including the Danube river in Ukraine), then with the sign of area and navigation Part I. Classification restrictions of a small craft is indicated by a sign of navigation area as for the shps of inland navigation in accordance with **2.2.5.6.1** of this part of the Rules, for example:  $\frac{IIP2}{B2}$ .

**2.2.5.7.3. Navigation areas**

### **2.2.5.7.3.1 General**

.1 Sea navigation areas and their characteristics are adopted in accordance with **2.2.5.1** taking into account adopted in **1.3.4.13.2** of this part of the Rules.

.2 For coastal navigation at seas, inland waterways and on waters and waters not related to waterways, taking into account adopted in **1.3.4.13.2** are established areas 1, 2, 3, 4 and 5 (refer to **2.2.5.7.3.3**) in accordance with the following provisions:

.2.1 Areas of coastal navigation are assigned with characteristics depending on the effects of wind and the formation of the typical waving.

Wherein are considered waters that are regarded as deep in respect of wave height (depth of waters more than 10-15 times the height of the waves), in which the formation of destructive and counter (broken water) waves is not observed.

1st coastal region is considered under the influence of wind from the open water area, that is not protected by shore.

Coastal areas 2 - 5 are considered under the influence of wind from the coast to open waters, or under the influence of wind on water area protected by shores closely located around;

.2.2 Wind-wave characteristics of coastal navigation areas is adopted on the basis of assigning restrictions for navigation in open waters and the characteristics of possible waving in limited protected waters.

The area is defined by the maximum allowed for the ship or craft distance from the coastline and places of shelter, with restriction of navigation to the wind and sea rough, including the sea rough induced by navigation;

.2.3 The division of inland waterways into navigation areas 1, 2, 3 and 4 is adopted in accordance with paragraph **2.2.5.6.2.1** of this part of the Rules;

.2.4 For 1 coastal navigation area sea rough characteristics is adopted based on assess of waves at 3% probability, as is adopted in **2.2.5.1** of this part of the Rules;

.2.5 For coastal navigation areas 2-5 sea rough characteristics is adopted based on assess of waves at 5% probability, as is adopted in **2.2.5.6.2** of this part for inland waterways.

.3 Class of the ship, continuously operated in the area of this category or certain area of navigation, shall not be lower than the grade of this area or conditions of the navigation area.

.4 Operation of ships in areas corresponding to a higher grade, and the possibility and terms of ships' single passages through areas of a higher grade, is the subject of a special review of the Register, taking into account, season, time of the day and duration of operation of the ship in the area of higher a grade, the duration of the transition, class and type of vessel, her technical condition, complianc of equipment and construction with requirements SC Rules.

In sound cases, the Register may require the shipowner to provide backgrounds and measures to guarantee the safety of vessels operation in areas that correspond to a higher class.

### **2.2.5.7.3.2 Sea navigation areas**

**Unrestricted area** - navigation in the oceans and seas without restrictions (typical waves heights at 3% provided to 10,0m and wind up to 10 points).

**Area R1**– navigation in the oceans and seas at sea rough with waves height at 3% provided up to 8,5m and wind up to 9 points with distance from the place of refuge not more than 200 miles and allowable distance between places of refuge not more than 400 miles.

**Area R2**– navigation in the oceans and seas at sea rough with waves height at 3% provided up to 7,0m and wind up to 8 points with distance from the place of refuge not more than 100 miles and allowable distance between places of refuge not more than 200 miles.

### **2.2.5.7.3.3 Coastal navigation areas**

**Coastal 1** – coastal navigation in sea areas under favorable weather conditions at sea rough with waves at 3% probability up to 6,0m and wind up to 8 points with distance from the coastline not more than 20 miles and distance from the place of refuge not more than 50 miles or without restrictions on inland waterways in areas 1, 2, 3 and 4. For this area, in coordination with the Register may be assigned special restrictions of sea rough on height of the waves at 3% probability ranging from 6,0m to 3,5m inclusively with indication in the ship class notation, as is set out in **2.2.5.7.2.2** of these Rules.

**Coastal 2** - coastal navigation under favorable weather conditions at sea rough with waves at 5% probability not more than 2.0 m and wind not more than 6 points with distance from the shoreline not more than 5 miles and from the place of refuge not more than 20 miles within the sea coast of open and inland seas, where the ship may be provided with emergency aid and on inland waterways in areas 1, 2, 3 and 4 without restrictions on distance.

**Coastal 3** - coastal navigation under favorable weather conditions at sea rough with waves at 5% probability not more than 1,2m and wind up to 6 points with distance from the shoreline not more than 1 mile and from the place of refuge not more than 5 miles within inland waterways in area 1 or the sea coast, where the vessel may be given emergency assistance, and without restrictions on distance on inland waterways in areas 2, 3 and 4.

**Coastal 4** - coastal navigation under favorable weather conditions at sea rough with waves at 5% probability not more than 0.6 m and wind up to 6 points with distance from the shoreline not more than 1 km for the motor, sailing craft and ships, which are towed, and not more than 500 m for other crafts within inland waterways in areas 1 and 2 or the sea coast, where the ship may be given emergency assistance, and without restrictions on distance from the coastline on inland waterways in areas 3 and 4.

**Coastal 5** - coastal navigation under favorable weather conditions at sea rough with waves at 5% probability not more than 0.3 m and wind up to 4 points with distance from the shoreline not more than 500 m for motor, sailing crafts and vessels, which are towed, and not more than 200 m for other shps within inland waterways in areas 1, 2 and 3 or the sea coast, where the ship may be given emergency assistance, and without restrictions on distance from the coastline on inland waterways in area 4 and in the protected waters of the coastal area of internal seas and areas 1, 2 and 3 of inland waterways.

*Notes* (Notes to the sailing conditions in the coastal area).

1. Navigation outside the specified protected waters of area 4 is permitted provided that the requirements of 2.1.5 part IV «Stability, floodability and freeboard" of these Rules are observed.
2. The area may experience conditions with occasional waves of 0,5 m of maximum height, for example from ships passing by.

## **2.2.6 Distinguishing automation marks.**

**2.2.6.1** Sea and mixed sea-river and river-sea navigation ships and floating facilities fitted with automation equipment complying with the requirements of Part XV "Automation" are assigned one of the following distinguishing marks 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, Part XV "Automation" of SS Rules;

**.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, Part XV "Automation."

**2.2.6.2** Inland navigation ships whose automation equipment complies with the requirements of Part X "Automation" of the INS Rules, a distinguishing mark **AUT** is added to the character of classification.



Inland navigation ships equipped for operation with a minimum manning of **S1** or **S2** in accordance with the requirements of Part XVII "Special Requirements Applicable to Ships with a Minimum Crew" of the INS Rules, the distinguishing mark **S1** or **S2** is added to the character of classification, which, in combination with the above indicated mark is designated as **AUT-S1** or **AUT-S2**.

**2.2.6.3** Small craft, the automation equipment of which complies with the requirements of Part VI "Automation" of SC Rules, the distinguishing mark **AUT** is added to the character of classification.

#### **2.2.6.4 Distinguishing mark of automatic stabilization.**

If a high-speed craft is equipped with automatic or semi-automatic stabilization system and the ship cannot move in operational mode without this system, the **stab** distinguishing mark is added to the character of classification after the marks indicated in **2.2.6.1-2.2.6.3**.

#### **2.2.7 Distinguishing mark of one man bridge operated ship.**

If the navigational equipment of self-propelled sea-going or mixed navigation ship installed on the navigation bridge complies with the requirements for self-propelled one man bridge operated ships specified in Part V "Navigational Equipment" of the Rules for the Equipment of Sea-Going Ships, a distinguishing mark **NAV-1** is added to the character of classification.

If the wheelhouse of a self-propelled inland navigation ship is specially equipped to operate the ship by one person using a radar station in accordance with **3.2**, Part XII "Navigational Equipment" of the INS Rules, then the distinguishing mark **NAV-1** is added to the character of classification.

#### **2.2.8 Distinguishing mark for a ship 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 these Rules in respect to those appliances, distinguishing marks **FF1WS**, **FF1**, **FF2WS**, **FF2** or **FF3WS** are added to the character of classification proceeding from the degree of the ship equipment with these appliances.

The degree of the ship's equipment for fire fighting aboard other ships is determined by the composition of fire-fighting systems and equipment assigned in **6.6**, Part VI "Fire Protection" of the SS Rules or in **2.7.8**, Part V "Fire Protection" of the MNS Rules in accordance with the ship's class.

#### **2.2.9 Distinguishing mark 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 distinguishing marks: **DP1**, **DP2** or **DP3** is added to the ship's character of classification, depending on the redundancy of the dynamic positioning system.

#### **2.2.10 Distinguishing mark for ships fitted with position mooring systems.**

If a self-propelled sea-going or mixed navigation ship is fitted with the position mooring system, one of the following distinguishing marks is added to the character of classification:

**.1 POSMOOR** – if the position mooring system meets the requirements of **9.1 - 9.3**, Part XV "Automation";

**.2 POSMOOR-TA** – if the position mooring system meets the requirements of **9.1 - 9.4**, Part XV "Automation" when applying thrusters complying with the applicable requirements of Section 8, Part XV "Automation".

#### **2.2.11 Distinguishing mark 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 this Part 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 Distinguishing mark 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 Distinguishing mark 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 10 Part III «Equipment, arrangements and outfit» the distinguishing mark **DEICE** is added to the character of classification.

The distinguishing mark **DEICE** may be assigned either to ship in construction or operation.

### **2.2.14 Distinguishing mark for ships fit for carriage of dangerous goods.**

If a ship complies with the requirements of 7.2, Part VI "Fire Protection" of SS Rules, 7.3 Part V «Fire Protection» of MNS Rules or Part XIII «Ships fit for carriage of dangerous goods» of INS Rules 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.

Ships intended for carriage of packaged irradiated nuclear fuel, plutonium and high-level radioactive wastes, which comply with the requirements of 7.3, Part VI "Fire Protection" or 7.4 Part VI "Fire Protection" of MNS Rules are assigned one of the following distinguishing marks added to the character of classification:

**INF1** for Class **INF1** ships;

**INF2** for Class **INF2** ships;

**INF3** for Class **INF3** ships.

### **2.2.15 Distinguishing mark for ships fitted with a loading instrument.**

If a ship is fitted with a loading instrument complying with the requirements of 1.4.4.4 and Appendix 2, Part II "Hull", the distinguishing mark **LI** is added to the character of classification.

### **2.2.16 Distinguishing mark for ships fitted with a cargo vapour discharge system.**

If a sea going or mixed navigaton ship is fitted with a cargo vapour discharge system complying with the requirements of 9.9, Part VIII "Systems and Piping", or inland navigation ship is fitted with a cargo vapour discharge system complying with the requirements of 8.3, Part VIII "Systems and Piping" of INS Rules, the distinguishing mark **VCS** is added to the character of classification.

### **2.2.17 Distinguishing mark for ships fitted with an inert gas system.**

If a sea-going or mixed navigaton ship is fitted d with an inert gas system complying with the requirements of 9.16, Part VIII "Systems and Piping", one of the following distinguishing marks 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 9.16.12, 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 9.16.11, 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 distinguishing marks **IGS-IG** or **IGS-NG**.

### **2.2.18 Distinguishing mark for ships fitted with a crude oil washing system.**

If a sea-going or mixed navigaton 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.

### **2.2.19 Distinguishing mark for ships fitted with a centralized cargo control system.**

If a sea-going or mixed navigaton 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.

### **2.2.20 Distinguishing marks for ships of high ecological safety.**

Ships complying with the requirements of VII «Requirements for ship equipment for compliance with **ESO** and **ESO-S** marks in the character of classification» of the Rules for the pollution prevention from ships are assigned with one of the following distinguishing marks 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 **5**, Part VII «Requirements for ship equipment for compliance with **ESO** and **ESO-S** marks in the character of classification» of the Rules for the pollution prevention from 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 **6**, Part VII «Requirements for ship equipment for compliance with **ESO** and **ESO-S** marks in the character of classification» of the Rules for the pollution prevention from ships.

### **2.2.21 Distinguishing mark for a ship complying with ballast water management requirements.**

If a sea-going or mixed navigaton ship performs ballast water management through ballast water exchange at sea and, as appropriate, carries the Guidelines for Safe Ballast Water Exchange at Sea, which complies with the requirements of **1.4.13**, Part IV "Stability" of these Rules, , and the ship ballast system complies with the requirements of **8.7**, Part VIII "Systems and Piping" of these Rules, one of the following distinguishing marks 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.

If a sea-going or mixed navigaton ship is fitted with ballast water management system that meets the requirements of the International Convention for the Control and Management of Ships' Ballast Water and Sediments of 2004 with the implementation of the D2 standard (by treating ballast water) and has a type approval from the Administration, and accordingly has a Ballast Water Management Plan developed in accordance with the provisions of resolution MEPC.127 (53), and the ballast systems of the ship meet the requirements of **8.8**, Part VIII "Systems and Piping" of the SS Rules, then the distnguishing mark **BWM (D2)** is added to the character of classification.

### **2.2.22 Distinguishing marks for a ship fitted with a diving system permanently installed on the ship.**

If ships are fitted with diving system installed permanently on ships that complies with the relevant requirements of the Rules for the Classification and Construction of Manned Submersibles and Ship's Diving Systems, one of the following distinguishing marks may be added to the character of classification:

**.1 SDS < 12** for ships fitted with a diving system designed for diving operations at depths less than 12 m;

**.2 SDS < 60** for ships fitted with a diving system designed for diving operations at depths less than 60 m;

**.3 SDS > 60** for ships fitted with a diving system designed for diving operations at depths of 60 m and over.

### **2.2.23 Distinguishing mark for ships fitted with manned submersible.**

If ships are fitted with manned submersible complying with the relevant requirements of the Rules for the Classification and Construction of Manned Submersibles and Ship's Diving Systems, the distinguishing mark **MS** may be added to the character of classification.

### 2.2.24 Distinguishing mark for a ship to carry out cargo operations at offshore terminals.

On tankers equipped to carry cargo operations at offshore terminals in accordance with the requirements of Part VIII «Requirements to tankers equipped to carry cargo operations at offshore terminals" of the Rules for the Prevention of Pollution from Ships», are assigned one of the following distinguishing marks 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 in accordance with **1** of «Requirements to tankers equipped to carry cargo operations at offshore terminals»;

**.2 BLS** – 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, у відповідності з положеннями, наведеними в **1.1.3** Section **1** of «Requirements to tankers equipped to carry cargo operations at offshore terminals»;

**.3 SPM** – if a ship is not fitted with the bow loading system, though complies with the requirements of **1.1.4** Section **1** of «Requirements to tankers equipped to carry cargo operations at offshore terminals».

### 2.2.25 Distinguishing mark for a ship fitted with helicopter facilities.

Sea and mixed sea-river and river-sea navigation ship, equipped with helicopter facilities in accordance with requirements of section 11 «Requirements to ships equipment with helicopter facilities» of part III «Gears, equipment and supply» of SV Rules, one of the following distinguishing marks is added to the character of classification:

**.1 HELIDECK** – if a ship is fitted with a helideck and complies with the requirements of **11.1.2.1**;

**.2 HELIDECK-F** – if a ship is fitted with helicopter refuelling facilities and complies with the requirements of **11.1.2.2**;

**.3 HELIDECK-H** – if a ship is fitted with hangar facilities and fully complies with the requirements of **11.1.2.3**.

The distinguishing marks **HELIDECK**, **HELIDECK-F** or **HELIDECK-H** may be assigned either to ship in construction or operation.

### 2.2.26 Distinguishing mark for propulsion plant redundancy.

Where provision is made for the redundancy of propulsion plant components complying with the requirements of **2.7** «Requirements for propulsion plant redundancy», Part VII «Macninery Installations», one of the following distinguishing marks is added to the character of classification: **RP-1**, **RP-1A**, **RP-1AS**, **RP-2** або **RP-2S**, depending on the redundancy arrangement.

### 2.2.27 Distinguishing mark for a ship equipped to use gas fuel.

If sea-going ships are equipped for using gas fuel in compliance with **1.1.3**, including **2.10** «General requirements for the design of ships equipped to use gas fuel», Part VII «Macninery Installations» and the requirements of other parts of the SS Rules specified in **1.1.3**, the distinguishing mark **GFS** (gas fuelled ships) is added to the character of classification.

If mixed navigation and inland navigation ships ships are equipped for using gas fuel in compliance with **6.5** «Ships equipped to use gas fuel», Part V «Fre Protection» of MNS Rules and Part XV «Special requirements for the design of ships equipped to use gas fuel» of INS Rules, the distinguishing mark **GFS** (gas fuelled ships) is added to the character of classification.

### 2.2.28 Distinguishing mark for a planned maintenance scheme for machinery and boilers 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 **11** and **12**, Part VII «Macninery Installations» of the SS Rules, at the shipowner's discretion, the distinguishing mark **PMS** (Planned Maintenance Scheme for Machinery) and/or **BMS** (Boiler Monitoring System) may be added to the character of classification.

### **2.2.29 Distinguishing mark 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.**) (for ships not engaged on the international voyages (**deck**) (**cargo hold(s) No.**)).

### **2.2.30 Distinguishing mark for a ship equipped to ensure long-term operation at low temperatures.**

If ships are equipped to ensure long-term operation at low temperatures in compliance with the requirements of Rules for the Classification and Construction of Sea-Going Ships, Rules for the Equipment of Sea-Going Ships and Rules for the Cargo Handling Gear of Sea-Going Ships, at the shipowner's discretion, the distinguishing mark **WINTERIZATION(DAT)**, is added to the character of classification, where design ambient temperature is indicated in brackets, in Celsius degrees, e.g.: **WINTERIZATION(-40)**.

The following is required for the assignment of a distinguishing mark **WINTERIZATION(DAT)**:

**.1** sign of the Polar class or the Baltic ice class **IC...IA Super**, or the Register ice class not lower than **Ice4**, or **Icebreaker** according to **2.2.3**. At the shipowner's discretion, the distinguishing mark **WINTERIZATION(DAT)** may be assigned to Baltic ice class I or ice class Ice3 ship and below, while the scope of these requirements is determined by the Register in agreement with the ship-owner, taking into account the expected operating conditions of the ship and her design features;

**.2** the distinguishing mark **DEICE** according to **2.2.13**.

The distinguishing mark **WINTERIZATION(DAT)** may be assigned either to ship in construction or operation.

### **2.2.31 Distinguishing mark 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.

A system of prompt access to computerized shore-based emergency response service shall comply with the requirements of **12.2.11**, Part II "Technical Documentation" of the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships.

### **2.2.32 Distinguishing mark confirming fatigue life of a ship.**

Where design remaining life of a ship (fatigue life) exceeds 25 years, the distinguishing mark **FTL (years)** may be added to the character of classification, where design remaining life of a ship within the range of 25 - 40 years (at 5-year intervals) is indicated in brackets.

When performing verification by direct calculation with application of spectral method, the distinguishing mark **Spectral North Atlantic** is added after the distinguishing mark **FTL (years)**.

**2.2.33** Reserved.

**2.2.34** Reserved.

**2.2.35** Reserved.

### **2.2.36 Additional distinguishing marks of a small craft.**

#### **2.2.36.1 Distinguishing mark of seasonal navigation restriction.**

Depending on whether a small craft has required strength of the hull, stability and floodability, specially provided equipment, insulation and heating of accommodation, as well as adequate life-savinr supply and sets of clothes, a seasonal navigation restriction sign is attached.

Seasonal periods for the respective areas are defined in the Load Line Rules for Sea-Going Ships.

Navigation restriction distinguishing mark is indicated with the letter **T**, with indication after it the respective number **0**, **1**, **2** or **3**, namely:


**T0** - for ships built, furnished and equipped for the possibility of navigation in summer in winter seasonal area, navigation is also possible in areas with the signs **T1** and **T2**;

**T1** – for ships built, furnished and equipped for the possibility of year-round navigation in the summer area, navigation is also possible in the area with sign **T2**;

**T2** – for ships built, furnished and equipped for the possibility of swimming in summer in summer area;

**T3** - for ships For ships built, furnished and equipped for year-round navigation in the tropics and the seasonal tropical area, navigation is also possible in areas with sign **T2**.

#### **2.2.36.2 Distinguishing mark of navigation restriction by time of day.**

Only in coastal areas 3, 4 and 5 can be made restrictions on navigation of vessels in the daytime. In this case, the distinguishing mark  attached.

#### **2.2.36.3 Distinguishing mark of small craft commercial use.**

If a small craft, except crafts of 5 coastal navigation area, meets the requirements of Part XIII «Specific requirements for ships for commercial carriage of passengers" of SC Rules, distinguishing mark **K** is attached.

#### **2.2.37 The verbal characteristics in the character of classification.**

**2.2.37.1** Sea-going ships that meet the specified volume of SS Rules requirements, which take into account the structural features of the ship and the conditions of her operation, the main class symbol of is added with appropriate verbal characteristics.

SS Rules of he Register contain certain requirements, the implementation of which enables the introduction of these verbal characteristics into the character of classification:

**Anchor handling vessel** – судно для обслуговування якорів

**Berth-connected ship** - стоянкове

**Bilge water removing ship** - збирач нафтовмісних вод

**Bulk carrier** - навалювальне

**Cable laying barge** - кабелеукладальна баржа

**Cable laying vessel** - кабелеукладальне судно

**Catamaran** – катамаран

**Chemical tanker** - хімовоз

**Container ship** - контейнеровоз

**Crane vessel** - кранове

**Crew boat** – судно для персоналу

**Docklift ship** - наплавне

**Dredger** – земснаряд

**Escort tug** - ескортний буксир

**Fishing vessel** - риболовецьке

**Floating crane** - плавкран

**Floating dock** - плавдок

**Gas carrier** – газовоз

**Hopper barge** – ґрунтовідвізна шаланда

**Hopper dredger** – трюмний земснаряд




**Oil/bulk carrier** – нафтонавалювальне

**Oil/bulk/ore carrier** - нафторудонавалювальне

**Oil recovery ship** - нафтозбирач  
**Oil tanker** - нафтоналивне  
**Ore carrier** - рудовоз  
**Passenger ship** – пасажирське  
**Pipe laying barge** - трубоукладальна баржа  
**Pipe laying vessel** - трубоукладальне судно  
**Pontoon** – понтон  
**Pontoon for technological services** – технологічний понтон  
**Pontoon for transportation services** – транспортний понтон  
**Ro-ro passenger ship** - пасажирське накатне  
**Ro-ro ship** - накатне  
**Salvage ship** – рятувальник  
**Self-unloading bulk carrier** саморозвантажувальне навалювальне судно  
**Shipborne barge** - суднова баржа  
**Special purpose ship** - спеціального призначення  
**Standby vessel** – чергове  
**Supply vessel** - судно забезпечення (other then **Supply vessel (OS)**)  
**Supply vessel (OS)** - судно забезпечення ПБУ/МСП  
**Tanker** - наливне  
**Tanker (water)** - наливне (вода)  
**Tanker (wine)** - наливне (вино)  
**Timber carrier** - лісовоз  
**Tug** - буксир  
**WIG craft** – екраноплан  
 and so on.

*Note.* The verbal characteristics in a class symbol of the ship, engaged on international voyages, including international routes on inland waterways, is written in English. At the request of the shipowner verbal characteristics in a class symbol of the ships specified can be written in two languages: English and Ukrainian, for example: **Oil tanker (ESP)**.

Special signs and verbal characteristics in the symbol of class gas carriers, chemical carriers, high-speed crafts, small type A WIG, floating rigs, manned submersibles and ship diving systems are specified in accordance with the Rules for classification and construction of these types of vessels (refer to **1.3.1.2**).

For a passenger ship, where the special needs of persons with reduced mobility concerning safety have been taken into account, the verbal characteristic is supplemented by a sign , e.g. **Passenger ship**  - passenger .

With verbal characteristics **Tanker** particular cargo transported by the vessel is indicated in brackets, e.g.: **Tanker (water)**, **Tanker (wine)** etc.

For berth-connected ships **Berth-connected ship** (refer to 2.2.5.1.7) the operating conditions are indicated in parentheses: when moored at quay - (**S, shore**) when lying at a water area distanced from the shore - (**W, waters**), after that a verbal characteristics is specified purpose of the vessel listed in the definition of berth-connected ship (refer to 1.2.1).

If the volume of the Regulation requirements, which the ship meets, allows, two or more verbal characteristics such as: **Supply vessel, Salvage ship, Tug** can be written in a class symbol, or verbal characteristics may be provided in the form of a combination of shortened words such as: **Cargo/passenger ship, Oil/bulk carrier, Oil/bulk/ore carrier** etc.

If oil tanker or oil recovery ship meets the requirements for ships carrying or recovery oil from the sea surface and transporting petroleum products with a flashpoint above 60 ° C, the temperature indicated in the verbal characteristics, e.g. **Oil tanker (>60°C), Oil/ore carrier (>60°C), Oil recovery ship (>60°C)**.

For bulk carriers and oil tankers of 150 m in length and over, which fully complying with the requirements of Part II "Hull" and, for these vessels of unrestricted navigation area, Part XVII "General rules for the construction of bulk carriers and oil tankers" of the SS Rules, the distinguishing mark **CSR** is added to the character of classification.

On addition the main class symbol with verbal characteristics «Bulk carrier» for ships of 150 meters and more in compliance with the relevant requirements of Part II "Hull" and, for those vessels of unrestricted navigation area, of part XVII «General rules for the construction and durability strength of bulk carriers» of SS Rules the following distinguishing marks are attached after verbal characteristics:

**.1 BC-A** - for ships designed to carry bulk cargoes with density of 1 t/m<sup>3</sup> and more at the maximum draft of which the holds remain empty;

**.2 BC-B** - for ships designed to carry bulk cargoes with density of 1 t/m<sup>3</sup> and more, when loading all holds;

**.3 BC-C** - for ships designed to carry bulk cargoes with density less than 1 t/m<sup>3</sup>.

For bulk carriers, to which class notation symbols **BC-A** and **BC-B** are added, in the section «other characteristics» of the Classification Certificate restrictions, which must be adhered to during operation as a consequence of the loading conditions applicable to the design (refer to **3.3**, Part II "Hull" or **3.1.3**, Section 1, Chapter XVIII, Part 1 of "General Rules for the Design and Strength of Bulk Ships", as applicable) must be recorded in detail in the following cases:

for **BC-A** or **BC-B** signs the entry (**maximum cargo density... t/m<sup>3</sup>**) is entered if the maximum load density is less than 3.0 t/m<sup>3</sup>;

for **BC-A** sign, in addition, allowable combination of determined empty cargo holds is recorded, eg, (**cargo holds Nos. 2, 4, ... may be empty**);

For **BC-A** sign, if the ship is intended for use in alternate block load condition, record (**block loading**) is made.

If the ship was not originally designed for loading and unloading in several ports, a distinguishing mark (**no MP**) is added after all these signs.

For bulk carriers, with distinguishing mark **BC-A** or **BC-B** in the character of classification, which cargo holds are designed for loading/unloading using grabs with weight of each 20 tonnes or more in accordance with the requirements of Section 1 of Chapter 12 of Part XVIII «General rules for construction and strength of bulk carriers" of SS Rules, after the said distinguishing mark is attached sign **GRAB (X)**, where instead of X, the weight of an empty grab of not less than:

35 t for ships with length  $L \geq 250$  m;

30 t for ships with length  $200 \text{ m} \leq L < 250$  m;

20 t in other cases is indicated

For all other bulk carriers addition of **GRAB (X)** distinguishing mark is voluntary.

On addition to the character of classification of self-propelled ships of verbal characteristics «Chemical tanker», «Oil tanker», «Bulk carrier», «Ore carrier» or combinations of words («Oil/bulk carrier», «Oil/ore carrier» etc.) after verbal characteristics is necessarily added: (ESP), indicating the need to provide these vessels for expanded program surveys. For example **Oil/ore carrier (>60°C)(ESP)**.

Verbal characteristics **Escort tug** is attached to character of classification of tugs that meet the requirements of section 9 "Requirements concerning tugs for escort operations" of part III «Equipment, arrangements and outfit" of SS Rules.



Gas carriers transporting liquefied natural gas (LNG) and designed to provide the transfer of LNG to ships using LNG as fuel (hereinafter referred to as LNG bunkering ships) in accordance with the requirements of Part XI "LNG Bunkering Ships" of the Rules for the Classification and Construction of Ships for Carriage of Liquefied Gases in Bulk, a word characteristic **LNG bunkering ship** is added after the distinguishing mark **Gas carrier** into the character of classification.

If an LNG bunkering ship has additional functions related to servicing ships using LNG as fuel and the vessel meets the requirements set forth in Section 13, Part XI "LNG Bunkering Ships" of the Rules for the Classification and Construction of Ships for the Carriage of Liquefied Gases in Bulk, one (or more) of the following distinguishing marks: **RE**, **Ig-supply**, **BOG** is added to the character of classification after the verbal characteristic LNG bunkering ship.

**2.2.37.2** The ships of mixed river-sea navigation, complying with a certain INS Rules requirements for types of ships contained therein, taking into account the structural features of the ship and conditions of her operation, the character of classification is added with characteristics using stated in **2.2.37.1** and provided in INS Rules for types the ships, for example, missing in **2.2.37.1**: **Tug – pusher**, **Cargo ship– pusher** etc.

For vessels of mixed river-sea navigation, carrying dangerous goods in bulk, the character of classification in verbal characteristics is added with the type of tanker, determined in accordance with **1.5.1** of the XIII «Vessels for the carriage of dangerous goods" of INS Rules.

**2.2.37.3** Inland navigation ships, complying with a certain INS Rules requirements for types of ships contained therein, taking into account the structural features of the ship and conditions of her operation, the character of classification is added with characteristics using stated in **2.2.37.1** and types of ships provided in INS Rules, including specified in **2.2.37.2**, for example, for types missing in **2.2.37.2**, **Pusher**.

For inland navigation ships transporting dangerous goods, the character of classification is added with verbal characteristics as set out in **2.2.2** of part XIII «Ships for the carriage of dangerous goods" of INS Rules.

**2.2.37.4** For small crafts and floating structures satisfying specific volume of SC Rules requirements, taking into account their design features, purpose and operating conditions, the character of classification is added with the verbal characteristics.

The verbal characteristics displays:

.1 particulars of the structural type of ship:

**BKC** – multihull vessel;

**BM** – jet ski;

**BIII C** – high speed craft;

**B** – ship, which is towed;

**B** – sailing ship (if installation of motor is not provided);

**Г** – rowing ship (if installation of motor is not provided);

**ГЛС** – gliding ship;

**KT** – frame and tissue rowing boat;

**KTБ** – frame and tissue sailing ship;

**KTM** – frame and tissue ship with an outboard motor;

**H1...H8** – inflatable boat with an indication of her type, defined according to the **6.1.3**, Part II «Hull" of SC Rules, where arabic numeral corresponds to a roman numeral of a small craft type;

**HB** – inflatable boat, which is towed;

**CT** – berth-connected ship;

**CMIB** – ship with a small area of waterline;

**СПК** – hydrofoil ship;

**СIIIa** – air cushion ship amphibious;

**СIIIc** – air cushion ship skeg;

.2 type of ship due to the purpose: recreational, patrol, fishing, yacht, cottage, training, ferry pontoon, jetty, etc.

The verbal characteristics of the ship purpose can be written in the ship character of classification in abbreviated form, e.g. Recreational - **rec.**, Patrol - **patr.**, Fishing - **fish.**, Training - **train.** etc.

If necessary, a verbal characteristics may consist of several words, such as **HFS/patr/rec.**

Indication of verbal characteristics for two or more kinds of structural types and kinds of purpose of one ship means, as a rule, her separate use for each purpose and compliance with the requirements of the ship at the same time with rules for all kinds of purposes.

With the simultaneous use of the ship for a variety of purposes the analysis is carried out and necessary technical documentation for the confirmation of such use with reflection in the specification of the ship and the stability and floodability information of the vessel (Ship owner's manual).

When deciding on a possible, agreed with the Register, carry out of requirements, such as requirements concerning ship supply, separately depending on the kind of purpose, the specified is reflected in the specification of the vessel and information on the stability and buoyancy of the vessel (the Manual for the owner of the ship) and the Certificate of Fitness of the small crsft for navigation with a footnote "depending on the purpose."

Indication of verbal characteristics of the type of ship for the intended purpose "**Fish**" (fishing) on the other hand is allowed for self-propelled vessels with main engines of 55 kW or more, and self-propelled vessels with a gross tonnage of 80 t or more.

**2.2.37.5** If a sea and inland navigation non-passenger ship (pleasure, crew, etc.) intended for the carriage of passengers is used for the commercial carriage of passengers (refer to 1.2.1 the definition of "Commercial carriage of passengers -"), the verbal description of such a ship is supplemented with the distinguishing mark (**K**), for example, **pleasure (K)**.

### **2.2.38 Restriction of certain distinguishing msrks action.**

If the implementation of a certain volume of requirements of the Rules, required for the introduction of the relevant signs into the class symbol, is confirmed only when the restrictions are set by the Register, after the class symbol in brackets the following signs and conditions are indicated, under which abuse these signs expire, for example **KM** ⊕ **Ice6 (hull at  $d \leq 8,4m$ ; machinery) ⊡ (at  $d \leq 8,4m$ ) AUT2 Ro-ro ship.**

At the request of the shipowner, when establishing the ice class restriction, the maximum draft in fresh water at which the Register requirements for the specified ice class are met, for example **Ice6 (hull at  $d/d_f \leq 6,0m/6,15m$ ; machinery)**, where  $d_f$  - maximum draft in fresh water at which the ice class requirements are met, which is defined as the sum of the draft  $d$  and corrections for fresh water according to formula (4.5.5.1) of the Load Line Rules of Sea-Going Ships.

## **2.3 ADDITIONAL ENTRIES**

**2.3.1** When complying with definite requirements of the Register rules stipulated by the structural features or operational characteristics of the ship the fulfilment of which is not reflected by distinguishing marks 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; the ship may operate in oil harbour water areas etc. (refer also to **1.1.4.8, 1.1.5.1, 1.1.5.2, 3.3.1.5, 3.10.4.1, 3.11.1.1.2** and **3.12.4.3.2, Part II "Hull"**).

**2.3.2** 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, pipelaying 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" (**Supply vessel (OS)**).

## **2.4 CHANGE OF CLASS NOTATIONS**

**2.4.1** The Register may exclude or change appropriate distinguishing mark in the character of classification in case of change or violation of conditions that were the basis for the introduction of the distinguishing mark into the character of classification.

### 3. ADDITIONAL PROVISIONS

**3.1 Reserved.**

**3.2 Reserved.**

**3.3 Reserved.**

#### 3.4 CLASSIFICATION OF SHIPS THAT MEET THE PROVISIONS OF DIRECTIVE 2013/53 / EU AND SHIPS WITH OCS CLASS

**3.4.1** The provisions of this section apply to small craft with mark "CE" affixed in accordance with the basic principles of Regulation (EC) № 765/2008 (Annex II) and Article 18 of Directive 2013/53 / EU with the number of notified body, including Register as a notified body, (if it is involved at the stage of production control or assess at the end of production), if necessary, in accordance with the national law of the Administration of the flag, their classification by the Register in accordance with SC Rules, including the use of recreational craft for commercial carriage passenger.

**3.4.2** The Register, together with providing of a small craft for classification, should be provided, depending on the applied vessel conformity assessment module in accordance with Article 20 of Directive 2013/53 / EU, Declaration of conformity (EU Declaration of conformity), composed by the manufacturer of the ship or an authorized representative or, for vessels with lengths from 12m to 24m of design categories A, B and C, the Declaration of conformity (EU Declaration of conformity) and a copy of the Certificate of EU type approval (EU type-examination certificate (with Supplement) or copy of the Certificate of Conformity (Certificate of conformity), issued by the notified body.

**3.4.3** The Register may require providing technical documentation that enables to carry out conformity assessment of the craft with Directive 2013/53 / EU (the volume in accordance with Annex IX to the Directive) and verification of the requirements of SC Rules under **3.4.5** i **3.4.6**.

The technical documentation submitted by the manufacturer of the ship or its authorized representative or, in the case they are outside Ukraine, the person who delivered the vessel to Ukraine (technical documentation regarding conformity assessment of the ship with Directive 2013/53 / EU, may be kept (provided) in relevant national authorities for inspection purposes).

**3.4.4** According to assessment by Directive 2013/53 / EU and the standards ДСТУ EN ISO 12217 and the applicable ISO and EN standards, the ship is assigned with a defined design category with establishing of restrictions on sea rough with significant wave height ( $h_{1/3}$ ) and wind force, specified in Tables 3.4.4-1 and 3.4.4-2.

**Table 3.4.4-1 Design categories of vessels according to Directive 2013/53/EU**

Design category	Wind force (Beaufort Scale)	Significant wave height ( $h_{1/3}$ ), m
<b>A</b>	> 8	>4
<b>B</b>	≤ 8	≤4
<b>C</b>	≤ 6	≤2
<b>D</b>	≤ 4	≤0,3

Definitions:

**A.** Recreational ship with assigned design category **A** is considered designed for navigation conditions at wind force exceeding 8 points (on a Beaufort scale) and a height of significant waves of 4m or more, except for unusual conditions such as storm, gail and storm, hurricane extreme state of the sea or unusual sea waves;

**B.** Recreational ship with assigned design category **B** is considered designed for navigation conditions at wind force exceeding 8 points inclusive and a height of significant waves of 4 m inclusive;

**C.** Recreational ship and jet-ski with assigned design category **C** is considered designed for navigation conditions at wind force to 6 points inclusive and a height of significant waves of 2 m inclusive;

**D.** Recreational ship and jet-ski with assigned design category **D** is considered designed for navigation conditions at wind force to 4 points inclusive and a height of significant waves of 0,3m inclusive with occasional waves of 0,5 m maximum height.

**Table 3.4.4-2 Design categories of ships according to ДСТУ EN ISO 12217 and the applicable ISO and EN standards**

Design category	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
Typical wind force on the Beaufort scale, in points	≤ 10	≤ 8	≤ 6	≤ 4

Maximum wave height	about 7m significant waves	4m significant waves	2m significant waves	0,3 m significant waves 0,5m sudden waves (maximum) -h <sub>max</sub> )
Wind speed estimated for 10 min., in m/s	24.4	20,7	13,8	7.9
<p><i>Note 1.</i> The maximum average wind speed adopted according to the Met Office 6 UK Bulletin in accordance with atmospheric conditions, gusts can temporarily increase wind speed.</p> <p>Notes for categories:</p> <ul style="list-style-type: none"> <li>- <b>Category A.</b> As a rule, such conditions may occur in extended navigation, for example, across the oceans, but can also occur in coastal sea areas that are not protected from wind and waves by several hundred nautical miles. Depending on atmospheric conditions, winds can reach about 32 m/s;</li> <li>- <b>Category B.</b> As a rule, such conditions may arise on sea voyages of sufficient length, but may also arise in coastal areas, where it is not always possible to reach a place of refuge immediately. Such conditions may also be in enclosed seas of impressive dimensions, where high waves can be formed. Depending on atmospheric conditions, winds can reach 27 m/s;</li> <li>- <b>Category C.</b> As a rule, such conditions can occur in open inland waters, in estuaries and in coastal sea areas under moderate weather conditions. Depending on atmospheric conditions, winds can reach around 18 m/s;</li> <li>- <b>Category D.</b> As a rule, such conditions can occur in protected inland waters and in coastal sea areas in good weather. Depending on atmospheric conditions, winds can reach about 12 m/s.</li> </ul>				

**3.4.5** Comparison of the requirements under the class of SC Rules, with assessment, adopted by the Directive 2013/53 / EU, is performed in the Table 3.4.5 upon the main characteristic - the permitted area of vessel navigation, for providing which, the requirements, laid down in the relevant parts of SC Rules, shall be observed.

However, due to some differences between the requirements of SC Rules and Directive 2013/53 / EU, full compliance of the ship's class, assigned in accordance with SC Rules, with a certain design category under Directive 2013/53 / EU shall be clarified, comparing available freeboard of the vessel and characteristics of closures and specified in the vessel's documentation allowed navigation restrictions: distance from the shoreline (place of shelter), wind force and sea rough.

**Table 3.4.5 Comparison of Register class and design categories according to Directive 2013/53/EU**

Class of the Shipping Register of Ukraine		Design categories in accordance with Directive 2013/53/EU						
Character of classification	Navigation area	Design category	Variants					
			Sailing with length ≥ 6m, ISO 12217-2:2015	Not sailing with length ≥ 6m, ISO 12217-1:2015	With length < 6m, ISO 12217-3:2015			
KM ⊕ KR ⊕ KE ⊕	M	A	1	1	nil			
						MR1		
						MR2		
	1	B	1	1, 3	nil			
						2	2, 4	2, 4, 10, 11
						3	5	6, 8, 9
						4	6	1, 7
						5	2, 4, 5	2, 4, 5, 6, 8, 9, 10, 11
5	D	7	6	1, 3, 7				

*Note.* Options on specified ISO 12217 standards series ISO 12217 (applicable DCTY EN ISO 12217 and EN ISO 12217 standards) are set in the table as indicative that determine the minimum required version to meet the specified class of the Register. However, in the presence of the actual ship characteristics that exceed the requirements on ISO 12217 (applicable DCTY EN ISO 12217 and EN ISO 12217 standards) standards series, to certain variant of performance, a higher class of the Register may be assigned to this ship.

**3.4.6** Class of the Register, with the assessment in accordance with Directive 2013/53 / EU, is assigned to the ship, taking into account the Table 3.4.5.

Wherein:

.1 Navigation area is determined in accordance with the design category of the ship.

For the ship of category **A** navigation area is determined as unrestricted, **R1** or **R2** when there is evidence of the possibility of ship's sailing in rough seas and winds, corresponding to set for these areas in **2.2.5.7.3.2**.

For the ship of category **B** navigation area is determined as the coastal **1**, indicating navigation restrictions on rough seas and winds, corresponding to set by this part for this area in **2.2.5.7.3.3.3**.

For the ship of category **C** navigation area is determined as coastal **2** or **3** or **4** if there is evidence of the possibility of ship's sailing in rough seas and winds, corresponding to set by this part for these areas in **2.2.5.7.3.3.3**.

For the ship of category **D** navigation area is determined as the coastal **5** indicating the restrictions on navigation in rough seas and winds, corresponding to set by this part for this area in **2.2.5.7.3.3.3** taking into account the notes to this navigation area.

For comparison of the evaluation criteria of sea rough and wind data of Table 1.2.3.1 of this part are used;

**.2** Navigation area shall be assigned lower than the relevant design category in Table 3.4.5 in the case of non-compliance with SC Rules on equipment and supply of the vessel with life-saving and signal means, radio navigation equipment, fireprotection and emergency supply for this area of navigation;

**.3** The ship shall be checked for compliance with the applicable requirements of SC Rules, provided for ships with class that complies with the assigned navigation area in terms of anchor and mooring maintenance, closing holes, floodability, life-saving and signal appliances, radio navigation equipment, fireprotection and emergency supply;

**.4** When using recreational ship for commercial carriage of passengers, she must be checked for compliance with Part XIII «Specific requirements for ships for commercial carriage of passengers " of the Rules;

**.5** Manual for the owner shall be provided for the ship (refer to **1.3.4.11**).

Manual for the owner of the ship, except for reporting information in accordance with Directive 2 013/53 / EU, namely:

- name of the manufacturer;
- CE marking description;
- design category of the ship;
- mass of the empty vessel, kg;
- established by the manufacturer maximum load (fuel, water, supplies of provisions, miscellaneous equipment and people), kg, excluding the mass of content of completely filled stationary tanks;
- established by the manufacturer number of people on board, for the transportation of which the ship is designed;
- the characteristics of maneuverability of the ship with the largest engine capacity, for which she is intended, and with which the vessel is built;
- maximum rated engine power;
- the risk of fire or flooding,

shall contain the information required by SC Rules to compile information about stability and floodability of the ship under **1.3.10** of Part IV «Stability, floodability and freeboard" or be supplemented by such information (possibly a separate addition to the Manual).

**3.4.7** Class of the Register according to SC Rules to a ship, classified by OCS, is assigned considering the determined by OCS area and conditions of navigation, with verification of compliance with SC Rules in terms of stability, floodability, life-saving, signal and emergency supply, radio navigation equipment, to the extent of applicable and relevant requirements of SC Rules, to assigned by OCS navigation area and conditions.

**3.4.8** The ships classified in accordance with the Rules of the Register of Ukraine for small craft, which were in force before enactment of Part I "Classification" with the valid SC Rules, can be classified under SC Rules, subject to carry out of their requirements and taking into account the content of table 3.4.8:

**Table 3.4.8 Reclassification in accordance with SC Rules**

Class of the Shipping Register of Ukraine					
Rules for classification and construction of small craft, edition 2005 and editions 2013 and 2015, and this part I «Classification» edition 2010 and 2014		«Guidance on classification, technical supervision over construction and operation of yachts»		Rules for classification and construction of small craft 2001	
Character of classification	Navigation area	Character of classification	Navigation area	Character of classification	Navigation area
	SS H/o/M	⊕	K0	Classification not provided	

KM ⊕ KE ⊕ K ⊕		I/ MR1		K1	
		II/ MR2		K2	
		1		K3	
		2		K4	
	costal	2	Classification not provided	KM ⊕ M KE ⊕ M K ⊕ M	Category 1
		3			Category 2
		4			Category 3
		5			Category 4
					Category 5
					Category 6
			Category 7		

## 4. TECHNICAL DOCUMENTATION

### 4.1 GENERAL

**4.1.1** General provisions pertinent to the review and approval (agreement) of technical documentation on ships, materials and products are given in Part II "Technical Documentation" of the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships.

**4.1.2** This part of the Rules specifies the design documents of the ship in construction (plan approval documentation), submitted to the Register for examination and approval.

**4.1.3** 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 the Register or another classification society, are given in Part I "General Provisions" of the Rules for the Classification Surveys of Ships in Service and in **4.4** of this Part.

At the same time, technical documentation for conversion of sea and mixed (sea-river and river-sea) navigation single-hull tankers to double-hull tankers or bulk carriers shall meet the relevant requirements of these Rules taking in to account IACS UI SC226 (Rev.1 Dec 2012) (published at IACS site).

**4.1.4** Requirements for the scope of technical documentation of materials and products for ships, which are objects of technical supervision of the Register in accordance with Appendix 1 "Nomenclature of objects of technical supervision of the Register" part 1 "Organizational regulations for technical supervision" Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ship, are given in applicable Parts SS, MNS, INS, SC Rules, specified in **1.3.1.1.2**, **1.3.1.1.4** and **1.3.1.1.6** of General provisions on classification and other activities.

Technical documentation for materials and products shall be submitted prior to their manufacture for the Register technical supervision over their production, testing and certification prior to their installation on the ship. Upon presentation of a material or product without a certificate of the Register or the organization, recognized by the Register, the material or the product to be installed on the ship shall be certified with the providing of the specified technical documentation and tests carry out in accordance with the main sample acceptance program.

Agreed with the Register standards for certain materials and products can replace the relevant part of the documentation or documentation in general.

**4.1.5** The scope of technical documentation for the construction of vessels, specified in this paragraph takes into account the requirements of Rules, stated in **1.3.1.1.2-1.3.1.1.4** and **1.3.1.1.6-1.3.1.1.10** of General provisions on technical supervision activities.

The scope of technical documentation for the construction of the ship and manufacture of materials and products provided in this part of the Rules shall be amended with regard to the requirements of Rules, applicable to to the ship, specified in **1.3.1.1** and not mentioned above, and of Rules applicable to the ship of a special type, specified in **1.3.1.2** of General provisions on technical supervision activities.

**4.1.6** Technical documentation in accordance with the requirements of applicable to the ship conventions and codes is provided to the ships subject to International Conventions and Codes.

**4.1.7** When alternative design and arrangements being applied on board (refer to **1.2.2**), deviate from the classification requirements and are allowed by Reg. II-1/55, II-2/17 and III/38 SOLAS, a *Technical Analysis* shall be submitted for approval by the Register with technical justification demonstrating that the alternative design and arrangements provide an equivalent level of safety to that stipulated by the applicable requirements of SOLAS.

*Technical Analysis* shall be carried out and provided for the examination and approval of the Register with subsequent providing to ship Flag State Administration under the provisions of the Guidance alternative design and arrangements (refer to IMO MSC/Circ.1002 з Coord.1, Coord.2, Coord.3 и MSC.1/Circ.1552 and MSC.1/Circ.1212/Rev.1), taking into account Guidelines for the approval of alternatives and equivalents, adopted by MSC.1/Circ.1455.

When alternative design and arrangements being applied on board, deviate from the classification requirements of the Register rules, an engineering analysis shall be submitted for approval by the Register with technical justification demonstrating that the alternative design and arrangements provide an equivalent level

of safety to that stipulated by the Register requirements. Regarding alternative fire protection structures, measures and devices - see 1.7 of Part VI «Fire protection" of SS Rules and regarding life-saving appliances - 1.3.11 of Part II "Life-saving appliances" of Rules for the equipment of sea-going ships.

#### **4.1.8 Evacuation analyses for passenger ships.**

Escape routes shall be evaluated early in the design process using evacuation analysis (refer to 4.2.4.17 or 4.2.2.2). This analysis is performed for:

- .1 ro-ro passenger ships, which are under construction on 01.07.1999 or after this date; and
- .2 passenger ships other than ro-ro passenger ships constructed on or after 1 January 2020 carrying more than 36 passengers.

The analysis is used to identify and eliminate, as far as possible, the congestion that may arise when the ship is abandoned as a result of the movement of passengers and crew along escape routes, including the likelihood that crew members will have to move along these routes in the opposite direction. In addition, this analysis shall be applied to demonstrate that the evacuation arrangements are flexible enough to allow that some escape routes, muster stations, embarkation stations or life-boats and rafts could be damaged as a result of an accident. The analysis is in accordance with the provisions of the IMO circular "Guidelines for evacuation analysis for new and existing passenger ships" (MSC.1 / Circ.1533), as amended.

## **4.2 DESIGN DOCUMENTATION FOR A SHIP UNDER CONSTRUCTION**

### **4.2.1 General.**

Prior to the commencement of a ship construction, technical documentation (plan approval documentation), яка дозволяє переконатися, proving that all requirements of the Register applicable to the ship concerned are complied with shall be submitted to the Register for review, as a rule, completed according to the following list, taking into account features and type of ship.

In case of absence (not required and not provided by the Rules) on the vessel of appropriate structures, mechanisms, devices, systems, equipment and supply, their technical documentation is not provided for the Register. In case of presence on the vessel of specific constructions, mechanisms, devices, systems, equipment and supply, which are not subject to supervision of the Register, the technical documentation for them is submitted to the Register to the extent necessary to comply with the Rules on such constructions, machinery, devices, systems, equipment and outfit.

Shown in the lists documents for the construction of small craft and craft of a simplified design can be combined respectively, provided they display design solutions with the ability to verify that all the requirements of the Rules have been carried out.

The Register may require submission of additional documentation in the absence in documentation submitted confirmation that all the requirements of the Rules have been carried out.

On positive results of examination the design documentation is approved or, for documents, which names in the lists are specified with a sign «(\*)», is taken into account, or for documents in the lists next to the name of which the sign «(\*\*)» is indicated, for information, with putting appropriate stamp.

Register approval of design documentation does not apply to vessel's elements, structures and equipment provided for therein, but are not objects of the Register's technical supervision and which are not subject to the requirements of the Rules; approval of documents does not confirms their compliance with requirements applied in their development, other than the requirements of the rules and regulations of the Register and agreed with the Register normative documents in part regulated by them.

### **4.2.2 General:**

- .1 ship specification (\*).

Section "Radio Equipment" of general specification of vessels operated at sea and on navigable sea routes of inland waterways (INR) of Ukraine according to the Decree of the Cabinet Ministers of Ukraine from 06.12.1996 №640, should contain information about the sea navigation area (concerning radio equipment) and navigation area on INS and for ships with sea (concerning radio equipment) navigation area - maintenance of radio equipment in accordance with the requirements of the Global Maritime Distress and Safety System (GMDSS).



General passenger ship specifications shall include information about the availability of cabins equipped for persons with reduced mobility.

General inland navigation ship specification: self-propelled cargo ships, pusher, pusher and passenger shall contain information about the equipment for operation with a minimum crew of vessels (indicating systems (standard) and minimum crew);

**.2** general arrangement plan; drawings of an overall plan safety center (for passenger ships.

For vessel with bifuel engine (with distinguishing mark **GFS** in character of classification) drawings of general location of the vessel indicating the location of:

- storage tanks for gaseous fuels (GST) and any openings in them;
- storage facilities and fuel preparation and any openings that lead to them;
- doors, hatches and any other openings leading to explosive spaces and spaces;
- vapor tubes and places of air inflow and exhaust of explosive areas and spaces ventilation system; - doors, skylights, vestibules, ducts exits and other openings in rooms adjacent to the explosive zones;

**.3** list of standard equipment, systems, gears and materials that are the objects of technical supervision of the Register (\*) in accordance with nomenclature of the Rules of technical supervision over the construction of ships and manufacture of materials and products containing data on:

- type and basic technical data;
- manufacturing enterprise;
- reliability (only for systems, devices, instrumentation and automation elements);
- approval by the Register or by other competent authority, recognized by the Register;

**.4** drawings of explosive zones, spaces and premises (only for tankers and oil recovery ships);

**.5** for ships of mixed river-sea and inland navigation carrying dangerous goods:

**.5.1** ship damage control plan;

**.5.2** instructions on measures in case of emergency or incident;

**.5.3** list or general plan indicating fixed installations and equipment suitable for use in at least zone 1 and installations and equipment corresponding to the provisions regarding the surface temperature of electrical and non-electrical installations and equipment according to **3.2.1.12** and **3.3.28**, Part XIII of INS Rules;

**.5.4** list or general plan of electrical equipment indicating fixed installations and equipment, which are not allowed to be used during loading, unloading, degassing (for tankers) or while staying near or within the designated coastal area (marked in red in accordance with **3.2.1.12.2** or **3.3.29.3**, Part XIII of INS Rules);

**.5.5** a plan with the designation of the boundaries of zones and the location of electrical and non-electrical installations and equipment installed in the corresponding zone, intended for use in explosive areas, as well as (for tankers) autonomous explosion protection systems;

**.5.6** a list of the installations and equipment referred to in **.5.5**, with the following information:

- installation / equipment, location, marking (explosion protection level in accordance with IEC 60079-0 (in Ukraine ДСТУ 7113), equipment category in accordance with directive 2014/34 / EU or equivalent level of protection, explosion group, temperature class, type of explosion protection, test body ) in the case of electrical equipment for use in zone 0 or zone 1 and (for tankers) in the case of non-electrical equipment for use in zone 0 (or, alternatively, a copy of the Approval certificate according to directive 2014/34 / EU);

- installation / equipment, location, marking (explosion protection level in accordance with IEC 60079-0 (in Ukraine ДСТУ 7113), equipment category in accordance with directive 2014/34 / EU or an equivalent level of protection, including explosion group and temperature class, type of explosion protection, identification number) in the case of electrical equipment for use in zone 2 and in the case of non-electrical equipment for use in zone 1 and zone 2 (or, alternatively, a copy of the declaration of conformity according to directive 2014/34 / EU);

- for tankers - autonomous explosion protection systems: location, marking (group / subgroup of explosion hazard);

**.5.7** for tankers, a list or general plan indicating fixed installations and equipment installed outside explosive zones which may be used during loading, unloading, degassing, stay at berth or while in close proximity to or within the designated coastal area, unless they are specified **.5.3** and **.5.6**.

**.5.8** for type G tankers - in the case of carriage of refrigerated liquefied gases, when the temperature is not regulated in accordance with **3.3.15.1.1** and **3.3.15.1.3**, Part XIII of the INS Rules - determination of the holding time (paragraphs 7.2.4.16.16, 7.2.4.16.17 of ADN and documentation indicating the heat transfer coefficient);

**.5.9** instructions for speed of loading and unloading of cargo system of tankers of type C i N;

**.5.10** instruction on cargo heating (for ships intended for the carriage of substances having a melting point  $\geq 0^{\circ}\text{C}$ ).

**.6** list of operational activities performed by the shipowner during the preparation of the oil recovery ship for operations to rectify the oil spill;

**.7** list of measures and technical solutions that provide electrostatic and galvanic intrinsic safety (if required by the Rules), including description and layout of constructive facilities and equipment used for such purposes;

**.8** plan showing the position of the IMO number on board a ship in compliance with the requirements of regulation XI-1/3 of SOLAS-74/04 (for ships engaged in sea voyages, all passenger ships of 100 gross tonnage and above and for all cargo ships of 300 gross tonnage and above);

**.9** drawing of identification anchors signs (for inland vessels); drawing of installing metal plate with information regarding the Ship's certificate (certificate of seaworthiness) (for inland waterway barges, which are pushed, if absence of this certificate and inland vessel tonnage certificate on board is supposed); drawing of installing metal plate with information regarding the ADN Certificate of Approval (for inland navigation barges, which are pushed, which are not carrying dangerous goods) and additional (for dry cargo or liquid barges carrying dangerous goods), metal or polymer plates with photocopy of a specified certificate if absence of this certificate on board is supposed;

**.10** Guide for the owner (\*), refer to **1.3.4.11** (for small craft) (approved if it includes information about the stability and floodability refer to **4.2.7.15**);

**.11** List of deviations from the RU rules ((list of available in the design decisions on structures, materials and products that differ from regulated by the Rules, with grounding of their use) - in the case of deviations, refer to **1.3.4.1** of General provisions on classification and other activities.

The grounding displays: the requirements of the rules on the design, material or product that is replaced, used on the ship construction, material and product grounding of equivalent replacement, decision taken, confirming an equivalent level of safety when replacing;

**.12 2** *Technical analysis* equivalents and / or alternative designs and equipment/ *engineering analysis* (refer to **4.1.7**) - in the event of their use (\*);

**.13** for ships with distinguishing marks of propulsion installation redundancy **RP-1, RP-1A, RP-1AS, RP-2** and **RP-2S** (for passenger ship) (which is applicable):

**.1** calculations showing that in case of a single failure the ship maintains progress and control in accordance with the requirements of **2.7.5.3**, Part VII «Machinery installation" of SS Rules (for ships with distinguishing marks **RP-1A, RP-1AS, RP-2** or **RP-2S**) (\*).

Alternatively the submission of the results of model or full-scale tests is allowed;

**.2** qualitative analysis of propulsive and steering gears failures (under **12** of Part VII «Mechanical installation" of SV Rules ) or analysis of the types and effects of failures (Failure Mode and Effect Analysis, FMEA) of propulsive plant elements based on building a fault tree or equivalent risks assessment method, agreed with the Register (\*);

**.3** calculation of torsional vibrations, in which the long-term use of the alternative propulsion installation shall be considered separately (\*);

**.4** programs of mooring and sea trials (possibly with the inclusion into the programs in accordance with **4.3**);

**.14** technical analysis of the ship ability to reach the port in an emergency in accordance with **2.2.6** and **2.2.7** of the Part VI «Fire Protection» of SS Rules with regard to interpretations of IMO circular MSC.1 / Circ.1369 (with MSC.1 / Circ.1369 / Add. 1) (for passenger ships of 120 m or more or having three or more main vertical zones (\*);

**.15** for ship with dual fuel engines (with distinguishing mark **GFS** in character of classification) analysis of risks, related to the use and storage of gaseous fuels and the possible consequences of its spill by the method, approved by the Register is provided (in accordance with IACS Recommendations №146 or ISO 31000: 2009 and ISO 31010: 2010 standards or relevant standards DSTU ISO 31000 and DSTU IEC / ISO 31010).

The analysis should consider risks of the hull structural elements damage and failures of any equipment after the accident, associated with the use of gas fuel. The results of the risk analysis shall be included in the operational manual;

**.16** drawings of typical units of hull structures, installation of hull support parts, earthing of ship equipment (it is allowed not to submit if units are given in the drawings of hull structures and installation of equipment and support);

**.17** grounding of the conditions for anchorage of a berth-connected ship (refer to **1.3.5**) (\*);

**.18** additional documentation for anchor handling ships:

**.18.1** drawings of the location of equipment for handling anchors: winches, anchor chain stoppers, towing bits, stern rollers, lifting equipment (if any), including the typical location of cargo on deck (anchors, cables, chains, etc.) with an indication of the trajectory of the towing line, limit sectors, maximum design bollard pull, maximum design load for each component (\*\*);

**.18.2** for the winch for anchor handling:

**.18.2.1** design criteria, including design loads and performance of the rope emergency release system, indicating response time and residual bollard pull after release (\*\*);

**.18.2.2** strength calculation of a drum with flanges, shafts with couplings, housing and brakes (\*);

**.18.2.3** assembly and general drawings.

**.18.3** for anchor chain stopper:

**.18.3.1** design criteria, including design loads and rope emergency release characteristics under operational and idle conditions (\*\*);

**.18.3.2** strength calculation (\*);

**.18.3.3** assembly and general drawings.

**.18.4** for towing bits:

**.18.4.1** design criteria, including design loads and rope emergency release characteristics under operational and idle conditions (\*\*);

**.18.4.2** strength calculation (\*);

**.18.4.3** assembly and general drawings.

**.18.5** for stern rollers:

**.18.5.1** design criteria, including design loads (\*\*);

**.18.5.2** strength calculation (\*);

**.18.5.3** assembly and general drawings.

**.18.6** drawings of reinforcements and seatings under winches, anchor chain stoppers, stern rollers and towing bits with indication of the maximum design load.

**.18.7** electrical circuits of power supply and diagrams of control systems for towing equipment and equipment for anchor handling.

**.18.8** drawings and technical descriptions of operator stations (user interface) of towing and anchor handling equipment control systems (for descriptions (\*)).

**.18.9** drawings and technical description of communication devices between the anchor handling control station and the wheelhouse (for descriptions (\*)).

**.18.10** design bollard pull evaluation(\*\*).

**.18.11** bollard pull test procedure (\*);

**.19** for ships equipped for long-term operation at low temperatures (descriptive mark **WINTERIZATION(DAT)** may be assigned):

**.19.1** Manual on ship operation at low temperatures (Winterization Manual) (\*);

**.19.2** equipment test programs, which in operation the ship is exposed to long-term low temperatures (possibly with inclusion in programs according to **4.3**) (refer also to **4.2.13.25**);

**.20** scheme/plan of assembly and installation of towing equipment and towing line bridle attachment points, towing line, etc. (as part of an emergency towing booklet (see MSC.1 / Circ.1255) for ships in accordance with SOLAS Regulation II-1/3-4).

### 4.2.3 Hull documentation<sup>1,2</sup>:

**.1** hull members scantlings determination, as well as analysis of the overall longitudinal strength and buckling stability of members for all specified loading conditions of a ship, including the loading and carriage of bulk cargoes other than grain, and, where required by the applicable Rules, local strength calculations; for reinforced concrete hulls - for hulls made of reinforced concrete -strength calculations of reinforced concrete (steel concrete, complex, composite, of prestressed concrete) constructions, calculations of structures for the disclosure of cracks and endurance and cross-sectional anchor area; vessel and hull structures vibration calculations (excluding small craft) (\*);

**.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. For ships, for which the total longitudinal strength calculation is carried out, hull section modulus for estimated cross-sections are indicated on drawings;

**.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.

For hulls made of reinforced concrete the drawings reflect the connections of embedded fittings (profiles) and plates, profiles and bars in steel-concrete and complex structures, embedded parts and cutouts;

**.4** deck and platform plans with indication of design loads (including the loads induced by lift trucks, containers and mooring, towing and anchor equipment), positions and dimensions of openings, their strengthening, end structures of the side coamings;

**.5** double bottom (single bottom) plan. The plan shall contain sea chest sections with indication of pressure in the blow-down system, table of pressure heads, boundaries of watertight compartments, dimensions and position of manholes and other openings. For bulk carriers and ore carriers an allowable load on the inner bottom plating shall be indicated.

**.6** shell expansion with indication of the ship hull boundaries, positions and dimensions of openings in shell plating, and for ships strengthened for navigation in ice also the upper and lower edges of the ice belt and corresponding forward and aft draughts (with due regard to trim), arrangement of intermediate frames. Shell expansion for fiber-reinforced plastic ships shall be submitted if the outer shell plating has different thickness;

**.7** drawings of longitudinal and transverse bulkheads, including tank wash bulkheads (for tanks the heights of overflow and air pipes shall be indicated);

**.8** drawing of the after end framing and sternframe;

**.9** drawing of the fore end framing and stem and for pushers - towknee;

**.10** drawings of multi hull ships bridge connections design;

**.11** for small craft drawings of cockpit, buoyancy elements design and ballast keel with their attachments to the hull, hull frame attachments design, flexible and resilient elements between themselves and with the solid hull;

**.12** drawings of propeller shaft brackets and bossings as well as fixed nozzles, special constructions of high-speed crafts, air ducts and the hovercraft air cushion skirt;

**.13** drawings of seatings for the main machinery (main engine, main diesel engine) and boilers, including bottom construction; the drawings shall be provided with indication of type and model of the equipment and that the seating complies with the requirements of the supplier's conditions on the equipment or that no special requirements are placed by the supplier on the equipment;

**.14** drawings of seatings for equipment (arrangements, machinery) according to **2.11** of Part II of "Hull" of SS Rules and MNS Rules and **2.13** of Part II of "Hull" of MNS Rules, and **2.14 13** of Part II of "Hull" of

<sup>1</sup> All constructional drawings mentioned here 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; for reinforced concrete hulls, classes and grades of concrete, classes of reinforcing steel are indicated.

<sup>2</sup> Documents under **.1**, **.2**, **.3** and **.6** shall be submitted with the first set of hull documentation.

HSC Rules, which are supervised by the Register (are examined by the subdivision of the Register, which carries out technical supervision over construction, at the stage of delivery and installation);

**.15** drawings of engine and boiler casings, coamings, companions and other guards of openings in the ship's hull;

**.16** drawing of superstructures and deckhouses; drawings of ballast water tanks with their internal structures (for ships with **BWM (D2)**, for integrated tanks can be combined with drawings of hull structures, (\*) for tanks);

**.17** drawings of bulwark;

**.18** strength calculations for seatings for mooring, anchor and towing equipment (\*);

**.19** drawings of seatings for mooring, anchor and towing equipment;

**.20** plan of weld control and table of hull welding (\*), containing the following information:

**.20.1** name and thickness of structural components to be joined;

**.20.2** shape or symbol of edge preparation;

**.20.3** brands and grades of base meta;

**.20.4** brands and grades of welding consumables;

**.20.5** method of welding and position of joint in space.

If the information indicated in **.20.1 – .20.5** is stated to the full in the drawings of a ship's hull, then submission of the table of welding is not required;

**.21** plan of testing the hull for watertightness (it is allowed to combine with the scheme according to **4.2.8.1**);

**.22** drawings of piping, ventilation ducts, cable lines, etc penetration through bulkheads, decks, double bottom, watertight floors and frame members;

**.23** specifications of protective coatings according to 6.5, Part XIII "Materials" (for sea and mixed navigation vessels);

**.24** basic parameters of the hull protection by damping from damages when mooring (for ships to be moored at sea to other ships) (\*);

**.25** subdivision scheme with a smooth hull assembly and welding technology (\*).

Description of fundamental process of the hull parts assembly afloat, developed on the basis of recognized by the Register methods of such works performance (if applicable);

**.26** for fiber-reinforced plastic ships — a detailed description of the hull constructing process, containing the information on the materials, methods of forming the structural items, necessary conditions required during hull construction, as well as analysis of the structural strength both local and general (\*);

**.27** program of ship propulsion vibration and local hull structures vibration measurements (excluding small craft);

**.28** Loading manual (for sea going ships, except of category II less than 90 meters and deadweight not exceeding 30% of the tonnage on summer load-line, and all cargo ships of mixed river-sea and inland navigation and small craft) and stability and strength information (booklet) for the carriage of non-grain bulk cargoes of (for sea and mixed river-sea navigation ships refer to **1.4.8** Part II «Hull» of SS Rules).;

**.29** Stability and strength information (booklet) for the carriage of non-grain bulk cargoes (for sea and mixed river-sea navigation vessels see **1.4.8.7** Part II «Hull» of SS Rules).

#### **4.2.4 Documentation on arrangements, equipment and outfit:**

**.1** arrangement plans, drawings of essential assemblies and parts of closing appliances of openings in hull, superstructures, deckhouses and subdivision bulkheads, including data on coamings height and type of closing appliances;

**.2** strength calculations of bow, side and stern closing appliances in a ship's hull (\*);

**.3** arrangement plans of machinery and actuators of rudder and steering gear with indication of essential parts and assemblies; arrangement plans of the main parts and components of Active means of ship steering (AMSS);

**.4** strength calculation of essential parts and assemblies of rudder and steering gear (\*);

**.5** calculation of efficiency of rudder and steering gear and AMSS (\*);

**.6** arrangement plan with essential parts and assemblies of hatchways of dry cargo holds;

**.7** strength calculations of hatchways of dry cargo holds (\*);

**.8** calculations of anchor, mooring towing and coupling arrangements, foil arrangement of the hydrofoil ship, wheelhouse lifting device, as well as for tugs - bollard pull diagrams and for escort tugs - preliminary calculation of the maximum holding force of the tug at an escort speed of 8 and / or 10 knots, including the calculation of the propulsive capacity of the escort tug required to provide and maintain the specified pull; (\*);

**.9** calculations of anchor, mooring towing and coupling arrangements, foil arrangement of the hydrofoil ship, wheelhouse lifting device and for small craft - centerboard device with basic data of applicable equipment; for escort tugs - general arrangement drawings of the escort towing device, including a towline fastening diagram and contains data on the minimum breaking load of the towline components and the strength of the corresponding structures;

**.10** calculations of signal masts and rigging and sailing ship rigging (\*);

**.11** drawings of signal masts and rigging and sailing ship rigging;

**.12** arrangement plans of guard rails;

**.13** calculations of essential parts and assemblies of guide members for containers in cargo holds (\*);

**.14** 4 arrangement plans of guide members for containers in cargo holds; arrangements plans of parts and components of units for the separation of bulk cargo;

**.15** plans of arrangement and fastening of ladders with essential parts and assemblies (including accommodation and pilot ladders, and gangways);

**.16** arrangement plan with essential parts and assemblies of catwalk on oil tankers;

**.17** plan of escape routes (if missing on the general arrangements plans);

**.18** arrangement plans with essential parts and assemblies of means of access for inspections of spaces in cargo area and other spaces on oil tankers, bulk carriers and sea and mixed navigation ships;

**.19** means of access manual (for oil tankers and bulk carriers and sea and mixed navigation ships);

**.20** calculation of hoisting gear of shipborne barges (\*);

**.21** general view of hoisting gear of shipborne barges;

**.22** list of emergency outfit indicating basic technical characteristics and location on the ship.

**4.2.5 Documentation on cargo handling gear**, refer also to **1.4** of the Rules for the Cargo Handling Gear of Sea-Going Ships:

**.1** ship's cargo handling gear specification (as part of the ship specification according to **4.2.2.1**) (\*);

**.2** general arrangement plans of the cargo handling gear with indication of principal characteristics (safe working load, operation areas, outreach, cargo lifting and lowering speed, maximum and minimum outreach, slewing speed, etc.);

**.3** general arrangement plans of cargo masts with derricks, ship's cranes, hoists, lifts and ship's elevating platforms, their attachments to ship structures and hull strengthening in way of their installation;

**.4** drawing (scheme) of derrick and crane rigging;

**.5** drawings of metal structures (cargo masts, derricks, bridges, gantries, mounts (pedestals) and columns, supporting and slewing gear of cranes, trunks, cars and ship's lift guides, platforms and guides of ship's elevating platforms, etc.) with strength and stability calculations;

- .6** technical documentation on machinery and drives:  
assembly drawings with sections;  
drawings of cargo shafts, gear wheels and pinions of reduction gear units as well as couplings (may be submitted together with assembly drawings);  
basic diagrams of hydraulic units;  
drawings of bed frames and housings together with particulars on welding (may be submitted together with assembly drawings);  
strength calculations or calculation results of essential stress-bearing items (\*);  
explanatory note or description with indication of principal technical characteristics (\*);  
testing programmes for the prototype and a serial specimen of the machinery;
- .7** technical documentation on electrical equipment:  
description of the operation principle and main performance specifications (\*);  
specification including the list of associated items, devices and materials (\*);  
structural assembly drawings;  
circuit diagram of the electric drive;  
testing programme;
- .8** drawings of components of the cargo handling gear together with strength calculations or with particulars proving their strength as equivalent to that of the standard components approved by the Register (\*);
- .9** drawings of safety devices (together with strength calculations where necessary) (\*);
- .10** drawings of securing of the cargo handling gear in the stowed for sea position;
- .11** diagrams of forces acting on stressed items of the cargo handling gear;
- .12** strength calculations or results of calculations for load-bearing structures as well as stability calculations of jib cranes and rope-suspended jib booms (\*);
- .13** instructions for derricks operating in union purchase rig with indication of the working range, safe working load, types, sizes and scheme of rigging;
- .13** testing programme of the cargo handling gear in assembly at the manufacturer.

Technical documentation on cranes, winches, metal structures, gear and safety devices of cargo handling gear may be submitted separately (independent of the ship technical documentation), the types and purposes of the ships and floating facilities for which they are designed shall be, however, indicated.

#### **4.2.6 Documentation for the equipment of ships.**

##### **4.2.6.1 Life-saving equipment and appliances documentation:**

- .1** location drawings of life boats and rescue boats, life rafts, marine evacuation systems and their launching appliances, primary and emergency lighting of their location and outboard launch area of life-saving appliances and also appliances for embarkation of people in collective life-saving appliances that are at water;
- .2** drawings of launching appliances fastening for collective life-saving equipment and rescue boats and means of embarkation into them;
- .3** drawings of collective life-saving equipment and rescue boats fastening with display of explanatory (manual) plaque or signs;
- .4** arrangement plans of muster stations and embarkation into collective life-saving equipment stations and lighting, communication and wave protection and protection against ingress of water in collective lifesaving equipment facilities;
- .5** drawings of location and stowing of individual life-saving appliances of mapping with display of their packaging;
- .6** necessary calculations and data confirming the Register Rules carry out (\*).

##### **4.2.6.2 Signal means documentation:**

- .1** drawings of location, mounting and grounding of signal-distinctive and signal-flashing lamps and also pyrotechnics and sound signal means indicating the main coordinates of their location and the name, type,

technical characteristics and number of signaling means;

.2 a list of signal means indicating their main technical characteristics and the number of signaling means (\*).

#### **4.2.6.3 Navigating Bridge documentation:**

.1 drawings of navigating bridge (for sea-going ships and ships of mixed navigation) showing:

.1.1 bridge arrangement, including the configuration and location of all working places on the bridge, including working places to perform additional functions of the bridge with displaying aisle width sieling height, the height of openings and doors, the distance between the deck plating and the bottom edge of equipment attached to the cieling, and installed separately from the equipment power supplies, heating, ventilation, communication, alarm and lighting devices;

.1.2 configuration and dimensions of working panels;

.1.3 arm-chairs installed for use in the workplaces, specifying the minimum and maximum altitude of regulation and horizontal distances of their movement;

.2 equipment arrangement plan (not less than in two projections).

The drawings shall display the location of radio navigation and other equipment at workplace panels and elsewhere on the navigating bridge and beyond, functionally associated with the bridge, wherein the following should be indicated (if available):

.2.1 distress signal system control panels (integrated or remote);

.2.2 VHF radio installations;

.2.3 MF or MF/HF radio installation, including the letter printing device;

.2.4 satellite radiocommunication means, including printing device;

.2.5 receivers providing continuous monitoring of the DSC notification on channel 70 (VHF), frequency 2187.5 kHz, DSC frequencies in the HF band;

.2.6 NAVTEX and extended group call (EGC) receivers;

.2.7 means for identification of ship's and life-saving appliance position for the purposes of search and rescue, radar transponder (RT) of the ship and life-saving appliance automatic identification system transmitter (AIS) of the ship and life-saving appliance (RT-AIS), emergency position identifying radar beacon;

.2.8 VHF radio installations of two-way radio communication and chargers;

.2.9 VHF radio installations of two-way radio communication with planes and chargers (for passenger ships);

.2.10 emergency lighting lamp that receives power from the backup source of electricity (GMDSS batteries);

.2.11 charger for backup electric power source (GMDSS batteries);

.2.12 ship security alert system and security alert button for transmitting and receiving (confirming) alert signal;

.2.13 power switchboards for radio and navigation equipment (with protection devices);

.2.14 optical magnetic compass or repeater performance transmission device;

.2.15 GNSS transceiver indicator;

.2.16 external sound signals receiving system (ESSRS) (for vessels with enclosed navigating bridge);

.2.17 log and its repeaters;

.2.18 echo-sounder and its repeaters;

.2.19 gyrocompass: pelorus / repeater (for course readings, for direction finding (gyroazimuth));



- .2.20 rate of turn indicator and its repeaters;
- .2.21 AIS equipment;
- .2.22 manual steering control, steering mode switch, ship course/track control system;
- .2.23 radars;
- .2.24 electronic chart display and information system (ECDIS);
- .2.25 long range identification and tracking system (LRIT);
- .2.26 bridge navigation watch alarm system (BNWAS);
- .2.27 rotation speed, force and direction of propeller thrust; pitch and operational mode of controllable pitch propellers; rudder angular position; force and direction of thruster indicators;
- .2.28 remote video surveillance equipment;
- .2.29 voyage data recorder (VDR);
- .2.30 whistle/typhon control;
- .2.31 main alarm switchboard (devices and indicators emergency alarm system affecting safety of navigation);
- .2.32 internal ship communications (equipment for automatic telephone communication, internal radio communications and command microphone station of command-translational unit);
- .2.33 propulsion gear control;
- .2.34 thruster control;
- .2.34 engine alarm switchboard;
- .2.36 fire alarm panel of fire detection and aerosol fire-extinguishing system actuation;
- .2.37 ventilation emergency shut down;
- .2.38 cargo alarm panel;
- .2.39 alarm switchboard/display;
- .2.40 windows wiping and heating control system; binoculars; signal flags;
- .2.41 lighting control buttons;
- .2.42 navigation lights turn on indicators and signal lights off alarm (switch);
- .2.43 automation equipment on the bridge, refer to 4.2.14.12;
- .3 drawings of visibility areas from navigating bridge (for seagoing ships and vessels of mixed navigation with a maximum length of 55 m or more), including:
  - .3.1 sea surface areas of visibility from the places of vessel control (for the said vessels and inland waterway vessels taking into account, if applicable, the caravan of vessels pushed by the vesselpusher);
  - .3.2 areas of visibility in the horizontal plane from the vessel control place, including individual shady sectors and the amount of shadow sectors towards the bow of the ship along the arc of the horizon 180° (from beam to beam);
  - .3.3 area of visibility in the vertical plane towards the stern of the vessel up to 10o to each side under different draft, trim and location of deck cargo conditions, from the place of vessel control and workplace for navigation and maneuvering, including the line of sight along the top edge of the window from a standing position and the lower edge of the window from a seated position;
  - .3.4 visibility of ship's side from the navigating bridge wing;
  - .3.5 location of windows, including slope, size, space between the windows and the height of the upper and lower edges above the bridge deck, and the height of ceiling;
- .4 list of all equipment installed on the bridge (\*) with the name and type.

For self-propelled sea-going ship and ship of mixed navigation project documentation associated with the navigating bridge construction, its equipping with radio equipment and navigation systems and other ship equipment should be developed taking into account the Appendix to Part V «Navigation Equipment" of the Rules for the equipment of sea-going ships.

For self-propelled sea and mixed sea-river and river-sea navigation vessel with distinguishing mark **NAV-1** design documentation shall be made taking into account the requirements of **1.3.7** and configuration of equipment in accordance with **2.3.23** of Part V «Navigation Equipment" of the Rules for the equipment of sea-going ships.

For self-propelled inland navigation ships with distinguishing mark **NAV-1**, which wheel-house is specially equipped to control the ship by one person using radar, design documentation shall take into account the configuration of the equipment in the wheelhouse in accordance with section **11** of Part III "Equipment, arrangements and outfit. Signal means" of INS Rules.

#### **4.2.6.4 Radio equipment documentation:**

**.1** electrical connections circuit of all radio equipment blocks (according to the type-approval certificate). Wherein the following should be reflected (if applicable):

**.1.1** antennas switching circuit;

**.1.2** power supply circuit from the main, emergency and backup sources of electricity (GMDSS batteries);

**.1.3** protection and disconnect devices as well as protection from radio interference;

**.1.4** connection of chargers;

**.1.5** connection of receiver-indicator GNSS (GPS/GLONASS/Galileo) to the VHF/MF/HF - radio installations;

**.1.6** type (brand) and section of cables cores;

**.2** block diagram (scheme of electrical connections of all blocks) of command translational device to display the main locations and remote command microphone stations;

**.3** drawing of antennas location (in three projections). Wherein the following should be reflected (if available):

**.3.1** all transmitting aerials including coordinating device;

**.3.2** all receiving antennas;

**.3.3** aerials of satellite communication equipment;

**.3.4** location free float satellite EPIRB;

**.3.5** location of external sound signals receiving system microphones;

**.4** calculation of the reserve source (batteries) of electrical energy capacity for GMDSS radio equipment supply (\*);

**.5** calculation of VHF and HF radio systems range (\*).

#### **4.2.6.5 Navigation equipment documentation:**

**.1** electrical connections circuit of all electro navigation equipment blocks (according to the type-approval certificate). Wherein the following should be reflected (if applicable):

**.1.1** aerials switching circuit;

**.1.2** power supply circuit from the main, emergency and backup sources of electricity

**.1.3** protection and disconnect devices as well as protection from radio interference;

**.1.4** connection of GNSS receiver-indicator (GPS/GLONASS/Galileo) to the VHF/MF/HF - radio installations;

**.1.5** connection of gyrocompass/long range course transmission unit with other equipment;

.1.6 connection to voyage data recorder (VDR);

.1.7 type (brand) and section of cables cores;

.2 drawing of aerials location (in three projections). Wherein the following should be reflected (if available):

.2.1 all signal transmitting and receiving antennas;

.2.2 Radar antennas (indicating the rotation radius of the aerial and any cargo or ship structures (masts, booms, containers, etc.) that can interfere with radio waves or degrade radar performance);

.2.3 of GNSS receiver-indicator antennas;

.2.4 location of main / auxiliary magnetic compass;

.2.5 location of voyage data recorder special protective container (capsule);

.3 list of information (data) that is recorded by voyage data recorder, indicating the format and the data source (equipment, sensors) (if applicable) (\*).

**4.2.7 Documentation on stability and manoeuvrability** (\*), (except for the documents below):

.1 lines drawing, coordinate tables of lines;

.2 hydrostatic curves;

.3 curves of areas and static moments of hull cross sections;

.4 calculations and curves of arms of form stability (cross-curves) including drawing of the buoyant hull;

.5 summary table of displacements, positions of centre of gravity, trim and initial stability for various loading conditions;

.6 calculations relating to verification of a ship's stability according to these Rules; mass tables for various loading conditions with indication of distribution of cargoes, fuel oil, fresh water and liquid ballast in tanks; calculations of roll amplitude and weather criterion; diagrams of windage area of a ship and calculations of heeling moments; calculations of heel caused by crowding of passengers and by turning; calculations of icing, angles of flooding, corrections for free surface effect of liquid cargoes and stores, etc.; deck cargo arrangement plan;

.7 summary table of the results of stability verification according to these Rules and curves of static or dynamic stability, required by the Rules for different load cases (it is allowed to include a summary table in the Stability Information); for escort tugs - calculations (preliminary) of tug stability in escort mode;

.8 stability calculations for the case of loading and stowage of bulk cargoes other than grain (for ships carrying such cargo);

.9 additional technical documentation for ships, engaged in carriage of grain in bulk:

.9.1 calculation and curves of cargo spaces volumes and center of gravity positions depending on the space filling level;

.9.2 calculation and heeling moments curves through shift of grain (if equipment that limits the shift is available, and without it) depending on the filling of compartment for joint and separate loading of cargo spaces;

.9.3 diagram or vessel's stability control table on heeling moments limit value and calculations, which the table is based on (may be submitted with the approval of information about the vessel's stability when loading grain);

.9.4 estimated materials on the typical grain loading plan (stowage of supply, ballast and cargo, the calculation of load, stability test calculations, calculations, which are the grounding for recommendations on ballasting, etc.). Calculations are made for the ship at the beginning and end of the voyage and, where necessary, for the most unfavorable intermediate state;

.9.5 drawings of equipment for carriage of grain, if it is installed, along with calculations of strength (stamp of approval);

**.9.6** ship strength test calculations for the case of uneven load along the length of the ship;

**.10** program of model tests and experimental studies of stability in the transitional and operational modes of hydrofoils navigation;

**.11** calculations and experimental program, if necessary modeling, research and stability tests in driving mode of the hovercraft;

**.12** program of field maneuver trials under the Guidelines on determining the maneuvering characteristics of the vessel (for vessels of 100 meters or more in length and chemical carriers and gas carriers built on 01.01.2004 and after that date, except high speed crafts, and according to the requirements of the Rules on maneuvering characteristics and for other vessels and vessels convoys (for other vessels and vessels convoys maneuvering test program can be part of the sea trials of the vessel or vessels convoys according to **4.3**) (stamp of approval);

**.13** testing program to assess the stability and floodability of vessels (for small crafts in accordance with **1.3.5** of IV «Stability, floodability and freeboard" of SC Rules (stamp of approval);

**.14** solid ballast stowage scheme (if ballast is available) (stamp of approval);

**.15** stability information (preliminary) (stamp of approval) and estimated materials if these materials are not included in the documentation submitted under **4.2.7.1-4.2.7.9** or require correction based on the results of heeling test (\*) concerning estimated materials). For non sea-going ships preliminary information on the stability and floodability is compiled (combined with information on **4.2.8**), which for small crafts may include as a separate section of the Manual for the owner. For sea-going ships it is allowed to introduce stability information as into Damage trim and stability or Information on the effects of compartment flooding according to **4.2.8**. For final approval of Stability information and Stability and floodability information, if required, Ship heeling test protocol and corrected, if necessary, information taking into account the results of the above test is provided;

**.16** ship stability information when loading grain (for ships, engaged in carriage of grain in bulk) (stamp of approval). For approval of Ship stability information when loading grain, except documentation specified in **4.2.7.9**, the protocol of ship heeling test, taking into account the results of which the information is compiled, must provide;

**.17** information about the place of refuge (for ships with distinguishing marks of navigation area restriction: **R3-S, R3-RS, B-R3-S, B-R3-RS, C-R3-S, C-R3-RS, D-R3-S, D-R3-RS, R3, R3-IN, B-R4-RS, R4-RS**).

**4.2.8 Documentation on subdivision** (\*), (except for the documents below):

**.1** plan of subdivision 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;

**.2** calculations on probability estimation of subdivision (if required);

**.3** calculations of damage trim and stability, including static stability curves;

**.4** cross-curves of stability (for a damaged ship) if necessary for the adopted method of damage stability calculation;

**.5** calculations of sectional areas of cross-flooding fittings and of uprighting time of a ship;

**.6** corner point coordinate table for compartments and tanks;

**.7** documentation on installation of flooding detection sensors of water ingress into compartments of passenger ship and bulk carrier or a cargo ship with one hold and a length of less than 100 m, as specified in Part V "Subdivision". The documentation, as a minimum, shall include:

flooding detection system specification;

flooding detection system Type Approval Certificate;

single-line diagrams of the flooding detection system (stamp of approval);

documents with indication of the location of the flooding detection system equipment (stamp of approval);

description of the procedures necessary for the performance in case of failures in the emergency alarm system;

requirements on technical maintenance of emergency alarm system equipment;  
Flooding detection system operational Manual (stamp of approval).

**.8** Damage stability and stability information (preliminary) (stamp of approval), see also **4.2.7.15**, and calculated materials on the basis of which it is composed, according to **4.2.8.3**, if these materials accompanying the Information or require corrections (\*) concerning calculated materials). Damage stability and stability information, if necessary, is corrected, taking into account initial stability clarification upon the results of heeling test and, if necessary, ship trials.

Information on compartment flooding effect (for sea dry cargo ships with length  $L_1 < 80$  m (refer to **1.4.9** Part V «Subdivision" of SS Rules (instead of Damage trim and stability information);

**.9** Damage control scheme and plan (for sea-going and mixed navigation ships) (stamp of approval).

#### **4.2.9 Freeboard assigning documentation:**

**.1** Freeboard calculation (for sea ships and ships engaged in international voyages, mixed river-sea navigation - Register forms **1.11.2** and **1.11.2.1**) (\*) and the drawing of load line (except in respect of load line drawing for small crafts less than 10m of 3 -5 coastal navigation areas);

**.2** drawings of draft marks and draft scales (for inland navigation ships) and draft scales for small crafts longer than 6.0 m;

**.3** drawings of the general location of openings and closings that provide watertightness of outer restrictive construction of the vessel (outer doors, cargo hatches, service hatches, bow, side and stern doors and apparel; skylights and windows, storm scuppers and porticos, sea connections of seawater, sewage, plumbing, etc.; air pipes and vent heads, ventilation ducts covers, machinery spaces skylights and so on (can be used drawing according to **4.2.4.1** with completing it with the necessary information (drawings) (\*);

**.4** terms of freeboard assignment (for sea ships and ships engaged in international voyages of mixed river-sea navigation - Register form 1.11.1) (\*);

**.5** drawings of stowage and fastening timber deck cargo (if carried and timber freeboard assignment);

**.6** data on the safety of crew and passengers (bulwarks, railing, bridges and transitional passages, etc. (refer to **4.2.9.4**) (\*);

**.7** Damaged stability and stability calculation of vessel with flooded compartments (for sea and mixed river-sea navigation ships with reduced freeboard) (\*).

The following documentation is used or submitted for determining the freeboard:

theoretical drawings (according to **4.2.7.1**);

general arrangement drawings (according to **4.2.2.2**);

determination of hull structures members (according to (по **4.2.3.1**);

strength calculation of dry of cargo ships cargo hatches covers (according to **4.2.4.7**);

stability information (according to **4.2.7.15** after correction, if necessary);

loading instructions (if required by applicable rules) (according to **4.2.3.28** or **4.2.3.29**).

#### **4.2.10 Documentation on fire protection:**

**.1** documents on structural fire protection;

**.1.1** arrangement plan of fire-protective divisions, including doors and penetrations (cutouts) in these structures with indication of categories of these spaces in accordance with:

for sea-going ships - **2.2.1.3**, **2.2.1.5**, **2.3.3** or **2.4.2** Part VI "Fire Protection" of SS Rules;

for mixed sea-river navigation ships - **2.2.1.3**, **2.2.3.2.1**, **2.2.3.2.2** and **2.2.3.2.6** Part V «Fire protection» of MNS Rules,

and also the number of certificates for the door and aisle seats design type approval, (cuts);

**.1.2** schemes or description of insulation, lining, finishing, deck covering and other finishing indicating the numbers of certificates of material type approval issued under the Code on fire test procedures (refer to :

for sea-going ships - **1.6** and **2.1.1.5 - 2.1.1.9** of Part VI "Fire protection" of SS Rules,

for ships of mixed river-sea navigation – **1.6, 2.2.7-2.2.9, 2.2.11, 2.2.12, 2.2.14-2.2.16** and **2.7.2.5** of Part V «Fire protection" of MNS Rules,

for inland navigation ships – **1.2** and **2.2** of Part V «Fire Protection" of INS Rules;

for small craft – **1.2** and **2.2** of Part X «Fire Protection» of SC Rules;

for high-speed craft – **1.2** and **2.1** of Part VI «Fire Protection» HSC Rules);

**.1.3** calculations (\*) as required:

– for sea-going ships – in **2.1.1.4** and **2.1.1.10** of Part VI «Fire protection» of SS Rules;

– for ships of mixed river-sea navigation - in **2.1.1.4** of Part V«Fire protection" of MNS Rules);

– for inland navigation ships - in **2.2.10** of Part V «Fire protection" of INS Rules)

– for small crafts - in **2.2.10** of Part X "Fire protection" of SC Rules;

– for high-speed craft – in **2.1.12** of Part VI «Fire Protection» HSC Rules;

**.2** diagrams of fire extinguishing systems and smoke detection system by air sampling with associated description, calculations and other data, which confirm the fulfilment of the requirements of Parts "Fire Protection" of appropriate SS Rules, MNS Rules, INS Rules, SC Rules and HSC Rules) (\*) concerning calculations)).

The documentation shall contain data on the dimensions of pipes (diameter and wall thickness), the design of piping (materials, insulation, manufacturing technology, installation, location, hydraulic tests, etc.), as well as data on the materials of applicable piping, gasket materials and types of pipe connections;

**.3** принципова схема і креслення розташування побутової установки скрапленого газу (при наявності);

**.4** list of fire-fighting outfit (\*).

**.5** structural drawings of units and parts of fire protection structures showing documents on conducting fire tests required;

**.6** structural drawings of insulation, lining and deck covering;

**.7** arrangement plan of fire-fighting outfit and emergency breathing devices;

**.8** list of spare parts and tools (\*);

**.9** calculations on fire extinguishing systems (\*);

**.10** structural drawings of fire extinguishing systems and fire alarm with drawings of units and equipment;

**.11** arrangement drawings of heating equipment that runs on liquid or solid fuels, indicating the structural insulation junction of hull structures, funnels;

**.12** preliminary fire plan (\*) according to 1.4 of Parts V i VI «Fire protection» of MNS Rules and SS Rules respectively (for sea-going and mixed river-sea navigation ships), as well as in accordance with 1.2, part VI "Fire protection" of the HSC Rules (for high-speed craft) (stamp of approval is placed on completion of ship construction).

For inland navigation ships and small craft fire plan is provided; for passenger ships of inland navigation safety plan is submitted (instead of fire protection plan). For inland navigation ship, concerning the content of fire plan, refer to **1.4** and for passenger ships, concerning the content of fire plan, refer to **7.7.1** of Part V «Fire protection" MNS Rules;

**.13** calculations of thermal emission from the flame, which can occur during a fire affecting the fuel tank with gas, and other equipment and spaces associated with gas fuel (\*) (for ships with dual-fuel engine (with distinguishing mark **GFS** in the character of classification).

*Note.* In case of complex supply of carbon dioxide fire extinguishing equipment, aerosol fire extinguishing systems and stationary systems of local application appropriate schematic diagrams, drawings and calculations according to 4.2.9.2, 4.2.9.9 and 4.2.9.10 for specified systems is allowed to provide as a part of documentation in accordance with 4 of Part 4 "Technical supervision over manufacturing of products for vessels " of Rules for technical supervision over the construction of ships and manufacture of materials and products.

.14 electrochemical protection scheme in oil tankers.

#### 4.2.11 Documentation on machinery and boiler plant:

.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, Part VII "Machinery Installations", for inland navigation ships in machinery spaces of category A, refer to 1.2, Part VI "Machinery Installations" of the INS Rules, for small craft in machinery spaces, refer to 1.2, Part VI "Machinery Installations. Machinery. Systems and Piping" of SC Rules, for high-speed craft in engine rooms of increased fire hazard, refer to 1.1, part IX "Machinery" of HSC Rules) and in the of emergency diesel generators rooms with an indication of attachment points to the corresponding structures of the ship, walkways and f escape routes;

.2 drawings of seatings and attachment fittings of the main machinery, boilers and shaft bearings;

.3 diagram (\*) and description of the remote control for 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.

*Note.* When remote control for the main machinery is supplied as complete delivery with the main engines and/or with steerable propellers, the mentioned diagram and description may be submitted together with the documentation required by Section 12, Part IV "Technical Supervision during Manufacture of Products" of the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships;

.4 drawings of arrangement and outfitting in fuel oil and lubricating oil tanks;

.5 arrangement plan of fuel tanks indicating the distance from the side plating and bottom to the tanks; drawing of supports and other structures that provide mounting and restrict movement of fuel tanks (for vessels with bi-fuel engine (with distinguishing mark **GFS** in the character of classification).

*Note.* 1. Regarding LNG fuel tanks (tanks for storing liquefied gas fuel) technical documentation to the extent required for the approval of cargo tanks for the transport of LNG gas carriers in accordance with the Rules for classification and construction of vessels for the transportation of Liquefied Gases in Bulk and the International Code of construction and equipment of ships carrying liquefied gases in bulk must be submitted.

2. With respect to CNG fuel tanks (compressed gaseous fuels storage tank) technical documentation to the extent required for the approval of cargo capacity for CPG carriage by gas carriers in accordance with the Rules for classification and construction of vessels for the transportation of compressed natural gas must be submitted. If the standard cylinders are used, then the calculation of allowable pressure is provided;

.6 documentation on shafting:

.6.1 general view of shafting;

.6.2 drawing of sterntube and parts of sterntube arrangement, drawing of casing protecting the area between the sterntube and propeller boss;

.6.3 sterntube bearing and sterntube seal lubrication and cooling diagrams;

.6.4 drawings of shafts (propeller, intermediate and thrust);

.6.5 drawings of shaft connections and couplings;

.6.6 drawings of journal and thrust bearings of shafting and their fastening to the seatings;

.6.7 strength calculation of shafts and their fastening parts (\*);

.6.8 calculation of the number of shaft supports, their position and loads carried (\*);

.6.9 calculation of parameters of shafting alignment (\*);

.6.10 calculation of fitting of propeller and shafting couplings (\*);

.6.11 1 torsional vibration calculations in compliance with the requirements of Section 8, Part VII "Machinery Installations" for for sea-going and mixed river-sea navigation ships, Section 8, Part VI

"Machinery Installations" of INS Rules for inland navigation ships and of **2.11** Part V "Machinery Installations. Machinery. Systems and Piping" of SC Rules for small craft (\*). In some cases axial and bending fluctuations calculation may be required (in accordance with the requirements of Section 5 of Part VII « Machinery installation" of SS Rules).

*Note.* In case of complex delivery of controllable pitch propeller with a propulsive installation documentation, specified in **4.2.10.6.2- 4.2.10.6.11** is allowed to be provided as a part of documentation in accordance with **6** of Part **4** " Technical Supervision during Manufacture of Products " of the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships;

**.7** calculation of power of the main machinery for Ice2-Ice6 ice class ships in compliance with the requirements of 2.1, Part VII "Machinery Installations" to the minimum value of power delivered to the propeller shafts of the ships (for sea-going and mixed river-sea navigation ships) (\*);

**.8** documentation on propeller and other screw (for screws that are not covered by the Rules for documentation is set in consultation with the Register in each case):

**.8.1** general view of propeller;

**.8.2** strength calculation of propeller blade, and for detachable-blade propellers and controllable-pitch propellers (CP-propellers), also calculation of fastening of blades to the boss (\*).

*Note.* The documentation may be submitted together with the documentation required by Section **7**, Part IV "Technical Supervision during Manufacture of Products" of the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships;

**.8.3** drawings of blade, boss and cone, as well as items for their securing (for detachable-blade propeller and CP-propeller);

**.8.4** drawing of propeller attachment to propeller shaft;

**.8.5** description of pitch actuating mechanism (PAM) and its control system (\*);

**.8.6** diagrams of pitch actuating mechanism (PAM);

**.8.7** pitch control unit (PCU) as assembled (\*);

**.8.8** 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.

*Note.* The documentation listed in **4.2.11.8.3-4.2.11.8.8**, may be submitted together with the documentation required by Section **7**, Part IV "Technical Supervision during Manufacture of Products" of the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships;

**.9** calculations of propeller (or impeller of water-jet), shafts, couplings, pinions, gear wheels of steerable propellers, water-jets and thrusters, paddle wheel, fan screw to create an air cushion and their calculations (according to calculations (\*);

**.10** documentation on active means of the ship's steering (AMSS):

**.10.1** drawings of AMSS installation and securing;

**.10.2** data to confirm compliance of the AMSS construction with operational conditions (\*);

**.10.3** general view with necessary sections and sealing details;

**.10.4** calculations of propeller (or impeller of water-jet), shafts, couplings, pinions, gear wheels of steerable propellers, water-jets and thrusters (when CP-propeller is used, refer to **4.2.11.8**) (\*);

**.10.5** drawings of propeller (or impeller of water-jet), shafts, couplings, pinions, gear wheels of steerable propellers, water-jets and thrusters (when CP-propeller is used, refer to **4.2.11.8**);

**.10.6** strength calculations of the input drive shaft of rotor, blade, gearing of vertical-axis propellers (\*);

**.10.7** drawings of shafts, gearing, rotors, blades and pitch control gear of vertical-axis propellers;

**.10.8** drawings of bearings and seals;



**.10.9** calculation of connections, drawings of propeller nozzles and tunnels, including information on acceptable clearance between ready-fitted propeller and tunnel (nozzle) (\*);

**.10.10** hull member drawings and drawings of reversible-steering gear of water-jets;

**.10.11** diagrams of cooling, lubricating and hydraulic turning systems for steerable propellers (blades of CP-propellers), as well as particulars of piping of the above mentioned systems;

**.10.12** calculations of electric drives for electrically driven AMSS (\*);

**.10.13** diagrams of electric drives for electrically driven AMSS;

**.10.14** documentation on monitoring, control, and protection systems;

**.10.15** torsional vibration calculations (for main AMSS and dynamic positioning systems) and service life calculation of rolling bearings (\*);

Moreover, the Register may require presentation of rotational and calculations of pendular vibration for steerable propellers if used as main AMSS (\*);

**.10.16** AMSS specification, containing its principal characteristics, as well as material specifications for principal parts and assemblies (\*);

**.10.17** prototype and pilot specimen test programme;

**.10.18** description, service and maintenance manual (\*).

*Note.* The documentation listed in **4.2.11.10.3-4.2.11.10.18**, may be submitted together with the documentation required by Section 7, Part IV "Technical Supervision during Manufacture of Products" of the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships;

**.11** steering column (outboard motors) remote control scheme;

**.12** calculation of allowable maximum power of the main engines (for small crafts under **2.3** of Part V «Machinery installations. Machinery. Systems and piping" of SC Rules (\*);

**.13** list of spare parts;

**.14** documentation on refrigerating plants (refer to **5.3**).

*Note.* The documentation listed in **4.2.11.6, 4.2.11.8-4.2.11.10** shall contain information on treatment and geometry of working surfaces, heat treatment, tolerances on mating parts, hydraulic tests, non-destructive testing, etc.

#### **4.2.12 Documentation on systems and piping:**

**.1** documentation on ship's systems:

**.1.1** bilge system diagram;

**.1.2** ballast system diagram; for **BWM (D2)** ships, the ballast system diagram shall include additional ballast water management system equipment for ballast water treatment;

**.1.2.1** Ballast Water Management Plan (for sea and mixed navigation ship equipped with ballast system, it is approved by the Register, taking into account, if available, the corresponding authorization from the Flag Administration, that may be submitted for examination at the stage of ship construction)

**.1.3** heel and trim system diagrams, as well as diagrams of devices (automatic and manually controlled) for ship equalization by cross-flooding;

**.1.4** air, overflow and sounding pipes diagrams, installations of liquids level indicators, remote level measurement in fuel tanks, cargo and drain tank of oil tankers;

**.1.5** diagrams of ventilation and air conditioning systems of accommodation, service, cargo, machinery and production spaces with indication of watertight and fire-resisting bulkheads, arrangement of fire dampers, as well as indication of closures of ventilation ducts and openings;

**.1.6** diagrams of sanitary and drain water systems, as well as scuppers with indication of watertight bulkheads, freeboard deck and distances from waterline or freeboard deck to the relevant discharges;

**.1.7** diagrams of sea chest heating and blow-down systems, heating system of side valves, heating system for liquids in tanks, steaming system for tanks;

**.1.8** diagram of the compressed air system for typhoons, for purging the sea chests;

**.1.9** diagrams of systems for hydraulic drives of mechanisms and arrangements;

**.1.10** diagrams of special systems for oil tankers and combination carriers;

**.1.11** diagram of thermal liquid system;

**.1.12** 1 calculations of the systems: bilge, ballast, vapour emission control; ventilation of battery rooms, cargo pump rooms, machinery of category A and ADG, hangars for helicopters, enclosed spaces and holds intended for the carriage of motor vehicles and dangerous goods, and others, for which the Rules require to ensure the regulated exchange of air (\*);

*Note.* For dual fuel ship (with distinguishing mark **GFS** in the character of classification) documentation in accordance with **4.2.12.1.1**, **4.2.12.1.2**, **4.2.12.1.5** i **4.2.12.1.12** shall display:

**.1** diagrams and calculations of ballast and drainage systems in gas dangerous spaces;

**.2** diagrams and calculation of ventilation in gas dangerous spaces;

**.3** diagrams and calculation of the vapor system.

**.2** documentation on machinery installation systems:

**.2.1** diagrams of live and waste steam systems;

**.2.2** diagrams of purging systems for boilers, machinery and steam piping;

**.2.3** diagram of condensate and feed water system;

**.2.4** diagram of fuel oil system and ship helicopters fueling system, with a flashpoint below 43° C.

For dual fuel ship (with distinguishing mark **GFS** in the character of classification):

**.2.4.1** drawings and diagrams of systems and piping for gaseous fuels showing these units as expansion joints, flange connections, valves and control valves, drawings of fuel gas system quick-closing devices, schemes of systems of gas fuel preparation, heating and pressure control, pipelines, containing gas fuel at a temperature below minus 110° C, stress calculations;

**.2.4.2** drawing of safety and vacuum valves of gaseous fuels storage tanks (GFST);

**.2.4.3** drawings and description (concerning description (\*) of all systems and devices to measure the quantity and characteristics of the fuel and gas leak detection;

**.2.4.4** diagram of control and regulation of temperature and pressure of gaseous fuel;

**.2.4.5** data on the properties of gas fuel, intended for use on the vessel;

**.2.5** diagram of lubricating oil system;

**.2.6** diagrams of fresh water and sea water cooling systems;

**.2.7** diagram of starting air system;

**.2.8** diagram of exhaust gas pipes and uptakes;

**.2.9** drawing of sea chests and ice boxes equipment;

**.2.10** calculation of starting air system (\*);

**.2.11** calculation of fuel oil service tank capacity of emergency diesel-generator (\*);

**.2.12** drawings of silencers and spark arresters of exhaust gas pipes and uptakes (\*) (may be submitted together with the documentation required by Section 8, Part IV "Technical Supervision during Manufacture of Products" of the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships);

**.2.13** drawings of position and details of attachment of bottom and side valves and valves at the collision bulkhead;

**.2.14** drawings of air pipes and ventilator pipes on open deck spaces;

**.2.15** drawings of pipelines and ventilation ducts passing through the watertight bulkheads, fire-fighting divisions, decks and platforms;

**.3** calculation of allowable loading and unloading rate of cargo system of type C and N tankers (\*).

**.4** data on pipe dimensions (diameter and wall thickness), on piping construction (materials, insulation, manufacturing methods, installation, arrangement, hydraulic tests, etc.) as well as data on material of pipes used, material of gaskets and types of pipe connections shall be contained in documentation listed in **4.2.12.1** and **4.2.12.2**.

#### **4.2.13 Documentation on electrical equipment:**

**.1** diagrams of power generation and distribution from the main and emergency sources of electrical power: power networks, lighting networks (up to section distribution switchboards) and navigation lights;

**.2** single-line diagrams and general view of the main and emergency switchboards, control desks and other switchboards of non-standard design;

**.3** calculation results of necessary output of the ship's electric power plant, including accumulator (solar) batteries as the main source of power for small craft, for the operating conditions, substantiation of the choice of the number and power output of generators, as well as calculation of capacity of emergency sources of electrical power (\*);

**.4** calculation results of cables section with their types, currents and protection (\*);

**.5** detailed diagrams of the main current, excitation, control, pilot, signalling, protection and interlocking of the electric propulsion plant;

**.6** calculation results of necessary power output of the propulsion generators to ensure normal operation under all operating conditions (\*);

**.7** 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 (\*);

**.8** calculation results of illumination intensity for areas and spaces (\*);

**.9** diagrams of external connections of the ship control devices, electric machinery telegraph; telephone service; an emergency alarm, fire detection alarm; volumetric fire-extinguishing system starting alarm; watertight and fire doors closure alarm; machinery spaces alarm; machinery watch alarm system; water ingress alarm in the cargo holds of bulk cargo ships, passenger ships having on board 36 and more persons, cargo ships with one holds, which are non-bulk vessels; stationary fire extinguishing system local unit starting alarm.

For dual fuel ship (with distinguishing mark **GFS** in the character of classification) diagrams of electrical systems of measurement and alarm equipment associated with the use of gaseous fuels;

**.10** diagrams of essential electric drives of the equipment for critical application and electrical protection systems, remote controls and alarm systems.

For dual fuel ship (with distinguishing mark **GFS** in the character of classification) diagrams of electric drives and control systems of fuel preparation systems, ventilation and air explosive premises gateways;

**.11** diagrams of lubrication systems for electrical machines and air cooling systems for the main electrical machines;

**.12** protective earthing diagrams, drawings and, where necessary, calculations lightning arrester appliances for oil tankers, gas carriers, rigs and vessels with non-metallic hulls and for small crafts (concerning calculations (\*));

**.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 **16.8.1.9** and **16.8.1.11**, Part XI "Electrical Equipment");

**.14** 2capacity 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 (\*);

**.15** results of calculation of the expected total harmonic distortions for different parts of the ships 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 (\*);

**.16** list of electrical equipment installed in dangerous zones, containing information on spaces and areas where it is installed with indication of zones and spaces and information on this equipment with indication of type of explosion protection (\*);

**.17** 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 (\*);

**.18** 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;

**.19** instructions on preparation and application of electrical equipment of oil recovery ship for elimination of oil spills. It is to determine the procedure of compulsory disconnection of power consumers having no Certificates on Safe Type Electrical Equipment (\*);

**.20** arrangement plan of equipment and cabling in hazardous areas and spaces. Documentation (Certificates of competent authorities), which confirms the possibility of using explosion-proof electrical equipment in hazardous areas and spaces;

**.21** documents on portable electrical measuring instruments and alarm systems for ultimate concentration of dangerously explosive and noxious gases;

**.22** calculation of voltage drop when a consumer with the maximum starting power is switched on (\*);

**.23** list of measures to ensure the electromagnetic compatibility of a ship equipment (\*);

**.24** failure mode and effects analysis (FMEA) for all electric and hydraulic components of the podded azimuth thrusters used as the rudder and steering gear (may be submitted together with the documentation required by Section 7, Part IV "Technical Supervision during Manufacture of Products" of the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships) (\*);

**.25** electrical connections diagrams (for systems and equipment according to **4.2.13.1**, **4.2.13.2**, **4.2.13.5**, **4.2.13.9**, **4.2.13.10**, **5.3.1.1.12**) indicating the types of cables and schemes of all elements installation; circuits of electrical signal-distinctive and flashing lights and electrical sound signal means connections, for ships equipped for long-term operation at low temperatures (with distinguishing mark **WINTERIZATION(DAT)**), electrical connection diagrams of electrical heating systems (electrical heaters, systems using heating cables);

**.26** drawings of cable runs and their penetrations through watertight, gastight and fire-fighting divisions with indication of measures taken to suppress radio interferences.

For dual fuel ship (with distinguishing mark **GFS** in the character of classification) – drawings of cable laying in explosive and gas-hazardous spaces;

**.27** diagrams of the main and emergency lighting in the spaces and places of arrangement of essential appliances, escape routes, survival craft embarkation stations on the deck and outboard (supplying from distribution switchboards);

**.28** drawings of layout and installation of essential electrical equipment and electric propulsion installation.

For dual fuel ship (with distinguishing mark **GFS** in the character of classification):

**.28.1** technical justification of the electrical equipment compliance(\*);

**.28.2** layout drawings of electrical equipment associated with the use of gas fuels;

**.29** assembly drawings of the main and emergency switchboards, electric propulsion plant switchboards, control stations and panels, special switchboards, power and lighting switchboards;

**.30** diagrams and installation and layout drawings of electrical apparatus and facilities for measuring non-electric values (level, pressure, temperature gauges, etc.);

**.31** technical background containing substantiation of distinguishing mark **EPP** (if applicable) in the class notation (\*);

**.32** For dual fuel ship (with distinguishing mark **GFS** in the character of classification)– drawing of electrical equipment, cables, piping, installed in gas dangerous spaces grounding;

**.33** drawing of lightning arrester appliances;

**.34** spare parts list;

**.35** where the classification of the refrigeration plants is provided, the above documentation shall take into account available electrical equipment of the refrigeration plant.

#### **4.2.14 Documentation on automation equipment.**

##### **4.2.14.1** General documentation:

**.1** list and 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 switchboards in the main machinery control room and on the navigation bridge (\*);

**.2** 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;

**.3** general arrangement plans of automation equipment in the main machinery control room and on the navigation bridge;

**.4** technical background containing substantiation of distinguishing automation mark for ships having distinguishing automation mark in the class notation (\*);

**.5** technical background containing the design intent of a dynamic positioning system with indication of the equipment redundancy level for ships with distinguishing marks **DP2** or **DP3** in the class notation (\*);

**.6** diagrams of power supply for automation systems listed in **4.2.14.2.1÷4.2.14.2.7**.

##### **4.2.14.2** Documentation on individual automation systems and control and monitoring consoles:

**.1** technical documentation on alarm and monitoring systems (AMS), centralized monitoring systems and integrated control systems and AMS, including functional diagrams, control console panels with indication of all devices;

**.2** technical documentation on remote automated control for main machinery and propellers: including functional diagrams, remote automated control console panels with indication of all devices;

**.3** technical documentation on automation of auxiliary engines and electric power plant, including functional diagrams, control console panels for electric power plant with indication of all devices;

**.4** technical documentation on automation of boiler plant, including functional diagrams, control console panels with indication of all devices;

**.5** functional diagrams of automation of compressor plants;

**.6** functional diagrams of automation, including remote control, of bilge and ballast systems;

**.7** functional diagrams of remote level indicating systems;

**.8** diagrams of electric connections for automation systems and equipment listed in **4.2.14.2.1÷4.2.14.2.7**, with indication of cable types and places of installation of all system elements and devices;

**.9** drawings of front panels of desks and boards of control and alarm systems in the main machinery control room and on the navigation bridge with indication of all devices;

**.10** structural and mounting drawings of consoles and control and monitoring switchboards as well as mounting drawings of elements of automation systems and devices, sensors, signalling and instruments.

**.11** principal and functional diagrams of automation systems, supervised by the Register and listed in the relevant parts of the Rules, but not mentioned above;

*Note.* Technical documentation listed in **4.2.14.2** shall be submitted by the designer or system integrator specified in **3.4.2.14.1.1**. In the latter case, the documentation shall be developed taking into account the solutions adopted in technical documentation listed in **4.2.14.1**, and submitted for approval at the stage of delivery and installation to the Register Branch Office responsible for carrying out technical supervision during construction, together with the documentation according to **1.4.1** of Part XV "Automation" of these Rules, approved under technical supervision of automation equipment as required by Section **12** of Part IV "Technical Supervision during Manufacture of Products" of the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships.

#### **4.2.15 Documentation on arrangements and equipment for the prevention of pollution from ships:**

**4.2.15.1** For sea-going and mixed river-sea navigation ships the following is submitted:

**.1** general ship technical specification as part of the ship specification according to **4.2.2.1**, and an explanatory note on the carry out of requirements of MARPOL 73/78/97, Technical Code for NOx, the International Convention on the Control of Harmful Anti-fouling Systems on Ships (\*);

**.2** layout of equipment and devices for the prevention of pollution from ships, including collection tanks / reservoirs and removable devices for garbage collection;

**.3** calculations of capacity: tank / hold bilge tanks and oil residues (oily sludge) generated in machinery spaces; collection tanks / sewage tanks; garbage collection appliances (\*);

**.4** calculation of the sewage discharge rate; calculation of the untreated sewage discharge with the approved by the Administration maximum discharge rate (\*);

**.5** schemes of systems / pipelines: hold bilge water and oil residues (oily sludge) generated in machinery spaces; burning oil residues (oily sludge), if available on the vessel; marine oily water cleaning installations on 15 million<sup>-1</sup>; sewage on the ship; removal and delivery of sewage into receptacle facilities;

**.6** for oil tankers in addition to the documents referred to in **4.2.15.1.1 - 4.2.15.1.5**:

calculation of slop tanks and segregated ballast tanks capacity (\*);

calculation of the cargo tanks length (\*);

arrangement of all tanks on the ships;

calculation of conditional hull damages and the alleged oil spill (\*);

calculations of stability in intact condition and booklet on the balance and stability (for combined vessels with additional operational procedures for operations on pumping fluids (according to **3.1.11** and "Requirements to ships construction and their oil pollution prevention equipment" of Regulations for the Prevention of Pollution from Ships) (concerning calculations (\*);

subdivision diagram, calculations of emergency stability and information on loading and stowage of cargo and the emergency stability (according to **3.1.12** Part I "Requirements to vessels construction and their oil pollution prevention equipment" of Regulations for the Prevention of Pollution from Ships) (concerning calculations (\*);

vapor collection system diagram;

emergency oil pumping diagram;

tanks crude oil washing scheme and shady chart (if applicable), small diameter pipeline diagram;

discharge holes layout;

diagram of cargo tank cleaning and dirty ballast residue and wash water pumping from the cargo tanks to slop tank system; scheme of pumping and discharge of oil residues;

diagram of pumping and oil residues delivery system;

diagram of automatic measurement, registration and oil discharge control system of ballast and wash water.

**.7** for ships carrying noxious liquid substances in bulk, in addition to the documents referred to in

**4.2.15.1.1-4.2.15.1.5:**

arrangement plan of pump rooms;

diagram of cargo tank ventilation systems;

cargo and noxious liquid substances discharge system with arrangement plan of discharge outlets;

program for determining the quantity of residues of noxious liquid substances that are not pumped (in tanks, pumps, piping);

diagram of tanks wash and discharge of wash water.

**.8** drawings of tanks for oily waste, sewage collecting tanks, removable devices for garbage collection and their equipment (can be provided as a part of working drawings and drawings of built in tanks - as a part of hull constructions drawings);

**.9** diagram of collection tanks heating systems;

**.10** description of the integrated ship oily bilge water treatment system (\*);

**.11** description of the fuel oil tank protection (\*);

**.12** description of the construction and list of ship's equipment for oil spill protection (\*), drawings of guarding, working platform, drainage systems with tanks;

**.13** diagram of exhaust gas cleaning system in accordance with the NO<sub>x</sub> Technical Code;

**.14** drawings of selective recovery chamber with catalytic recovery unit and reductant injection system (for diesel engines equipped with selective recovery system);

**.15** lists of:

**.15.1** equipment containing ozone-depleting substances;

**.15.2** ozone-depleting substances - refrigerant applied in industrial and domestic refrigeration equipment;

**.15.3** ozone-depleting substances extinguish fire (gallons) used to extinguish fires on board;

**.16** principle diagram of equipment electrical supply and scheme of management, control, display, alarm and protection ship's pollution prevention systems (without schemes of the equipment);

**.17** technical documentation on ship energy efficiency design index (EEDI) and the calculations EEDI required (for ships with a gross tonnage of 400 or more of types: bulk carrier, gas carrier, tanker, container ship for the transportation of general cargo, refrigerated vessel, combined ship, Ro-Ro cargo ship, Ro-Ro cargo ship (ship for carriage of vehicles), passenger ro-ro ship, other than vessels with diesel-electric, hybrid and turbine units, as well as for cruise passenger vessels with non-traditional propulsion gears, including vessels with diesel electric, and hybrid turbine installations) and attained energy efficiency index for specified types of ships and passenger ship, except that ship with diesel-electric, and hybrid turbine installations;

**.18** description Anti-fouling Systems in accordance with **1.3.4**, Part VI of Regulations for the Prevention of Pollution from Ships;

**.19** documents, approved by the Register, required on board before issuing appropriate certificates confirming compliance with the requirements of the Rules on prevention of pollution from ships or international certificates which confirm compliance with the requirements of MARPOL -73/78/97 and AFS International Convention:

**.19.1** Ship oil pollution emergency plan (for oil tankers of 150 gross tonnage or more and vessels that are not oil tankers of 400 gross tonnage or more);

**.19.2** Ship sea pollution with noxious liquid substances emergency plan (for a ship with a gross tonnage of 150 or more, for which a certificate for the transportation of hazardous liquid substances in bulk is issued).

Named plan may be combined with a plan to **.3.1** for specified in it ships with the title "Ship marine pollution emergency plan";

**.19.3** Garbage management plan (for ships with a gross tonnage of 100 or more accommodating on board 15 people and over, as well as stationary and floating platforms);

**.19.4** Ship Plan / Manual on systems of oily bilge water and oil residues (oily sludge) treatment (for oil tanker with a gross tonnage of 150 or more, for ships with a gross tonnage of 150 or more, for which a certificate for the transportation of hazardous liquid substances in bulk is issued and ships not an oil tanker with a gross tonnage of 400 or more);

**.19.5** Ship STS Plan - of operations (for oil tanker with a gross tonnage of 150 or more, which performs the transfer of oil cargo between oil tankers at sea («Ship - to - ship oil transfer operations at Sea»);

**.19.6** Ship volatile organic compounds (VOCs) vapor Management Plan (for oil tanker which transports crude oil);

**.19.7** Technical File of marine diesel engine or for engines of 5000 kW capacity and a cylinder volume of 90 liters or more installed on ships constructed on Jan. 1, 1990 or after, but up to 1 January 2000, the Technical file for approved appliances of ship diesel engine;

**.19.8** Guidance on monitoring NO<sub>x</sub> emission;

**.19.9** for vessels using the exhaust gas cleaning systems (EGCS)(unit) to reduce SO<sub>x</sub> emissions:

**.19.9.1** SO<sub>x</sub> Emission Compliance Plan (SECP);

**.19.9.2** Manual on EGC-SOX system operation (diagrams A or B) (for each EGC aggregate);

**.19.9.3** SO<sub>x</sub> Emission monitoring manual (EMM);

**.20** documents required on board in accordance with the requirements of the Regulations for the Prevention of Pollution from Ships, or requirements of MARPOL -73/78/97 and AFS International Convention (subject to approval by the Register on obtaining the directive for document approval):

**20.1** Ship Energy Efficiency Management Plan (SEEMP) (for ships of 400 gross tonnage or more, except platforms (including floating receiving, storing and discharging installations and mobile offshore drilling units) (may be a part of the safety management system (SMS));

**20.2** Approved manual on methods and devices for cargo operations, tanks clearing, sinks flush operations, discharge of liquid residues of harmful substances and ballasting of the ship (for ships which are permitted to carry substances of categories X, Y or Z);

**.20.3** Operational documents required by Rules and MARPOL-73/78/97:

**.20.3.1** Operating Instructions for volatile organic compounds vapour system (VOCs) (for tankers);

**.20.3.2** Operation Manual for shipboard incinerator;

**.20.3.3** Guidance on the operation and maintenance of separators for 15 million<sup>-1</sup> and 15 million<sup>-1</sup> alarm;

**.20.3.4** Guidance on equipment and operation of crude oil wash system (if applicable);

**.20.3.5** Approved Manual on operation of automatic measurement, registration and control oil discharge system and, if applicable, ballast and wash water, taking into account overlapping assets in case of failure of control systems;

**.20.3.6** Manual on operation and maintenance of wastewater treatment plants or plants for shredding and disinfecting of waste water (depending on which is installed on board).

*Note.* Documentation on **4.2.15.1.19** and **4.2.15.1.20**, subject to approval by the Register may be submitted for consideration at the stage of ship construction. In the case of submission of these documents without the data of a specific ship, incl. as part of the design documentation of the ship in construction, the documents are considered as preliminary with the subsequent entry into them of the relevant data of a particular ship taking into account, if any structural changes made during the construction of the ship, consideration and, if necessary, final approval.

**4.2.15.2** For inland navigation ships the following is submitted:

**.1** ship technical specification as part of the ship specification on **4.2.2.1**, and an explanatory note on the requirements of the part XIV «Measures for the Prevention of Pollution from Ships" of INV Rules (\*);

**.2** arrangement plan of equipment and devices for the prevention of pollution from ships;



.3 calculation of the required capacity of collection and other tanks and tanks for oil residues generated during separation of fuel and lubricants, water containing oil, sewage, garbage collection devices (\*);

.4 drawings of specified in 4.2.15.2.3 tanks, tanks and gears and their equipment (may be given as part of working drawings and drawings of built in tanks -as a part of hull constructions drawings);

.5 calculation of voyage autonomy in terms of environmental safety (\*);

.6 arrangement plan of equipment for limiting the spill and collecting oil, spilled overboard with its technical characteristics;

.7 schematic diagrams of pumping, distribution and discharge of water containing oil and waste water;

**4.2.15.3** For small craft the following is submitted:

.1 ship technical specification as part of the ship specification on 4.2.2.1, and an explanatory note on the requirements of the part XIV «Measures for the Prevention of Pollution from Ships" of SC Rules (\*);

.2 arrangement plan of equipment and devices for the prevention of pollution from ships (for ships operated at sea, 1 or 2 the coastal navigation areas or designated for accommodation on board of 10 persons and more);

.3 calculation of tanks capacity for water containing oil, sewage, garbage collection devices (for ships operated at sea, 1 or 2 the coastal navigation areas or designated for accommodation on board of 10 persons and more) (stamp of approval is not applied).

**4.2.14.4** In construction documentation in accordance with 4.2.15.1 - 4.2.15.3 the specifications on equipment, appliances, fittings, materials, insulation, hydraulic tests are specified.

#### **4.2.16 Documentation on Tonnage Measurement of Ships.**

**4.2.16.1** To determine the gross and net tonnage of sea and mixed (river-sea) navigation vessel the following is submitted:

.1 detailed calculation of gross and net tonnage (if the calculation is performed not by the Register see The rules of tonnage measurement of sea vessels and vessels of mixed navigation) (\*);

.2 arrangement plan of cargo spaces indicating their capacities;

.3 other drawings necessary for determining (calculations verification) of ship's volumes and capacities.

In determining the tonnage the following documentation is used:

theoretical drawing (refer to 4.2.7.1);

General arrangement plan (refer to 4.2.2.2);

**4.2.16.2** For tonnage measurement of inland navigation vessels in accordance with the Rules on the measurement of inland navigation ships and the Convention on the measurement of inland navigation vessels from 1966 the following is submitted:

.1 Calculation of the vessel tonnage with possible trims (\*);

.2 other documents necessary to establish the tonnage characteristics:

general ship specification (refer to 4.2.2.1);

mass loading of the ship, including ship load cases corresponding to the largest ship's draft and a draft of the empty ship (refer to 4.2.7.6);

theoretical drawing (refer to 4.2.7.1);

general arrangement plans (refer to 4.2.2.2);

drawing of longitudinal section (refer to 4.2.3.1.3);

drawing midsection-frames (refer to 4.2.3.1.2);

table of offsets (\*);

.3 Tonnage certificate of inland navigation vessels draft form filling sample (form 2.10.2) (\*);

.4 drawings of tonnage marks and their location (mounting) on the ship and application of measurement mark.

**4.2.16.3** To determine gross tonnage of an inland navigation ships and a small craft the calculation of gross tonnage is submitted (\*).

**4.2.17 Documentation for refrigerators is provided in 5.3.3.**

### **4.3 PROGRAMMES OF MOORING AND SEA TRIALS**

**4.3.1** Programmes of mooring and sea trials shall be approved by the Register prior to commencement of the relevant trials.

**4.3.2** The scope of mooring and sea trials shall comply with the relevant requirements of the Rules on technical supervision of the construction of ships and manufacture of materials and products.

### **4.4 TECHNICAL DOCUMENTATION FOR RENEWED VESSELS, CONVERTED OR RECLASSIFIED VESSELS**

**4.4.1** Prior to conversion or renewal of ships, which is classified or have been classified by the Register it is necessary to submit for review and approval technical documentation on those parts of the hull, machinery appliances and equipment subject to re-equipment or renewal, and in the effect of influence of reequipment or repair on the general technical characteristics of the ship (strength, stability, freeboard, maneuverability, etc. as well as appropriate calculations, or backgrounds and corrected general materials and documents.

**4.4.2** When installing on board new machinery and devices that are different from the original and which are subject to the requirements of the Rules, it is necessary to submit for consideration and approval of the Register additional technical documentation for new facilities related to these mechanisms or devices to the extent necessary for vessel in construction (refer to **4.1** and **4.2**).

**4.4.3** It is necessary to provide overall strength calculation taking into account wear and the local residual deformations in the event of hull deformation and wear.

**4.4.4** During re-equipment of the ship for her reclassification the Register must be provided with regard to **4.1.3** and **4.2.1** the following documentation:

.1 explanatory note with background of reclassification (\*);

.2 analysis of ship compliance with requirements of applicable, refer to **1.3.3**, General provisions on the technical supervision activities of the Register Rules for a new class on all elements of the ship (\*);

.3 list of decisions that differ from the requirements of the applicable rules for the new class with backgrounds;

.4 analysis of the ship compliance with the requirements of the applicable international regulations (\*);

.5 amendments to the specification (\*);

.6 trial program;

.7 instructions for loading the ship, refer to 4.2.3.28, or additions to the available on the vessel (for vessels carrying cargo);

.8 stability information (previous) or amendments to existing on board and stability calculation materials and on the basis of which it is composed;

.9 information on the damaged trim and stability (floodability) (previous) or amendments to existing on board calculation materials and on the basis of which it is composed.

Providing documents is allowed according to **.8** and **.9** as the combined document - Stability and floodability information and for small crafts with inclusion into the set of Manual for the owner;

**.10** Additional calculations of general and local strength on the choice of reinforcement designs and sizes of hull members (\*);

**.11** technical documentation for assigning freeboard of sea ships and vessels of mixed navigation according to Load Line Rules for Sea-Going Ships; calculation of freeboard height (\*) and drawings of load line ( for small craft in case of its application);

**.12** groundings, which confirm the ability of operation of the main engines, propulsion-steering gear and the ship's power plant without breach of their technical characteristics, which are determined by delivery documentation and Rules (\*);

**.13** technical documentation for reclassification of the vessel concerning the reinforcement of the hull, additional equipment and ship supply upon the results of analysis according to **.2** and calculations according to **.10**, including drawings of general location. The technical documentation concerning additional equipment of the vessel upon the results of analysis according to **.4**, including documents required by international conventions and codes;

**.14** calculations of maneuverability, including maneuverability table (for a small calculations of steerability for a sailing ship) (\*).

## 5. CLASSIFICATION OF REFRIGERATING PLANTS

### 5.1 GENERAL

**5.1.1** For ensuring safety of a ship and preventing ozone-destructive effect of refrigerants on environment the refrigerating plants installed in ships classed with the Register 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** 2 refrigerating plants working with Group I refrigerants and comprising the compressors with theoretical suction capacity 125 m<sup>3</sup>/h and above;

**.3** refrigerating plant ensures the functioning of systems affecting the ship safety.

**5.1.2** From the number of the refrigerating plants stated in **5.1.1** the Register 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;

**.3** refrigeration plants designed to maintain the desired mode of carriage of liquefied gases in bulk on gas carriers.

Other refrigerating plants from the number of those stated in **5.1.1** are considered unclassed.

### 5.2 CLASS OF A REFRIGERATING PLANT

#### 5.2.1 General.

**5.2.1.1** The Register 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.

**5.2.1.2** Assignment or renewal of a class means that the refrigerating plant fully or to a degree considered acceptable by the Register complies with the relevant requirements of these Rules, 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.

**5.2.1.3** 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.

#### 5.2.2 Class notation of a refrigerating plant.

**5.2.2.1** The character of classification of a refrigerating plant consists of the following marks:

**REF** ⊕ – for a refrigerating plant built according to these Rules and surveyed by the Register;

**REF** ✦ – for a refrigerating plant built according to the rules of a classification society recognized by the Register, surveyed by that classification society and then classed by the Register;

**REF** ✦ – for a refrigerating plant built according to the rules of a classification society recognized by the Register, surveyed by that society during construction and subsequently classed by the Register, if the refrigerating plant does not fully comply with the requirements of Part XII "Refrigerating Plants of the Rules;

**(REF)** ✦ – for a refrigerating plant built without being surveyed by a classification society recognized by the Register or without being surveyed by a classification society at all, but subsequently classed with the Register.

**5.2.2.2** 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 Plant and in the Register of Ships.

#### **5.2.2.3** Mark of capability for cooling or freezing sea products.

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

#### **5.2.2.4** Distinguishing marks of refrigerating plants.

**5.2.2.4.1** 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.

**5.2.2.4.2** 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.

**5.2.2.4.3** If the refrigeration plant is designed to maintain the desired mode of carriage of liquefied gases in bulk on gas carriers, which complies with applicable requirements of Part XII "Refrigerating Plants" the distinguishing mark **LG** is added to the character of classification of the plant.

#### **5.2.3** Additional characteristics.

**5.2.3.1** 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 the Register of Ships if it is found necessary by the Register to specify the purpose or structural features of the refrigerating plant.

**5.2.3.2** Number of thermal containers served by the refrigerating plant is indicated in the Classification Certificate for Refrigerating Plant and in the Register of Ships.

#### **5.2.4** Alteration of marks in class notation.

The Register may delete or alter a mark shown in the class notation in case of any modification or non-compliance with the requirements which served as the basis for the insertion of that mark into the class notation.

### **5.3** TECHNICAL DOCUMENTATION OF A REFRIGERATING PLANT

#### **5.3.1** Documentation of a classed refrigerating plant.

Prior to delivery of a refrigerating plant onboard the ship, documentation with a sufficient scope of information to prove that the requirements of the Register rules for a refrigerating plant are complied with shall be submitted to the Register for review:

- .1** technical description of a refrigerating plant (\*);
- .2** calculation of refrigeration capacity indicating heat load on from each cooled cargo space and technological consumption of cold (\*);
- .3** arrangement plan of refrigeration plant on board;
- .4** diagrams of main and emergency ventilation systems of refrigeration plant room and other facilities with the equipment under the pressure of the refrigerant with an indication of watertight and fire bulkheads and air exchange multiplicity;
- .5** circuit diagrams of refrigerant, cooling medium, cooling water systems with indication of places for installation of instruments and automatic devices;
- .6** air cooling system diagram indicating waterproof and fire-protection bulkheads;

- .7 arrangement plan of equipment in refrigerated spaces indicating escape routes;
- .8 arrangement plan 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 the water screen in refrigerated spaces (for refrigerant of group II);
- .11 arrangement plan of cooling and refrigeration plants and other technological refrigeration equipment on the vessel;
- .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 enclosing surfaces areas quantities of refrigerated cargo spaces with information about the estimated heat transfer coefficient of each surface and the average coefficient of heat insulation room design (\*);
- .16 drawings of air ducting of cargo cooling in thermally insulated containers with indication of distribution over the ship;
- .17 drawings of air ducting insulation with indication of details on materials;
- .18 drawings of sealing and flexible joints with indication of details on materials;
- .19 arrangement plan of gas environment composition control unit;
- .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 refrigerant, coolant and cooling water piping arrangement drawings indicating the penetrations through bulkheads, decks and platforms;
- .23 drawings of emergency refrigerant discharge overboard station location;
- .24 spare parts list.

### **5.3.2 Test program.**

**5.3.2.1** Test program with indication of the method of design cooling 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 the Register prior to commencement of the relevant tests.

**5.3.2.2** The scope of tests shall comply with the relevant requirements of **11, Part 5** «Technical Supervision during the construction of ships» of the Rules for Technical Supervision during Construction of Ships and Manufacture of Materials and Products for Ships.

### **5.3.3 Documentation of an unclassified refrigerating plant.**

**5.3.3.1** Prior to delivery of a refrigerating plant on board the ship, documentation listed in **5.3.1.1.3–5.3.1.1.5** (for refrigerant only), **5.3.1.1.7**, **5.3.1.1.10**, **5.3.1.1.11** (only for devices operating under refrigerant pressure), **5.3.1.1.12** (for protection and alarm system only), **5.3.1.1.21**, **5.3.1.1.22** (for refrigerant only), **5.3.1.1.23**) shall be submitted to the Register.

**LIST**  
**of international ISO (series 47.080: small craft etc) STANDARDS , used for development of SC**  
**Rules, 2015.**

ISO	Name	ДСТУ	EN
ISO 4001: 1997	Shipbuilding – Inland navigation – Raft-type life-saving apparatus <i>Суднобудування. Внутрішнє судноплавство. Рятувальні засоби типу плот</i>		
ISO 4566: 1992	Small craft with inboard engine - Propeller shaft ends and bosses with 1:10 taper <i>Малі судна з стаціонарним двигуном. Кінці гребного вала та маточини гребного гвинта з конусністю 1:10</i>		
ISO 6185-1:2001	Inflatable boats - Part 1: Boats with a maximum motor power rating of 4,5 kW <i>Судна з надувним корпусом. Частина 1. Судна з двигунами максимальною потужністю до 4,5 кВт</i>	ДСТУ EN ISO 6185-1:2015	EN ISO 6185-1: 2001
ISO 6185-2:2001	Inflatable boats - Part 2: Boats with a maximum motor power rating of 4,5 kW to 15 kW inclusive <i>Судна з надувним корпусом. Частина 2. Судна з двигунами максимальною потужністю від 4,5 до 15 кВт включно</i>	ДСТУ EN ISO 6185-2:2015	EN ISO 6185-2: 2001
ISO 6185-3:2014	Inflatable boats - Part 3: Boats with a maximum motor power rating of 15 kW and greater <i>Судна з надувним корпусом. Частина 3. Судна з двигунами максимальною потужністю 15 кВт і більше</i>	ДСТУ EN ISO 6185-3:2015	EN ISO 6185-3: 2014
ISO 6185-4:2014	Inflatable boats - Part 4: Boats with a hull length of between 8 m and 24 m with a motor power rating of 15 kW and greater <i>Судна з надувним корпусом. Частина 4. Судна з довжиною корпусу між 8 м та 24 м з двигунами потужністю 15 кВт і більше</i>	ДСТУ EN ISO 6185-4:2015	EN ISO 6185-4: 2011
ISO 7840:2013	Small craft - Fire-resistant fuel hoses <i>Малі судна. Вогнестійкі паливні шланги</i>	ДСТУ EN ISO 7840: 2016	EN ISO 7840: 2013
ISO 8099:2000	Small craft - Toilet waste retention systems <i>Малі судна. Системи збору стічних вод з туалетів</i>	ДСТУ EN ISO 8099: 2015	EN ISO 8099: 2000
ISO 8469:2013	Small craft - Non-fire-resistant fuel hoses <i>Малі судна. Не вогнестійкі паливні шланги</i>	ДСТУ EN ISO 8469: 2016	EN ISO 8469: 2013
ISO 8665:2006	Small craft - Marine propulsion reciprocating internal combustion engines - Power measurements and declarations <i>Малі судна. Суднові головні гребні двигуни та системи. Вимірювання потужності та заявлені значення</i>	ДСТУ EN ISO 8665: 2015	EN ISO 8665: 2006
ISO 8666:2002	Small craft - Principal data <i>Малі судна. Основні данні</i>	ДСТУ EN ISO 8666: 2015	EN ISO 8666: 2002
ISO 8845:1994 +Cor.1: 1995	Small craft with inboard engine — Propeller shaft ends and bosses with 1:16 taper <i>Малі судна з стаціонарним двигуном. Кінці гребного вала та маточини гребного гвинта з конусністю 1:16</i>		
ISO 8846:1990	Small craft - Electrical devices - Protection against ignition of surrounding flammable gases <i>Малі судна. Електричні пристрої. Захист від спалаху навколишніх вогнебезпечних газів</i>	ДСТУ EN 28846: 2015+ ДСТУ EN 28846:2015 /Alteration № 1:2015	EN 28846:1993 +EN28846:1993 /A1:2000

ISO 8847:2004	Small craft - Steering gear - Cable and pulley systems <i>Малі судна. Рувальний пристрій. Системи тросів і шківів</i>	ДСТУ EN ISO 8847:2015+ДСТУ EN ISO 8847:2015/ Amendment № 1:2015	EN ISO 8847:2004+EN ISO 8847:2004 /AC:2005
ISO 8848:1990	Small craft - Remote steering systems <i>Малі судна. Системи дистанційного керування</i>		
ISO 8849:2003	Small craft - Electrically operated direct-current bilge pumps <i>Малі судна. Трюмні насоси з приводом від електродвигуна постійного струму</i>	ДСТУ EN ISO 8849:2015	EN ISO 8849:2003
ISO 9093-1:1994	Small craft - Seacocks and through-hull fittings - Part 1: Metallic <i>Малі судна. Забортні клапани та фітинги, що проходять через корпус. Частина 1. Металічні</i>	ДСТУ EN ISO 9093-1:2017	EN ISO 9093-1:1997
ISO 9093-2:2002	Small craft - Seacocks and through-hull fittings - Part 2: Non- metallic <i>Малі судна. Забортні клапани та фітинги, що проходять через корпус. Частина 2. Неметалічні</i>	ДСТУ EN ISO 9093-2:2015	EN ISO 9093-2:2002
ISO 9094-1:2003	Small craft - Fire protection - Part 1: Craft with a hull length of up to and including 15 m <i>Малі судна. Протипожежний захист. Частина 1. Судна з довжиною корпусу до 15 м включно</i>	ДСТУ EN ISO 9094-1:2015	EN ISO 9094-1:2003
ISO 9094-2:2002	Small craft - Fire protection - Part 2: Craft with a hull length of over 15 m <i>Малі судна. Протипожежний захист. Частина 2. Судна з довжиною корпусу більше 15 м</i>	ДСТУ EN ISO 9094-2:2015	EN ISO 9094-2:2002
ISO 9097:1991	Small craft - Electric fans <i>Малі судна. Електричні вентилятори</i>	ДСТУ EN ISO 9097:2015	EN ISO 9097:1994
ISO 9650-1:2005	Small craft - Inflatable liferafts - Part 1:Type I <i>Малі судна. Надувні рятувальні плотики. Частина 1. Тип I</i>		
ISO 9650-2:2005	Small craft - Inflatable liferafts - Part 2: Type II <i>Малі судна. Надувні рятувальні плотики. Частина 2. Тип II</i>		
ISO 9650-3:2009	Small craft - Inflatable life-rafts - Part 3: Materials <i>Малі судна. Надувні рятувальні плотики. Частина 3. Матеріали</i>		
ISO 9775:1990	Small craft - Remote steering systems for single outboard motors of 15 kW to 40 kW power <i>Малі судна. Системи дистанційного управління для одиночних підвісних двигунів потужністю від 15 до 40 кВт</i>	ДСТУ EN 29775:2015 + ДСТУ EN 29775:2015/Alteration № 1:2015	EN 29775:1993 + EN 29775:1993/A1:2000
ISO 10087:2006	Small craft - Craft identification - Coding system <i>Малі судна. Ідентифікація судна. Система кодування</i>	ДСТУ EN ISO 10087:2015	EN ISO 10087:2006
ISO 10088:2013	Small craft - Permanently installed fuel systems <i>Малі судна. Стаціонарні паливні системи</i>	ДСТУ EN ISO 10088:2015	EN ISO 10088:2013
ISO 10133:2012	Small craft - Electrical systems - Extra-low-voltage d.c. installations <i>Малі судна. Електричні системи. Установки постійного струму наднизької напруги</i>	ДСТУ EN ISO 10133:2015	EN ISO 10133:2012
ISO 10134:2003	Small craft - Electrical devices - Lightning protection systems <i>Малі судна. Електричні пристрої. Системи захисту від удару блискавки</i>		
ISO 10239:2014	Small craft - Liquefied petroleum gas (LPG) systems <i>Малі судна. Системи зрідженого нафтового газу (LPG)</i>	ДСТУ EN ISO 10239:2015	EN ISO 10239:2014



ISO 10240:2004+ ISO 10240:2004/Amd 1:2015	Small craft - Owner's manual <i>Малі судна. Керівництво для власника судна</i>	ДСТУ EN ISO 10240:2015 + ДСТУ EN ISO 10240:2015/Alteration № 1:2015	EN ISO 10240:2004 + EN ISO 10240:2004/A1:2015
ISO 10592:1994	Small craft - Hydraulic steering systems <i>Малі судна. Гідравлічні системи керування рульом</i>	ДСТУ EN ISO 10592:2015	EN ISO 10592:1995
ISO 10862:2009	Small craft - Quick release system for trapeze harness <i>Малі судна. Система швидкого роз'єднання для трапецієвидного страхувального пояса</i>	ДСТУ EN ISO 10862:2015	EN ISO 10862:2009
ISO 11105:1997	Small craft - Ventilation of petrol engine and/or petrol tank compartments <i>Малі судна. Вентиляція у відсіках бензинового двигуна і/або цистерн для бензину</i>	ДСТУ EN ISO 11105:2015	EN ISO 11105:1997
ISO 11192:2005	Small craft - Graphical symbols <i>Малі судна. Графічні символи</i>	ДСТУ EN ISO 11192:2015	EN ISO 11192:2005
ISO 11547:1994	Small craft - Start-in-gear protection <i>Малі судна. Захист пускового механізму</i>	ДСТУ EN ISO 11547:2015+ ДСТУ EN ISO 11547:2015/Alteration № 1:2015	EN ISO 11547:1995+ EN ISO 11547:1995/A1:2000
ISO 11591:2011	Small craft, engine-driven - Field of vision from helm position <i>Малі судна моторні. Поле огляду з місця керування судном</i>	ДСТУ EN ISO 11591:2015	EN ISO 11591:2011
ISO 11592:2001	Small craft less than 8 m length of hull - Determination of maximum propulsion power rating <i>Малі судна з довжиною корпусу менше 8 м. Визначення максимально допустимої потужності двигуна</i>		
ISO 11812:2001	Small craft - Watertight cockpits and quick-draining cockpits <i>Малі судна. Водонепроникні і швидко осушувальні кокпіти</i>	ДСТУ EN ISO 11812:2015	EN ISO 11812:2001
ISO 12133:2011	Small craft - Carbon monoxide (CO) detection systems <i>Малі судна. Системи виявлення монооксиду вуглецю (CO)</i>		
ISO 12215-1:2000	Small craft - Hull construction and scantlings - Part 1: Materials: Thermosetting resins, glass-fiber reinforcement, reference laminate <i>Малі судна. Конструкція і набір корпусу. Частина 1. Матеріали: терморезактивні смоли, скловолоконна арматура, шаруватий матеріал</i>	ДСТУ EN ISO 12215-1:2015	EN ISO 12215-1:2000
ISO 12215-2:2002	Small craft - Hull construction and scantlings - Part 2: Materials: Core materials for sandwich construction, embedded materials <i>Малі судна. Конструкція і набір корпусу. Частина 2. Матеріали. Наповнювачі для конструкцій типу «сандвіч», матеріали для вставок</i>	ДСТУ EN ISO 12215-2:2015	EN ISO 12215-2:2002
ISO 12215-3:2002	Small craft - Hull construction and scantlings - Part 3: Materials: Steel, aluminum alloys, wood, other materials <i>Малі судна. Конструкція і набір корпусу. Частина 3. Матеріали: сталь, алюмінієві сплави, дерево та інші матеріали</i>	ДСТУ EN ISO 12215-3:2015	EN ISO 12215-3:2002
ISO 12215-4:2002	Small craft - Hull construction and scantlings - Part 4: Workshop and manufacturing <i>Малі судна. Конструкція і набір корпусу. Частина 4. Будівничі майстерні та виробничий процес</i>	ДСТУ EN ISO 12215-4:2015	EN ISO 12215-4:2002

ISO 12215-5:2008+A1:2014	Small craft - Hull construction and scantlings - Part 5: Design pressures for monohulls, design stresses, scantlings determination <i>Малі судна. Конструкція і набір корпусу. Частина 5. Розрахунковий тиск для однокорпусних суден, розрахункові напруження, визначення розмірів елементів корпусу</i>	ДСТУ EN ISO 12215-5:2015+ ДСТУ EN ISO 12215-5:2015/Alteration № 1:2015	EN ISO 12215-5:2008+ EN ISO 12215-5:2008/A1:2014
ISO 12215-6:2008	Small craft - Hull construction and scantlings - Part 6: Structural arrangements and details <i>Малі судна. Конструкція і набір корпусу. Частина 6. Система набору корпусу та деталі</i>	ДСТУ EN ISO 12215-6:2015	EN ISO 12215-6:2008
ISO 12215-8:2009+ Cor. 1:2010	Small craft - Hull construction and scantlings - Part 8: Rudders <i>Малі судна. Конструкція і набір корпусу. Частина 8. Рулі</i>	ДСТУ EN ISO 12215-8:2015+ ДСТУ EN ISO 12215-8:2015/ Amendment № 1:2015	EN ISO 12215-8:2009+ EN ISO 12215-8:2009/AC:2010
ISO 12215-9:2012	Small craft - Hull construction and scantlings - Part 9: Sailing craft appendages <i>Малі судна. Конструкція і набір корпусу. Частина 9. Баластові кілі парусного судна</i>	ДСТУ EN ISO 12215-9:2015	EN ISO 12215-9:2012
ISO 12216:2002	Small craft - Windows, port-lights, hatches, dead-lights and doors - Strength and watertightness requirements <i>Малі судна. Вікна, бортові ілюмінатори, люки, глухі ілюмінатори та двері. Вимоги до міцності та водонепроникності</i>	ДСТУ EN ISO 12216:2015	EN ISO 12216:2002
ISO 12217-1:2015	Small craft - Stability and buoyancy assessment and categorization - Part 1: Non-sailing boats of hull length greater than or equal to 6 m <i>Малі судна. Оцінка остійності та непотоплюваності та встановлення проектної категорії. Частина 1. Непарусні судна з довжиною корпусу 6 м і більше</i>	ДСТУ EN ISO 12217-1:2015	EN ISO 12217-1:2015
ISO 12217-2:2015	Small craft - Stability and buoyancy assessment and categorization - Part 2: Sailing boats of hull length greater or equal to 6 m <i>Малі судна. Оцінка остійності та непотоплюваності та встановлення проектної категорії. Частина 2. Парусні судна з довжиною корпусу 6 м і більше</i>	ДСТУ EN ISO 12217-2:2015	EN ISO 12217-2:2015
ISO 12217-3:2015	Small craft - Stability and buoyancy assessment and categorization - Part 3: Boats of hull length less than 6 m <i>Малі судна. Оцінка остійності та непотоплюваності та встановлення проектної категорії. Частина 3. Судна з довжиною корпусу менше 6 м</i>	ДСТУ EN ISO 12217-3:2015	EN ISO 12217-3:2015
ISO 12401:2009	Small craft - Deck safety harness and safety line – Safety requirements and test methods <i>Малі судна. Страхувальні збруї та страхувальні ліні. Вимоги безпеки та методи випробувань</i>	ДСТУ EN ISO 12401:2015	EN ISO 12401:2009
ISO 13297:2014	Small craft - Electrical systems - Alternating current installations <i>Малі судна. Електричні системи. Установки змінного струму</i>	ДСТУ EN ISO 13297:2015	EN ISO 13297:2014
ISO 13342:1995	Small craft - Static thrust measurement for outboard motors <i>Малі судна. Вимірювання статичного упору забортних двигунів</i>		
ISO 13363:2004	Rubber and plastics hoses for marine-engine wet-exhaust systems - Specification		

+ Coor.1:2008	<i>Рукави резинові та пластмасові для систем водного газовипуску суднових двигунів. Технічні вимоги</i>		
ISO 13590:2003	Small craft - Personal watercraft - Construction and system installation requirements <i>Малі судна. Судно для індивідуального користування. Вимоги до конструкції та улаштування систем</i>	ДСТУ EN ISO 13590:2015	EN ISO 13590:2003
ISO 13591:1997	Small craft - Portable fuel systems for outboard motors <i>Малі судна. Переносні паливні системи для підвісних двигунів</i>		
ISO 13592:1998	Small craft - Backfire flame control for petrol engines <i>Малі судна. Контроль зворотного спалаху полум'я бензинових двигунів</i>		
ISO 13929:2001	Small craft - Steering gear - Gearing link systems <i>Малі судна. Рувальний пристрій. Зубчасті передачі</i>	ДСТУ EN ISO 13929:2015	EN ISO 13929:2001
ISO 14227:2001	Small craft - Magnetic compasses <i>Малі судна. Магнітні компаси</i>		
ISO 14509-1:2008	Small craft - Airborne sound emitted by powered recreational craft - Part 1: Pass-by measurement procedures <i>Малі судна. Повітряний шум, що створюється моторним прогулянковим судном. Частина 1. Методика вимірювання зовнішнього шуму</i>	ДСТУ EN ISO 14509-1:2015	EN ISO 14509-1:2008
ISO 14509-2:2006	Small craft - Airborne sound emitted by powered recreational craft - Part 2: Sound assessment using reference craft <i>Малі судна. Повітряний шум, що створюється моторним прогулянковим судном. Частина 2. Оцінка звуку з використанням еталонного судна</i>	ДСТУ EN ISO 14509-2:2015	EN ISO 14509-2:2006
ISO 14509-3:2009	Small craft - Airborne sound emitted by powered recreational craft - Part 3: Sound assessment using calculation and measurement procedures <i>Малі судна. Повітряний шум, що створюється моторним прогулянковим судном. Частина 3. Оцінка звуку з використанням розрахунків і процедур вимірювань</i>	ДСТУ EN ISO 14509-3:2015	EN ISO 14509-3:2009
ISO 14895:2016	Small craft - Liquid- fueled galley stoves <i>Малі судна. Камбузні плити, що працюють на рідкому паливі</i>	ДСТУ EN ISO 14895:2017	EN ISO 14895:2016
ISO 14945:2004	Small craft - Builder's plate <i>Малі судна. Табличка виробника</i>	ДСТУ EN ISO 14945:2015 + ДСТУ EN ISO 14945:2015/ Amendment № 1:2015	EN ISO 14945:2004 + EN ISO 14945:2004/AC:2005
ISO 14946:2001	Small craft - Maximum load capacity <i>Малі судна. Максимальне навантаження</i>	ДСТУ EN ISO 14946:2015 + ДСТУ EN ISO 14946:2015/ Amendment № 1:2015	EN ISO 14946:2001+ EN ISO 14946:2001/AC:2005
ISO 15083:2003	Small craft - Bilge – pumping systems <i>Малі судна. Осушувальні системи</i>	ДСТУ EN ISO 15083:2015	EN ISO 15083:2003
ISO 15084:2003	Small craft - Anchoring, mooring and towing - Strong points <i>Малі судна. Якірний, швартовний і буксирний пристрої. Точки кріплення</i>	ДСТУ EN ISO 15084:2015	EN ISO 15084:2003
ISO 15085:2003+Amd. 1: 2009	Small craft - Man-overboard prevention and recovery <i>Малі судна. Попередження падіння за борт і підйом людини на борт</i>	ДСТУ EN ISO 15085:2015+ДСТУ EN ISO 15085:2015/ Amendment № 1:2015	EN ISO 15085:2003+EN ISO 15085:2003/A1:2009

ISO 15372:2000	Ships and marine technology - Inflatable rescue boats - Coated fabrics for inflatable chambers <i>Судна та морські технології. Надувні чергові шлюпки. Тканини з покриттям для надувних камер</i>		
ISO 15584:2001	Small craft - Inboard petrol engines - Engine-mounted fuel and electrical components <i>Малі судна. Стаціонарні бензинові двигуни. Компоненти паливної та електричної систем, що монтуються на двигуні</i>	ДСТУ EN ISO 15584:2015	EN ISO 15584: 2001
	Устаткування та пристрої для скрапленого газу. Установки гребні на скрапленому газі для човнів, яхт та інших суден	ДСТУ EN 15609:2015	EN 15609:2012
ISO 15652:2003	Small craft - Remote steering systems for inboard mini jet boats <i>Малі судна. Системи дистанційного рульового керування для мінігідрочовнів, що знаходяться на борту</i>	ДСТУ EN ISO 15652:2015	EN ISO 15652: 2005
ISO 15734:2001	Ships and marine technology - Hydrostatic release units <i>Судна та морські технології. Гідростатичні пристрої для від'єднання рятувальних плавучих засобів</i>		
ISO 15736:2006	Ships and marine technology - Pyrotechnic life-saving appliances - Testing, inspection and marking of production units <i>Судна та морські технології. Піротехнічні рятувальні засоби. Випробування, контроль і маркування одиниць продукції</i>		
ISO 16147: 2002+Amd 1:2013	Small craft - Inboard diesel engines - Engine-mounted fuel and electrical components <i>Малі судна. Стаціонарні дизельні двигуни. Компоненти паливної та електричної систем, що монтуються на двигуні</i>	ДСТУ EN ISO 16147:2015 + ДСТУ EN ISO 16147:2015/ Amendment № 1:2015	EN ISO 16147: 2002 + EN ISO 16147:2002/A1: 2013
ISO 16180:2013	Small craft - Navigation lights - Installation, placement and visibility <i>Малі судна. Навігаційні вогні. Установка, розташування та видимість</i>	ДСТУ EN ISO 16180:2015	EN ISO 16180: 2013
ISO 16315:2016	Судна малі. Електрична силова установка	ДСТУ EN ISO 16315:2017	EN ISO 16315: 2016
ISO 17339:2002	Ships and marine technology - Sea anchors for survival craft and rescue boats <i>Судна та морські технології. Плавучі якорі для рятувальних шлюпок і плотів і чергових шлюпок</i>		
ISO 18813:2006	Ships and marine technology – Survival equipment for survival craft and rescue boats <i>Судна та морські технології. Рятувальне обладнання для рятувальних шлюпок і плотів і чергових шлюпок</i>		
ISO 18854:2015	Small craft – Reciprocating internal combustion engines exhaust emission measurement – Test-bed measurement of gaseous and particulate exhaust emissions <i>Малі судна. Відпрацьовані гази, які надходять із циліндрів двигунів внутрішнього згоряння. Випробування для визначення величини викидів у відпрацьованих газах</i>	ДСТУ EN ISO 18854:2017	EN ISO 18854: 2015
ISO 19009:2015	Small craft – Electric navigation lights – Performance of LED lights <i>Малі судна. Електричні навігаційні вогні – Виконання LED вогнів</i>	ДСТУ EN ISO 19009:2017	EN ISO 19009: 2015
ISO 21487:2012 +A1:2014	Small craft -Permanently installed petrol and diesel fuel tanks	ДСТУ EN ISO 21487:2015 + ДСТУ EN ISO 21487:2012/	EN ISO 21487: 2012+EN ISO 21487:2012/A1:

+A2:2015	<i>Малі судна. Стаціонарні паливні цистерни для бензину і дизельного палива</i>	Alteration № 1:2017+ ДСТУ EN ISO 21487:2012/ Alteration № 2:2017	2014+ EN ISO 21487:2012/A2:2015
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ISO 25197:2012 +A1:2014	Small craft - Electrical/electronic control systems for steering, shift and throttle <i>Малі судно. Електричні/електронні системи керування рульовим пристроєм, рухом та дроселюванням</i>	ДСТУ EN ISO 25197:2015+ ДСТУ EN ISO 25197:2015/ Alteration № 1:2015	EN ISO 25197:2012+ EN ISO 25197:2012/A1:2014
	Судна малі. Прилади дистанційного кермового керування	ДСТУ EN 28848:2015+ДСТУ EN 28848:2015/ Alteration № 1:2015	EN 28848:1993 +EN 28848:1993/A1:2000
	Електричне обладнання суден. Частина 507. Судна малі	ДСТУ EN 60092-507:2015	EN 60092-507:2015

*Note:* The Rules apply ISO standards (series 47.080: small craft and others). It is allowed to use the GOST and EN standards specified in this Appendix, the corresponding to specified ISO standards in the text of the Rules, as well as to the specified GOST and EN standards in lieu of the applicable ISO standards.

## Notes

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**GENERAL PROVISIONS ON TECHNICAL SUPERVISION  
ACTIVITIES  
RULES FOR CLASSIFICATION AND CONSTRUCTION OF SHIPS  
PART I “ CLASSIFICATION ”**

**Volume 1**

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