

# RULES

## FOR THE CLASSIFICATION AND CONSTRUCTION OF SMALL SEA FISHING VESSELS

### PART VI

#### FIRE PROTECTION

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**St. Petersburg**  
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# **RULES FOR THE CLASSIFICATION AND CONSTRUCTION OF SMALL SEA FISHING VESSELS**

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Rules for the Classification and Construction of Small Sea Fishing Vessels of Russian Maritime Register of Shipping (RS, the Register) have been approved in accordance with the established approval procedure and come into force on 1 January 2023.

The present edition of the Rules is based on the 2022 edition taking into account the amendments and additions developed immediately before publication.

The Rules are published in the following parts:

Part I "Classification";

Part II "Hull";

Part III "Equipment, Arrangements and Outfit";

Part IV "Stability and Freeboard";

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 "Radio Equipment";

Part XVIII "Navigational Equipment".

**REVISION HISTORY**

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

For this version, there are no amendments to be included in the Revision History.

## **1 GENERAL**

### **1.1 APPLICATION**

**1.1.1** The requirements of this Part of the Rules for the Classification and Construction of Small Sea Fishing Vessels<sup>1</sup> apply to ship's structural fire protection, fire extinguishing systems and fire detection and alarm systems, as well as fire-fighting equipment and outfit.

**1.1.2** The fire protection requirements relating to the structural items of the ship hull, machinery and parts thereof, electrical equipment, pumping and piping, ship's arrangements, fuel oil and lubricating oil tanks, construction and location of boilers, refrigerating plants, ship's spaces, etc. are set out in the relevant parts of these Rules.

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<sup>1</sup> Hereinafter referred to as "these Rules".

## **1.2 DEFINITIONS AND EXPLANATIONS**

**1.2.1** The definitions and explanations relating to the general terminology are given in Section 1, Part I "Classification" of these Rules and in Part VI "Fire Protection" of the Rules for the Classification and Construction of Sea-Going Ships<sup>1</sup>.

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<sup>1</sup> Hereinafter referred to as "the Rules for the Classification".

## **2 STRUCTURAL FIRE PROTECTION**

### **2.1 GENERAL**

**2.1.1** Every ship shall be so constructed and equipped that its structural fire protection shall provide prevention of fire, containment of flame and smoke spreading throughout the ship by dividing the hull, superstructures and deckhouses with steel or aluminum alloy bulkheads and application of thermal insulation made from non-combustible materials, as well as shall create conditions for safe evacuation of people from the ship's spaces and from the ship.

#### **2.1.2 Requirements for materials.**

**2.1.2.1** The below requirements for materials apply to all the ships irrespective of hull construction materials.

**2.1.2.2** The insulating materials used in accommodation spaces, service spaces, control stations and machinery spaces shall be non-combustible. The insulation surface in machinery spaces shall be impervious to oil products and their vapours.

The insulating materials used for refrigerant piping penetrating spaces of specially equipped fish-processing shops (shops for raw fish filleting and washing, refrigerating, canning shops) shall comply with the requirements of 8.2.3, Part XII "Refrigerating Plants" of the Rules for the Classification.

**2.1.2.3** In refrigerated cargo spaces and refrigerated storerooms of service spaces, combustible insulation may be used, provided it is protected by close fitting linings.

As a lining material steel plates or moisture-resistant plywood with low flame spread characteristics may be used as specified in FTP Code. For plastic laminated moisture-resistant plywood, both composing materials (plywood and laminate) shall have low flame-spread characteristics.

**2.1.2.4** Primary deck coverings within accommodation and service spaces and control stations shall have low flame spread characteristics, shall not produce smoke or give rise to toxic or explosive hazards at elevated temperatures, vapours, this being determined in accordance with FTP Code.

**2.1.2.5** Exposed surfaces within accommodation spaces, service spaces, control stations, corridor and stairway enclosures and the concealed surfaces behind bulkheads, suspended ceilings, panelling and linings fitted within those spaces shall have low flame spread characteristics.

**2.1.2.6** Linings, ceilings, draught stops and their associated grounds shall be made of non-combustible materials.

**2.1.2.7** Air spaces enclosed behind suspended ceilings, panelling or linings in accommodation spaces, service spaces and control stations shall be divided by close fitting draught stops spaced not more than 7 m apart.

**2.1.2.8** Paints, varnishes and other finishes used on exposed surfaces inside accommodation and service spaces, control stations and stairway enclosures shall not produce excessive quantities of smoke and toxic vapours, this being determined in accordance with FTP Code.

This requirement applies to the finish materials of bulkheads, decks, floor coverings, linings and ceilings, but is not applicable to cables insulation, plastic piping and furniture.

**2.1.2.9** Plastic pipes shall be applied in compliance with Section 3, Part VIII "Systems and Piping" of the Rules for the Classification.

#### **2.1.3 Additional requirements to spaces of separate categories.**

In addition to the requirements of [Section 2](#), the below requirements to structural fire protection shall be complied with.

**2.1.3.1** Galleys shall comply with the following requirements:

- .1** wherever practicable, electrically powered cooking equipment shall be provided in preference to open flame types;
- .2** galleys where deep-fat cooking equipment is installed shall comply with 3.1.2.14, Part VI "Fire Protection" of the Rules for the Classification;
- .3** materials that are in the vicinity of any cooking appliance shall be non-combustible, except that combustible materials may be employed when these are faced with stainless steel or a similar non-combustible material;
- .4** galley decks shall be covered with ceramic tiles or similar non-combustible covering;
- .5** exhaust ventilation ducts from galley ranges shall meet the requirements of 12.2.4, 12.2.7 or 12.3.6, Part VIII "Systems and Piping" of the Rules for the Classification and shall be protected by the fixed fire extinguishing system according to Table 3.1.2.1, Part VI "Fire Protection" of the Rules for the Classification.

**2.1.3.2** Storerooms for flammable materials and substances shall comply with the following requirements:

- .1** cylinders containing flammable or other dangerous gases shall be clearly marked as to their contents and properly stowed and secured on open decks. All valves, pressure regulators and pipes leading from such cylinders shall be protected against damage.

Flammable liquids shall always be carried in suitably sealed containers and stowed in a safe position on open decks. Such cylinders and containers may be stowed in the storerooms that meet the requirements set out in [2.1.3.2.2](#);

- .2** cylinders and bottles containing flammable liquids and combustible gases shall be stored in the storerooms having direct access from open deck. Such storerooms shall have boundary bulkheads constructed from steel or similar non-combustible materials; where boundary bulkheads of such compartments adjoin other enclosed spaces they shall be gas-tight. Pressure adjusting devices and relief valves, if any, shall be installed outside the storerooms. The storerooms shall be equipped with independent exhaust and input ventilation system arranged at high and low levels and the inlets and outlets of ventilators shall be positioned in safe areas and fitted with spark arresters;

- .3** electrical equipment shall not be installed within the storerooms containing flammable liquids or combustible gases, except where necessary for service within the storeroom. Where such electrical equipment is installed, it shall be of safe type according to 2.9, Part XI "Electrical Equipment" of the Rules for the Classification;

- .4** storerooms containing compressed and/or combustible gas cylinders shall not be used for stowage of other combustible products or for tools or objects not belonging to the gas distribution system.

**2.1.3.3** Gas welding and cutting equipment, if carried, shall be stowed in a secure manner on the open deck at a safe distance from any potential source of fire and shall have the capability of being readily jettisoned overboard, if necessary.

**2.1.3.4** Any enclosed hazardous compartment that contains a gas consuming appliance or any compartment into which flammable gas may leak or accumulate, shall be provided with a gas detector and alarm.

## **2.2 STRUCTURAL FIRE PROTECTION FOR SHIPS WITH HULLS CONSTRUCTED OF STEEL OR OTHER EQUIVALENT MATERIAL**

**2.2.1** In every ship the superstructure, structural bulkheads, decks, deckhouses and pillars shall be constructed of steel or other equivalent material, having due regard to the risk of fire.

**2.2.2** Bulkheads and decks bounding machinery spaces of category A shall be of "A-0" class, except those specified in [2.2.3–2.2.5](#).

**2.2.3** Where fishrooms are fitted with combustible insulation, bulkheads and decks separating such spaces from machinery spaces of category A shall be of "A-30" class.

**2.2.4** Bulkheads and decks, which separate the machinery spaces of category A from the accommodation spaces, service spaces and control stations, shall be of "A-30" class.

**2.2.5** Deck sections with the associated access routes located above a machinery space of category A or galley and intended for stowage of liferafts or EPIRB shall be of "A-30" class.

**2.2.6** Bulkheads and decks, which separate galleys (or combined galley/mess rooms) from accommodation spaces, service spaces and control stations, shall be of "A-30" class.

**2.2.7** The bulkheads and decks, which separate the accommodation and service spaces from control stations, shall be of "A-30" class.

**2.2.8** Bulkheads of corridors serving accommodation spaces, service spaces and control stations, other than bulkheads required to meet the provisions of [2.2.2](#), [2.2.4](#), [2.2.6](#) and [2.2.7](#), shall be of "B-15" class and extend from deck to deck and to the shell plating or other boundaries.

**2.2.9** Interior stairways serving accommodation spaces, service spaces or control stations shall be constructed of steel. The enclosures to such stairways shall be of steel "B-15" class and be fitted with a "B-15" class closing arrangement at one end of each stairway (refer to Fig. 2.1.4.3.1-3, Part VI "Fire Protection" of the Rules for the Classification).

**2.2.10** The number of openings in the bulkheads and decks referred to in [2.2.2](#) and [2.2.6](#) shall be the minimum practicable. Such openings shall be fitted with closing arrangements that provide fire protection equivalent to the surrounding structure. Any access doors provided in the casing of machinery spaces of category A and galleys shall be self-closing, except when such a door is required to be of weathertight construction.

**2.2.11** Where bulkheads or decks, that are required to be of "A" or "B" class divisions, are penetrated by pipes, cables, trunks, ducts etc., arrangements shall be made to ensure that the fire integrity of the division is not impaired.



## **2.3 STRUCTURAL FIRE PROTECTION FOR SHIPS WITH HULLS PARTIALLY OR ENTIRELY CONSTRUCTED OF COMBUSTIBLE MATERIALS**

**2.3.1** For ships constructed of wood where the superstructure, structural bulkheads and decks over machinery spaces are constructed of steel or other equivalent material, fire protection arrangements shall be fitted as for steel ships ([refer to 2.2](#)).

**2.3.2** On the ship, which hull is constructed of combustible materials, the decks and bulkheads of machinery spaces of category A and galleys shall provide fire integrity equal to "B-30" due to non-combustible insulation, and such boundaries shall, as far as practicable, prevent the passage of smoke.

**2.3.3** Decks and bulkheads separating control stations from accommodation spaces, service spaces and machinery spaces of category A shall provide fire integrity equal to "B-30".

**2.3.4** Bulkheads of corridors serving accommodation spaces, service spaces and control stations shall be of "B-15" class and extend from deck to deck and to the shell plating or other boundaries.

**2.3.5** Interior stairways serving accommodation spaces, service spaces or control stations shall be constructed of steel, the enclosures to such stairways shall be of "B-30" class divisions and be protected by "B-30" or "B-15" class self-closing doors at one end of each stairway (refer to Fig. 2.1.4.3.1-3, Part VI "Fire Protection" of the Rules for the Classification).

**2.3.6** The number of openings in the bulkheads and decks referred to in [2.3.2](#) and [2.3.3](#) shall be the minimum practicable. Such openings shall be fitted with closing arrangements that provide fire integrity equivalent to the surrounding structure. Any doors provided in the bulkheads bounding machinery spaces of category A shall be of "B-30" or "B-15" class and be self-closing, except when such a door is required to be of weathertight construction.

**2.3.7** Where bulkheads or decks, that are required to be of "B-30" or "B-15" class divisions, are penetrated by pipes, cables, trunks, ducts etc., arrangements shall be made to ensure that the fire integrity of the division is not impaired.

**2.3.8** All exposed surfaces of glass reinforced plastic constructions or composite constructions within accommodation and service spaces, control stations, machinery spaces of category A and other machinery spaces of similar fire risk shall have the surface or final lay-up layer having low flame-spread characteristics and not producing excessive quantities of smoke and toxic vapours, this being determined in accordance with the FTP Code, or be protected by non-combustible materials or paint coatings having the above characteristics including intumescent compositions and paints with the above characteristics.

### **3 FIRE DETECTION AND ALARM SYSTEM**

#### **3.1 GENERAL**

**3.1.1** All electrical equipment, devices, alerts and indicators, feeders and wiring of fire detection and alarm systems shall comply with the requirements of 7.5 and 7.6, Part XI "Electrical Equipment" of the Rules for the Classification, the Code on Alerts and Indicators and FSS Code.

All fire detection and alarm equipment and systems shall be designed to withstand ambient temperature changes, vibration, humidity, shock, impact and corrosion normally encountered in ships.

### **3.2 FIRE DETECTION AND FIRE ALARM SYSTEMS**

**3.2.1** The fire detection and fire alarm system shall meet the following requirements:

**.1** the activation of any detector or manually operated call point shall initiate a visual and audible signals at the control panel and indicating units. If the signals have not received attention within 2 min, an audible alarm shall be automatically sounded throughout the crew accommodation and service spaces, control stations and machinery spaces of category A. This alarm sounder need not be an integral part of the fire detection and fire alarm system;

**.2** the control panel shall be located on the navigation bridge or in the main fire control room. One indicating unit shall be located on the navigation bridge if the control panel is located in the main fire control station;

**.3** indicating units shall, as a minimum, denote the section, in which a detector has activated or manually operated call point has operated;

**.4** clear information shall be displayed on or adjacent to each indicating unit about the spaces covered and the location of the sections.

**3.2.2** The fixed fire detection and fire alarm system shall be installed to protect:  
machinery spaces;

galley;

accommodation and service spaces;

control stations;

spaces containing heaters, open flames devices;

areas of concentrated electrical equipment;

and other areas of fire.

**3.2.3** A fixed fire detection and fire alarm system with manually operated call points shall be capable of immediate operation at all times.

**3.2.4** Sections of automatic detectors and manually operated call points shall meet the following requirements:

**.1** automatic detectors and manually operated call points shall be grouped into sections;

**.2** a section of automatic detectors which covers a control station, a service or an accommodation space shall not include a machinery space of category A.

**3.2.5** The automatic detectors shall be located in compliance with 4.2.1.4, Part VI "Fire Protection" of the Rules for the Classification.

**3.2.6** Fire detection and fire alarm system for periodically unattended machinery spaces of category A shall be designed and the automatic detectors so positioned as to quickly detect the fire in any part of those spaces and under any normal operation conditions of machinery and variations of ventilation. Except in spaces of restricted height and where their use is especially appropriate, fire detection and fire alarm systems using only thermal detectors shall not be permitted.

The possibility of using automatic detectors operated by other factors indicative of incipient fires may be considered by the Register, provided they are no less sensitive than the heat or smoke detectors. Flame detectors shall only be used in addition to heat and smoke detectors.

The detection system shall be self-monitoring for faults, and on being activated shall initiate audible and visual alarms, distinct from those of any other system not indicating fire, in sufficient number of places to ensure that the alarms are heard and observed on the navigation bridge and by a responsible engineer officer.

When the bridge is unmanned, the alarm shall sound in place where a responsible officer will be on duty.

**3.2.7** There shall be not less than two sources of power supply for the electrical equipment used in the operation of the fixed fire detection and fire alarm system, one of which shall be an emergency source.

### **3.3 FIRE WARNING ALARMS**

**3.3.1** Means shall be provided for automatically giving audible and visual warning of the release of fire-extinguishing medium into spaces accessible by doors or hatches in which personnel normally work or to which they have access.

Conventional cargo spaces and spaces with only a local release need not be provided with such an alarm.

**3.3.2** The audible alarms shall be located so as to be audible throughout the protected space with all machinery operating, and the alarms shall be distinguished from other audible alarms by adjustment of sound pressure or sound patterns.

**3.3.3** The signal shall be clear, distinct and readily audible in a noisy space, and shall be of a tone distinct from all other signals. In addition to the audible signal, there shall be a visible signal: "Gas! Go away!" and for the spaces protected by the aerosol fire extinguishing systems, "Aerosol! Go away!".

## **4 FIRE-FIGHTING EQUIPMENT AND SYSTEMS**

**4.1** The ship shall be equipped with the fixed water fire main system. The diameters of the fire main and water service pipes shall be sufficient for the effective distribution of the maximum required discharge from the fire pump.

**4.2** The water fire main system shall be provided with a pump, generally, with an independent power source, delivering a minimum of 15 m<sup>3</sup>/h at a pressure of not less than 2 MPa.

The fire pump driven by the main engine may be used, provided that the propulsion unit (engine — shaft — propeller) is so designed as to permit this pump operation when the ship is not under way. V-belt transmission may be used providing the pump operation in case one belt is broken.

**4.3** The number and position of the hydrants shall be such that at least one jet of water from a single length of hose, as specified in [5.1.1](#), may reach any part of the ship normally accessible to the crew, while the ship is being navigated and any part of any cargo space when empty.

Furthermore, such hydrants shall be positioned near the accesses to the protected spaces. At least two hydrants shall be provided on the ship.

**4.4** At least one hydrant shall be provided in each machinery space of category A.

**4.5** Each fire hydrant shall have a shut-off valve and a standard quick-acting coupling. Hydrants fitted on open decks shall also have quick-acting plugs, or equivalent device.

**4.6** Machinery spaces of category A shall be protected by one of the fixed fire extinguishing systems specified in Table 3.1.2.1, Part VI "Fire Protection" of the Rules for the Classification.

**4.7** In ships of less than 150 gross tonnage where arranging a fire extinction station outside the protected spaces is hardly feasible, cylinders containing the fire extinguishing medium may be fitted within the protected space on condition that such stations are provided with efficient remote control for immediately starting the system from outside the protected space. The remote starting control position shall be distinctly indicated and lighted both from the main and emergency sources of electrical power.

**4.8** Fire-fighting equipment and systems shall be readily available for operation under all service conditions.

## **5 FIRE-FIGHTING OUTFIT**

**5.1** Depending on the size of the ship and general arrangement of spaces, the ship shall be provided with fire-fighting outfit of approved type and be ready for use at any time:

**.1** fire hoses in assembly with nozzles having length 10–15 m (for each of the hydrants; additionally one spare fire hose shall be provided). On open deck they shall be kept in spray-proof ventilated lockers or enclosures. Manual fire nozzles (not of aluminum construction) shall be of dual-purpose type having 12 mm in diameter with a shut-off device;

**.2** at least 2 portable foam fire extinguishers suitable for extinguishing oil fires, at least 4 dry powder fire extinguishers and at least 2 carbon dioxide fire extinguishers based on their location:

one dry powder fire extinguisher — in wheelhouse and navigation room;

two foam fire extinguishers and one carbon dioxide fire extinguisher — in engine room;

three dry powder fire extinguishers — in accommodation and service spaces;

one carbon dioxide fire extinguisher in radio room, if it is enclosed, or in wheelhouse and navigation room.

Additionally, in galley, power plant room, accumulator battery room, if any, or in other enclosed space where the electrical equipment is installed, dry powder fire extinguishers shall be provided, one fire extinguisher at the entrance to each space;

**.3** spare charge for every portable fire extinguisher except that for each such fire extinguisher which is of a type that cannot readily be recharged while the vessel is at sea, an additional portable fire extinguisher of the same type shall be provided in lieu of a spare charge;

**.4** fire smothering blanket complying with the requirements in 5.1.13, Part VI "Fire Protection" of the Rules for the Classification;

**.5** complete set of fire fighting tools (one fire axe, one light-weight fire crowbar);

**.6** one firefighter's outfit consisting of a set of personal equipment, breathing apparatus and lifeline complying with the requirements of IMO resolution MSC.98(73) (on ships greater than or equal to 150 gross tonnage).

Russian Maritime Register of Shipping

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**Part VI**  
**Fire Protection**

FAI "Russian Maritime Register of Shipping"  
8, Dvortsovaya Naberezhnaya,  
191186, St. Petersburg,  
Russian Federation  
[www.rs-class.org/en/](http://www.rs-class.org/en/)