RUSSIAN MARITIME REGISTER OF SHIPPING

CIRCULAR LETTER **No. 313-14-1809c** dated 24.08.2022

Re:

amendments to the Rules for the Classification and Construction of Sea-Going Ships, 2022, ND No. 2-020101-152-E

Item(s) of supervision:

ships under construction

Entry-into-force date:
01.10.2022

~~Cancels / amends / adds Circular Letter No.~~ ~~dated~~

Number of pages: 1 + 15

Appendices:

Appendix 1: information on amendments introduced by the Circular Letter

Appendix 2: text of amendments to Part VI "Fire Protection"

Director General Konstantin G. Palnikov

Text of CL:

We hereby inform that in connection with implementation of IACS Unified Interpretation (UI) SC200 (Corr.1 May 2022), the Rules for the Classification and Construction of Sea-Going Ships shall be amended as specified in the Appendices to the Circular Letter.

It is necessary to do the following:

1. Bring the content of the Circular Letter to the notice of the RS surveyors, interested organizations and persons in the area of the RS Branch Offices' activity.
2. Apply the provisions of the Circular Letter during review and approval of the technical documentation on ships contracted for construction of conversion on or after 01.10.2022, in the absence of a contract, during review and approval of the technical documentation on ships requested for review on or after 01.10.2022.

List of the amended and/or introduced paras/chapters/sections:

Part VI: paras 2.1.5.6, 2.1.5.9.1, Table 3.1.2.1, paras 3.1.2.8, 3.1.3.5, 3.2.2.1, 3.2.5.4.2, 3.2.5.4.3, 3.2.6.10, 3.4.1, 3.4.8.3, 3.6.4, 3.6.5, 3.7.1.1, Table 3.7.1.1, paras 3.7.2.7, 3.7.2.8, 3.8.1.7, 3.8.2.6.4, 3.8.3.3, 3.8.3.5 — 3.8.3.9, 3.11, Table 3.13.1, paras 4.2.1.2.1 — 4.2.1.2.9, 4.2.1.4, Table 4.2.1.4, para 8.9.1.5

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"Thesis" System No. 22-132045

Appendix 1 to Circular Letter
No. 313-14-1809c dated 24.08.2022

Information on amendments introduced by the Circular Letter
(for inclusion in the Revision History to the RS Publication)

Nos.	Amended paras/chapters/ sections	Information on amendments	Number and date of the Circular Letter	Entry-into-force date
1	Part VI, para 2.1.5.6	Requirements have been introduced for spaces for electric and gas welding operations	313-14-1809c of 24.08.2022	01.10.2022
2	Part VI, para 2.1.5.9.1	Requirements have been specified for structural fire protection of incinerators and waste stowage spaces in fishing vessels	313-14-1809c of 24.08.2022	01.10.2022
3	Part VI, Table 3.1.2.1	In item 4 the requirements have been specified for storerooms with cylinders with gases other than flammable ones on ships fitted with fixed diving system. In Footnote 16 the requirements have been specified for protection of regenerators of gas turbine installation by fixed carbon dioxide smothering system. In Footnote 22 the requirements have been specified for protection of cylinders with gases other than flammable ones on ships fitted with fixed diving system	313-14-1809c of 24.08.2022	01.10.2022
4	Part VI, para 3.1.2.8	Requirements for protection of boiler rooms have been specified in compliance with item 6 in Table 5.1.2	313-14-1809c of 24.08.2022	01.10.2022
5	Part VI, para 3.1.3.5	Requirements for fixed gas fire extinguishing systems have been specified in connection with implementation of IACS UI SC200 (Corr.1 May 2022)	313-14-1809c of 24.08.2022	01.10.2022
6	Part VI, para 3.2.2.1	Requirements have been specified for location of fire pumps on cargo and passenger ships	313-14-1809c of 24.08.2022	01.10.2022
7	Part VI, para 3.2.5.4.2	Requirements for fire hydrants have been specified	313-14-1809c of 24.08.2022	01.10.2022
8	Part VI, para 3.2.5.4.3	Requirements for fire hydrants have been specified	313-14-1809c of 24.08.2022	01.10.2022

Nos.	Amended paras/chapters/ sections	Information on amendments	Number and date of the Circular Letter	Entry-into-force date
9	Part VI, para 3.2.6.10	Requirements have been introduced for installation of fire hydrants in spaces housing refrigerating machinery and spaces containing the process equipment working under pressure of Group II refrigerants	313-14-1809c of 24.08.2022	01.10.2022
10	Part VI, para 3.4.1	Requirements for pressure water-spraying system have been specified in compliance with IMO Circular MSC.1/Circ.1430/Rev.2	313-14-1809c of 24.08.2022	01.10.2022
11	Part VI, para 3.4.8.3	Requirements for pressure water-spraying system have been specified in compliance with IMO Circular MSC.1/Circ.1430/Rev.2	313-14-1809c of 24.08.2022	01.10.2022
12	Part VI, para 3.6.4	Requirements have been specified for application of drenching systems and pressure water-spraying systems together with flooding of spaces fitted for the carriage of explosives	313-14-1809c of 24.08.2022	01.10.2022
13	Part VI, para 3.6.5	Requirements have been specified for supply rate of the pumps servicing the drenching system	313-14-1809c of 24.08.2022	01.10.2022
14	Part VI, para 3.7.1.1	Requirements for medium expansion air mechanical foam have been specified in compliance with the provisions of IMO resolution MSC.339(91)	313-14-1809c of 24.08.2022	01.10.2022
15	Part VI, Table 3.7.1.3	Requirements for medium expansion air mechanical foam have been specified in compliance with the provisions of IMO resolution MSC.339(91)	313-14-1809c of 24.08.2022	01.10.2022
16	Part VI, para 3.7.2.7	Requirements have been specified for fire hydrants of deck foam system installed on the deck of cargo tanks	313-14-1809c of 24.08.2022	01.10.2022
17	Part VI, para 3.7.2.8	Requirements have been specified for fire hydrants of deck foam system installed on the poop deck and forwarded to the cargo area	313-14-1809c of 24.08.2022	01.10.2022

Nos.	Amended paras/chapters/ sections	Information on amendments	Number and date of the Circular Letter	Entry-into-force date
18	Part VI, para 3.8.1.7	Requirements for carbon dioxide smothering system have been specified regarding submission of hydraulic calculation confirming uniform distribution of carbon dioxide in the protected space	313-14-1809c of 24.08.2022	01.10.2022
19	Part VI, para 3.8.2.6.4	Requirements have been specified for marking of carbon dioxide cylinders fitted with hand-operated valves	313-14-1809c of 24.08.2022	01.10.2022
20	Part VI, para 3.8.3.3	Requirements for fixed low-pressure carbon dioxide smothering system have been specified	313-14-1809c of 24.08.2022	01.10.2022
21	Part VI, paras 3.8.3.5 — 3.8.3.9	Para 3.8.3.5 has been deleted. Paras 3.8.3.6 — 3.8.3.9 and references thereto have been renumbered 3.8.3.5 — 3.8.3.8, accordingly	313-14-1809c of 24.08.2022	01.10.2022
22	Part VI, para 3.8.3.8	Value of the minimum pressure in the tank to activate the alarm system has been specified	313-14-1809c of 24.08.2022	01.10.2022
23	Part VI, Chapter 3.11	In the text of Footnote 1, the requirements for aerosol fire extinguishing system have been specified	313-14-1809c of 24.08.2022	01.10.2022
24	Part VI, Table 3.13.1	Item 4 has been deleted. Items 5 — 7 have been renumbered 4 — 6, accordingly	313-14-1809c of 24.08.2022	01.10.2022
25	Part VI, para 4.2.1.2	Requirements have been specified for installation of the fixed fire detection and fire alarm system in passenger ships carrying more than 36 passengers in compliance with the provisions of SOLAS regulation II-2/7.5, as amended	313-14-1809c of 24.08.2022	01.10.2022
26	Part VI, para 4.2.1.2.1	Requirements of the third sentence in para 4.2.1.2.1 have been transferred to para 4.2.1.4.8	313-14-1809c of 24.08.2022	01.10.2022
27	Part VI, paras 4.2.1.2.2.1, 4.2.1.2.2.2 and 4.2.1.2.2.3	Paras 4.2.1.2.2.1 — 4.2.1.2.2.3 have been deleted and their requirements have been transferred to paras 4.2.1.2.1, 4.2.1.4.3 and 4.2.1.4.4	313-14-1809c of 24.08.2022	01.10.2022

Nos.	Amended paras/chapters/ sections	Information on amendments	Number and date of the Circular Letter	Entry-into-force date
28	Part VI, paras 4.2.1.2.3.3 and 4.2.1.2.3.4	Paras 4.2.1.2.3.3 and 4.2.1.2.3.4 have been deleted and their requirements have been transferred to para 4.2.1.2.1	313-14-1809c of 24.08.2022	01.10.2022
29	Part VI, para 4.2.1.2.4	Requirements of the second paragraph of para 4.2.1.2.4 have been transferred to para 4.2.1.4.9	313-14-1809c of 24.08.2022	01.10.2022
30	Part VI, paras 4.2.1.2.7 and 4.2.1.2.8	Paras 4.2.1.2.7 and 4.2.1.2.8 have been deleted and their requirements have been transferred to paras 4.2.1.4.5 and 4.2.1.4.2	313-14-1809c of 24.08.2022	01.10.2022
31	Part VI, para 4.2.1.2.9	Para 4.2.1.2.9 has been renumbered 4.2.1.2.7	313-14-1809c of 24.08.2022	01.10.2022
32	Part VI, para 4.2.1.4	Requirements of para 4.2.1.2 have been specified in accordance with 2.4, Chapter 9 of the FSS Code	313-14-1809c of 24.08.2022	01.10.2022
33	Part VI, para 8.9.1.5	Requirements have been specified for arrangement of portable fire extinguishers on cargo ships of less than 500 gross tonnage	313-14-1809c of 24.08.2022	01.10.2022

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ND No. 2-020101-152-E

PART VI. FIRE PROTECTION

2 STRUCTURAL FIRE PROTECTION

1 **Para 2.1.5.6** is replaced by the following text:

"**2.1.5.6** Spaces for electric and gas welding operations shall comply with the following requirements:

.1 spaces shall be located on or above the uppermost continuous deck with access to the space from the open deck through a steel door opening outwards fitted with a lock; herewith welding stations may be located in the workshop of the engine room as well as on the open deck in lockable metal cabinets;

.2 the spaces shall be separated from any adjacent space by "A" class division considering requirements of Tables 2.2.1.3-1, 2.2.1.3-2, 2.2.1.5-1, 2.2.1.5-2, 2.3.3-1, 2.3.3-2, 2.4.2-1, 2.4.2-2, 2.5.3-1, 2.5.3-2, 2.6.3-1, 2.6.3-2;

.3 spaces shall be equipped with mechanical ventilation providing not less than 20 air changes per hour.".

2 **Para 2.1.5.9.1** is replaced by the following text:

"**.1** requirements for structural fire protection in compliance with 2.2.1.3, 2.2.1.5, 2.3.3, 2.4.2, 2.5.3 and 2.6.3 may not be applied, if the spaces are arranged aft as far as practicable; at least 3 m from entrances, air inlets or openings to accommodations, service spaces and control stations, not less than 5 m measured horizontally from the nearest hazardous area or vent outlet from a hazardous area; not less than 2 m shall separate the incinerator and the waste material stowage area, unless physically separated by a structural fire barrier;".

3 FIRE-FIGHTING EQUIPMENT AND SYSTEMS

3 **Table 3.1.2.1**. **Item 4** is replaced by the following text:

"Table 3.1.2.1

Nos.	Description of spaces	Fixed fire extinguishing systems							
		Sprinkler	Pressure water spraying	Water screen	Drenching	Foam fire extinguishing	Carbon dioxide smothering	Dry powder	Aerosol
4	Service spaces listed in 1.5.3.1, 1.5.3.2.3[22] and 1.5.3.2.4	+[1]			+[22]				

".

Text of Footnote 16 is replaced by the following:

"[16] Installation of one of the above systems is compulsory in all oil tankers and oil recovery tankers, supply vessels, ships adapted for the carriage of explosive and fire hazardous cargoes and on ships servicing and towing the above-mentioned ships.".

Text of Footnote 22 is replaced by the following:

"[22] Only on ships fitted with fixed diving system to protect compression chamber control and support station, diving operation control station and pressure vessels, including cylinders with gases (O_2, N_2, He) or breathing gas mixtures (O_2/He, O_2/He/N_2, N_2/O_2) located in separate storerooms.".

4 **Para 3.1.2.8** is replaced by the following text:

"**3.1.2.8** Whatever a fixed fire extinguishing system is specified in Table 3.1.2.1 for boiler spaces of oil tankers in which crude oil or clops are used for boilers, provision shall be made for 135 l capacity foam extinguisher in compliance with 5.1.10 or an equivalent foam unit equipped with fixed foam generators capable of delivering foam to the boiler fronts and to trap under burners, valves and connections. This fire unit shall be remotely operated from outside the boiler room.

In boiler rooms with domestic boilers of less than 175 kW and in case of boilers protected by fixed local application fire extinguishing systems, the fire extinguisher or unit is not required.".

5 **Para 3.1.3.5** is replaced by the following text:

"**3.1.3.5** In equivalent fixed gas fire extinguishing systems with modular configuration, the fire extinguishing gas cylinders may be located in the protected space in at least six separate locations and subject to the requirements of para 5 of Annex to IMO circular MSC.1/Circ.1267. The arrangement of fire extinguishing gas cylinders, the electrical circuits and piping essential for the release of any system shall be such that in the event of a single failure to one of the release lines (including bottle valve) through mechanical damage, fire or explosion in a protected space, other system equipment shall provide the delivery and distribution of five sixth of the fire extinguishing gas adequate to the minimum fire extinguishing concentration.

For systems that need less than six cylinders (using the smallest bottles available), the total amount of extinguishing gas on the bottles shall be such that in the event of a single failure to one of the release lines (including bottle valve), five sixth of the fire extinguishing gas can still be discharged. This may be achieved by for instance using more extinguishing gas than required so that if one bottle is not discharging due to a single fault, the remaining bottles shall discharge the minimum five sixth of the required amount of gas. This can be achieved with minimum two bottles.

However, no-observed-adverse-effect level (NOAEL is the highest gas concentration where the adverse effect to the health is not observed) calculated at the highest expected engine room temperature shall not be exceeded when discharging the total amount of extinguishing gas simultaneously.

Systems that cannot comply with the above, for instance systems using only one bottle located inside the protected space, cannot be accepted. Such systems shall be designed with the bottle(s) located outside the protected space, in a dedicated room in compliance with 3.1.3.2.".

6 **Para 3.2.2.1** is replaced by the following text:

"**3.2.2.1** Location of fire pumps on cargo and passenger ships shall comply with the requirements of 3.2.1.2 and 3.2.1.4 that determine necessity of installation of an emergency fire pump depending on location of fire pumps as well as requirements of 3.2.3.6 and 3.2.3.7.".

7 **Paras 3.2.5.4.2** and **3.2.5.4.3** are replaced by the following text:

"**.2** before each isolation valve on the fire main there shall be fitted twin fire hydrants so located that they are equally spaced, over the length of the ship and the fulfilment of the requirements of 3.2.6.2 is ensured;

.3 before the cut-off valve fitted in the poop there shall be a branch pipe on either side, led out from the fire main to the forward part of the poop deck; the diameter of each branch pipe shall be sufficient for supplying water through two fire hoses connected to two hydrants fitted at the end of each branch. Where fire pumps are fitted forward of the cargo tanks, two more similar pipes branching from the fire main of the same diameter as above shall be provided on the after part of the forecastle deck, an isolation valve being fitted on the fire main within the erection, after the branches.".

8 **New para 3.2.6.10** is introduced reading as follows:

"**3.2.6.10** In spaces housing refrigerating machinery and spaces containing the process equipment working under pressure of Group II refrigerants, fire hydrants shall be provided in compliance with 3.1.5 and 3.5.2, Part XII "Refrigerating Plants".".

9 **Para 3.4.1** is replaced by the following text:

"**3.4.1** In machinery spaces of category A as well as in cargo pump rooms specified in 1.5.7.1, pressure water-spraying system shall be supplied from an independent pump, which shall be automatically put into action by a pressure drop in the system and from the fire main. A non-return shut-off valve shall be fitted on the connection line with the fire main.

Where automatic release of system sections is provided, their manual release shall be provided as well.

The pressure water-spraying system for ro-ro cargo spaces, vehicle spaces (refer to 1.5.4.3 and 1.5.4.4) and special category spaces (refer to 1.5.9) shall comply with the provisions of IMO circular MSC.1/Circ.1430/Rev.2 "Revised Guidelines for the Design and Approval of Fixed Water-Based Fire-Fighting Systems for Ro-Ro Spaces and Special Category Spaces". Such system shall protect all portions of any deck and sites for vehicles in the specified spaces, shall have manual control and pressure gauge at every distribution box with clear marking indicating protected spaces, as well as suitable maintenance and service instructions located at the valves section. Considering a substantial loss of stability, which may occur due to large concentration of water on decks of specified spaces during system operation, measures shall be provided as stipulated in 7.6.12, Part VIII "Systems and Piping".

Where high-pressure water-spraying system is used, the necessity for the reserve supply for such system shall be determined in each case on agreement with the Register, the rate of water supply shall be provided not less than specified in 3.4.2.1.".

10 **Para 3.4.8.3** is replaced by the following text:

"**.3** in accordance with Tables 4-1, 4-2 and 4-3 of IMO circular MSC.1/Circ.1430/Rev.2 for ro-ro and special category spaces;".

11 **Paras 3.6.4** and **3.6.5** are replaced by the following text:

"**3.6.4** The drenching system of magazines and the pressure water-spraying system of the cargo spaces fitted for the carriage of explosives may be used for their flooding in emergency only together with the water fire main system fitted for this purpose.

3.6.5 The capacity of the pumps supplying the system shall be sufficient to ensure the following rates of water discharge for drenching magazine racks, 36 l/min per 1 m² of the total magazine floor area. ".

12 **Para 3.7.1.1** is replaced by the following text:

"**3.7.1.1** The foam fire extinguishing systems shall be capable to produce air mechanical foam for the use as an extinguishing medium suitable for extinguishing an oil fire depending on the foam expansion ratio:

of low expansion ratio (about 10:1 but not more than 12:1);

of medium expansion ratio (between 21:1 and 200:1);

of high expansion ratio (not more than 1000:1).

Foam fire extinguishing systems may include units separately producing, but simultaneously supplying low expansion ratio foam and medium expansion ratio foam (combination foam).".

13 **Table 3.7.1.3** is replaced by the following:

"Table 3.7.1.3

Spaces	Foam solution supply rate, in l/min per 1 m^2, with the foam expansion ratio			Rated time of continuous operation, in min
	low expansion	medium expansion[1)]	high expansion	
Cargo oil tanks and cargo tank deck	6[2)]			
	0,6	6[3)]	—	20[4)]/30
	3			
Tanks for oil products with a flash point 60°C and above (fuel oil tanks)	6[3)]	4,5[3)]	—	20
Dry cargo holds	—	4[3)]	—	45
Machinery spaces and other spaces whose equipment is oil-fired	—	—	1[3)]	—[5)]
Paint lockers, storerooms for flammable liquids, flammable liquefied and compressed gases	—	4,5[3)]	—	20
Hangars for helicopters, enclosed garages, as well as spaces listed in 1.5.4.3 and 1.5.8.1	—	—	—[6)]	45
Helidecks[7)]	—[7)]	—[7)]	—[7)]	—[7)]

[1)] The solution supply rates apply to combination-foam production as well.

[2)] The rate of solution supply shall not be less than the greatest of the following:

.1 6 l/min per square metre of the horizontal sectional area of the single tank having the largest such area;

.2 0,6 l/min per square metre of cargo tanks deck area, where cargo tanks deck area means the maximum breadth of the ship multiplied by the total longitudinal extent of the cargo tank spaces;

.3 3 l/min per square metre of the area protected by the largest monitor, such area being entirely forward of the monitor but not less than 1250 l/min.

[3)] For the area of the largest horizontal section of the largest protected space.

[4)] Sufficient foam concentrate shall be supplied to ensure at least 20 min of foam generation in oil tankers fitted with an inert gas system and 30 min in oil tankers not fitted with an inert gas system using largest rate of solution supply stipulated in Footnote 1.

[5)] Sufficient foam concentrate shall be supplied to ensure foam generation in the volume equal to 5-fold volume of the largest protected space. Foam expansion ratios shall not exceed 1000:1.

[6)] The rate of solution supply shall be sufficient for filling of the protected space volume during 15 min.

[7)] For foam solution supply rate refer to 6.4.1.2, Part XVII "Distinguishing Marks and Descriptive Notations in the Class Notation Specifying Structural and Operational Particulars of Ships".

".

14 **Paras 3.7.2.7** and **3.7.2.8** are replaced by the following text:

"**3.7.2.7** The foam fire main as well as water fire main if it is an integral part of the deck fire extinguishing system in easily accessible places of the cargo deck shall be fitted with isolation sluice or disc valves spaced not more than 40 m apart forward of each monitor to isolate damaged sections of these fire mains. Next to each of such valves there shall be provided an information plate to indicate that the valve shall be kept permanently open under normal service conditions.

Before each isolation valve fitted on the foam piping there shall be twin fire hydrants for coupling thereto fire hoses with air-foam nozzles located at such distance that the requirements of 3.2.6.2 are met.

Branches from the fire main and foam piping to the monitors shall also be fitted before the isolation valves.

Where medium expansion foam is used, twin fire hydrants shall be substituted by valve chests with a number of fire hydrants equal to 50 % of the required number of foam generators.

3.7.2.8 In oil tankers, each foam fire extinction station shall be provided with a shut-off device located on the foam fire main before it extends beyond the boundaries of the station.

Before the shut-off device there shall be a branch led out to the monitors situated both port and starboard at the front of the poop or accommodation spaces facing the cargo tanks deck and to twin fire hydrant for coupling thereto fire hoses with air-foam nozzles. For oil tankers of less than 4000 t deadweight, it is sufficient to provide only branch pipes to the said fire hydrants.

Where medium expansion foam is used, twin fire hydrants shall be substituted by valve chests with a number of fire hydrants equal to 50 % of the required number of foam generators.".

15 **Para 3.8.1.7** is replaced by the following text:

"**3.8.1.7** Carbon dioxide shall be supplied to the protected spaces through nozzles arranged in the upper part of these spaces. The piping for the distribution of fire extinguishing medium shall be arranged and discharge nozzles so positioned that a uniform distribution of carbon dioxide is obtained which shall be confirmed by a hydraulic calculation. Where the floor plates of the machinery spaces of category A are placed higher than one meter above the tank top, a number of nozzles (about 15 % of the total number) shall be fitted in the upper portion of the space below the plates.".

16 **Para 3.8.2.6.4** is replaced by the following text:

"**3.8.2.6.4** If the design of the hand-operated (manual mechanical or manual pneumatic) valves installed on carbon dioxide cylinders of local fire extinction systems (refer to 3.8.5) and providing simultaneous discharge of carbon dioxide, differs from that of the valves of all other cylinders where they are fitted, they shall have the inscription "primary".".

17 **Para 3.8.3.3** is replaced by the following text:

"**3.8.3.3** A tank shall be fitted with:

branches with shut-off valves for filling the tank;

a discharge pipe;

a device for direct monitoring of liquid carbon dioxide level, mounted on the tank;

two relief valves with discharge pipes laid to the open air and arranged so as to provide disconnection of any of them with the remaining one connected with the container;

a pressure gauge;

high (not more than setting of the relief valve) and low (not less than 1,8 MPa) pressure;

lowest acceptable level alarm device.

Relief valves shall be adjusted at the pressure not less than $1{,}1p$ (where p is working pressure in the tank, in MPa), and throughput of each valve shall be such that pressure in the tank with the valve fully open does not exceed the standby pressure by more than 20 %.

The value of the design pressure of the tank shall be assumed equal to the greatest lifting pressure of a relief valve.".

18 **Para 3.8.3.5** is deleted. **Paras 3.8.3.6 — 3.8.3.9** and references thereto are renumbered **3.8.3.5 — 3.8.3.8** accordingly.

19 **Para 3.8.3.8** is replaced by the following text:

"**3.8.3.8** The alarm system shall give visual and audible alarm signals:

when the maximum (not higher than the setting of the relief valve) and minimum (not less than 1,8 MPa) pressure is reached in the tank;

when the level of liquid carbon dioxide in the tank is reduced to the minimum acceptable level;

in case of refrigerating plant failure;

when the discharge of carbon dioxide begins.

The alarm signals shall be given at the central control station and in engineers' cabins.".

20 **Chapter 3.11**. **Text of Footnote 1** is replaced by the following:

"[1] Refer also to IMO circular MSC.1/Circ.1270 "Revised Guidelines for the Approval of Fixed Aerosol Fire-Extinguishing Systems Equivalent to Fixed Gas Fire-Extinguishing Systems, as Referred to in SOLAS 74, for Machinery Spaces" as amended by IMO circular MSC.1/Circ.1270/Corr.1.".

21 **Table 3.13.1** is replaced by the following:

"Table 3.13.1

Nos.	Systems and assemblies to be tested	Hydraulic test pressure	
		in shop	on board ship
1	Foam and water fire extinguishing systems (refer also to Section 21, Part VIII "Systems and Piping"):		
	.1 pipes;	—	in action
	.2 pipes of sprinkler system	—	1p
2	Pipes of dry powder system	1,5p	1p (by air)
3	Carbon dioxide systems		
3.1	High-pressure systems:		
	.1 pipes from cylinders to release control valves; transit pipe lines passing through spaces (refer to 3.1.4.1.4);	—	1,5p
	.2 pipes from release control valves to nozzles and pipes from safety devices	—	5 MPa
3.2	Low-pressure systems:	—	
	.1 pipes from tank to release control valves;	—	1,5p
	.2 pipes from release control valves to nozzles and pipes from safety devices	—	1p
4	Pneumatic pipes	—	1,5p
5	Cylinders, containers and tanks:		
	.1 operating under pressure, including cylinders without valves;	1,5p	—
	.2 operating without pressure;	By filling up to the top of the air pipe	In assembly with system
	.3 cylinders with screwed-in valves	1p (by air)	—
6	Fittings	1,5p, but not less than 0,2 MPa	

Notes: 1. p is the maximum working pressure in the system, and for carbon dioxide *p* is a design pressure of a cylinder or a tank, in MPa.
2. Fittings in assembly shall be tested for the tightness of closing by a pressure of at least 1,25p, valves of carbon dioxide cylinders — by the highest breaking pressure of protective diaphragms according to 3.8.2.6.1.
3. The systems shall be tested in assembly on board ship upon completion of all erection work.
4. Pipes specified in 3.1.1 and 3.2.1 of the Table, after being tested by a pressure of 1,5p, may be tested on board by pressure of 1p.
5. Pipes of the water fire main system in ships of 500 gross tonnage and upwards (refer to 3.2.5.1) shall be tested by a pressure of at least 1,0 MPa.

".

4 FIRE DETECTION AND ALARM SYSTEMS

22 **Para 4.2.1.2** is replaced by the following text:

"**4.2.1.2** When protecting accommodation and service spaces and control stations the following shall be provided:

.1 in passenger ships:

smoke detectors shall be installed in all stairways, corridors and escape routes within accommodation spaces as specified in 4.2.1.2.2 — 4.2.1.2.3.

the entire main vertical zone containing atrium shall be protected over the entire area by the smoke detection system;

consideration shall be given to installation of special smoke detectors in ventilation ducts;

the fixed fire detection and fire alarm system shall be capable of remotely and individually identifying each detector and manually operated call point;

it shall be considered that detectors fitted in cabins, when activated, shall also be capable of emitting, or cause to be emitted, an audible alarm within the space where they are located (refer to 19.1.1.6.3, Part XI "Electrical Equipment");

.2 in passenger ships carrying more than 36 passengers the fixed fire detection and fire alarm system shall be so installed and arranged as to detect the presence of smoke in service spaces, control stations and accommodation spaces including corridors, stairways and escape routes within accommodation spaces. Installation of smoke detectors in private bathrooms is not required. Spaces having little fire risk, such as void spaces, public toilets, carbon dioxide extinction station and equivalent spaces need not be protected with fixed fire detection and fire alarm system;

.3 in passenger ships carrying not more than 36 passengers, there shall be installed throughout each separate vertical or horizontal zone, in all accommodation and service spaces, and where the Register considers it necessary, in control stations, except spaces posing no substantial fire risk such as void spaces, sanitary spaces, etc. either:

.3.1 a fixed fire detection and fire alarm system so installed and arranged as to detect the presence of fire in such spaces and provide smoke detection in corridors, stairways and escape routes within accommodation spaces; or

.3.2 an automatic sprinkler system and a fixed fire detection and fire alarm system so installed and arranged as to protect such spaces and, in addition, the fixed fire detection and fire alarm system so installed and arranged as to detect the presence of smoke in corridors, stairways and escape routes within the accommodation spaces;

.4 detectors may be operated by heat, smoke or other products of combustion, flame or any combination of these factors. Detectors operated by other factors may be considered by the Register, provided that they are no less sensitive than the above detectors.

.5 in cargo ships accommodation and service spaces and control stations depending on a protection method shall be protected by a fixed fire detection and fire alarm system and/or by an automatic sprinkler system and fire alarm and detection system as follows:

.5.1 when method IC is used: a fixed fire detection and fire alarm system shall be so installed and arranged as to provide smoke detection in all corridors, stairways and escape routes within accommodation spaces;

.5.2 when method IIC is used: a fixed fire detection and fire alarm system shall be so installed and arranged as to provide smoke detection in all corridors, stairways and escape routes within accommodation spaces. In addition, an automatic sprinkler system shall be so installed and arranged as to protect accommodation spaces, galleys and other service spaces except spaces posing no substantial fire risk such as void spaces, sanitary spaces, etc.;

.5.3 when method IIIC is used: a fixed fire detection and fire alarm system shall be so installed and arranged as to detect the presence of fire in all accommodation and service spaces, providing smoke detection in corridors, stairways and escape routes within accommodation spaces, except spaces posing no substantial fire risk such as void spaces, sanitary spaces, etc. In addition, a fixed fire detection and fire alarm system shall be so installed and arranged as to provide smoke detection in all corridors, stairways and escape routes within accommodation spaces. However, there is no need to provide fixed fire detection and fire alarm system in service spaces built away from the accommodation block;

.6 if the fixed fire detection and fire alarm system is required for protection of spaces other than spaces specified in 4.2.1.2.1, at least one detector complying with the requirements of the FSS Code shall be installed in each such space;

.7 a galley of fishing vessels shall be protected by a fixed fire detection and fire alarm system.".

23 **Paras 4.2.1.2.2.1 — 4.2.1.2.2.3, 4.2.1.2.3.3** and **4.2.1.2.3.4** are deleted. **Para 4.2.1.2.9** is renumbered **4.2.1.2.7**.

24 **Para 4.2.1.4** is replaced by the following text:

"**4.2.1.4 Installation requirements.**

4.2.1.4.1 Detectors and manually operated call points shall be grouped into sections.

4.2.1.4.2 A section of fire detectors which covers a control station, a service space or an accommodation space shall not include a machinery space of category A and a ro-ro space. A section of fire detectors which covers a ro-ro space shall not include a machinery space of category A. For fixed fire detection and fire alarm systems with remotely and individually identifiable fire detectors, a section covering fire detectors in accommodation, service spaces and control station shall not include fire detectors in machinery spaces of category A or ro-ro spaces.

4.2.1.4.3 Where the fixed fire detection and fire alarm system does not include means of remotely identifying each detector individually, no section covering more than one deck within accommodation spaces, service spaces and control stations shall normally be permitted except a section which covers an enclosed stairway. In order to avoid delay in identifying the source of fire, the number of enclosed spaces included in each section shall be limited as determined by the RS requirements. If the fire detection and fire alarm system is fitted with individually identifiable fire detectors, the sections may cover several decks and serve any number of enclosed spaces.

4.2.1.4.4 In passenger ships, a section of detectors and manually operated call points shall not be situated in more than one main vertical zone except on cabin balconies.

4.2.1.4.5 No section shall pass through a space twice. When this is not practical (e.g. for large public spaces), the part of the section which by necessity passes through the space for a second time shall be installed at the maximum possible distance from the other parts of the section.

4.2.1.4.6 Detectors shall be located for optimum performance. Positions near beams and ventilation ducts or other positions where patterns of air flow could adversely affect performance and positions where impact or physical damage is likely shall be avoided.

Detectors which are located on the overhead shall be a minimum distance of 0,5 m away from bulkheads, except corridors, lockers and stairways.

4.2.1.4.7 The maximum spacing of detectors shall be in accordance with Table 4.2.1.4.7.

The Register may permit deviation from the requirements of Table 4.2.1.4.7 based upon characteristics of detectors obtained during tests and agreed with the Register.

When heat-pulse detectors are used in machinery spaces, the deck area served by one detector shall be 50 m^2, and distance between centres shall be not more than 6 m.

Table 4.2.1.4.7

Type of detector	Maximum floor area per detector, in m^2	Maximum distance apart between centres, in m	Maximum distance away from bulkheads, in m
Heat	37	9	4,5
Smoke	74	11	5,5

4.2.1.4.8 The smoke detectors on stairways shall be located at the top level of the stair and at every second level beneath.

4.2.1.4.9 When fire detectors are installed in freezers, drying rooms, saunas, parts of galleys used to heat food, laundries and other spaces where steam and fumes are produced, heat detectors may be used.

4.2.1.4.10 Except in spaces of restricted height and where their use is specially appropriate, fire detection and fire alarm systems using only heat detectors shall not be permitted.".

8 REQUIREMENTS FOR FIRE PROTECTION OF CARGO SHIPS OF LESS THAN 500 GROSS TONNAGE

25 **Para 8.9.1.5** is replaced by the following text:

"**8.9.1.5** Accommodation spaces, service spaces and control stations shall be provided with a sufficient number of portable fire extinguishers to ensure that at least 1 (one) extinguisher will be easily available for use in every compartment of the crew spaces. In any case, on ships greater than or equal to 150 gross tonnage their number shall be not less than 3 (three), except where this is impractical for very small ships, in which case 1 (one) extinguisher shall be available at each deck having accommodation or service spaces, or control stations.".