

[^{F1}ANNEX I**SAFETY REQUIREMENTS FOR NEW AND EXISTING
PASSENGER SHIPS ENGAGED ON DOMESTIC VOYAGES****Textual Amendments**

- F1** Substituted by [Commission Directive 2010/36/EU of 1 June 2010 amending Directive 2009/45/EC of the European Parliament and of the Council on safety rules and standards for passenger ships \(Text with EEA relevance\)](#).

CHAPTER II-2

FIRE PROTECTION, FIRE DETECTION AND FIRE EXTINCTION*PART A***GENERAL****9 Fixed fire detection and fire alarm systems (R 13)**

NEW CLASS B, C AND D SHIPS CONSTRUCTED BEFORE 1 JANUARY 2003 AND EXISTING CLASS B SHIPS:

- .1 *General*
- .1 Any required fixed fire detection and fire alarm system with manually operated call points shall be capable of immediate operation at all times.
- .2 Power supplies and electric circuits necessary for the operation of the system shall be monitored for loss of power or fault conditions as appropriate. Occurrence of a fault condition shall initiate a visual and audible fault signal at the control panel which shall be distinct from a fire signal.
- .3 There shall be not less than two sources of power supply for the electrical equipment used in the operation of the fire detection and fire alarm system, one of which shall be an emergency source. The supply shall be provided by separate feeders reserved solely for that purpose. Such feeders shall run to an automatic changeover switch situated in or adjacent to the control panel for the fire detection system.
- .4 Detectors and manually operated call points shall be grouped into sections. The activation of any detector or manually operated call point shall initiate a visual and audible fire signal at the control panel and indicating units. If the signals have not received attention within 2 minutes an audible alarm shall be automatically sounded throughout the crew accommodation and service spaces, control stations and machinery spaces. This alarm sounder system need not be an integral part of the detection system.
- .5 The control panel shall be located on the navigating bridge or in the main fire control station.
- .6 Indicating units shall, as a minimum, denote the section in which a detector or manually operated call point has operated. At least one unit shall be so located that it

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is easily accessible to responsible members of the crew at all times, when at sea or in port, except when the ship is out of service. One indicating unit shall be located on the navigating bridge if the control panel is located in the main fire control station.

- .7 Clear information shall be displayed on or adjacent to each indicating unit about the spaces covered and the location of the sections.
- .8 Where the fire detection system does not include means of remotely identifying each detector individually, no section covering more than one deck within accommodation, service 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 Administration of the flag State. In no case shall more than 50 enclosed spaces be permitted in any section. If the detection system is fitted with remotely and individually identifiable fire detectors, the sections may cover several decks and serve any number of enclosed spaces.
- .9 If there is no fire detection system capable of remotely and individually identifying each detector, a section of detectors shall not serve spaces on both sides of the ship nor on more than one deck and neither shall it be situated in more than one main vertical zone except that the Administration of the flag State, if it is satisfied that the protection of the ship against fire will not thereby be reduced, may permit such a section of detectors to serve both sides of the ship and more than one deck. In ships fitted with individually identifiable fire detectors, a section may serve spaces on both sides of the ship and on several decks but may not be situated in more than one main vertical zone.
- .10 A section of fire detectors which covers a control station, a service space or an accommodation space shall not include a machinery space.
- .11 Detectors shall be operated by heat, smoke or other products of combustion, flame or any combination of these factors. Detectors operated by other factors indicative of incipient fires may be considered by the Administration of the flag State provided that they are not less sensitive than such detectors. Flame detectors shall only be used in addition to smoke or heat detectors.
- .12 Suitable instructions and component spares for testing and maintenance shall be provided.
- .13 The function of the detection system shall be periodically tested to the satisfaction of the Administration of the flag State by means of equipment producing hot air at the appropriate temperature, or smoke or aerosol particles having the appropriate range of density or particle size, or other phenomena associated with incipient fires to which the detector is designed to respond.

All detectors shall be of a type such that they can be tested for correct operation and restored to normal surveillance without the renewal of any component.

- .14 The fire detection system shall not be used for any other purpose, except that closing of fire doors and similar functions may be permitted at the control panel.
- .15 Fire detection systems with a zone address identification capability shall be so arranged that:
 - a loop cannot be damaged at more than one point by a fire,
 - means are provided to ensure that any fault (e.g. power break, short circuit, earth) occurring in the loop will not render the whole loop ineffective,

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- all arrangements are made to enable the initial configuration of the system to be restored in the event of failure (electrical, electronic, informatic),
- the first initiated fire alarm will not prevent any other detector to initiate further fire alarms.

.2 *Installation requirements*

- .1 Manually operated call points shall be installed throughout the accommodation spaces, service spaces and control stations. One manually operated call point shall be located at each exit. Manually operated call points shall be readily accessible in the corridors of each deck such that no part of the corridor is more than 20 metres from a manually operated call point.
- .2 Smoke detectors shall be installed in all stairways, corridors and escape routes within accommodation spaces.
- .3 Where a fixed fire detection and fire alarm is required for the protection of spaces other than those specified in paragraph .2.2 above, at least one detector complying with paragraph .1.11 shall be installed in each such space.
- .4 Detectors shall be located for optimum performance. Positions near beams and ventilation ducts or other positions where patterns of airflow could adversely affect performance and positions where impact or physical damage is likely, shall be avoided. In general, detectors which are located on the overhead shall be a minimum distance of 0,5 metres away from bulkheads.
- .5 The maximum spacing of detectors shall be in accordance with the table below:

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

The Administration of the flag State may require or permit other spaces based upon test data which demonstrate the characteristics of the detectors.

- .6 Electrical wiring which forms part of the system shall be so arranged as to avoid galleys, machinery spaces, and other enclosed spaces of high fire risk except where it is necessary to provide for fire detection or fire alarm in such spaces or to connect to the appropriate power supply.

.3 *Design requirements*

- .1 The system and equipment shall be suitably designed to withstand supply voltage variation and transients, ambient temperature changes, vibration, humidity, shock, impact and corrosion normally encountered in ships.
- .2 Smoke detectors to be installed in stairways, corridors and escape routes within accommodation spaces as required by paragraph .2.2 shall be certified to operate before the smoke density exceeds 12,5 % obscuration per metre, but not until the smoke density exceeds 2 % obscuration per metre.

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Smoke detectors to be installed in other spaces shall operate within sensitivity limits to the satisfaction of the Administration of the flag State having regard to the avoidance of detector insensitivity or oversensitivity.

- .3 Heat detectors shall be certified to operate before the temperature exceeds 78 °C but not until the temperature exceeds 54 °C, when the temperature is raised to those limits at a rate less than 1 °C per minute. At higher rates of temperature rise, the heat detector shall operate within temperature limits to the satisfaction of the Administration of the flag State having regard to the avoidance of detector insensitivity or oversensitivity.
- .4 The permissible temperature of operation of heat detectors may be increased to 30 °C above the maximum deckhead temperature in drying rooms and similar spaces of a normal high ambient temperature.

NEW CLASS B, C AND D SHIPS CONSTRUCTED ON OR AFTER 1 JANUARY 2003:

- .4.1 The fixed fire detection and fire alarm systems shall be of an approved type, complying with the provisions of the Fire Safety Systems Code.
- .4.2 Manually operated call points complying with the Fire Safety Systems Code shall be installed throughout the accommodation spaces, service spaces and control stations. One manually operated call point shall be located at each exit. Manually operated call points shall be readily accessible in the corridors of each deck such that no part of the corridor is more than 20 metres from a manually operated call point.

NEW CLASS A, B, C AND D SHIPS:

- .5 In addition to the above provisions, the Administration of the flag State shall ensure that safety provisions on the installations regarding their independence from other installations or systems, the corrosion resistance of their components, the electrical power supply to their control system, and the availability of instructions for their operation and maintenance shall be complied with.]