

or rigid liferafts of such aggregate capacity as will accommodate at least 25% of the total number of persons on board must be carried. These liferafts must be served by at least one launching appliance on each side.

The Administration may permit the substitution of lifeboats by liferafts of equivalent total capacity, provided that there should never be less than sufficient lifeboats on each side of the ship to accommodate 37.5% of the total number of persons on board. A marine evacuation system(s) may be substituted for the equivalent capacity of liferafts and launching appliances.

Passenger ships must also carry at least one rescue boat.

Ref: SOLAS Regulation III/21

Que. What amendments to SOLAS Regulation II-2/13 entered into force on 1st January 2020?

Ans. Resolution MSC.404(96) extends the minimum requirements for evacuation analysis on all passenger ships (previously just RoRo ships). They concern the mandatory evaluation of escape routes in the design process of passenger vessels to avoid congestion, facilitate crew movement and ensure flexibility if certain escape routes are unavailable. Associated revised guidelines on evacuation analyses for new and existing passenger ships were approved at MSC 96 in May 2016 (MSC.1/Circ.1533).

Que. What are the SOLAS requirements regarding the recovery of persons from the water?

Ans. All ships must have ship-specific plans and procedures for the recovery of persons from the water. The plans and procedures must identify the equipment to be used for recovery purposes and the measures to be taken to minimise the risk to shipboard personnel in recovery operations. MSC.1/Circ.1447 sets out IMO guidelines for the development of these plans.

Que. What is the FSS Code?

Ans. The International Code for Fire Safety Systems (FSS Code) contains engineering specifications for fire safety equipment and systems as required under SOLAS Chapter II-2, including international shore connections, fire extinguishers, fixed systems, fire pumps, means of escape and detection systems.

Que. What are the 2024 amendments to the FSS Code?

Ans. Two amendments to the FSS Code entered into force on 1st January 2024. The first (Resolution MSC.457(101)), adopted in June 2019, introduced improved wording in Chapter 15, with the term 'forward of' replaced with 'downstream' in relation to system components within inert gas systems. The second (Resolution MSC.484(103)) concerned fault isolation requirements for cargo ships and passenger ship cabin balconies fitted with individually identifiable fire detector systems.

Que. What are the fire detection requirements on new build passenger ships built after 1st July 2012 carrying more than 12 passengers?

Ans. Fixed fire detection and fire alarm systems must be capable of remotely and individually identifying each detector and manually operated call point. A section of fire detectors and manually operated call points must not be situated in more than one main vertical zone, except on cabin balconies.

Ref: FSS Code, June 2012

Que. What was the 2014 amendment to SOLAS requirements for firefighter's communication?

Ans. SOLAS Regulation II-2/10.10.4 states that ships constructed on or after 1st July 2014 must carry on board a minimum of two two-way portable radiotelephone apparatus for each fire party, for firefighter's communication. They must be of an explosion-proof type or intrinsically safe. All other ships constructed before

1st July 2014 had to comply with these requirements not later than the first survey after 1st July 2018.

Que. What are the SOLAS requirements for the number of fire pumps on ships?

Ans. SOLAS Regulation II-2/10.2.2.2 states that ships must be provided with independently driven fire pumps as follows:

- On passenger ships of $\geq 4,000$ GT – at least three fire pumps
- on passenger ships of $< 4,000$ GT – at least two fire pumps
- on cargo ships of $\geq 1,000$ GT – at least two fire pumps
- on cargo ships of $< 1,000$ GT – at least two power-driven fire pumps, one of which must be independently driven.

Que. What are the SOLAS requirements for the number of firefighter's outfits on ships?

Ans. SOLAS Regulation II-2/10.10.2.1 states that ships must have at least two firefighter's outfits.

In addition:

- SOLAS Regulation II-2/10.10.2.2.1 states that *“in passenger ships carrying more than 36 passengers, two additional firefighter's outfits shall be provided for each main vertical zone”* (excepting stairway enclosures as defined in the regulation)
- SOLAS Regulation II-2/10.10.2.2.2 states that ships carrying more than 36 passengers must provide *“for each pair of breathing apparatus, one water fog applicator which shall be stored adjacent to such apparatus”*
- SOLAS Regulation II-2/10.10.2.3 states that *“in tankers, two fire-fighter's outfits shall be provided”*.

For ships carrying dangerous goods, added safety measures are stipulated under SOLAS Regulation II-2/19. At least two extra SCBA are to be provided (in addition to those required by Regulation II-2/10.10).

The Administration may also require additional outfits and equipment having due regard to the size and type of ship. Two spare charges must be provided for each required breathing apparatus. However, for cargo ships and passenger ships carrying not more than 36 passengers which are equipped with means for fully recharging cylinders, only one spare charge is needed for each required SCBA.

Que. What are the SOLAS requirements for fire hose lengths on ships?

Ans. Fire hoses should have a length of at least 10 m, but not more than:

- 15 m in machinery spaces
- 20 m in other spaces and open decks
- 25 m for open decks on ships with a maximum breadth in excess of 30 m.

Que. What information is available on firefighting equipment on UK ships?

Ans. The principal regulations are The Merchant Shipping (Fire Protection) Regulations 2023. MSN 1665 (Amendment 1) references these regulations in relation to firefighting equipment. It has the following schedules:

- Schedule 1: International shore connection
- Schedule 2: Non-portable foam fire extinguishers
- Schedule 3: Non-portable carbon dioxide fire extinguishers
- Schedule 4: Non-portable dry powder fire extinguishers
- Schedule 5: Breathing apparatus
- Schedule 6: Portable foam-applicator units
- Schedule 7: Fire pumps and fire main
- Schedule 8: Fire extinguishers.

MSN 1901 and MSN 1902 provide further details for ships built after 1st July 2002 on international and non-international voyages respectively.

MGN 667 provides guidance on both these MSN's as well as the 2023 Regulations as a whole.

In addition, MSN 1666 (Amendment 1) covers fixed fire detection alarm and extinguishing systems.

Note that halon firefighting systems are not permitted due to their damaging effect on the stratospheric ozone layer (see MGN 258).

Que. What are the requirements for fire detection systems in machinery spaces?

Ans. Fire detection system requirements are contained in SOLAS Regulation II-2/7. A ship must have a fixed fire detection and alarm system that is SOLAS approved. There are additional requirements for the protection of machinery spaces. Specifically, a fixed fire detection and alarm system must be installed in periodically unattended machinery spaces, in machinery spaces with automatic and remote-control systems, and enclosed spaces containing incinerators. These systems should take into account the height and ventilation arrangements of the machinery space. The detection system must initiate distinctive audible and visual alarms that can be heard and seen on the bridge and by a responsible engineer officer. Further information is contained in the FSS Code, specifically Chapters 8, 9 and 10.

Que. What are the ventilation requirements on all new build ships built after 1st January 2016?

Ans. Ducts must be constructed of steel or equivalent material (as opposed to a non-combustible material). Short ducts (2 m) need not comply provided the ducts are: used at the end of the ventilation device; not situated <600 mm from an opening in an 'A' or 'B' class division or 'B' class ceiling; not more than 0.2 m² sectional area; and made of heat-resisting non-combustible material (internally and externally faced with low flame-spread membranes having calorific value not exceeding 45 MJ/m² of their surface area for the thickness used. Similarly, short length flexible bellows not exceeding 600 mm used to connect fans to ducting in air-conditioning rooms are acceptable. Exhaust ducts from galley ranges that pass through accommodation spaces or spaces containing combustible materials are required to have a fire damper in the upper end of the duct, in addition to the lower end.

Ref: SOLAS Regulation II-2/9.7

Que. What is the supplementary lighting requirement on new build passenger ships carrying more than 12 passengers built on or after 1st July 2010?

Ans. Supplementary lighting must be provided in all cabins to clearly indicate the exit. The lighting may be powered from an emergency source of power or have a self-contained source of electrical power in each cabin. Lighting must illuminate automatically when power to cabin lighting is lost and must remain illuminated for at least 30 minutes.

Ref: SOLAS Regulation II-1/41

Que. What is the Ship Structure Access Manual?

Ans. SOLAS Regulation II-1/3-6.4 states that oil tankers and bulk carriers should have on board an approved Ship Structure Access Manual. The manual should include items such as plans