Australian Government

Australian Maritime Safety Authority

MARINE ORDERS

Part 15

Construction—
Fire protection, fire detection and fire extinction

Issue 5

Order No. 9 of 2009

Pursuant to subsection 425(1AA) of the *Navigation Act 1912*, I hereby make this Order repealing Marine Orders Part 15, Issue 4, and substituting the attached Marine Orders Part 15, Issue 5, to come into operation from 1 January 2010.

Michael Kinley
Acting Chief Executive Officer
18 November 2009

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Issue 1, Order No. 24 of 1983
—Amended by Order No. 8 of 1986
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—Amended by Order No. 6 of 2004
—Amended by Order No. 5 of 2008

1 Purpose and power

1.1 Purpose

This Part of Marine Orders gives effect to Chapter II-2 of SOLAS and prescribes standards to be met concerning fire protection, fire detection and fire extinction for SOLAS ships and non-SOLAS ships.

1.2 Power

1.2.1 Section 191 of the Navigation Act provides for regulations to make provision for or in relation to giving effect to SOLAS. Paragraph 215 (1) (b) of that Act provides that the regulations may make provision for or in relation to the prevention, detection and extinction of fire on ships.

1.2.2 Subsection 425(1) of the Navigation Act provides for regulations to be made prescribing matters required or permitted to be prescribed or which are necessary or convenient to be prescribed for carrying out or giving effect to the Act.

1.2.3 Subsection 425(1AA) of the Navigation Act provides that AMSA may make orders with respect to any matter for or in relation to which provision may be made by regulation.

2 Definitions of words and phrases used in this Part

AMSA means the Australian Maritime Safety Authority established by the *Australian Maritime Safety Authority Act 1990*;

Deputy CEO means the person occupying the position of Deputy Chief Executive Officer, Maritime Operations, in AMSA;

Fire Safety Systems Code means the International Code on Fire Safety Systems as adopted by IMO Resolution MSC.98 (73), as amended by Annex 1 to IMO Resolution MSC.217 (82) and, with effect from 1 July 2010, by IMO Resolution MSC.206 (81) and Annex 2 to IMO Resolution MSC.217 (82);

IMO means the International Maritime Organization;

Manager, Ship Inspections, means the person occupying the position of Manager, Ship Inspections, in AMSA or, in respect of any particular purpose under this Part, a suitably qualified person authorised by the Manager, Ship Inspections, for that purpose;

Navigation Act means the *Navigation Act 1912*;

SOLAS means the Safety Convention as defined in the Navigation Act;

Note The current text of Chapter II-2 of SOLAS is found in the SOLAS consolidated edition 2004, published by the IMO, and amended by IMO Resolutions MSC.194 (80), MSC.216 (82), MSC.201(81), MSC.256(84) and MSC.269(85).
The amendments to SOLAS Chapter II-2 made by resolution MSC.201(81) will come into operation on 1 July 2010.
The amendments made by Annex 3 of Resolution MSC.216(82) and Annexes 1 and 2 of Resolution 269(85) will come into operation as follows:

(a) the amendments made by Annex 1 to IMO Resolution MSC.269(85)—1 July 2010;

(b) the amendments made by Annex 2 to IMO Resolution MSC.269(85)—1 January 2011;

(c) the amendments made by Annex 3 to IMO Resolution MSC.216 (82)—1 July 2010.

SOLAS ship means:

(a) a ship to which SOLAS applies as set out in Regulations 1 and 3 of Chapter I of SOLAS; or

(b) an Australian registered ship to which SOLAS would apply if that ship were to undertake an international voyage as defined in the Navigation Act;

survey authority means a corporation or association for the survey of shipping, approved by AMSA, in writing, for the purposes of the Navigation Act;

Note A list of approved survey authorities is available on AMSA's website: www.amsa.gov.au

surveyor means:

(a) a person appointed to be a surveyor under section 190 of the Navigation Act; or

(b) a person employed as a surveyor by a survey authority;

USL Code means the Uniform Shipping Laws Code referred to in section 427 of the Navigation Act.

Note Information on obtaining copies of IMO resolutions and documents referred to in this Part is available from AMSA on AMSA's website: www.amsa.gov.au; or via e-mail: international.relations@amsa.gov.au.

3 Interpretation

3.1 In this Part, a reference to the date on which a ship was constructed means the date on which not less than 50 tonnes or one per cent of the proposed total mass of the structural material of the ship, whichever is the less, has been assembled.

3.2 A reference in Chapter II-2 of SOLAS to **the Administration** is to be read, in relation to an Australian registered ship, as a reference to the Manager, Ship Inspections.

3.3 In this Part:

(a) headings and subheadings are part of the Part;

(b) each Appendix is part of the Part; and

(c) a note is not part of the Part, but may provide additional information or guidance in applying the Part.

4 Application

4.1 This Part applies to and in relation to:

(a) a ship registered in Australia; and

(b) a ship registered in a country other than Australia, that is in the territorial sea of Australia or in waters on the landward side of the territorial sea.

4.2 This Part does not apply to a ship that is a Safety Convention ship registered in a country other than Australia, except to the extent that the ship fails to comply with Chapter II-2 of SOLAS.

5 Exemptions and equivalents

5.1 Exemptions

The Manager, Ship Inspections, if satisfied that compliance with a provision of this Part would be unnecessary or unreasonable having regard to a ship, its equipment and its intended voyage, may exempt that ship from compliance with such provision to the extent specified and subject to such conditions as that officer thinks fit.

5.2 Equivalents

Where a provision of this Part requires a particular fitting, material, appliance or apparatus, or type thereof to be fitted or carried in a ship or a particular provision to be made in a ship, the Manager, Ship Inspections, may allow any other fitting, material, appliance or apparatus, or type thereof, to be fitted or carried, or any other provision to be made, if that officer is satisfied that the other fitting, material, appliance or apparatus, or type thereof, or provision, is at least as effective as that required by that provision of this Part.

5.3 Exemptions and equivalents not to contravene SOLAS

The Manager, Ship Inspections, must not give an exemption under 5.1 or allow an equivalent under 5.2 if it would contravene SOLAS.

Note Applications for modifications or exemptions should be made to the Manager, Ship Inspections, and should be accompanied by relevant information. The Manager, Ship Inspections, may seek additional information to assist in reaching a decision.

6 Review of decisions

6.1 Internal review

6.1.1 If the Manager, Ship Inspections, makes a decision under this Part, a person affected by the decision may, within 3 months of the date of notification of the decision or such longer period as determined by the Deputy CEO, apply to the Deputy CEO for review of that decision.

6.1.2 An application for internal review under provision 6.1.1 must be made in writing to the Deputy CEO and must be accompanied by such information as the Deputy CEO requires to enable that officer to make a proper decision.

6.1.3 The Deputy CEO may:

(a) affirm the original decision by the Manager, Ship Inspections; or

(b) make any decision that could be made by the Manager, Ship Inspections, in accordance with this Part.

6.1.4 The Deputy CEO must give his or her decision in writing within 28 days of receiving the application for internal review.

6.1.5 Failure to comply with 6.1.4 in relation to a decision does not affect the validity of that decision.

6.2 Review by the AAT

6.2.1 Application may be made to the Administrative Appeals Tribunal for review of a decision by the Deputy CEO under 6.1.3.

6.2.2 The notice under 6.1.4 must include:

(a) a statement to the effect that, if the person is dissatisfied with the decision, application may, subject to the *Administrative Appeals Tribunal Act 1975*, be made to the Administrative Appeals Tribunal for review of the decision; and

(b) a statement to the effect that the person may request a statement under section 28 of that Act.

6.2.3 Failure to comply with 6.2.2 in relation to a decision does not affect the validity of that decision.

7 Requirements

7.1 SOLAS ships

7.1.1 A SOLAS ship constructed on or after 1 July 2002 must:

(a) meet the relevant standards for fire protection, fire detection and fire extinction contained in Chapter II-2 of SOLAS; and

(b) if an Australian registered ship, comply with Appendixes 1 to 3 of this Part.

7.1.2 A SOLAS ship constructed before 1 July 2002 must:

(a) comply with Regulations 1.2.2 and 1.3 of Chapter II-2 of SOLAS;

(b) meet the relevant standards for fire protection, fire detection and fire extinction contained in Chapter II-2 of SOLAS as set out in *SOLAS Consolidated Edition 1997*, published by the IMO, as amended in accordance with Appendix 1 to Issue 3 of this Part; and

(c) if the ship is an Australian registered ship—comply with Appendixes 2, 3, 4 and 6 of Issue 3 of this Part.

Note Some Regulations, or parts of Regulations, of Chapter II-2 of SOLAS apply to: (i) particular ships; or (ii) ships constructed before or after a particular date specified in Chapter II-2 of SOLAS.

7.1.3 If a ship is surveyed and certificated under:

(a) the 1979 MODU Code or the 1989 MODU Code, in accordance with Marine Orders Part 47; or

(b) the DSC Code, the 1994 HSC Code or the 2000 HSC Code, in accordance with Marine Orders Part 49;

it is to meet the standards specified in the relevant code rather than those in Chapter II-2 of SOLAS.

7.2 Non-SOLAS ships

A ship that is not a SOLAS ship must comply with the relevant standards for fire protection, fire detection and fire extinction set out in the USL Code.

Note USL Code (2008)*, which replaces USL Code Section 11 (Fire Appliances) with NSCV Part C Section 4 (Fire Safety), came into operation on 1 October 2008. Therefore, a ship constructed on or after 1 October 2008 is to comply with NSCV Part C Section 4 while a ship constructed before 1 October 2008 is to comply with the pre-2008 USL Code, unless the ship is upgraded in service or is subject to initial survey.*

7.3 Additional requirements

The Manager, Ship Inspections, may, if satisfied in respect of an Australian registered ship or class of ships that the standards specified in SOLAS, the USL Code or Appendixes 1 to 3 do not provide for an adequate level of safety, require the ship or class of ships to comply with such additional requirements that that officer determines.

* * * * * *

Appendix 1

Breathing apparatus

1 A breathing apparatus required by Chapter II-2 of SOLAS must be approved by the Manager, Ship Inspections, or a survey authority and must, in addition to meeting the requirement of the Fire Safety Systems Code, be a self-contained breathing apparatus complying with 2, 3 and 4.

2 A self contained breathing apparatus must:

(a) be of the compressed air open circuit type; and

(b) be designed, tested and maintained to the requirements of:

(i) AS/NZS 1715 (Selection, use and maintenance of respiratory protective equipment) and AS/NZS 1716 (Respiratory protective devices); or

(ii) any other equivalent international standards; and

(c) meet the requirements mentioned in 2.1 to 2.4 of this Appendix.

2.1 A manually operated bypass valve must be fitted.

2.2 The storage capacity of the air cylinder or cylinders attached to the apparatus must be at least 1,200 litres of free air measured at a temperature of 16°C and at atmospheric pressure.

2.3 The pressure gauge must be clearly marked to indicate:

(a) when the cylinder capacity has been reduced by 80 per cent of its effective life; and

(b) when the cylinder is full.

2.4 For the purposes of a test procedure using human volunteers required by AS/NZS 1716, the number of test persons is to be 10 unless otherwise specified by the Manager, Ship Inspections.

3 A self-contained breathing apparatus must be provided with fully charged spare cylinders having a spare storage capacity of at least 2,400 litres of free air except that:

(a) if the ship is carrying 5 or more of those apparatuses, the total spare storage capacity of free air need not exceed 9,600 litres; or

(b) if the ship is equipped with a means acceptable to the Manager, Ship Inspections, for re-charging the air cylinder to full pressure with air, free from contamination, the spare storage capacity of the fully charged spare cylinders of each of those apparatuses must be of at least 1,200 litres of free air, and the total spare storage capacity of free air provided in the ship need not exceed 4,800 litres.

Note for paragraph (b) An acceptable means may be a high pressure tank capable of storing sufficient clean air to enable the bottles to be quickly recharged, giving effectively the same use time as if each BA set had spare bottles with a capacity of 2,400 litres of free air, or a compressor capable of refilling bottles with clean air in less time than normally taken to expend the air, the compressor being driven by the emergency power source or a suitable independent power source.

4 In 4.1 and 4.2, **breathing apparatus** means a self-contained breathing apparatus.

4.1 A breathing apparatus must be constructed of materials having adequate mechanical strength, durability and resistance to deterioration by heat or by contact with sea water and those materials must be resistant to fire and must not allow the breathing circuit to be penetrated by smoke or chemical fumes likely to be encountered in service. The fabric used in the construction of any harness provided with that apparatus must be resistant to shrinkage. Exposed metal parts of the apparatus, harness and fittings must be of materials so far as practicable resistant to frictional sparking.

4.2 The following equipment must be provided for use with each breathing apparatus:

(a) a fire-proof life-and-signalling line with snap hook, at least 3 metres longer than is required to reach from the open deck in clean air well clear of a hatch or doorway to any part of the accommodation, service, cargo, or machinery spaces, but not less than 30 metres in length, the line being made of copper or corrosion resistant steel wire rope having a breaking strength of at least 5 kN and being overlaid at least 10 millimetres in diameter by hemp or other covering to provide a surface that can be firmly gripped when wet;

(b) where provision is not made on the breathing apparatus harness for attaching the life-line, an adjustable safety belt or harness to which that line must be capable of being securely attached and detached by the wearer;

(c) operating instructions in clear and permanent lettering on a plate for attachment to the apparatus or for display in clearly visible position near the apparatus stowage position;

(d) plates of suitable material, that is not readily combustible, bearing the code of signals in the following table to be used between the wearer and his or her attendant, one of which must be attached to the harness and another attached to the free end of the life-and-signalling line.

Signal	***Meaning***
By wearer of breathing apparatus	
2 PULLS	SLACK OFF LIFELINE
3 PULLS	HELP ME OUT IMMEDIATELY
To wearer of breathing apparatus	
3 PULLS	COME OUT IMMEDIATELY

Appendix 2

Fire extinguishers

1 Non-portable foam fire extinguishers

1.1 In 1.2 to 1.11, **extinguisher** means a foam fire extinguisher other than a portable fire extinguisher.

1.2 An extinguisher must be constructed of suitable materials and must be of an efficient design and of sufficient strength to safely withstand the maximum internal pressure to which it may be subjected and must be capable of withstanding a test by hydraulic pressure suitably in excess of the maximum working pressure. For the purpose of this Appendix, maximum working pressure is the equilibrium pressure that develops within the body at 70°C when the correctly charged extinguisher has been operated with all outlets closed.

1.3 Where an extinguisher is provided with a gas cylinder as the means for expelling the extinguishing medium, that gas cylinder must be constructed in accordance with the Australian Gas Cylinders Code AS2030 or other standard acceptable to the Manager, Ship Inspections.

1.4 An extinguisher must be provided with a nozzle and a reinforced discharge hose constructed to withstand 4 times the maximum working pressure specified in 1.2.

1.5 Where an extinguisher is provided with an inner container, that container must be adequately supported.

1.6 Any necessary openings in an extinguisher body must be fitted with caps or covers so designed that any pressure remaining in the container may be released gradually before the cap or cover can be removed completely.

1.7 Every part of an extinguisher must, where necessary, be protected against corrosion.

1.8 An extinguisher must be provided with a controllable device to enable the discharge to be interrupted.

1.9 An extinguisher actuating mechanism must be protected so that it is safeguarded against inadvertent operation.

1.10 A fully charged extinguisher must, when operated under normal conditions, be capable of projecting foam a distance of 14 metres for a period of not less than 90 seconds in the case of an extinguisher of 135 litres capacity or over, and a distance of 10 metres for a period of not less than 60 seconds in the case of an extinguisher of 45 litres or over but under 135 litres capacity.

1.11 The outside of an extinguisher body must be clearly marked with:

(a) a mark showing the level of the liquid when the extinguisher is filled to its working capacity; and

(b) a statement setting out all of the following:

(i) the name of the maker or vendor of the extinguisher;

(ii) the capacity of the extinguisher;

(iii) the pressure under which the extinguisher was tested;

(iv) the instructions for operating the extinguisher;

(v) the year in which the extinguisher was manufactured; and

(c) a colour code in accordance with AS 1841, or another standard acceptable to the Manager, Ship Inspections, indicating the extinguishing medium.

2 Non-portable carbon dioxide fire extinguishers

2.1 In 2.2 to 2.6, **extinguisher** means a carbon dioxide fire extinguisher other than a portable fire extinguisher.

2.2 An extinguisher must be provided with a cylinder constructed in accordance with the Australian Gas Cylinder Code AS2030 or other standard acceptable to the Manager, Ship Inspections. The cylinder must be provided with an internal discharge tube and a valve to release the gas.

2.3 An extinguisher must be provided with a discharge hose reinforced so as to withstand a pressure of 12.2 megapascals when the necessary couplings are fitted. The bore of the discharge hose must be not less than the size specified in Table 1 in relation to the capacity of the extinguisher.

Table 1

Capacity of extinguisher	***Minimum bore of discharge hose***
16 kilograms	10 millimetres
45 kilograms	12 millimetres

2.4 The discharge hose of an extinguisher must be provided with a horn of electrically non-conducting material and of a design that will reduce the velocity of the gas discharged. The metal part of the operating handle must be suitably sheathed to protect the hands of the operator from extreme cold.

2.5 At a temperature between 15°C and 18°C inclusive, an extinguisher must discharge gas at such a rate that carbon dioxide equal in weight to three quarters of the capacity of the container will be discharged in the periods respectively set out in Table 2.

Table 2

Capacity of extinguisher	Period
16 kilograms	30 to 45 seconds
45 kilograms	60 to 90 seconds

2.6 The outside of an extinguisher body must be clearly and permanently marked with a statement setting out all of the following:

(a) the name of the maker or vendor of the extinguisher;

(b) instructions for operating the extinguisher;

(c) the mass of the extinguisher when empty and the mass when filled to its working capacity;

(d) the year in which the extinguisher was manufactured;

(e) the standard to which the extinguisher is constructed;

(f) a colour code in accordance with Australian Standard AS 1841, or another standard acceptable to the Manager, Ship Inspections, indicating the extinguishing medium.

2.7 Every part of an extinguisher must, where necessary, be protected against corrosion.

2.8 An extinguisher must be provided with a controllable device to enable the discharge to be interrupted.

2.9 An extinguisher actuating mechanism must be protected so that it is safeguarded against inadvertent operation.

3 Non-portable dry powder fire extinguishers

3.1 In 3.2 to 3.11, **extinguisher** means a dry powder fire extinguisher other than a portable fire extinguisher.

3.2 An extinguisher must be of the kind in which a mixture of dry powder and an expellant is stored under pressure.

3.3 An extinguisher must be constructed of suitable materials and must be of an efficient design and of sufficient strength to safely withstand the maximum internal pressure to which it may be subjected and must be capable of withstanding a test by hydraulic pressure suitably in excess of the maximum working pressure. For the purpose of this Appendix, the maximum working pressure is the pressure within the body at 70°C when the extinguisher is correctly charged.

3.4 An extinguisher must be provided with a nozzle and a reinforced discharge hose constructed to withstand four times the maximum working pressure specified in 3.3.

3.5 Any necessary openings in an extinguisher body must be fitted with caps or covers so designed that any pressure remaining in the container may be released gradually before the cap or cover can be removed completely.

3.6 Every part of an extinguisher must, where necessary, be protected against corrosion.

3.7 An extinguisher must be effectively sealed to prevent the ingress of moisture, but those sealing arrangements must not interfere with the discharge of the extinguisher.

3.8 An extinguisher must be provided with a controllable device to enable the discharge to be interrupted.

3.9 An extinguisher actuating mechanism must be protected so that it is safeguarded against inadvertent operation.

3.10 A fully charged extinguisher must, when operated under normal conditions, be capable of discharging not less than 85 per cent of the mass of dry powder charge. The discharge rate must be not less than 1 kilogram per second.

3.11 The outside of an extinguisher body must be clearly and permanently marked with a statement setting out all of the following:

(a) the name of the maker or vendor to the extinguisher;

(b) the capacity of the extinguisher;

(c) the pressure to which the extinguisher was tested;

(d) instructions for operating the extinguisher;

(e) the year in which the extinguisher was manufactured;

(f) a colour code in accordance with Australian Standard AS 1841, or another standard acceptable to the Manager, Ship Inspections, indicating the extinguishing medium.

4 Portable fire extinguishers

4.1 Portable fire extinguishers provided for use in a ship must so far as practicable have a uniform method of operation. When a ship is to be provided with a replacement or an additional extinguisher, the extinguisher must have a method of operation similar to the extinguishers already on aboard and, if practicable, must be of the same manufacture.

4.2 Portable fire extinguishers must:

(a) be designed, manufactured, tested and marked in accordance with the relevant Australian Standard, and must be entitled to bear and must so bear the registered certification of the Standards Association of Australia; or

(b) be acceptable to the Manager, Ship Inspections.

4.3 Where portable dry powder fire extinguishers are provided in accommodation and service spaces or in machinery spaces, they should be of the type in which a mixture of dry powder and the expellant is stored under pressure and their number must not exceed one half of the total number of extinguishers provided in either of those spaces.

4.4 A spare charge must be provided for every portable fire extinguisher provided in compliance with this Part. However, for each of those fire extinguishers that is of a type that cannot be recharged while the ship is at sea, an additional portable fire extinguisher of the same type, or its equivalent, must be provided in place of a spare charge. Such additional fire extinguishers must be kept in an easily accessible storeroom, not likely to be cut off in the event of a fire, until such time as replacement is necessary. While a portable fire extinguisher provided in excess of the provisions of this Part will not require a spare charge or spare extinguisher, that additional extinguisher must be maintained in a condition similar to that required for a portable fire extinguisher that is required by this Part.

4.5 Subject to 4.6, a portable fire extinguisher must be serviced, inspected, pressure tested, recharged and maintained in accordance with Australian Standard AS 1851.

4.6 A portable fire extinguisher on a ship is not required to comply with clause 15.2.1 of Australian Standard AS 1851 unless a surveyor determines that a ship is required to comply with that clause.

Note Clause 15.2.1 of Australian Standard AS 1851 provides that extinguishers that are not located in aggressive environments are to follow the inspection, test and preventive maintenance schedules set out in clause 15.4 of that Standard every 5 years.

Note 2 IMO Circular MSC/Circ.850 sets out guidelines for the maintenance and inspection of fire protection systems and appliances.

4.7 Extinguishers must be located in conspicuous, accessible positions and be well distributed, taking into account positions of greater fire hazard within any one space. They must be located within the space they are intended to service, one extinguisher being near an entrance to the space. Where, by virtue of the size of the space, its position relative to other spaces, its configuration or the layout of equipment within it, a surveyor considers that a fire may best be fought from a position outside the space, the surveyor may permit one of the extinguishers for the space to be located outside the space and near an entrance to the space.

4.8.1 In a passenger ship there must be at least 2 portable fire extinguishers readily available for use on each deck within each main vertical zone. They must be distributed as uniformly as possible and so that no extinguisher is more than 20 metres walking distance from another extinguisher in that zone.

4.8.2 In a cargo ship there must be a sufficient number of portable fire extinguishers to ensure that at least one will be readily available for use in any block of accommodation not exceeding 23 metres in length on one deck, and in every service space and control space.

4.8.3 In addition to those required by 4.8.1 and 4.8.2, there must, in every galley of less than 15 m^2, be one portable fire extinguisher and, in every galley of 15 m^2 or more, be 2 portable fire extinguishers. There must also be a fire blanket stowed in a galley within close proximity to any stove on which oil may be heated for cooking purposes, provided that a surveyor may permit the blanket to be stowed outside a small galley.

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Appendix 3

Miscellaneous additional requirements and interpretations

1 Additional requirements

1.1 Pressure testing of gas cylinders and bulk containers

1.1.1 A gas cylinder must be inspected, serviced and tested (as appropriate) at a test station accredited for Australian Standard AS 2337 if the gas cylinder:

(a) has been discharged; or

(b) shows a loss of contents; or

(c) has evidence of deleterious corrosion or other physical defects; or

(d) subject to 1.1.2, is due for the cylinder's periodical inspection and test in accordance with Australian Standard AS 2030.

1.1.2 Despite the test period mentioned in Australian Standard AS 2030, a pressure test of a gas cylinder is to be performed in accordance with the following:

(a) subject to paragraph (b), on the 10^{th} anniversary of the cylinder's initial test after manufacture (the cylinder's initial test);

(b) if, on the 10^{th} anniversary of the cylinder's initial test, an external examination of the cylinder reveals that the cylinder has no unacceptable defects, the pressure test period may be extended until the 20^{th} anniversary of the cylinder's initial test;

(c) on the 20^{th} anniversary of the cylinder's initial test;

(e) every 5 years after the 20^{th} anniversary of the cylinder's initial test.

1.1.3 Bulk CO_2 cylinders are to be internally examined at intervals of 12 years from the date of manufacture. Hydrostatic pressure testing should be carried out after alterations and repairs, or if considered necessary by a surveyor.

1.2 Requirements related or additional to those in Chapter II-2 of SOLAS

In Table 1, the requirements in column 2 are to be read with, and where appropriate as additional to, the requirements set out in the relevant Regulation of Chapter II-2 of SOLAS.

Table 1

Regulation	***Requirement***
4.2.1.3	Oil fuel with a flashpoint of not less than 43°C may be used in motor lifeboat engines as well as in emergency generators. A rescue boat may be fitted with a petrol-driven outboard with an approved fuel system provided the fuel tanks are specially protected against fire and explosion.

Regulation	*Requirement*
7.3.2	When carrying out a survey of the equipment of a ship in compliance with Marine Orders, Part 31, 20 percent of the total number of detector must be tested 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, and all detectors must be so tested in a period not exceeding 5 years. All detectors must be of such type that they can be tested for correct operation and restored to normal surveillance without the renewal of a component.
10.2.1.6	The maximum pressure at a hydrant must not exceed 0.65 N/mm^2.
10.2.3.3	Spray Nozzle must produce a spray that will not disturb a film of oil on water.
10.2.3.3	Nozzles for deck hoses on tankers and ships with similar fire hazards must not be aluminium alloy.
10.3.2.1	Ships between 500 and 1000 gross tonnage must carry at least five portable fire extinguishers. Ships less than 500 gross tonnage must carry such number of portable fire extinguishers as is determined by the Manager, Ship Inspections.
10.5.1.2.2	A 45 kg CO_2 fire extinguisher is specified as equivalent to a 135 litres foam extinguisher.
FSS Code Chapter 7 2.1.1.5; Chapter 8 2.2.1 & 2.2.2	When a pump is driven by independent internal combustion machinery, in addition to it having to be so situated that the fire in the protected space will not effect the air supply to the machinery: • the fuel supply must be independent of the protected space; and • the fuel supply must be sufficient for 36 hours operation in the case of a passenger ship and 18 hours in the case of a cargo ship.
10.2.1.7 and FSS Code Chapter 2	Facilities must be available enabling an international shore connection to be used on either side of the ship. Where the fire main and hydrants of a ship are located on one side only, a branch main terminating in a hydrant must be fitted to provide a connection point on the opposite side of the ship. The international shore connection must be stowed in a readily accessible position on the open deck and remote from spaces that could be considered fire risks. The stowage arrangements must be such that the effects of a sea environment will not restrict ready use of the international shore connection.
10.2.1.2.1.3	Where the Manager, Ship Inspections has determined that a passenger ship may be fitted with a periodically unattended machinery space, a fixed pressure water spraying fire-extinguishing system must be fitted in that space.
10.2.3.2.1	The diameter of a fire hose must not be less than 38 mm. The number of hoses is to be as specified in Regulation 10/2.3 of Chapter II-2 of SOLAS, unless the Manager, Ship Inspections increases the number to meet a special need.
10.2.3.2.3.2	The number of hoses required by this regulation must not include any hoses required in an engine or boiler room.
20.6.2.1	See 4 of Appendix 2

1.3 Requirements for electrical cables in addition to Chapter II-2 of SOLAS

1.3.1 Electric cables must be of a flame-retardant type acceptable to the Manager, Ship Inspections or a survey authority, as appropriate, and tested in accordance with Australian Standard AS/NZS 1660.5.6:2005. When tested:

(a) any molten particles that drop must not ignite the tissue paper underlay; and

(b) burning must cease within 5 seconds of the flame being removed; and

(c) the distance between the top point of the scorched area and the underside of the upper clamp must be at least 250 mm.

1.3.2 In some applications, a fire-resistant electric cable is required. This is a cable that, when subjected to a continuous fire of 3 hours duration, is capable of normal operation during and after that period. The procedures to be followed for determining that an electric cable is fire-resistant are those set out in the relevant standard of International Electrotechnical Commission (IEC).

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