

**ANNEX 2**

**RESOLUTION MSC.57(67)  
(adopted on 5 December 1996)**

**ADOPTION OF AMENDMENTS TO THE INTERNATIONAL CONVENTION  
FOR THE SAFETY OF LIFE AT SEA, 1974**

**THE MARITIME SAFETY COMMITTEE,**

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING FURTHER article VIII(b) of the International Convention for the Safety of Life at Sea (SOLAS), 1974, hereinafter referred to as "the Convention", concerning the procedures for amending the Annex to the Convention, other than the provisions of chapter I thereof,

HAVING CONSIDERED, at its sixty-seventh session, amendments to the Convention proposed and circulated in accordance with article VIII(b)(i) thereof,

1. ADOPTS, in accordance with article VIII(b)(iv) of the Convention, amendments to the Convention the text of which is set out in the Annex to the present resolution;
2. DETERMINES, in accordance with article VIII(b)(vi)(2)(bb) of the Convention, that the amendments shall be deemed to have been accepted on 1 January 1998, unless, prior to that date, more than one third of the Contracting Governments to the Convention or Contracting Governments the combined merchant fleets of which constitute not less than 50% of the gross tonnage of the world's merchant fleet, have notified their objections to the amendments;
3. INVITES Contracting Governments to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 July 1998 upon their acceptance in accordance with paragraph 2 above;
4. REQUESTS the Secretary-General, in conformity with article VIII(b)(v) of the Convention, to transmit certified copies of the present resolution and the text of the amendments contained in the Annex to all Contracting Governments to the Convention;
5. FURTHER REQUESTS the Secretary-General to transmit copies of this resolution and its Annex to Members of the Organization, which are not Contracting Governments to the Convention.

ANNEX

**AMENDMENTS TO THE INTERNATIONAL CONVENTION  
FOR THE SAFETY OF LIFE AT SEA, 1974**

**CHAPTER II-1**

**CONSTRUCTION - SUBDIVISION AND STABILITY, MACHINERY  
AND ELECTRICAL INSTALLATIONS**

**PART A-1 - STRUCTURE OF SHIPS**

- 1 The following new regulations 3-3 and 3-4 are added to Part A-1 of chapter II-1:

**"Regulation 3-3  
Safe access to tanker bows**

1 For the purpose of this regulation and regulation 3-4, tankers include oil tankers as defined in regulation 2.12, chemical tankers as defined in regulation VII/8.2 and gas carriers as defined in regulation VII/11.2.

2 Every tanker constructed on or after 1 July 1998 shall be provided with the means to enable the crew to gain safe access to the bow even in severe weather conditions. For tankers constructed before 1 July 1998, such means of access shall be provided at the first scheduled dry-docking after 1 July 1998, but not later than 1 July 2001. Such means of access shall be approved by the Administration based on the guidelines developed by the Organization.\*

**Regulation 3-4  
Emergency towing arrangements on tankers**

Emergency towing arrangements shall be fitted at both ends on board every tanker of not less than 20,000 tonnes deadweight, constructed on or after 1 January 1996. For tankers constructed before 1 January 1996, such an arrangement shall be fitted at the first scheduled dry-docking after 1 January 1996 but not later than 1 January 1999. The design and construction of the towing arrangements shall be approved by the Administration, based on the guidelines developed by the Organization.\*\*"

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\* Refer to the Guidelines for Safe Access to Tanker Bows, adopted by the Maritime Safety Committee of the Organization by resolution MSC.62(67).

\*\* Refer to the Guidelines on Emergency Towing Arrangements for Tankers, adopted by the Maritime Safety Committee of the Organization by resolution MSC.35(63).

## **PART B - SUBDIVISION AND STABILITY**

- 2 The following new regulation 17-1 is added after existing regulation 17:

### **"Regulation 17-1**

#### **Openings in the shell plating below the bulkhead deck of passenger ships and the freeboard deck of cargo ships**

Notwithstanding the requirements of regulation 17, ships constructed on or after 1 July 1998 shall comply with the requirements of regulation 17 where a reference to "margin line" shall be deemed to mean a reference to the bulkhead deck of passenger ships and the freeboard deck of cargo ships."

## **PART C - MACHINERY INSTALLATIONS**

### **Regulation 26 - General**

- 3 The following new paragraphs 9, 10 and 11 are added after existing paragraph 8:

"9 Non-metallic expansion joints in piping systems, if located in a system which penetrates the ship's side and both the penetration and the non-metallic expansion joint are located below the deepest load waterline, shall be inspected as part of the surveys prescribed in regulation I/10(a) and replaced as necessary, or at an interval recommended by the manufacturer.

10 Operating and maintenance instructions and engineering drawings for ship machinery and equipment essential to the safe operation of the ship shall be written in a language understandable by those officers and crew members who are required to understand such information in the performance of their duties.

11 Location and arrangement of vent pipes for fuel oil service, settling and lubrication oil tanks shall be such that in the event of a broken vent pipe this shall not directly lead to the risk of ingress of seawater splashes or rainwater. Two fuel oil service tanks for each type of fuel used on board necessary for propulsion and vital systems or equivalent arrangements shall be provided on each new ship, with a capacity of at least 8 h at maximum continuous rating of the propulsion plant and normal operating load at sea of the generator plant.\* This paragraph applies only to ships constructed on or after 1 July 1998."

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\* Refer to regulation II-2/15 on Arrangements for oil fuel, lubricating oil and other flammable oils.

### Regulation 31 - Machinery controls

4 The following new paragraph 5 is added after existing paragraph 4:

"5 Ships constructed on or after 1 July 1998 shall comply with the requirements of paragraphs 1 to 4, as amended, as follows:

.1 paragraph 1 is replaced by the following:

"1 Main and auxiliary machinery essential for the propulsion, control and safety of the ship shall be provided with effective means for its operation and control. All control systems essential for the propulsion, control and safety of the ship shall be independent or designed such that failure of one system does not degrade the performance of another system.";

.2 in the second and third lines of paragraph 2, the words "and the machinery spaces are intended to be manned" are deleted;

.3 the first sentence of paragraph 2.2 is replaced by the following:

".2 the control shall be performed by a single control device for each independent propeller, with automatic performance of all associated services, including, where necessary, means of preventing overload of the propulsion machinery.";

.4 paragraph 2.4 is replaced by the following:

".4 propulsion machinery orders from the navigation bridge shall be indicated in the main machinery control room and at the manoeuvring platform;";

.5 a new sentence is added at the end of paragraph 2.6 to read as follows:

"It shall also be possible to control the auxiliary machinery, essential for the propulsion and safety of the ship, at or near the machinery concerned"; and

.6 paragraphs 2.8, 2.8.1 and 2.8.2 are replaced by the following:

".8 indicators shall be fitted on the navigation bridge, the main machinery control room and at the manoeuvring platform, for:

.8.1 propeller speed and direction of rotation in the case of fixed pitch propellers; and

.8.2 propeller speed and pitch position in the case of controllable pitch propellers;".

## **PART D - ELECTRICAL INSTALLATIONS**

### **Regulation 41 - Main source of electrical power and lighting systems**

5 The following new paragraph 5 is added after existing paragraph 4:

"5 Ships constructed on or after 1 July 1998:

.1 in addition to paragraphs 1 to 3, shall comply with the following:

.1.1 where the main source of electrical power is necessary for propulsion and steering of the ship, the system shall be so arranged that the electrical supply to equipment necessary for propulsion and steering and to ensure safety of the ship will be maintained or immediately restored in the case of loss of any one of the generators in service;

.1.2 load shedding or other equivalent arrangements shall be provided to protect the generators required by this regulation against sustained overload;

.1.3 where the main source of electrical power is necessary for propulsion of the ship, the main busbar shall be subdivided into at least two parts which shall normally be connected by circuit breakers or other approved means; so far as is practicable, the connection of generating sets and other duplicated equipment shall be equally divided between the parts; and

.2 need not comply with paragraph 4."

### **Regulation 42 - Emergency source of electrical power in passenger ships**

6 The following new paragraph 3.4 is added after existing paragraph 3.3:

"3.4 For ships constructed on or after 1 July 1998, where electrical power is necessary to restore propulsion, the capacity shall be sufficient to restore propulsion to the ship in conjunction with other machinery, as appropriate, from a dead ship condition within 30 min after blackout."

### **Regulation 43 - Emergency source of electrical power in cargo ships**

7 The following new paragraph 3.4 is added after existing paragraph 3.3:

"3.4 For ships constructed on or after 1 July 1998, where electrical power is necessary to restore propulsion, the capacity shall be sufficient to restore propulsion to the ship in conjunction with other machinery, as appropriate, from a dead ship condition within 30 min after blackout."

## CHAPTER II-2

### CONSTRUCTION - FIRE PROTECTION, FIRE DETECTION AND FIRE EXTINCTION

#### PART A - GENERAL

##### Regulation 1 - Application

8 Existing paragraph 1.1 is replaced by the following:

"1.1 Unless expressly provided otherwise, this chapter shall apply to ships the keels of which are laid or which are at a similar stage of construction on or after 1 July 1998."

9 Existing paragraph 1.3.2 is replaced by the following:

"2 the expression *all ships* means ships constructed before, on or after 1 July 1998".

10 Existing paragraph 2 is replaced by the following:

"2 Unless expressly provided otherwise, for ships constructed before 1 July 1998 the Administration shall ensure that the requirements which are applicable under chapter II-2 of the International Convention for the Safety of Life at Sea, 1974, as amended by resolutions MSC.1(XLV), MSC.6(48), MSC.13(57), MSC.22(59), MSC.24(60), MSC.27(61) and MSC.31(63), are complied with."

11 In paragraph 3.1, the expression "1 July 1986" is replaced by "1 July 1998".

##### Regulation 3 - Definitions

12 Existing paragraph 1 is replaced by the following:

"1 *Non-combustible material* is a material which neither burns nor gives off flammable vapours in sufficient quantity for self-ignition when heated to approximately 750°C, this being determined in accordance with the Fire Test Procedures Code. Any other material is a combustible material."

13 Existing paragraph 2 is replaced by the following:

"2 *A standard fire test* is one in which the specimens of the relevant bulkheads and decks are exposed in a test furnace to temperatures corresponding approximately to the standard time-temperature curve. The test methods shall be in accordance with the Fire Test Procedures Code."

14 In paragraph 3.4, "139°C" is replaced by "140°C".

15 Existing paragraph 3.5 is replaced by the following:

".5 the Administration shall require a test of a prototype bulkhead or deck in accordance with the Fire Test Procedures Code to ensure that it meets the above requirements for integrity and temperature rise."

16 In paragraph 4.2, "139°C" is replaced by "140°C".

17 Existing paragraph 4.4 is replaced by the following:

".4 the Administration shall require a test of a prototype division, in accordance with the Fire Test Procedures Code, to ensure that it meets the above requirements for integrity and temperature rise."

18 Existing paragraph 8 is replaced by the following:

"8 *Low flame spread* means that the surface thus described will adequately restrict the spread of flame, this being determined in accordance with the Fire Test Procedures Code."

19 Existing paragraph 22-1 is replaced by the following:

"22-1 *Central control station* is a control station in which the following control and indicator functions are centralized:

- .1 fixed fire detection and alarm systems;
- .2 automatic sprinklers, fire detection and alarm systems;
- .3 fire door indicator panels;
- .4 fire door closures;
- .5 watertight door indicator panels;
- .6 watertight door closures;
- .7 ventilation fans;
- .8 general/fire alarms;
- .9 communication systems including telephones; and
- .10 microphones to public address systems."

20 Existing paragraph 23.3 is replaced by the following:

".3 all draperies, curtains and other suspended textile materials have qualities of resistance to the propagation of flame not inferior to those of wool of mass 0.8 kg/m<sup>2</sup>, this being determined in accordance with the Fire Test Procedures Code."

21 Existing paragraph 23.4 is replaced by the following:

".4 all floor coverings have low flame spread characteristics."

22 Existing paragraph 23.6 is replaced by the following:

"6 all upholstered furniture has qualities of resistance to the ignition and propagation of flame, this being determined in accordance with the Fire Test Procedures Code."

23 The following new paragraph 23.7 is added:

"7 all bedding components have qualities of resistance to the ignition and propagation of flame, this being determined in accordance with the Fire Test Procedures Code."

24 The following new paragraph 34 is added:

"34 *Fire Test Procedures Code* means the International Code for Application of Fire Test Procedures, as adopted by the Maritime Safety Committee of the Organization by resolution MSC.61(67), as may be amended by the Organization, provided that such amendments are adopted, brought into force and take effect in accordance with the provisions of article VIII of the present Convention concerning the amendment procedures applicable to the Annex other than chapter I."

#### **Regulation 12 - Automatic sprinkler, fire detection and fire alarm systems**

25 Existing paragraph 1.2 is replaced by the following:

"1.2 Each section of sprinklers shall include means for giving a visual and audible alarm signal automatically at one or more indicating units whenever any sprinkler comes into operation. Such alarm systems shall be such as to indicate if any fault occurs in the system. Such units shall indicate in which section served by the system fire has occurred and shall be centralized on the navigation bridge and in addition, visible and audible alarms from the unit shall be located in a position other than on the navigation bridge, so as to ensure that the indication of fire is immediately received by the crew."

26 Existing paragraphs 1.2.1 and 1.2.2 are deleted.

#### **Regulation 16 - Ventilation systems in ships other than passenger ships carrying more than 36 passengers**

27 Existing text of paragraph 1.1 is replaced by the following:

"1 these ducts shall be of a material which has low flame spread characteristics."

28 The following new paragraph 11 is added:

"11 The following arrangements shall be tested in accordance with the Fire Test Procedures Code:

.1 fire dampers, including relevant means of operation; and



- .2 duct penetrations through "A" class divisions. Where steel sleeves are directly joined to ventilation ducts by means of rivetted or screwed flanges or by welding, the test is not required."

#### **Regulation 17 - Fireman's outfit**

- 29 At the end of paragraph 3.1.1 the following sentence is added:

"however, for stairway enclosures which constitute individual main vertical zones and for the main vertical zones in the fore or aft end of a ship which do not contain spaces of categories 26.2.2(6), (7), (8) or (12), no additional fireman's outfits are required."

#### **Regulation 18 - Miscellaneous items**

- 30 In the parenthesis below the title of the regulation, the words "and 8" in the first sentence are deleted and the following sentence is added:

"Paragraph 8 of this regulation applies to ships constructed on or after 1 July 1998."

- 31 Existing paragraph 8 is replaced by the following:

"8 Provisions for helicopter facilities shall be in accordance with the standards developed by the Organization\*."

\* Refer to the standards to be developed by the Organization.

### **PART B - FIRE SAFETY MEASURES FOR PASSENGER SHIPS**

#### **Regulation 24 - Main vertical zones and horizontal zones**

- 32 The third sentence of existing paragraph 1.1 is replaced by the following:

"Where a category 26.2.2(5), (9) or (10) space is on one side or where fuel oil tanks are on both sides of the division, the standard may be reduced to A-0."

#### **Regulation 26 - Fire integrity of bulkheads and decks in ships carrying more than 36 passengers**

- 33 The words "26.1 to 26.4" in paragraph 1 are replaced by "26.1 and 26.2" and the superscript "d" is added in the fourth row under columns 6, 7, 8 and 9 of table 26.1 and the following note is added to table 26.1:

"<sup>d</sup> Where spaces of category 6, 7, 8 and 9 are located completely within the outer perimeter of the muster station, the bulkheads of these spaces are allowed to be of "B-0" class integrity. Control positions for audio, video and light installations may be considered as part of the muster station."

**Regulation 28 - Means of escape**

34 At the end of paragraph 1.10, "." is replaced by "; and".

35 The following new subparagraph .11 is added:

"11 In all passenger ships carrying more than 36 passengers, the requirements of 1.10 and regulation 41-2.4.7 shall also apply to the crew accommodation areas."

**Regulation 30 - Openings in "A" class divisions**

36 Existing paragraph 4 is replaced by the following:

"4 Fire doors in main vertical zone bulkheads, galley boundaries and stairway enclosures other than power-operated watertight doors and those which are normally locked, shall satisfy the following requirements:

- .1 the doors shall be self-closing and be capable of closing against an angle of inclination of up to 3.5° opposing closure;
- .2 the approximate time of closure for hinged fire doors shall be no more than 40 s and no less than 10 s from the beginning of their movement with the ship in upright position. The approximate uniform rate of closure for sliding fire doors shall be of no more than 0.2 m/s and no less than 0.1 m/s with the ship in the upright position;
- .3 the doors shall be capable of remote release from the continuously manned central control station, either simultaneously or in groups and shall be capable of release also individually from a position at both sides of the door. Release switches shall have an on-off function to prevent automatic resetting of the system;
- .4 hold-back hooks not subject to central control station release are prohibited;
- .5 a door closed remotely from the central control station shall be capable of being re-opened at both sides of the door by local control. After such local opening, the door shall automatically close again;
- .6 indication shall be provided at the fire door indicator panel in the continuously manned central control station whether each of the remote-released doors are closed;
- .7 the release mechanism shall be so designed that the door will automatically close in the event of disruption of the control system or main source of electric power;

- .8 local power accumulators for power-operated doors shall be provided in the immediate vicinity of the doors to enable the doors to be operated after disruption of the control system or main source of electric power at least ten times (fully opened and closed) using the local controls;
- .9 disruption of the control system or main source of electric power at one door shall not impair the safe functioning of the other doors;
- .10 remote-released sliding or power-operated doors shall be equipped with an alarm that sounds for at least 5 s but no more than 10 s after the door is released from the central control station and before the door begins to move and continue sounding until the door is completely closed;
- .11 a door designed to re-open upon contacting an object in its path shall re-open not more than 1 m from the point of contact;
- .12 double-leaf doors equipped with a latch necessary to their fire integrity shall have a latch that is automatically activated by the operation of the doors when released by the control system;
- .13 doors giving direct access to special category spaces which are power-operated and automatically closed need not be equipped with the alarms and remote-release mechanisms required in .3 and .10;
- .14 the components of the local control system shall be accessible for maintenance and adjusting; and
- .15 power-operated doors shall be provided with a control system of an approved type which shall be able to operate in case of fire, this being determined in accordance with the Fire Test Procedures Code. This system shall satisfy the following requirements:
  - .15.1 the control system shall be able to operate the door at the temperature of at least 200°C for at least 60 min, served by the power supply;
  - .15.2 the power supply for all other doors not subject to fire shall not be impaired; and
  - .15.3 at temperatures exceeding 200°C the control system shall be automatically isolated from the power supply and shall be capable of keeping the door closed up to at least 945°C."

37 The second sentence of existing paragraph 6 is replaced by the following:

"The requirements for "A" class integrity of the outer boundaries of the ship shall not apply to exterior doors, except for those in superstructures and deckhouses facing life-saving appliances, embarkation and external muster station areas, external stairs and open decks used for escape routes. Stairway enclosure doors need not meet this requirement."

### **Regulation 32 - Ventilation systems**

38 Existing paragraph 1.1 is replaced by the following:

"1.1 The ventilation system of a passenger ship carrying more than 36 passengers shall, in addition to this part of this regulation, also be in compliance with the requirements of regulations 16.2 to 16.6, 16.8, 16.9 and 16.11."

39 Existing paragraph 1.4.3.1 is replaced by the following:

"3.1 the duct is constructed of a material which has low flame spread characteristics;"

### **Regulation 34 - Restricted use of combustible materials**

40 Existing paragraph 2 is replaced by the following:

"2 Vapour barriers and adhesives used in conjunction with insulation, as well as insulation of pipe fittings, for cold service systems need not be non-combustible, but they shall be kept to the minimum quantity practicable and their exposed surfaces shall have low flame spread characteristics."

41 Existing paragraph 7 is replaced by the following:

"7 Paints, varnishes and other finishes used on exposed interior surfaces shall not be capable of producing excessive quantities of smoke and toxic products, this being determined in accordance with the Fire Test Procedures Code."

42 Existing paragraph 8 is replaced by the following:

"8 Primary deck coverings, if applied within accommodation and service spaces and control stations, shall be of an approved material which will not readily ignite or give rise to toxic or explosive hazards at elevated temperatures, this being determined in accordance with the Fire Test Procedures Code."

**Note:** In paragraph 5 of regulation 34, an asterisk is added to the expression "calorific value", together with the following footnote:

"  
\* The gross calorific value measured in accordance with ISO standard 1716 - "Building Materials - Determination of Calorific Potential", should be quoted."

### **Regulation 37 - Protection of special category spaces**

43 In paragraph 1.2.1, the following third sentence is added:

"Where fuel oil tanks are below a special category space, the integrity of the deck between such spaces may be reduced to "A-0" standard."

44 The following new paragraph 4 is added:

**"4 Permanent openings for ventilation**

Permanent openings in the side plating, the ends or deckhead of special category spaces shall be so situated that a fire in the special category space does not endanger stowage areas and embarkation stations for survival craft and accommodation spaces, service spaces and control stations in superstructures and deckhouses above the special category spaces."

**Regulation 38 - Protection of cargo spaces, other than special category spaces, intended for the carriage of motor vehicles with fuel in their tanks for their own propulsion**

45 The following new paragraphs 5 and 6 are added:

**"5 Permanent openings for ventilation**

Permanent openings in the side plating, the ends or deckhead of cargo spaces shall be so situated that a fire in the cargo space does not endanger stowage areas and embarkation stations for survival craft and accommodation spaces, service spaces and control stations in superstructures and deckhouses above the cargo spaces.

**6 Structural protection**

For ro-ro cargo spaces of ships constructed on or after 1 July 1998, the requirements of paragraphs 1.1, 1.2 and 1.3 of regulation 38-1 shall be complied with."

46 The following new regulation 38-1 is added:

**"Regulation 38-1**

**Protection of closed and open ro-ro cargo spaces, other than special category spaces and ro-ro cargo spaces intended for the carriage of motor vehicles with fuel in their tanks**

**1 General**

1.1 The basic principles underlying regulation 37.1.1 also apply to this regulation.

1.2 In passenger ships carrying more than 36 passengers, the boundary bulkheads and decks of closed and open ro-ro cargo spaces shall be insulated to "A-60" class standard. However, where a category 26.2.2(5), (9) or (10) space is on one side of the division, the standard may be reduced to "A-0". Where fuel oil tanks are below a ro-ro cargo space, the integrity of the deck between such spaces may be reduced to "A-0" standard.

1.3 In passenger ships carrying not more than 36 passengers the boundary bulkheads and decks of closed and open ro-ro cargo spaces shall have a fire integrity as required for category (8) spaces in table 27.1 and the horizontal boundaries as required for category (8) spaces in table 27.2.

1.4 Permanent openings in the side plating, the ends or deckhead of open and closed ro-ro cargo spaces shall be so situated that a fire in the cargo space does not endanger stowage areas and embarkation stations for survival craft and accommodation spaces, service spaces and control stations in superstructures and deckhouses above the cargo spaces.

## **2 Closed ro-ro cargo spaces**

Closed ro-ro cargo spaces shall comply with the requirements of regulation 38, except for paragraph 4 of that regulation.

## **3 Open ro-ro cargo spaces**

Open ro-ro cargo spaces shall comply with the requirements of regulations 37.1.3, 37.2.1, 38.1, except that a sample extraction smoke detection system is not permitted, and 38.2.3."

# **PART C - FIRE SAFETY MEASURES FOR CARGO SHIPS**

## **Regulation 49 - Restricted use of combustible materials**

47 Existing paragraph 2 is replaced by the following:

"2 Paints, varnishes and other finishes used on exposed interior surfaces shall not be capable of producing excessive quantities of smoke and toxic products, this being determined in accordance with the Fire Test Procedures Code."

48 Existing paragraph 3 is replaced by the following:

"3 Primary deck coverings, if applied within accommodation and service spaces and control stations, shall be of approved material which will not readily ignite, or give rise to toxic or explosive hazards at elevated temperatures, this being determined in accordance with the Fire Test Procedures Code."

## **Regulation 50 - Details of construction**

49 Existing paragraph 3.1 is replaced by the following:

"3.1 Except in cargo spaces or refrigerated compartments of service spaces, insulating materials shall be non-combustible. Vapour barriers and adhesives used in conjunction with insulation, as well as the insulation of pipe fittings, for cold service systems, need not be of non-combustible materials, but they shall be kept to the minimum quantity practicable and their exposed surfaces shall have low flame spread characteristics."

**Note :** In paragraph 3.2 of this regulation, an asterisk is added to the expression "calorific value", together with the following footnote:

"  
\* The gross calorific value measured in accordance with ISO standard 1716 - "Building Materials - Determination of Calorific Potential", should be quoted."

**Regulation 53 - Fire protection arrangements in cargo spaces**

50 Existing paragraphs 1.2 and 1.3 are replaced by the following:

"1.2 Notwithstanding the provisions of paragraph 1.1, any cargo space in a ship engaged in the carriage of dangerous goods on deck or in cargo spaces shall be provided with a fixed gas fire-extinguishing system complying with the provisions of regulation 5 or with a fire-extinguishing system which, in the opinion of the Administration, gives equivalent protection for the cargoes\* carried.

1.3 The Administration may exempt from the requirements of paragraphs 1.1 and 1.2 cargo spaces of any ship if constructed and solely intended for the carriage of ore, coal, grain, unseasoned timber, non-combustible cargoes or cargoes which, in the opinion of the Administration, constitute a low fire risk\*\*. Such exemptions may be granted only if the ship is fitted with steel hatch covers and effective means of closing all ventilators and other openings leading to the cargo spaces\*\*\*. When such exemptions are granted, the Administration shall issue an Exemption Certificate, irrespective of the date of construction of the ship concerned, in accordance with regulation I/12(a)(vi), and shall ensure that the list of cargoes the ship is permitted to carry is attached to the Exemption Certificate."

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\* For cargoes for which a fixed gas fire-extinguishing system is ineffective, refer to the list of cargoes in table 2 of MSC/Circ.671.

\*\* For cargoes considered to be non-combustible or which constitute a low fire risk, refer to the list of cargoes in table 1 of MSC/Circ.671.

\*\*\* Refer to the Code of Safe Practice for Solid Bulk Cargoes - Emergency schedule B 14, entry for coal.

51 The following new paragraph 2.5 is added:

"2.5 Permanent openings in the side plating, the ends or deckhead of open and closed ro-ro cargo spaces shall be so situated that a fire in the cargo space does not endanger stowage areas and embarkation stations for survival craft and accommodation spaces, service spaces and control stations in superstructures and deckhouses above the cargo spaces."

**Regulation 54 - Special requirements for ships carrying dangerous goods**

52 The following new paragraph 2.4.3 is added:

"2.4.3 Natural ventilation shall be provided in enclosed cargo spaces intended for the carriage of solid dangerous goods in bulk, where there is no provision for mechanical ventilation."

53 The following new paragraphs 2.10 and 2.11 are added:

"2.10 In ships having ro-ro cargo spaces, a separation shall be provided between a closed ro-ro cargo space and an adjacent open ro-ro cargo space. The separation shall be such as to minimize the passage of dangerous vapours and liquids between such spaces. Alternatively, such separation need not be provided if the ro-ro cargo space is considered to be a closed cargo space over its entire length and shall fully comply with the relevant special requirements of this regulation.

2.11 In ships having ro-ro cargo spaces, a separation shall be provided between a closed ro-ro cargo space and the adjacent weather deck. The separation shall be such as to minimize the passage of dangerous vapours and liquids between such spaces. Alternatively, a separation need not be provided if the arrangements of the closed ro-ro cargo spaces are in accordance with those required for the dangerous goods carried on the adjacent weather deck."

**Note:** The following footnote is added to the title of regulation 54:

"

\* Refer to the International Maritime Dangerous Goods Code, as amended and the Code of Safe Practice for Solid Bulk Cargoes, adopted by resolution A.434(XI), as amended"



**Table 54.1 - Application of the requirements to different modes of carriage of dangerous goods in ships and cargo spaces**

54 Existing table 54.1 is replaced by the following:

"Wherever X appears in table 54.1 it means that this requirement is applicable to all classes of dangerous goods as given in the appropriate line of table 54.3, except as indicated by the notes.

Regulation 54.1.2	Weather decks .1 to .5 inclusive	.1 Not specifically designed	.2 Container cargo spaces	.3		.4 Solid dangerous goods in bulk	.5 Shipborne barges
				Closed ro-ro cargo spaces <sup>3</sup>	Open ro-ro cargo spaces		
Regulation 54.2							
.1.1	X	X	X	X	X	For application of requirements of regulation 54 to different classes of dangerous goods, see table 54.2	X
.1.2	X	X	X	X	X		-
.1.3	-	X	X	X	X		X
.1.4	-	X	X	X	X		X
.2	-	X	X	X	X		X <sup>4</sup>
.3	-	X	X	X	-		X <sup>4</sup>
.4.1	-	X	X <sup>1</sup>	X	-		X <sup>4</sup>
.4.2	-	X	X <sup>1</sup>	X	-		X <sup>4</sup>
.5	-	X	X	X	-		-
.6.1	X	X	X	X	X		-
.6.2	X	X	X	X	X		-
.7	X	X	-	-	X		-
.8	X	X	X <sup>2</sup>	X	X		-
.9	-	-	-	X <sup>3</sup>	X	-	

*Notes*

- 1 For classes 4 and 5.1 not applicable to closed freight containers.  
For classes 2, 3, 6.1 and 8 when carried in closed freight containers the ventilation rate may be reduced to not less than two air changes. For the purpose of this requirement a portable tank is a closed freight container.
- 2 Applicable to decks only.
- 3 Applies only to closed ro-ro cargo spaces, not capable of being sealed.
- 4 In the special case where the barges are capable of obtaining flammable vapours or alternatively if they are capable of discharging flammable vapour to a safe space outside the barge carrier compartment by means of ventilation ducts connected to the barges, these requirements may be reduced or waived to the satisfaction of the Administration.
- 5 Special category spaces shall be treated as closed ro-ro cargo spaces when dangerous goods are carried."

**Table 54.2 - Application of the requirements to different classes of dangerous goods for ships and cargo spaces carrying solid dangerous goods in bulk**

55 Existing table 54.2 is replaced by the following:

"

Class	4.1	4.2	4.3 <sup>6</sup>	5.1	6.1	8	9
Regulation							
54.2.1.1	X	X	-	X	-	-	X
54.2.1.2	X	X	-	X	-	-	X
54.2.2	X	X <sup>7</sup>	X	X <sup>8</sup>	-	-	X <sup>8</sup>
54.2.4.1	-	X <sup>7</sup>	X	-	-	-	-
54.2.4.2	X <sup>9</sup>	X <sup>7</sup>	X	X <sup>7,9</sup>	-	-	X <sup>7,9</sup>
54.2.4.3	X	X	X	X	X	X	X
54.2.6	X	X	X	X	X	X	X
54.2.8	X	X	X	X <sup>7</sup>	-	-	X <sup>10</sup>

*Notes*

- 6 The hazards of substances in this class which may be carried in bulk are such that special consideration must be given by the Administration to the construction and equipment of the ship involved in addition to meeting the requirements enumerated in this table.
- 7 Only applicable to Seedcake containing solvent extractions, to Ammonium nitrate and to Ammonium nitrate fertilizers.
- 8 Only applicable to Ammonium nitrate and to Ammonium nitrate fertilizers. However, a degree of protection in accordance with standards contained in the International Electrotechnical Commission, publication 79 - Electrical Apparatus for Explosive Gas Atmospheres, is sufficient.
- 9 Only suitable wire mesh guards are required.
- 10 The requirements of the Code of Safe Practice for Solid Bulk Cargoes adopted by resolution A.434(XI), as amended, are sufficient."

**Table 54.3 - Application of the requirements to different classes of dangerous goods except solid dangerous goods in bulk**

56 Existing table 54.3 is replaced by the following:

Class	1.1-1.6	1.4S	2.1	2.2	2.3	3.1 3.2	3.3	4.1	4.2	4.3	5.1	5.2	6.1 liquids	6.1 liquids ≤23°C	6.1 liquids >23°C ≤61°C	6.1 solids	8 liquids	8 liquids ≤23°C	8 liquids >23°C ≤61°C	8 solids	9
Regulation																					
54.2.1.1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
54.2.1.2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-
54.2.1.3	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
54.2.1.4	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
54.2.2	X	-	X	-	-	X	-	-	-	-	-	-	-	X	-	-	-	X	-	-	-
54.2.3	X	X	X	X	X	X	X	X	X	X	X	-	X	X	X	X	X	X	X	X	-
54.2.4.1	-	-	X	-	X	X	-	X <sup>11</sup>	X <sup>11</sup>	X	X <sup>11</sup>	-	-	X	X	X <sup>11</sup>	-	X	X	-	X <sup>11</sup>
54.2.4.2	-	-	X	-	-	X	-	-	-	-	-	-	-	X	X	-	-	X	X	-	-
54.2.5	-	-	-	-	-	X	-	-	-	-	-	-	X	X	X	-	-	X	-	-	-
54.2.6	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X <sup>14</sup>
54.2.7	-	-	-	-	-	X	X	X	X	X	X	-	-	X	X	-	-	X	X	-	-
54.2.8	X <sup>12</sup>	-	X	X	X	X	X	X	X	X	X <sup>13</sup>	-	-	X	X	-	-	X	X	-	-
54.2.9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Notes

- 11 When "mechanically-ventilated spaces" are required by the International Maritime Dangerous Goods Code, as amended.
- 12 Stow 3 m horizontally away from the machinery space boundaries in all cases.
- 13 Refer to the International Maritime Dangerous Goods Code.
- 14 As appropriate to the goods being carried."

## **PART D - FIRE SAFETY MEASURES FOR TANKERS**

### **Regulation 56 - Location and separation of spaces**

57 The sentence below the title is replaced by the following:

"(This regulation applies to ships constructed on or after 1 February 1992, except that paragraph 9 applies to ships constructed on or after 1 July 1998) "

58 Existing paragraph 7 is replaced by the following:

"7 Exterior boundaries of superstructures and deckhouses enclosing accommodation and including any overhanging decks which support such accommodation, shall be constructed of steel and insulated to "A-60" standard for the whole of the portions which face the cargo area and on the outward sides for a distance of 3 m from the end boundary facing the cargo area. In the case of the sides of those superstructures and deckhouses, such insulation shall be carried as high as is deemed necessary by the Administration."

59 The second sentence in existing paragraph 8.3 is replaced by the following:

"Such windows and sidescuttles, except wheelhouse windows, shall be constructed to "A-60" class standard."

60 The following new paragraph 9 is added:

"9 On every ship to which this regulation applies, where there is permanent access from a pipe tunnel to the main pump-room, a watertight door shall be fitted complying with the requirements of regulation II-1/25-9.2 and in addition with the following:

- .1 in addition to bridge operation, the watertight door shall be capable of being manually closed from outside the main pump-room entrance; and
- .2 the watertight door shall be kept closed during normal operations of the ship except when access to the pipe tunnel is required".

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### **Regulation 59 - Venting, purging, gas-freeing and ventilation**

61 The following new paragraph 1.2.3 is added:

"3 a secondary means of allowing full flow relief of vapour, air or inert gas mixtures to prevent over-pressure or under-pressure in the event of failure of the arrangements in 1.2.2. Alternatively, pressure sensors may be fitted in each tank protected by the arrangement required in 1.2.2, with a monitoring system in the ship's cargo control room or the position from which cargo operations are normally carried out. Such monitoring equipment shall also provide an alarm facility which is activated by detection of over-pressure or under-pressure conditions within a tank."

62 Existing paragraph 1.3.2 is replaced by the following:

"1.3.2 Where the arrangements are combined with other cargo tanks, either stop valves or other acceptable means shall be provided to isolate each cargo tank. Where stop valves are fitted, they shall be provided with locking arrangements which shall be under the control of the responsible ship's officer. There shall be a clear visual indication of the operational status of the valves or other acceptable means. Where tanks have been isolated, it shall be ensured that relevant isolating valves are opened before cargo loading or ballasting or discharging of those tanks is commenced. Any isolation must continue to permit the flow caused by thermal variations in a cargo tank in accordance with paragraph 1.2.1."

63 The following new paragraph 1.3.3 is added:

"1.3.3 If cargo loading and ballasting or discharging of a cargo tank or cargo tank group is intended, which is isolated from a common venting system, that cargo tank or cargo tank group shall be fitted with a means for over-pressure or under-pressure protection as required in paragraph 1.2.3"

64 The following new paragraph 1.11 is added:

"1.11 Ships constructed before 1 July 1998 shall comply with the requirements of paragraphs 1.2.3 and 1.3.3 by the date of the first scheduled dry-docking after 1 July 1998, but not later than 1 July 2001."

65 The following new paragraph 5 is added:

**"5 Combustible gas indicators**

All tankers shall be equipped with at least one portable instrument for measuring flammable vapour concentrations, together with a sufficient set of spares. Suitable means shall be provided for the calibration of such instruments."

**Regulation 62 - Inert gas systems**

66 In paragraph 11.2.1, the following sentence is added at the end:

"The control system operated shall provide positive indication of the operational status of such valves."

**CHAPTER V**  
**SAFETY OF NAVIGATION**

67 Existing regulation 15-1 is deleted.

**CARRIAGE OF DANGEROUS GOODS**

**Regulation 2 - Classification**

68 "Class 6.1 - Poisonous (toxic) substances" is replaced by the following:

"Class 6.1 - Toxic substances".

69 The words "Miscellaneous dangerous substances, that is" in the existing text for Class 9 are replaced by the following:

"Miscellaneous dangerous substances and articles, i.e."

**Regulation 7 - Explosives in passenger ships**

70 The following new paragraph 1.5 is added:

"1.5 articles in compatibility group N shall only be allowed in passenger ships if the total net explosive mass does not exceed 50 kg per ship and no other explosives, apart from division 1.4 compatibility group S, are carried."

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