

ประกาศกรมเจ้าท่า

ที่ ๘๓/๒๕๖๖

เรื่อง ข้อแก้ไขเพิ่มเติมของอนุสัญญาระหว่างประเทศว่าด้วยความปลอดภัยแห่งชีวิตในทะเล ค.ศ. ๑๙๗๔
บทที่ II-1 ว่าด้วยการต่อเรือ - โครงสร้าง การแบ่งระวางและความทรงตัว การติดตั้งเครื่องจักรและไฟฟ้า

(CHAPTER II-1 CONSTRUCTION - STRUCTURE, SUBDIVISION AND
STABILITY, MACHINERY AND ELECTRICAL INSTALLATIONS)

เพื่อให้การปฏิบัติงานเกี่ยวกับการตรวจเรือโดยสาร การตรวจเรือสินค้า การออก และการสลักหลังใบสำคัญรับรอง ตามกฎข้อบังคับสำหรับการตรวจเรือ กำหนดหลักเกณฑ์ วิธีการ และเงื่อนไข ในการออกใบสำคัญรับรองเกี่ยวกับความปลอดภัยแห่งชีวิตในทะเล พ.ศ. ๒๕๕๙ และประกาศกรมเจ้าท่า ที่ ๖๕/๒๕๖๔ เรื่อง แนวทางปฏิบัติในการตรวจและออกใบสำคัญรับรองเกี่ยวกับความปลอดภัยแห่งชีวิตในทะเลเป็นไปอย่างมีประสิทธิภาพ สอดคล้องกับข้อกำหนดของอนุสัญญาระหว่างประเทศว่าด้วยความปลอดภัยแห่งชีวิตในทะเล ค.ศ. ๑๙๗๔ และที่แก้ไขเพิ่มเติม (International Convention for the Safety of Life at Sea, 1974 (SOLAS), as amended)

อธิบดีกรมเจ้าท่าจึงประกาศกำหนดให้ใช้ข้อแก้ไขเพิ่มเติมของอนุสัญญาระหว่างประเทศว่าด้วยความปลอดภัยแห่งชีวิตในทะเล ค.ศ. ๑๙๗๔ (AMENDMENTS TO THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974) บทที่ II-1 ว่าด้วยการต่อเรือ - โครงสร้าง การแบ่งระวางและความทรงตัว การติดตั้งเครื่องจักรและไฟฟ้า (CHAPTER II-1 CONSTRUCTION STRUCTURE, SUBDIVISION AND STABILITY, MACHINERY AND ELECTRICAL INSTALLATIONS) ที่รับรองโดยข้อมติของคณะกรรมการความปลอดภัยทางทะเล ที่ MSC.474(102) เพื่อเป็นแนวทางปฏิบัติในการตรวจและออกใบสำคัญรับรองเกี่ยวกับความปลอดภัยแห่งชีวิตในทะเล ที่เกี่ยวกับการต่อเรือ โครงสร้าง การแบ่งระวางและความทรงตัว การติดตั้ง เครื่องจักรและไฟฟ้า ตามกฎข้อบังคับสำหรับการตรวจเรือ กำหนดหลักเกณฑ์ วิธีการ และเงื่อนไขในการออกใบสำคัญรับรองเกี่ยวกับความปลอดภัยแห่งชีวิตในทะเล พ.ศ. ๒๕๕๙ รายละเอียดของข้อมติปรากฏตามภาคผนวกที่แนบท้ายประกาศนี้

ประกาศ ณ วันที่ ๑๗ มีนาคม พ.ศ. ๒๕๖๖

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อธิบดีกรมเจ้าท่า

ภาคผนวก

ข้อแก้ไขเพิ่มเติมของอนุสัญญาระหว่างประเทศว่าด้วยความปลอดภัยแห่งชีวิตในทะเล ค.ศ. ๑๙๗๔
บทที่ II-1 ว่าด้วยการต่อเรือ - โครงสร้าง การแบ่งระวางและความทรงตัว การติดตั้งเครื่องจักรและไฟฟ้า
(CHAPTER II-1 CONSTRUCTION – STRUCTURE, SUBDIVISION AND STABILITY, MACHINERY AND
ELECTRICAL INSTALLATIONS) ตาม MSC.474(102)

RESOLUTION MSC.474(102)
(adopted on 11 November 2020)

**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 ALSO article VIII(b) of the International Convention for the Safety of Life at Sea, 1974 ("the Convention"), concerning the amendment procedure applicable to the annex to the Convention other than to the provisions of chapter I,

HAVING CONSIDERED, at its 102nd session, amendments to the Convention proposed and circulated in accordance with article VIII(b)(i) of the Convention,

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 said amendments shall be deemed to have been accepted on 1 July 2023, 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 the Secretary-General of their objections to the amendments;

3 INVITES Contracting Governments to the Convention to note that, in accordance with article VIII(b)(vii)(2) of the Convention, the amendments shall enter into force on 1 January 2024 upon their acceptance in accordance with paragraph 2 above;

4 REQUESTS the Secretary-General, for the purposes of 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 REQUESTS ALSO 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 – STRUCTURE, SUBDIVISION AND STABILITY, MACHINERY AND ELECTRICAL INSTALLATIONS

Part A General

Regulation 1 – Application

1 The existing paragraph 1.3 is replaced by the following:

"1.3 For the purpose of this chapter:

- .1 the expression *ships constructed* means ships the keels of which are laid or which are at a similar stage of construction;
- .2 the expression *ships constructed on or after 1 January 2024* means ships:
 - .1 for which the building contract is placed on or after 1 January 2024; or
 - .2 in the absence of a building contract, the keel of which is laid or which are at a similar stage of construction on or after 1 July 2024; or
 - .3 the delivery of which is on or after 1 January 2028.
- .3 the expression *all ships* means ships constructed before, on or after 1 January 2009;
- .4 a cargo ship, whenever built, which is converted to a passenger ship shall be treated as a passenger ship constructed on the date on which such a conversion commences."

Part A-1 Structure of ships

Regulation II-1/3-8 – Towing and mooring equipment

2 Regulation 3-8 is replaced by the following:

"1 Paragraphs 4 to 6 of this regulation apply to ships constructed on or after 1 January 2007.

2 Paragraphs 7 and 8 of this regulation only apply to ships:

- .1 for which the building contract is placed on or after 1 January 2024; or

- .2 in the absence of a building contract, the keel of which is laid or which is at a similar stage of construction on or after 1 July 2024; or
 - .3 the delivery of which is on or after 1 January 2027.
- 3 This regulation does not apply to towing arrangements provided in accordance with regulation 3-4.
- 4 Ships shall be provided with arrangements, equipment and fittings of sufficient safe working load to enable the safe conduct of all towing and mooring operations associated with the normal operation of the ship.
- 5 Arrangements, equipment and fittings provided in accordance with paragraph 4 above shall meet the appropriate requirements of the Administration or an organization recognized by the Administration under regulation I/6.
- 6 Each fitting or item of equipment provided under this regulation shall be clearly marked with any limitations associated with its safe operation, taking into account the strength of the supporting ship's structure and its attachment to it.
- 7 For ships of 3,000 gross tonnage and above, the mooring arrangement shall be designed, and the mooring equipment including lines shall be selected, in order to ensure occupational safety and safe mooring of the ship, based on the guidelines developed by the Organization. Ship-specific information shall be provided and kept on board.
- 8 Ships of less than 3,000 gross tonnage should comply with the requirement in paragraph 7 above as far as reasonably practicable, or with applicable national standards of the Administration.
- 9 For all ships, mooring equipment, including lines, shall be inspected and maintained in a suitable condition for their intended purposes.

Part B-1

Stability

Regulation 7-2 – Calculation of the factor s_i

- 3 Paragraphs 5.2, 5.3 and 5.5 are replaced by the following:

"5.2 The factor s_i is to be taken as zero in those cases where the final waterline, taking into account sinkage, heel and trim, immerses:

- .1 for cargo ships, the lower edge of openings through which progressive flooding may take place and such flooding is not accounted for in the calculation of factor s_i . Such openings shall include air pipes, ventilators and openings which are closed by means of weathertight doors or hatch covers;
- .2 any part of the bulkhead deck in passenger ships considered a horizontal evacuation route for compliance with chapter II-2; and
- .3 for passenger ships subject to the provisions of regulation 1.1.1.1 and constructed before 1 January 2024, the lower edge of openings through which progressive flooding may take place and such flooding is not accounted for in the calculation of factor s_i . Such

openings shall include air pipes, ventilators and openings which are closed by means of weathertight doors or hatch covers.

5.3 The factor s_i is to be taken as zero if, taking into account sinkage, heel and trim, any of the following occur in any intermediate stage or in the final stage of flooding:

- .1 immersion of any vertical escape hatch in the bulkhead deck of passenger ships and the freeboard deck of cargo ships intended for compliance with chapter II-2;
- .2 any controls intended for the operation of watertight doors, equalization devices, valves on piping or on ventilation ducts intended to maintain the integrity of watertight bulkheads from above the bulkhead deck of passenger ships and the freeboard deck of cargo ships become inaccessible or inoperable;
- .3 immersion of any part of piping or ventilation ducts located within the assumed extent of damage and carried through a watertight boundary if this can lead to the progressive flooding of compartments not assumed as flooded; and
- .4 for passenger ships constructed on or after 1 January 2024, immersion of the lower edge of openings through which progressive flooding may take place and such flooding is not accounted for in the calculation of factor s_i . Such openings shall include air pipes, ventilators and openings which are closed by means of weathertight doors or hatch covers.

5.5 Except as provided in paragraph 5.3.1, openings closed by means of watertight manhole covers and flush scuttles, remotely operated sliding watertight doors, side scuttles of the non-opening type as well as watertight access doors and watertight hatch covers required to be kept closed during navigation in accordance with regulations 22 to 24 need not be considered."

Part B-2

Subdivision, watertight and weathertight integrity

Regulation 12 – Peak and machinery space bulkheads, shaft tunnels, etc.

4 At the beginning of paragraph 6.1, the text "For ships subject to the provisions of regulation 1.1.1.1 and constructed before 1 January 2024," is added; the word "Except" is replaced by "except"; and the reference to "paragraph 6.2" is replaced by "paragraph 6.3".

5 A new paragraph 6.2 is inserted after existing paragraph 6.1 and the subsequent paragraph is renumbered accordingly:

"6.2 For ships constructed on or after 1 January 2024, except as provided in paragraph 6.3, the collision bulkhead may be pierced below the bulkhead deck of passenger ships and the freeboard deck of cargo ships by not more than one pipe for dealing with fluid in the forepeak tank, provided that the pipe is fitted with a remotely controlled valve capable of being operated from above the bulkhead deck of passenger ships and the freeboard deck of cargo ships. The valve shall be normally closed. If the remote control system should fail during operation of the valve, the valve shall close automatically or be capable of being closed manually from a position above the bulkhead deck of passenger ships and the freeboard deck of cargo ships. The valve shall be located at the collision bulkhead on either the forward or aft side,

provided the space on the aft side is not a cargo space. The valve shall be of steel, bronze or other approved ductile material. Valves of ordinary cast iron or similar material are not acceptable."

Regulation 13 – Openings in watertight bulkheads below the bulkhead deck in passenger ships

6 Regulation 13, including its title, is replaced by the following:

"Regulation 13 – Openings in watertight boundaries below the bulkhead deck in passenger ships

1 The number of openings in watertight boundaries shall be reduced to the minimum compatible with the design and proper working of the ship; satisfactory means shall be provided for closing these openings.

2.1 Where pipes, scuppers, electric cables, etc., are carried through watertight boundaries, arrangements shall be made to ensure the watertight integrity of the boundaries.

2.2 Valves not forming part of a piping system shall not be permitted in watertight boundaries.

2.3 Lead or other heat-sensitive materials shall not be used in systems which penetrate watertight boundaries, where deterioration of such systems in the event of fire would impair the watertight integrity of the boundaries.

3 No doors, manholes or access openings are permitted in watertight transverse bulkheads dividing a cargo space from an adjoining cargo space, except as provided in paragraph 8.1 and in regulation 14.

4 Subject to paragraph 9, not more than one door, apart from the doors to shaft tunnels, may be fitted in each watertight bulkhead within spaces containing the main and auxiliary propulsion machinery, including boilers serving the needs of propulsion. Where two or more shafts are fitted, the tunnels shall be connected by an intercommunicating passage. There shall be only one door between the machinery space and the tunnel spaces where two shafts are fitted and only two doors where there are more than two shafts. All these doors shall be of the sliding type and shall be so located as to have their sills as high as practicable. The hand gear for operating these doors from above the bulkhead deck shall be situated outside the spaces containing the machinery.

5.1 Watertight doors, except as provided in paragraph 8.1 or regulation 14, shall be power-operated sliding doors complying with the requirements of paragraph 6.

5.2 The means of operation whether by power or by hand of any power-operated sliding watertight door shall be capable of closing the door with the ship listed to 15° either way. Consideration shall also be given to the forces which may act on either side of the door as may be experienced when water is flowing through the opening applying a static head equivalent to a water height of at least 1 m above the sill on the centreline of the door.

5.3 Watertight door controls, including hydraulic piping and electric cables, shall be kept as close as practicable to the bulkhead in which the doors are fitted, in order to minimize the likelihood of them being involved in any damage which the ship may sustain. The positioning of watertight doors and their controls shall be such that if the ship sustains damage within one fifth of the breadth of the ship, as defined in regulation 2, such distance being measured at right angles to the centreline at the

level of the deepest subdivision draught, the operation of the watertight doors clear of the damaged portion of the ship is not impaired.

6.1 Each power-operated sliding watertight door:

- .1 shall have a vertical or horizontal motion;
- .2 shall, subject to paragraph 9, be normally limited to a maximum clear opening width of 1.2 m. The Administration may permit larger doors only to the extent considered necessary for the effective operation of the ship provided that other safety measures, including the following, are taken into consideration:
 - .1 special consideration shall be given to the strength of the door and its closing appliances in order to prevent leakages; and
 - .2 the door shall be located inboard the damage zone *B/5*;
- .3 shall be fitted with the necessary equipment to open and close the door using electric power, hydraulic power or any other form of power that is acceptable to the Administration;
- .4 shall be provided with an individual hand-operated mechanism. It shall be possible to open and close the door by hand at the door itself from either side and, in addition, close the door from an accessible position above the bulkhead deck with an all-round crank motion or some other movement providing the same degree of safety acceptable to the Administration. Direction of rotation or other movement is to be clearly indicated at all operating positions. The time necessary for the complete closure of the door, when operating by hand gear, shall not exceed 90 s with the ship in the upright position. Visual indicators to show whether the door is open or closed shall be provided at the accessible position above the bulkhead deck;
- .5 shall be provided with controls for opening and closing the door by power from both sides of the door and also for closing the door by power from the central operating console(s) required by paragraph 7.1;
- .6 shall be provided with an audible alarm, distinct from any other alarm in the area, which will sound whenever the door is closed remotely by power and which shall sound for at least 5 s but no more than 10 s before the door begins to move and shall continue sounding until the door is completely closed. In the case of remote hand operation it is sufficient for the audible alarm to sound only when the door is moving. Additionally, in passenger areas and areas of high ambient noise the Administration may require the audible alarm to be supplemented by an intermittent visual signal at the door; and
- .7 shall have an approximately uniform rate of closure under power. The closure time, from the time the door begins to move to the time it reaches the completely closed position, shall in no case be less than 20 s or more than 40 s with the ship in the upright position.

6.2 The electrical power required for power-operated sliding watertight doors shall be supplied from the emergency switchboard either directly or by a dedicated distribution board situated above the bulkhead deck. The associated control, indication and alarm circuits shall be supplied from the emergency switchboard either directly or by a dedicated distribution board situated above the bulkhead deck and be capable of being automatically supplied by the transitional source of emergency electrical power required by regulation 42.3.1.3 in the event of failure of either the main or emergency source of electrical power.

6.3 Power-operated sliding watertight doors shall have either:

- .1 a centralized hydraulic system with two independent power sources each consisting of a motor and pump capable of simultaneously closing all doors. In addition, there shall be for the whole installation hydraulic accumulators of sufficient capacity to operate all the doors at least three times, i.e. closed-open-closed, against an adverse list of 15°. This operating cycle shall be capable of being carried out when the accumulator is at the pump cut-in pressure. The fluid used shall be chosen considering the temperatures liable to be encountered by the installation during its service. The power-operating system shall be designed to minimize the possibility of having a single failure in the hydraulic piping adversely affect the operation of more than one door. The hydraulic system shall be provided with a low-level alarm for hydraulic fluid reservoirs serving the power-operated system and a low gas pressure alarm or other effective means of monitoring loss of stored energy in hydraulic accumulators. These alarms are to be audible and visual and shall be situated on the central operating console(s) required by paragraph 7.1; or
- .2 an independent hydraulic system for each door with each power source consisting of a motor and pump capable of opening and closing the door. In addition, there shall be a hydraulic accumulator of sufficient capacity to operate the door at least three times, i.e. closed-open-closed, against an adverse list of 15°. This operating cycle shall be capable of being carried out when the accumulator is at the pump cut-in pressure. The fluid used shall be chosen considering the temperatures liable to be encountered by the installation during its service. A low gas pressure group alarm or other effective means of monitoring loss of stored energy in hydraulic accumulators shall be provided at the central operating console(s) required by paragraph 7.1. Loss of stored energy indication at each local operating position shall also be provided; or
- .3 an independent electrical system and motor for each door with each power source consisting of a motor capable of opening and closing the door. The power source shall be capable of being automatically supplied by the transitional source of emergency electrical power as required by regulation 42.4.2 – in the event of failure of either the main or emergency source of electrical power and with sufficient capacity to operate the door at least three times, i.e. closed-open-closed, against an adverse list of 15°.

For the systems specified in paragraphs 6.3.1, 6.3.2 and 6.3.3, provision should be made as follows: Power systems for power-operated sliding watertight doors shall be separate from any other power system. A single failure in the electric or hydraulic

power-operated systems excluding the hydraulic actuator shall not prevent the hand operation of any door.

6.4 Control handles shall be provided at each side of the bulkhead at a minimum height of 1.6 m above the floor and shall be so arranged as to enable persons passing through the doorway to hold both handles in the open position without being able to set the power closing mechanism in operation accidentally. The direction of movement of the handles in opening and closing the door shall be in the direction of door movement and shall be clearly indicated.

6.5 As far as practicable, electrical equipment and components for watertight doors shall be situated above the bulkhead deck and outside hazardous areas and spaces.

6.6 The enclosures of electrical components necessarily situated below the bulkhead deck shall provide suitable protection against the ingress of water.

6.7 Electric power, control, indication and alarm circuits shall be protected against fault in such a way that a failure in one door circuit will not cause a failure in any other door circuit. Short circuits or other faults in the alarm or indicator circuits of a door shall not result in a loss of power operation of that door. Arrangements shall be such that leakage of water into the electrical equipment located below the bulkhead deck will not cause the door to open.

6.8 A single electrical failure in the power operating or control system of a power-operated sliding watertight door shall not result in a closed door opening. Availability of the power supply should be continuously monitored at a point in the electrical circuit as near as practicable to each of the motors required by paragraph 6.3. Loss of any such power supply should activate an audible and visual alarm at the central operating console(s) required by paragraph 7.1.

7.1 A central operating console for all power-operated sliding watertight doors shall be located in the safety centre in accordance with regulation II-2/23. If the safety centre is located in a separate space adjacent to the navigation bridge, a central operating console shall also be located on the navigation bridge. The central operating console(s) shall have a "master mode" switch with two modes of control: a "local control" mode, which shall allow any door to be locally opened and locally closed after use without automatic closure, and a "doors closed" mode, which shall automatically close any door that is open in not more than 60 s with the ship in an upright position. The "doors closed" mode shall permit doors to be opened locally and shall automatically re-close the doors upon release of the local control mechanism. The "master mode" switch shall normally be in the "local control" mode. The "doors closed" mode shall only be used in an emergency or for testing purposes.

7.2 For ships subject to the provisions of regulation 1.1.1.1 and constructed before 1 January 2024, the central operating console at the navigation bridge shall be provided with a diagram showing the location of each door, with visual indicators to show whether each door is open or closed. A red light shall indicate a door is fully open and a green light shall indicate a door is fully closed. When the door is closed remotely the red light shall indicate the intermediate position by flashing. The indicating circuit shall be independent of the control circuit for each door.

7.3 For ships constructed on or after 1 January 2024, the central operating console(s) shall be provided with a diagram showing the location of each power-operated sliding watertight door, with visual indicators to show whether each door is open or closed. A red light shall indicate a door is fully open and a green light shall indicate a door is fully closed. When the door is closed remotely the red light

shall indicate the intermediate position by flashing. The indicating circuit shall be independent of the control circuit for each door. Indication shall also be provided to the onboard stability computer, if installed in accordance with regulation II-1/8-1.3.1.

7.4 It shall not be possible to remotely open any door from the central operating console.

8.1 If the Administration is satisfied that such doors are essential, watertight doors of satisfactory construction may be fitted in watertight bulkheads dividing cargo spaces on 'tween decks. Such doors may be hinged, rolling or sliding doors but shall not be remotely controlled. They shall be fitted at the highest level and as far from the shell plating as practicable, but in no case shall the outboard vertical edges be situated at a distance from the shell plating which is less than one fifth of the breadth of the ship, as defined in regulation 2, such distance being measured at right angles to the centreline at the level of the deepest subdivision draught.

8.2 Should any such doors be accessible during the voyage, they shall be fitted with a device which prevents unauthorized opening. When it is proposed to fit such doors, the number and arrangements shall receive the special consideration of the Administration.

9 Portable plates on bulkheads shall not be permitted except in machinery spaces. The Administration may permit not more than one power-operated sliding watertight door larger than those specified in paragraph 6.1.2 to be substituted for these portable plates in each watertight bulkhead, provided these doors are intended to remain closed during navigation except in case of urgent necessity at the discretion of the master. These doors need not meet the requirements of paragraph 6.1.4 regarding complete closure by hand-operated gear in 90 s.

10.1 Where trunkways or tunnels for access from crew accommodation to the machinery spaces, for piping, or for any other purpose are carried through watertight bulkheads, they shall be watertight and in accordance with the requirements of regulation 16-1. The access to at least one end of each such tunnel or trunkway, if used as a passage at sea, shall be through a trunk extending watertight to a height sufficient to permit access above the bulkhead deck. The access to the other end of the trunkway or tunnel may be through a watertight door. Such trunkways or tunnels shall not extend through the first subdivision bulkhead abaft the collision bulkhead.

10.2 Where it is proposed to fit tunnels piercing watertight bulkheads, these shall receive the special consideration of the Administration.

10.3 Where trunkways in connection with refrigerated cargo and ventilation or forced draught trunks are carried through more than one watertight bulkhead, the means of closure at such openings shall be operated by power and be capable of being closed from a central position situated above the bulkhead deck."

Regulation 15 – Openings in the shell plating below the bulkhead deck of passenger ships and the freeboard deck of cargo ships

7 Paragraph 9 is replaced by the following:

"9 For ships subject to the provisions of regulation 1.1.1.1 and constructed before 1 January 2024, gangway, cargo and fuelling ports fitted below the bulkhead deck of passenger ships and the freeboard deck of cargo ships shall be watertight

and in no case be so fitted as to have their lowest point below the deepest subdivision draught."

- 8 The following new paragraph 10 is inserted after new paragraph 9 and existing paragraphs 10.1 and 10.2 are deleted.

"10 For ships constructed on or after 1 January 2024, cargo ports and other similar openings (e.g. gangway and fuelling ports) in the side of ships below the bulkhead deck of passenger ships and the freeboard deck of cargo ships shall be fitted with doors so designed as to ensure the same watertightness and structural integrity as the surrounding shell plating. Unless otherwise granted by the Administration, these openings shall open outwards. The number of such openings shall be the minimum compatible with the design and proper working of the ship. In no case shall these openings be so fitted as to have their lowest point below the deepest subdivision draught."

Regulation 16 – Construction and initial tests of watertight closures

- 9 Paragraph 1.1 is replaced by the following:

"1.1 The design, materials and construction of all watertight closures such as doors, hatches, sidescuttles, gangway and cargo ports, valves and pipes referred to in these regulations shall be to the satisfaction of the Administration."

Regulation 17 – Internal watertight integrity of passenger ships above the bulkhead deck

- 10 Paragraph 1 is replaced by the following:

"1 For passenger ships subject to the provisions of regulation 1.1.1.1 and constructed before 1 January 2024, the Administration may require that all reasonable and practicable measures shall be taken to limit the entry and spread of water above the bulkhead deck. Such measures may include partial bulkheads or webs. When partial watertight bulkheads and webs are fitted on the bulkhead deck, above or in the immediate vicinity of watertight bulkheads, they shall have watertight shell and bulkhead deck connections so as to restrict the flow of water along the deck when the ship is in a heeled damaged condition. Where the partial watertight bulkhead does not line up with the bulkhead below, the bulkhead deck between shall be made effectively watertight. Where openings, pipes, scuppers, electric cables, etc. are carried through the partial watertight bulkheads or decks within the immersed part of the bulkhead deck, arrangements shall be made to ensure the watertight integrity of the structure above the bulkhead deck."

- 11 The following new paragraphs 2 and 3 are inserted after new paragraph 1 and the subsequent paragraphs are renumbered accordingly:

"2 For ships constructed on or after 1 January 2024, the internal watertight subdivision arrangements to limit the entry and spread of water above the bulkhead deck shall be in accordance with the design arrangements necessary for compliance with the stability requirements in part B-1, and part B-2 if applicable. Where pipes, scuppers, electric cables, etc. are carried through internal watertight boundaries that are immersed at any intermediate or final stage of flooding in damage cases that contribute to the attained subdivision index A, arrangements shall be made to ensure their watertight integrity.

3 For ships constructed on or after 1 January 2024, doors in internal watertight subdivision arrangements above the bulkhead deck, and also above the worst intermediate or final stage of flooding waterlines, shall be capable of preventing the passage of water when immersed in the required range of positive stability for any damage cases contributing to the attained subdivision index A. These doors may remain open provided they can be remotely closed from the navigation bridge. They shall always be ready to be immediately closed."

Regulation 17-1 – Integrity of the hull and superstructure, damage prevention and control on ro-ro passenger ships

12 Paragraphs 1.1 to 1.3 are replaced by the following:

"1.1 All access from the ro-ro deck that leads to spaces below the bulkhead deck shall have a lowest point which is not less than 2.5 m above the bulkhead deck, unless the access is covered by the provisions of paragraphs 1.2 or 1.3.

1.2 Where vehicle ramps are installed to give access to spaces below the bulkhead deck, their openings shall be able to be closed weathertight to prevent ingress of water below and fitted with alarms and open/close indicators on the navigation bridge. The means of closure shall be watertight if the deck is intended as a watertight horizontal boundary under regulation 7-2.6.

1.3 Subject to regulations 23.3 and 23.6, the Administration may permit the fitting of particular accesses to spaces below the bulkhead deck provided they are necessary for the essential working of the ship, e.g. the movement of machinery and stores, and subject to such accesses being made watertight, fitted with alarms and open/close indicators on the navigation bridge."

**Part B-4
Stability management**

Regulation 19 – Damage control information

13 The following new paragraph 5 is inserted after existing paragraph 4:

"5 For passenger ships constructed on or after 1 January 2024, and to which regulation 8-1.3 applies, the damage control information shall include a reference to activation of damage stability support from the onboard stability computer, if installed, and to shore-based support when provided."

Regulation 21 – Periodical operation and inspection of watertight doors, etc., in passenger ships

14 Paragraph 1 is replaced by the following:

"1 Operational tests of watertight doors, sidescuttles, valves and closing mechanisms of scuppers shall take place weekly. In ships in which the voyage exceeds one week in duration, a complete set of operational tests shall be held before the voyage commences, and others thereafter at least once a week during the voyage."

Regulation 22 – Prevention and control of water ingress, etc.

15 In paragraphs 1 and 4, existing reference to "regulation 13.10" is replaced by the reference to "regulation 13.9".

16 Paragraphs 5 and 6 are replaced by the following:

"5 Watertight doors fitted in watertight bulkheads dividing cargo spaces on 'tween-decks in accordance with regulation 13.8.1 shall be closed before the voyage commences and shall be kept closed during navigation. The time at which such doors are opened or closed shall be recorded in such logbook as may be prescribed by the Administration.

6 For ships subject to the provisions of regulation 1.1.1.1 and constructed before 1 January 2024, gangway, cargo and fuelling ports fitted below the bulkhead deck of passenger ships and the freeboard deck of cargo ships shall be effectively closed and secured watertight before the voyage commences, and shall be kept closed during navigation."

17 A new paragraph 7 is inserted after existing paragraph 6 and the subsequent paragraphs are renumbered accordingly:

"7 For ships constructed on or after 1 January 2024, gangway, cargo and fuelling ports fitted below the bulkhead deck of passenger ships and the freeboard deck of cargo ships and all watertight hatches shall be effectively closed and secured watertight before the voyage commences, and shall be kept closed during navigation. However, the master may permit a watertight hatch to be opened during navigation for a limited period of time sufficient to permit passage or for access. It shall then be closed."

18 In the renumbered paragraph 8.2, existing reference to "paragraph 7.1" is replaced by reference to "paragraph 8.1".

19 In the renumbered paragraph 8.4, existing text "paragraphs 7.1 to 7.3" is replaced by "paragraphs 8.1 to 8.3".

20 In the renumbered paragraph 10, existing text "paragraphs 7.1 and 7.4" is replaced by "paragraphs 8.1 and 8.4".

21 In the renumbered paragraph 11, existing reference to "paragraph 7" is replaced by reference to "paragraph 8".

22 In the renumbered paragraph 12, existing reference to "paragraph 12" is replaced by reference to "paragraph 13" and the existing reference to "paragraph 13" is replaced by reference to "paragraph 14".

23 Renumbered paragraph 14.2 is replaced by:

".2 For any ship that has one or more sidescuttles so placed that the requirements of paragraph 14 would apply when it was floating at its deepest subdivision draught, the Administration may indicate the limiting mean draught at which these sidescuttles will have their sills above the line drawn parallel to the bulkhead deck at side of passenger ships and the freeboard deck at side of cargo ships, and having its lowest point 1.4 m plus 2.5% of the breadth of the ship above the waterline corresponding to the limiting mean draught, and at which it will therefore be permissible for the voyage to commence without them being closed and locked and to be opened during navigation on the responsibility of the master. In tropical zones as defined in the International Convention on Load Lines, 1966, this limiting draught may be increased by 0.3 m."

24 Renumbered paragraph 17 is deleted.

Regulation 23 – Special requirements for ro-ro passenger ships

25 In paragraph 5, existing reference to "regulation 22.12" is replaced by reference to "regulation 22.13".

Part D
Electrical installations

Regulation 42 – Emergency source of electrical power in passenger ships

26 In paragraph 4.2, existing reference to "regulation 13.7.3.3" is replaced by reference to "regulation 13.6.3.3" and existing reference to "regulation 13.7.2" is replaced by reference to "regulation 13.6.2".