

DIVISION 242
RECREATIONAL VESSELS
WITH A HULL LENGTH
OF 24 M OR MORE
AND OF GROSS TONNAGE OF LESS THAN 3 000

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CHAPTER 242-1 GENERAL

Article 242-1.01

Scope

- I. Unless expressly stipulated otherwise, the provisions of this Division shall apply to new recreational vessels of gross tonnage of less than 3 000 and with a hull 24 m or more in length.
- II. Conformity of the vessels with this Division shall be required for the vessel to be placed in service and, where necessary, for any national safety certificate to be issued, with the exception of certificates relating to the prevention of pollution.
- III. These provisions shall also be equivalent to the requirements of the international conventions in force on the issuing of safety certificates, where such vessels are intended to engage in commercial trade during international voyages. In this case, they shall be considered subject to the international safety certificates of cargo vessels with the same characteristics. The procedures for issuing and renewing these certificates are laid down in Division 130.
- IV. In all cases, the technical rules provided for by international conventions shall apply where they are expressly referred to in the text. Where no explicit reference is made, the only provisions applicable shall be those of this Regulation.
- V. Recreational vessels of gross tonnage of 3 000 or more shall comply with the provisions applicable to cargo vessels of equivalent gross tonnage.
- VI. Where they fall within the scope of the Divisions of this Regulation that apply to recreational vessels intended for competitions, tests, or traditional use, recreational vessels for personal or training use with a hull length of 24 m or more shall not be subject to the provisions of this Division.

Article 242-1.02

Definitions

1. **Main steering gear** consists of the machinery, the system for obtaining the rudder angle, the steering gear power units and the means of applying torque to the rudder stock (e.g. tiller or quadrant) necessary for effecting movement of the rudder and for maintaining it in the desired position, under the specified operating conditions.
2. A **stepped area** is a recess or cavity in a deck having no wall in common with the vessel's hull.
3. The term **fire resistant** means that the surface in question will not continue to burn for more than 20 seconds after the standard fire test flame has been removed, within the meaning of the FTP Code.
4. **Category 1 area:** consists of the exposed parts of the freeboard and the raised quarter-deck and the exposed parts of the superstructure decks extending in front of a point located one-quarter way along the length of the vessel from the forward perpendicular.
5. **Category 2 area:** consists of the exposed parts of the superstructure decks extending behind a point located one-quarter way along the length of the vessel from the forward perpendicular.

6. A **launching appliance or device** is a means of launching a small craft, life raft or rescue boat from its stowed position in complete safety and which meets the requirements of the International Life-Saving Appliance Code (LSA Code).
7. A **standard fire test** is a test during which sample bulkheads, decks and other structures are subjected, in a test oven, to temperatures roughly corresponding to the standard temperature/time curve. The test methods shall comply with the IMO Code of Fire Test Procedures.
8. **Watertight** means the ability to prevent the flow of water in all directions.
9. **Weathertight** has the same meaning as that given in Annex I to the International Convention on Load Lines (LL66). A device is said to be weathertight if it does not allow water to penetrate into the vessel in any of the conditions encountered at sea.
10. The expression **low flame spread** means that the surface in question is sufficiently resistant to the spread of flames, this property being determined to the satisfaction of the competent authority in accordance with a recognised procedure.
11. A **window** is an opening, generally rectangular in shape, with rounded corners, or round or oval in shape, with a surface area greater than 0.16 m².
12. A **buoyant lifeline** is a line that meets the requirements of the International Life-Saving Appliances Code (LSA Code).
13. A **risk area** is a space or compartment in which combustible or explosive gases or vapours may accumulate in dangerous concentrations.
14. **Machinery spaces** are all category A machinery spaces and all other spaces containing propelling machinery, boilers, oil fuel units, steam and internal combustion engines, generators and major electrical machinery, oil filling stations, refrigerating, stabilising, ventilation and air conditioning machinery, and similar spaces, and trunks to such spaces.
15. **Category A machinery spaces** are those spaces and trunks to such spaces which contain:
 - a) internal combustion machinery used for main propulsion; or
 - b) internal combustion machinery used for purposes other than main propulsion where such machinery has a total power output of at least 375 kW; or
 - c) any oil-fired boiler or oil fuel unit.
16. The **length** (L_r) shall be equal to 96% of the total length at a waterline at 85% of the least moulded depth measured from the top of the keel, or to the length from the fore side of the stern and the axis of the rudder stock to the aforesaid waterline, if this value is greater. In the case of vessels designed to sail with a raked keel, the waterline to which the length is measured shall be parallel to the specified load waterline.
17. The **hull length** (L_h) corresponds to the measurement of the length of the vessel in accordance with standard EN/ISO 8666. It is not defined literally as 'overall length' within the meaning of this Division, but where such an overall length is required by other regulatory provisions, the hull length should be used, rather than the length overall or the length within the meaning of the LL66 Convention.
18. The **length overall** corresponds to the hull length extended to the spars and removable equipment. No provision of this Division uses such a method to measure length.
19. A **training manual**, in relation to rescue equipment, means a manual complying with the

provisions of Article 221-III/B/35 - Life-saving equipment and appliances.

20. A **thermal protective aid** is a bag or suit made from a waterproof material and having a low thermal conductance.
21. A **short-range vessel** is an existing vessel of gross tonnage of less than 500 or a new vessel of gross tonnage of less than 300 and:
 - a) limited in its operations in the event of actual or forecast winds of a maximum Force 6 on the Beaufort Scale, and of waves that may reach a significant height of up to 2 metres inclusive, and
 - b) sailing at least 60 nautical miles from shelter. (The competent authority may permit a vessel to sail on specified routes up to 90 nautical miles from shelter, where appropriate).
22. A **Sailing vessel** is a vessel designed to have sails, either as the only means of propulsion, or as an auxiliary means of propulsion.
23. **Control stations** are areas in which the radio, main navigating equipment, emergency power source and central fire detection and extinguishing systems are located.
24. An **emergency electrical power source** is an electrical power source intended to supply the emergency switchboard in the event of failure of the supply from the main power source.
25. A **main electrical power source** is a source intended to supply electrical power to the main switchboard for distribution to all services necessary for maintaining the vessel in normal operational and habitable condition.
26. **Superstructure** has the same meaning as that given in Annex I to the International Convention on Load Lines (LL66).
27. The **emergency switchboard** is the switchboard that, in the event of failure of the main electrical power supply system, is directly supplied by the emergency electrical power source or the temporary electrical power source and is intended to distribute electrical power to the emergency services.
28. The **main switchboard** is the switchboard that is directly supplied by the main electrical power source and is intended to distribute electrical power to the vessel's services.
29. The **main vertical zones** are the zones created as a result of the division of the hull, the superstructures and the deckhouses by type A bulkheads. Their average length above any deck shall not generally exceed 40 m.
30. **International Code for Application of Fire Test Procedures (FTP Code)**: The Fire Test Procedures Code is the International Code for Application of Fire Test Procedures, which the IMO's Maritime Safety Committee adopted by Resolution MSC.61(67) and which may be amended by the latter organisation, provided that such amendments are adopted, brought into force and take effect in accordance with the provisions of Article VIII of the relevant convention, which relate to the applicable amendment procedures in the Annex thereto, with the exception of Chapter 1 of said Annex.
31. **FSS Code**: the Fire Safety Systems Code (FSS Code) is the International Code for Fire Safety Systems, which the IMO's Maritime Safety Committee adopted by Resolution MSC.98(73) and which may be amended by the latter organisation, provided that such amendments are adopted, brought into force and take effect in accordance with the provisions of Article VIII of the relevant convention on the applicable amendment

procedures in the Annex thereto, with the exception of Chapter I of said Annex. This Code, which is supplemented by provisions specific to France, appears in Annex 221-II-2/A.2.

Article 242-1.03

Equivalence

Unless expressly stipulated otherwise, the competent authority may examine any alternative solution providing a level of safety equivalent to the provisions of this Division. Applications of equivalence shall be accompanied by a means of proof. Under no circumstances may the level of safety reached be lower than that provided for in the international conventions made applicable by this Division.

Article 242-1.04

Exemptions

Requests for exemptions from the provisions of this Division shall be sent to the competent authority, and shall be accompanied by a means of proof. No exemption that is not covered by the applicable international conventions may be granted.

Article 242-1.05

Studies and tests

I. Before being placed in service, or in the other cases provided for by the provisions of Division 110, each vessel shall be the subject of a file of plans and documents to be submitted for examination by the competent authority. The list of plans and documents to be provided appears in Annex 242-1.A1. A copy of this file shall be sent to the head of the competent marine safety centre.

II. Unless otherwise indicated, the grouping together of several pieces of information into one document shall be permitted provided that the document is clear and legible.

III. Plans and documents shall be dated and bear the identification of their issuer. They shall be accompanied by reports containing technical comments by the approved body that examined them.

IV. References of approval shall be provided for all on-board marine equipment.

Article 242-1.06

Identification of vessels

I. A unique identification number shall be assigned to all new vessels that are not obliged to bear an IMO number.

II. This number shall be composed and displayed on the vessel in accordance with the provisions of standard EN/ISO 10087.

However, in the case of vessels not covered by the scope of the above-mentioned Decree of 4 July 1996, and for which the person responsible for design conformity is neither the builder nor his authorised representative, the country code shall be that of France and the code identifying the person responsible for design conformity shall be assigned by the Minister responsible for recreational vessels.

No derogation from the provisions of this Article may be granted.

CHAPTER 242-2

FREEBOARD

Article 242-2.01

General provisions

- I. A minimum freeboard shall be allocated to any vessel falling within the scope of this Division, even where it is not subject to the receipt and renewal of a freeboard certificate.
- II. Recreational vessels of 24 m or longer, where they are used for commercial purposes during international voyages, shall be subject to the rules of the International Convention on Load Lines. However, where these measures are neither reasonable nor necessary in view of these vessels' operating conditions, the provisions of this Division may be applied on an equivalent basis for the purposes of issuing and renewing the international freeboard certificate.
- III. For the purposes of allocating a minimum freeboard, other types of vessel shall comply with the provisions of this Division only. The competent authority may examine any exemption request where it is impossible to implement a required provision on a vessel with a hull length equal to or greater than 24 m, but less than 24 m within the meaning of the International Convention on Load Lines.

Article 242-2.02

Minimum freeboard

- I. The minimum freeboard shall be determined in accordance with the rules of the International Convention on Load Lines. For vessels with a hull length equal to or greater than 24m, but less than 24m within the meaning of the International Convention on Load Lines, the minimum freeboard shall not be less than 200mm.
- II. The minimum freeboard in fresh water, measured in mm, shall be determined as follows: minimum freeboard subtracted from $\Delta / 4T$ where Δ is the displacement in salt water at the loaded draught, and T the mass in tonnes corresponding to each centimetre of immersion at the load line.

Article 242-2.03

Freeboard marks

- I. All vessels shall include a set of marks making it possible to check at all times that the minimum freeboard is being maintained.
- II. A mark at the bow and stern of the vessel shall make it possible to determine its draught and attitude. However, in view of the operating conditions of the vessels covered by this Division, these marks shall not be required to comply with the requirements of the International Convention on Load Lines, provided that they can be immediately and easily read at all times.

Article 242-2.04

Freeboard certificates

All freeboard certificates shall be issued in accordance with the provisions of Division 130. The format of the national freeboard certificate shall be that laid down in Annex 222-2.A.1. The format of the international freeboard certificate shall be that laid down in Annex III of the Convention.

CHAPTER 242-3

CONSTRUCTION, SUBDIVISION, DRAINAGE

Article 242-3.01

Solidity of the construction

I. New and existing vessels shall be built in accordance with the requirements of an approved classification society and shall receive a class certificate for the hull and machinery. The classification shall include the hull, machinery, electrical installations, shafting, steering gear and mooring and docking apparatus. Vessels' operating conditions may not exceed the limits laid down by their classification certificates.

II. However, existing vessels of gross tonnage of less than 500 shall not be obliged to have classification certificates, provided that their operation is in all cases restricted to the following limits:

- a) actual or forecast winds of a maximum Force 6 on the Beaufort Scale, and waves that may reach a significant height of up to 2 metres inclusive, and;
- b) sailing at least 60 miles from a place in which all persons on board may be kept safe, or, where necessary, 90 miles from a place in which all persons on board may be kept safe on certain routes approved by the competent authority.

Article 242-3.02

Freeboard deck

I. Each vessel shall contain a freeboard deck, within the meaning of Annex I to the International Convention on Load Lines. The freeboard deck shall normally be the highest full deck exposed to the sea and bad weather having permanent devices for closing all openings located in the exposed parts and below which the openings used in the plating are fitted with permanent watertight closing devices.

II. However, on vessels having no continuous freeboard deck, the lowest part of the exposed deck and its extension parallel to the upper part of the freeboard deck shall be considered as the freeboard deck.

III. A lower deck may be considered as the freeboard deck, provided that it is complete, permanent, continuous athwartship and continuous in the fore and aft direction between the machinery spaces and the bow and stern bulkheads.

IV. Where this lower deck is discontinuous, the lowest part and its extension parallel to the highest parts of this deck shall be considered as the freeboard deck. Where a lower deck is designated as the freeboard deck, the part of the hull extending above the freeboard deck shall be considered as a superstructure with regard to the application of the conditions of assignment and of the freeboard calculations. The freeboard shall be calculated from this deck.

Article 242-3.03

Weather deck

The weather deck is the highest full deck forming an integral part of the structure and which is exposed to the sea and bad weather. It may be separate or merged with the freeboard deck. This deck shall be identified in the study of any new vessel falling within the scope of this Division.

Article 242-3.04

Sealed bulkheads

I. Sealed bulkheads shall meet the requirements of this Article. Their positions shall ensure that the vessel remains sufficiently buoyant to meet damage stability requirements, where appropriate.

II. Their resistance, watertightness and the openings and gangways installed therein shall meet the requirements of an approved body.

III. Openings in sealed bulkheads shall be made in accordance with the provisions applicable to passenger ships, as laid down in Article 221-II-1/15.

Article 242-3.05

Portes étanches

I. Approved hinged doors may be installed in sealed bulkheads. Where such doors are not closed, an audio and visual alarm shall be triggered in the wheelhouse.

II. Except where required by Article 242-3.06 – ‘Closed compartments located below the freeboard deck and accessible via openings on the hull’, hinged watertight doors may be approved on vessels of gross tonnage of less than 500, where there is an audio and visual alarm on the bridge indicating that the door is open. The triggering of this alarm may be timer-controlled. Doors shall be kept closed to the sea and shall display instructions to this effect at all times.

III. The procedures relating to the handling of watertight doors shall be validated by the competent authority and displayed at appropriate locations. Watertight doors shall be kept closed, with the exception of sliding watertight doors providing normal access to frequently used accommodation spaces. Furthermore, where an access point is liable not to be used for long periods of time, the door shall also be closed. All watertight doors shall be operated before the vessel gets under way, and once a week during navigation.

Article 242-3.06

Closed compartments located below the freeboard deck and accessible via openings on the hull

I. Closed compartments intended for the storage of recreational equipment, or to serve as recreational platforms, for the filling up with fuel or fresh water, or for other uses relating to the operation of the vessel, and which are located below the freeboard deck, being accessible via openings in the hull, shall be insulated from each other by sealed bulkheads.

II. They shall also be insulated from another compartment located below the freeboard deck, unless they are fitted with sliding watertight doors that meet the requirements of Article 242-3.05 – ‘Watertight doors’, or, in the case of vessels of tonnage of less than 500, with hinged doors that meet the requirements of the paragraph below.

III. Openings in the hull shall meet the requirements of Article 221-II-1/25-10 – ‘External openings on board cargo vessels’.

IV. Measures shall be taken to ensure that these doors may be closed and locked manually in the event of failure of the electricity or water supply. However, on board vessels of tonnage of less than 500, openings between two compartments located below the freeboard deck may be of the hinged watertight type, subject to the following requirements:

a) Either once water has entered the compartment with an opening on the hull, the waterline remains below the threshold of the openings used in said compartment;

b) Or the set of measures below are complied with:

1. flood alarms are fitted in the flood-risk compartment, with audible and visible repetition in the wheelhouse, and;
2. all hinged doors giving on to the flood-risk compartment open on to said compartment, and;
3. audio and visual alarms are fitted in the wheelhouse, indicating that the door is in the open position, and;
4. the door is fitted with a unique closing system, and;
5. the threshold of the door is at a higher position above the waterline than the threshold of the opening on to the hull.

Article 242-3.07

Masts and spars

I. Sampling of masts and spars shall comply with the provisions of an approved body, or with a national or international standard, or must be justified to the satisfaction of the competent authority.

II. The structure associated with the masts and spars, including the fixtures, decks and floors, must be able to absorb and transmit the forces in question during operation.

Article 242-3.08

Running and standing rigging

I. Cables made wholly of textile shall be permitted in running and standing rigging, but cores of textile may not be used for the metal cables of stays and guys.

II. The resistance of pulleys, shackles, turnbuckles, cleats and their fixtures shall be greater than the breaking load of the part of the associated running or standing rigging.

III. The chain plates of the standing rigging must be able to withstand and transmit the forces in question during operation.

Article 242-3.09

General monitoring of rigging

The state of the rigging shall be monitored in accordance with a maintenance schedule. The schedule shall include, in particular, regular monitoring of all equipment used to work safely at heights in the masts and on the bowsprit mast.

Article 242-3.10

Sail handling

I. Suitable means of winding and reducing the sails shall be installed.

II. Vessels shall be fitted with storm sails, or specific sails that may be reduced in the same manner as storm sails. However, short-range vessels shall not be obliged to carry storm sails.

Article 242-3.11

Drainage

I. The drainage system and the installation thereof shall meet the requirements of the regulation of an approved body and the provisions of this Chapter.

II. All vessels shall be fitted with at least two fixed pumps operated by power sources independent of each other, with suction pipes arranged such that any compartment may be drained where the vessel lists at a 10° angle. In the case of short-range vessels, the second pump and the suction pipes may be mobile.

III. The pumps, their individual power sources and their controls, including those of the valves, shall be arranged such that, in the event of flooding in any compartment, there remains at least one other pump available for draining the water entering compartments adjacent to the flooded compartment.

IV. Each bilge pump suction system shall be fitted with an effective strainer.

V. Vessels with periodically unattended machinery spaces shall have a flood alarm that can be seen and heard in the captain's cabin and the wheelhouse. However, the competent authority may permit this alarm to be sited in another place if it is deemed more appropriate.

VI. In holds in which hydrocarbons posing a fire risk at least equal to that of diesel fuel may accumulate both during normal operation and where damage has been caused, the pumps and bilge system shall be located far away from the accommodation spaces and shall be separate from the bilge systems serving said spaces. Said holds shall be fitted with flood alarms meeting the requirements of paragraph V.

Article 242-3.12

Additional drainage provisions for vessels of gross tonnage of 500 or more

I. The drainage systems of new and existing vessels of gross tonnage of 500 or more shall comply with the provisions of Articles 221-II-1/21, 221-II-1/21a and 221-II-1/21b.

II. At least two pumps shall be installed in all cases. Their capacity, the size of the main bilge pipe and the connections shall meet the requirements of passenger ships.

CHAPTER 242-4

CONDITIONS OF ASSIGNMENT OF FREEBOARD

Article 242-4.01

Virtual freeboard deck

- I. For the purposes of this Section, where the actual freeboard on the weather deck exceeds that required by the International Convention on Load Lines by at least the height of one standard superstructure, the openings on this deck, abaft of the forward quarter, shall be deemed to be in position 2, subject to contrary provisions laid down in said Convention.
- II. In the case of vessels with a freeboard less than 75 m in length, the height of a standard superstructure shall be 1.8 m. In the case of vessels with a freeboard greater than 125 m in length, it shall be 2.3 m. The standard superstructure heights for medium-length vessels shall be obtained by interpolation.

Article 242-4.02

General provisions relating to hatches and skylights

- I. All openings giving on to spaces below the weather deck, which cannot be made weathertight, shall be located either in a closed superstructure or in a sufficiently resistant deckhouse that meets the conditions of assignment of freeboard laid down by the competent authority.
- II. All exposed hatchways used for access that are located in a category 1 or 2 area shall be fitted with effective weathertight closure devices. Weathertight hatch covers shall be permanently fitted to the surrounding structure and shall be equipped with devices suitable for maintaining the hatch in the closed position.
- III. Emergency exits shall be fitted with covers that may be opened from both sides and, in order to aid exit, they must be able to be opened without a key. No handles located on the inside must be able to be removed. Emergency exits shall be easily identifiable and easy and safe to use, whatever their location.

Article 242-4.03

Hatches open to the sea

In general, hatches shall be kept closed to the sea. However, the dimensions of hatches that may be kept open to the sea shall be limited as far as possible, and under no circumstances shall the clear passage section exceed 1 m². These hatches shall be fitted with regulatory coaming complying with the provisions laid down in Article 242-4.04. They shall be positioned as near as possible to the centre line of the vessel, particularly on single-hull vessels. Hatch covers shall be permanently fitted to the hatch coaming and, where they are hinged, they shall be located on the fore side.

Article 242-4.04

Gangways located on the weather deck

- I. Doors in the deckhouses and superstructures that give on to spaces located below the weather deck shall be weathertight and have coaming of the following minimum heights:

Position	General	Short range
A	600 mm	300 mm
B	300 mm	150 mm
C	150 mm	75 mm

Position A: the door is located in the forward quarter of the vessel's length.

Position B: the door is located in a forward wall, in an exposed area, abaft of the forward quarter of the vessel.

Position C: the door is in a protected area abaft of the forward quarter of the vessel, or in an unprotected area on the forward third of the first deck above the exposed deck.

II. Weathertight doors shall open outwards and, where they are located on a side wall, the hinges shall be on the fore side of the vessel. Equivalent devices may be approved if the effectiveness of the closing devices and their ability to prevent the intake of water is demonstrated and does not reduce safety.

III. A door giving directly on to the machinery room, from the exposed deck, shall be fitted with a coaming of the following minimum height:

	General	Short range
Category 1 area	600 mm	450 mm
Category 2 area	380 mm	200 mm

IV. Except for doors giving directly on to the machinery room, the provisions relating to the height of the coaming of weathertight doors that are used only when the vessel is in port or moored in calm and sheltered waters and that are locked in the closed position when the vessel is at sea, may be reduced to half that of the provisions of the other paragraphs of this Article.

Article 242-4.05

Companion hatch openings

- I. Companion hatch openings providing access to spaces located below the weather deck shall be fitted with coaming of at least 300 mm above the deck, or of 150 mm in the case of short-range vessels.
- II. Removable coaming may be used to close the vertical opening. Where said coaming is used, it shall be installed and fixed so that it cannot be quickly displaced. Where it is put away, measures shall be taken to ensure that it is stowed in a safe position.
- III. The maximum width of a companion hatch opening shall not under any circumstances exceed 1 m.

Article 242-4.06

Skylights

- I. Skylights shall be weathertight and located as near as possible to the centre line of the vessel. If they are of the opening type, they shall be fitted with effective devices enabling them to be kept in the closed position.
- II. Skylights designated as emergency exits may open from both sides and, for exit purposes, must be able to be opened without a key. No handles located on the inside must be able to be removed. Emergency exits shall be easily identifiable and easy and safe to use, whatever their location.

- III. Windows and the method of fitting them within frames shall comply with the provisions of an approved body or with standards recognised as equivalent by the competent authority.
- IV. At least one removable blanking panel per size of glazed opening shall be taken on board. It shall be quick to access and stowed effectively in the event of a skylight breaking.

Article 242-4.07
Deck panels

Flush hatches may be installed, provided that their resistance is the same as the deck on which they are positioned, that their fixtures are robust, and, in the case of hinged panels, that they are mounted on the fore (closure in case of green sea). They shall also be weathertight and shall display the instruction: ‘Access to a watertight compartment – keep closed to the sea’.

Article 242-4.08
Sidescuttles

- I. Sidescuttles shall be of a strength suitable for their position on the vessel and shall comply with the provisions of recognised classification societies or with standards deemed to be equivalent. The structure and strength of sidescuttles shall be checked by an approved body. The strength shall be equivalent to that of the structure on which the sidescuttle is fixed.
- II. Sidescuttles located in areas protecting openings on to spaces located below the weather deck or located on the vessel’s hull shall be fitted with a permanently attached deadlight, ensuring the watertightness of the opening in the event of the glass breaking. The competent authority may agree to the use of removable deadlights, taking account of the position of the sidescuttles in question and the speed with which the deadlights can be implemented. Particular attention shall be paid to providing the captain with instructions on the installation of deadlights on sidescuttles.
- III. Sidescuttles located in the plating, below the freeboard deck level, shall:
 - α) either not be able to be opened;
 - β) or trigger a sound and light alarm in the wheelhouse if opened.
- Iϕ. The height of the lower edge of the sidescuttles above the highest load waterline assigned to the vessel shall be at least 500 mm or 2.5% of the width of the vessel, if this value is greater.
- ϕ. No sidescuttles shall be located within a machinery compartment.

Article 242-4.09
Windows

- I. Windows shall be of a strength suitable for their position on the vessel and shall comply with the provisions of an approved body or with standards recognised as equivalent by the competent authority.
- II. The structure and strength of windows shall be checked by an approved body. The strength shall be equivalent to that of the structure on which the window is fixed. Where the window is of insufficient strength, the competent authority may limit the navigation conditions in accordance with the report by the approved body. In this case, any international freeboard certificate issued shall include details of the limitations.
- III. For all vessels, where the material or thickness of the glass and the fitting of the windows does not meet the requirements of a recognised standard, the windows may be tested, to the competent authority’s satisfaction, under at least 4 times the required nominal pressure

determined by a national or international standard. Furthermore, the sampling methods shall comply with the regulation of an approved body. Where windows are fitted with deadlights, the provisions of paragraph VI shall apply. In the case of short-range vessels, the test pressure may be reduced to 2.5 times the required nominal pressure.

- IV. Windows located in weathertight superstructures or on deckhouses shall have a solid frame and be fixed solidly to the structure. The glass panes shall consist of toughened safety glass.
- V. Where chemically-toughened safety glass is used, the glass shall be of the multiplayer type, the minimum width of the chemical toughening on the exposed sides shall be 30 microns. Regular monitoring of the glass panes, more specifically the surface state thereof, shall be provided for in the on-board operational procedures and shall be the subject of periodic visits carried out by an approved body.
- VI. Windows shall not normally be fitted in the hull plating below the freeboard deck. Where they are fitted in the plating, they shall be approved by the competent authority, according to their position, strength, including that of their support, and to the availability of solid deadlights. Particular attention shall be paid to providing the captain with operating instructions on the installation of deadlights.
- VII. Except for short-range vessels, closing covers shall be required for all windows fitted on the bow and sides of the first superstructure deck and on the front of the second superstructure deck or of weathertight deckhouses above the freeboard deck.
- VIII. Where the windows are of the multilayer type and the width of the toughened safety glass exceeds the requirements of the applied standard by at least 30%, covers shall not be mandatory, but a closing cover shall instead be provided for each window size. Where the closing covers are interchangeable between port and starboard, a minimum 50% shall be provided for for each size.
- IX. Windows located on the bow and sides of the wheelhouse shall not be made of polarized or tinted glass.

Article 242-4.10
Airshafts and exhaust outlets

- I. A suitable ventilation system shall be provided for throughout the vessel. The fixtures and fittings shall be protected from gas emissions and smoke coming from the machinery installations.
- II. Airshafts shall have a robust structure and shall each contain a permanently secured, weathertight closing device. Airshafts serving a compartment located below the freeboard deck or a closed superstructure shall be fitted with a coaming of the following minimum height:

	General	Short range
Forward quarter of the length	900 mm	450 mm
Everywhere else	760 mm	380 mm

- III. Airshafts shall be positioned as far as possible in the axis of the vessel. Their height above the deck shall be sufficient to prevent the intake of water where the vessel lists.
- IV. The closing devices of air vents serving a machinery space shall be chosen according to the fire protection devices and extinguishing apparatus present in the space in question.
- V. The exhaust pipes of internal combustion machinery that cross the hull below the freeboard deck shall be fitted with mechanisms preventing the intake of water in the event of damage to the exhaust. Except on board short-range vessels, a mechanical closing device shall be provided

for. The system shall provide strength equivalent to that of the external hull. In the case of short-range vessels, where the installation of such a closing device is not possible, the exhaust shall be fitted with a swanneck of at least 1 000 mm in height above the waterline, and of which the strength is equivalent to that of the hull.

VI. In the case of sailing vessels, where it is not possible to meet the coaming height criteria referred to above, the competent authority may permit devices such as baffles, provided that they substantially limit the intake of water into the vessel.

Article 242-4.11

Air release pipes

I. The air release pipes of hydrocarbon containers and other tanks shall have a robust structure and be fitted with permanently secured, weathertight closing devices. The competent authority may approve the absence of closing devices where the open end of the air release pipe is sufficiently protected by a water intake prevention structure.

II. Where they are located on the weather deck, the air release pipes shall be positioned as far as possible in the axis of the vessel and shall be fitted with a coaming of a height sufficient to prevent any intake of water. The air release pipes of tanks shall be fitted with a coaming of the following minimum height:

	General	Short range
On the freeboard deck	760 mm	380 mm
Everywhere else	450 mm	225 mm

III. The air release pipes of hydrocarbon tanks shall be located at least 760 mm above the upper end of the filling pipe where the latter operates by means of gravity, or above the upper end of the overflow tank if the filling takes place under pressure.

IV. In the case of sailing vessels, where it is not possible to meet the coaming height criteria referred to above, systems such as crossing one side of the air release pipes over the other shall be used, provided that they substantially limit the intake of water into the vessel.

Article 242-4.12

Scuppers, water inlets and outlets

The provisions of the International Convention on Load Lines shall be applied to each outlet through the shell plating, in so far as it is possible and reasonable to do so, and in all cases, water inlets and outlets to the sea shall be fitted with effective stop valves positioned so as to be easily accessible at any time.

Article 242-4.13

Materials used in valves and associated pipes

I. Valves located below the waterline shall be made of steel, bronze or any other material having a similar resistance to shocks, fire and corrosion.

II. The associated pipes, in the locations indicated above, shall be made of steel, bronze, copper or any other equivalent material.

III. The competent authority shall examine the use of plastic pipes taking account of the type of pipe, its position and its use, with reference to the International Code for Application of Fire Test Procedures.

IV. The use of flexible parts shall be reduced to a minimum compatible with the main purpose

of their use.

Article 242-4.14

Freeing ports

I. The provisions relating to the discharge of water accumulated on decks shall comply with the International Convention on Load Lines, in so far as this is possible and reasonable. If the competent authority believes that the requirements of the Convention may not be met, it may examine alternative solutions enabling an equivalent level of security to be achieved.

II. In particular, when calculating the surface area of freeing ports, the following provisions may be applied where there is a well on each side of the vessel between, on the one hand, a superstructure or a deckhouse, and, on the other, the bulwark in said superstructure or said deckhouse. The section of the freeing ports FPREQ required on each side of the vessel and for the well in question shall reach at least $FPREQ = 0.28 \times A_w / B$.

where:

A_w = Surface area of the well in the superstructure or deckhouse

B = Width at the deck

III. In the case of sailing vessels whose bulwark does not exceed 150 mm in height, freeing ports as defined above shall not be necessary.

Article 242-4.15

Stepped areas

I. Any stepped area on the weather deck shall be weathertight and self-draining in normal conditions of pitching and rolling of the vessel. A swimming pool or spa on the deck shall be deemed a stepped area.

II. The drainage devices provided for must be able to function effectively when the vessel lists at an angle of 10° in the case of a motor vessel, and of 30° in the case of a sailing vessel.

III. The drainage devices shall have a capacity sufficient to drain the stepped area in less than 3 minutes when the vessel is at freeboard draught and at zero list. Means shall be provided for to prevent seawater from re-entering the stepped area.

IV. Where it is not possible to provide for a drainage system that complies with the provisions above, alternative safety measures may be subject to the approval of the competent authority, and intact and damage stabilities shall be examined taking account of the water mass and the free surface effect in the stepped areas on the deck.

Article 242-4.16

Minimum stem height

In view of their operating conditions, the vessels covered by this Division shall not be obliged to comply with the provisions of Rule 39 of the International Convention on Load Lines. However, the competent authority may take account of such compliance in the approval of the other conditions of assignment of freeboard, where the latter do not comply with the rules of said Convention.

CHAPTER 242-5

STABILITY

Article 242-5.01

General provisions

- I. Unless expressly stipulated otherwise in this Chapter, the vessels covered by this Division shall comply with the provisions of Division 211 applicable to cargo vessels.
- II. The loading cases to be taken into account are the following, as a minimum:
 - a) Departure of vessel at full load, 100% consumables;
 - b) Arrival of vessel at full load, 10% consumables.
- III. Any permanent ballast shall be installed so as to prevent any unforeseen movement, in accordance with a plan approved by the competent authority. Information relating to the permanent ballast shall be kept in the vessel stability file.
- IV. The buoyancy of closed superstructures complying with Rule 3(10)(b) of the International Convention on Load Lines may be taken into account for the drawing of GZ curves. Superstructures and doors that do not comply with the provisions of Rule 12 of the Convention may not be taken into account.

Article 242-5.02

Intact stability of single hulls

- I. With the exception of sailing vessels, the stability of single-hull vessels shall comply with the provisions of Division 211 applicable to cargo vessels, except for the provisions relating to the determination of the weather criterion.
- II. However, the stability criteria applied to short-range single-hull vessels may be replaced by the following:
 - a) the area under the righting lever curve (GZ curve) shall be at least 0.07 metres-radian up to an angle of heel of 15°, where the maximum GZ occurs at 15°, and at least 0.055 metres-radian up to an angle of heel of 30°, where the maximum GZ occurs at 30° or above. Where the maximum GZ occurs at angles of between 15° and 30°, the corresponding area A_{req} , under the GZ curve, shall be calculated as follows:
$$A_{req} = 0.055 + 0.001 \times (30^\circ - \theta_{max}) \text{ metres-radian};$$
where θ_{max} is the angle of heel in degrees at which the GZ curve reaches its maximum;
 - b) the area under the GZ curve for angles of heel of between 30° and 40° or between 30° and the angle of flooding, where the latter is less than 40°, shall not be less than 0.03 metres-radian;
 - c) the righting lever (GZ) shall be at least 0.20 m at an angle of heel of 30° or more;
 - d) the maximum righting lever GZ shall be reached at an angle of heel of at least 15°;
 - e) after free surface effect corrections have been made, the initial metacentric height (GM) shall not be less than 0.15 m.

Article 242-5.03

Intact stability of multi hulls

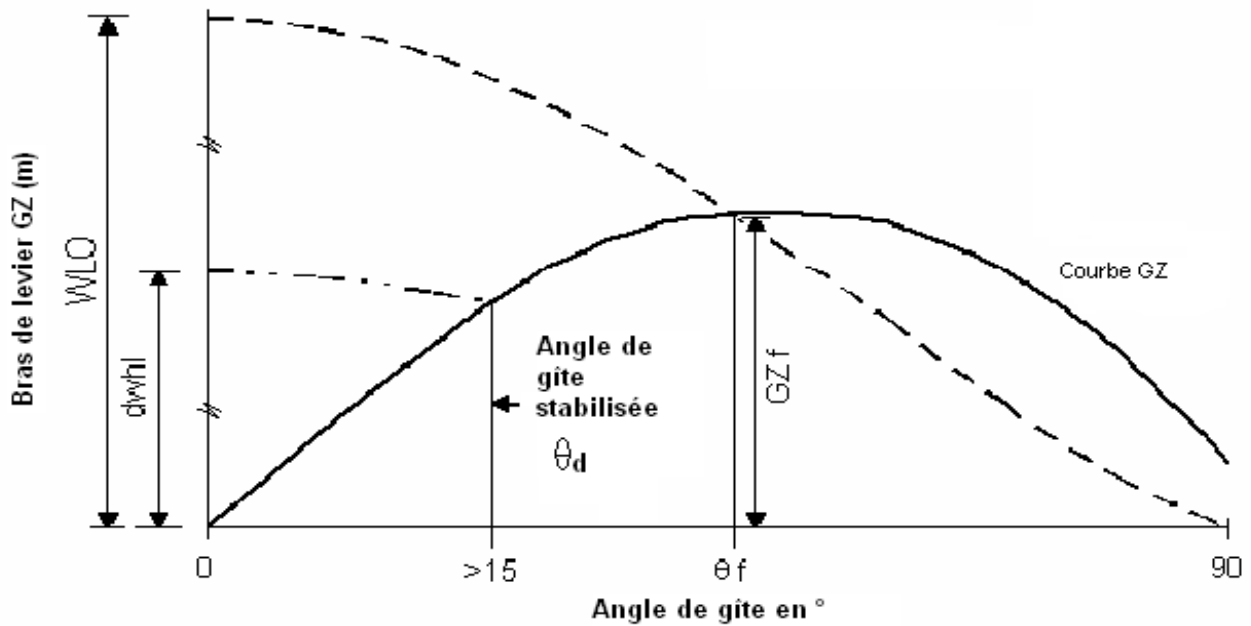
- I. With the exception of sailing vessels, the stability of multi-hull vessels shall comply with the provisions of Division 211 applicable to cargo vessels, with the following stability criteria:
- a) the area under the righting lever curve (GZ curve) shall be at least 0.075 metres-radian up to an angle of heel of 20°, where the maximum GZ is 20°, and at least 0.055 metres-radian up to an angle of heel of 30°, where the maximum GZ is at least 30°. Where the maximum GZ is at angles of between 20° and 30°, the corresponding area A_{req} , under the GZ curve, shall be calculated as follows:

$A_{req} = 0.055 + 0.002 \times (30 - \theta_{max})$ metres-radian, where θ_{max} is the angle of heel in degrees at which the GZ curve reaches its maximum;
 - b) the area under the GZ curve between angles of heel of 30° and 40° or between 30° and the angle of flooding, where the latter is less than 40°, shall be at least 0.03 metres-radian;
 - c) the maximum righting lever (GZ) shall be at least 0.20 m;
 - d) the maximum righting lever shall be at an angle of heel of at least 20°;
 - e) after free surface effect corrections have been made, the initial metacentric height (GM) shall reach at least 0.15 metres, and,
 - f) the competent authority may, depending on the case in question, permit the maximum righting lever (GZ) to be at an angle of less than 20°;
- II. On the other hand, the provisions of Article 211-1.02 concerning the determination of the weather criterion shall not be binding.

Article 242-5.04

Intact stability of single-hull sailing vessels

- I. The stability of single-hull sailing vessels shall comply with the provisions of Division 211 applicable to cargo vessels, with the following stability criteria:
- a) GZ curves shall have a range of positive stability of at least 90°. For vessels of more than 45 m, a range of positive stability of less than 90° may be permitted subject to specific conditions of use.
 - b) Furthermore, the angle of constant heel θ_d shall be greater than 15° (see Figure). The angle of constant heel shall be obtained by intersecting one part of the wind-related sloping righting lever curve with another part of the GZ curve of the loading case being studied.
 - c) In the Figure, d_{whl} is the wind-related sloping righting lever at an angle $\theta^\circ = 0.5 \times \epsilon WLO \times \epsilon \cos^{1.3} \theta$, where $WLO = GZ_f / (\cos^{1.3} \theta_f)$.



Key to diagram:

Bras de levier GZ (m)	Righting lever GZ (m)
Angle de gîte stabilisée	Angle of constant heel
Courbe GZ	GZ curve
Angle de gîte en °	Angle of heel in °

where:

WLO is the value of the sloping righting lever in true wind at 0° that may make the vessel heel up to a θ_f ou 60° angle of flooding, the lowest value being used,

GZ_f is the righting lever of the vessel at the angle of flooding (θ_f) or 60°, the lowest value being used,

θ_d is the angle at which the curve of the wind-related sloping righting lever intersects the GZ curve,

θ_f is the angle of heel at which immersion occurs at the lower side of openings having a total surface area, in square metres, greater than $(\Delta/1500)\epsilon$, where Δ is the displacement of the vessel in tonnes.

- II. All openings regularly used for access and ventilation shall be taken into account when determining the angle of flooding. No opening that may give rise to progressive flooding, whatever its size, shall be immersed at an angle of heel of less than 40°. The air release pipes of tanks may, however, not be taken into account.
- III. If, after the immersion of openings located in a superstructure, a vessel does not meet the stability criteria, these openings may not be taken into account in determining θ_f . However, in this case, openings in the weather deck shall be taken into account, and the GZ curve shall be plotted without the advantage of the buoyancy of the superstructure.
- IV. In all cases, the provisions of this Article are aimed at establishing the capacity, for vessels meeting the stability criteria and which sail at an angle of heel not exceeding the wind-related angle of heel, to withstand a gust 1.4 times the speed of a stable wind (i.e. twice the wind pressure) without immersing the flood openings or heeling at an angle of more than 60°.
- V. The provisions relating to the laying down of the weather criterion of Article 211-1.02 shall

not be binding.

Article 242-5.05
Intact stability
of multi-hull sailing vessels

I. The stability of multi-hull sailing vessels shall comply with the provisions of Division 211 applicable to cargo vessels, but with the following differences.

II. Righting lever curves, under both rolling and pitching conditions, shall be presented for at least the loading case corresponding to the arrival in port with 10% consumables. The vertical centre of gravity (VCG) shall be obtained using one of the following three methods:

a) by a stability test on load cells, the VCG being determined from the moments generated by the measured forces, or,

b) by a separate analysis of the weights of the hull and rigging (including the masts and the running and standing rigging) and by an additional calculation assuming that the VCG of the hull is located at 75% of the hull depth above the sag of the underwater body minus its appendages, and that the VCG of the rigging is located half-way up the mast (or the weighted average of the heights if there are several masts), or,

c) by a detailed weight calculation and calculation of the CG position of all the components making up the vessel, and by adding a 15% margin to the height of the VCG above the sag of the underwater body minus its appendages.

III. Where software is used to determine the longitudinal stability curve, the trim angle shall be determined for a series of longitudinal centre of gravity positions (LCG) placed in front of that used to determine the design waterline. The curve may therefore be determined as follows:

a) $GZ \text{ in trim} = CG' \cos(\text{trim angle})$

b) $\text{Trim angle} = \tan^{-1} \left((T_{FP} - T_{AP}) / L_{BP} \right)$

where:

CG' = displacement of the LCG in front of that required for the design trim, measured parallel to the baseline,

TFP = draught at the forward perpendicular,

TAP = draught at the rear perpendicular,

LBP = length between perpendiculars.

IV. Approximate values of maximum rolling or pitching moments shall not be permitted.

V. The maximum safe apparent wind speed corresponding to each sail combination shall be included in the captain's instructions.

a) Each speed shall be calculated according to the formulae below:

$$V_w = 1.5 \times (LM_R / A'_s h \cos\phi \epsilon_R + A_D b)^{0.5}$$

or:

$$V_w = 1.5 \times (LM_p / A'_s h \cos\phi \epsilon_p + A_D b)^{0.5}$$

where:

vW is the recommended maximum apparent wind speed (in knots),
LMR is the maximum transverse righting moment (N x m),
LMP is the maximum longitudinal righting moment (N x m) defined as the longitudinal righting moment corresponding to the smallest of the following angles:

1. angle corresponding to the maximum longitudinal righting moment, or,
2. angle at which the forward deck is immersed,
3. 10° in relation to the initial trim.

A'S is the surface area of the erected sails, including the mast and boom (in square metres),

h is the height of the centre of the sails and spars above the waterline (m),

θR = is the angle of heel at the maximum transverse righting moment LMR,

θP = is the trim angle used to calculate LMP (corresponding to LMP),

AD is the projected surface area of hulls and decks (in square metres),

b is the distance between the AD surface centre and the longitudinal axis of the hull to leeward.

b) These data shall be accompanied by the following note, held in the stability file:

'At fair speeds, the safe wind speed calculated for each sail combination must be reduced by the speed of the vessel.'

VI. With longitudinal sails (jibs, mainsail, etc.), where the calculated maximum safe wind speed is less than 27 knots, the calculation shall be used to check that the buoyancy volume, expressed in cubic metres (m^3), of the hull, the installations and the equipment is more than 1.2 times the full load displacement in tonnes. This calculation shall be carried out in accordance with Annex D to standard EN/ISO 12217-2 updated by its amendments, for cases in which the vessel is capsized, and flooded. Any volumes of air that are trapped after capsizing or flooding, except in specific air chambers and watertight compartments, must not be taken into account. Vessels whose maximum safe wind speed thus calculated is less than 27 knots shall contain an escape hatch in each watertight accommodation chamber that emerges completely above the waterline both in an upright position and when capsized.

VII. Where the vessel is under bare poles, the maximum safe wind speed shall be at least 36 knots. In the case of short-range vessels, it shall be at least 32 knots.

VIII. The lateral hulls of trimarans shall have a total buoyancy volume of at least 150% of the full load displacement volume.

IX. The stability file of multi-hull sailing vessels shall also include the following information:

- a) the stability-related risks to which these vessels are vulnerable, including the risk of capsizing laterally or longitudinally;
- b) the importance of complying with the information provided on the recommended maximum apparent wind speed;
- c) the need to reduce the calculated safe wind speeds, by reducing the speed of the vessel to fair speeds;
- d) the choice of sails to be made according to the force of the prevailing wind, the associated wind direction and the sea conditions;
- e) the precautions to be taken when luffing from a fair speed to a cross wind.

Article 242-5.06

Damage stability

- I. The provisions of this Article shall apply to all vessels except short-range vessels.
- II. Compliance with the damage stability criteria shall not be required for vessels complying on all points with the conditions of assignment of freeboard of the International Convention on Load Lines.
- III. Sealed bulkheads shall be sited such that a minor gap in the plating, resulting in the flooding of any given compartment, still enables the vessel to float with a margin line that shall not under any circumstances be less than 75 mm below the weather deck, the freeboard deck, or the bulkhead deck, where these provisions are not concurrent.
- IV. For the purposes of determining cases of damage, a minor gap shall be assumed to be able to occur anywhere along the length of the vessel, except at the level of a sealed bulkhead.

The following permeability values shall be used for this assessment:

Spaces	Permeability in %
Storerooms, lockers	60
Low filling density storerooms	95
Accommodation spaces	95
Machinery spaces	85

- V. After damage has occurred, no angle of rest shall be more than 7° from the vertical. Furthermore, the righting lever curve shall extend to the angle of flooding at at least 15° beyond the angle of rest. Finally, the righting lever in this range shall not be less than 100 mm, and the area under the curve shall not be less than 0.015 metres-radian.
- VI. The subdivision of a vessel of more than 85 metres in reference length shall meet the damage stability requirements of Division 221. The deterministic method shall be used for these calculations.
- VII. The following note shall be added to the stability file of short-range vessels whose damage stability has not been assessed:

‘The damage stability of this vessel has not been assessed. Its ability to float after damage to the hull or flooding is not known’.

Article 242-5.07

Additional information on board sailing vessels

- I. Sailing vessels shall carry a copy of the maximum angle of constant heel curves in order to prevent flooding during gusts of wind, or, in the case of a multi-hull vessel, the recommended maximum apparent wind speed values, in order that the watch officer may refer to them. It must be a direct copy of the content of the approved stability file.
- II. The total sail surface and the weights and dimensions of the spars shall be documented as precisely as in the information file on the vessel’s stability. Any change to the rigging that increases the total sail surface, or weight, or the dimensions of the overhead rigging, shall result in the information appearing in the stability file being updated.

CHAPTER 242-6
MACHINERY INSTALLATIONS
AND STEERING GEAR

Section 1 – Machinery installations

Article 242-6.01

Scope

- I. The machinery installations of new and existing vessels of gross tonnage of 500 or more shall comply with the regulation of an approved body and, in so far as it is possible and reasonable to do so:
 - a) with the rules of part C of Chapter 221-II-1 – Machinery installations, and;
 - b) with the rules of part E of Chapter 221-II-1 – Additional requirements for periodically unattended machinery spaces.
- II. For the purposes of approving gas-turbine installations, the competent authority shall take account of the rules of the IMO's HSC Code.
- III. The machinery installations of vessels of gross tonnage of less than 500 shall meet the requirements of Articles 242-6.02 et 242-6.03 of this Section.

Article 242-6.02

*General provisions applicable
to vessels of gross tonnage of less than 500*

- I. Machinery installations shall comply with the regulation of an approved body. The classification or serial number shall include at least propulsion and electricity-generating machines, as well as shafting.
- II. In the case of existing vessels, and new vessels whose machinery spaces do not require a permanent crew presence, the machinery and their installations shall comply with the rules of part E of Chapter 221-II-1 – 'Additional provisions applicable to periodically unattended machinery spaces', in so far as it is possible and reasonable to do so.
- III. Plastic pipes shall be permitted if their circuits and use comply with the provisions of the International Code for Application of Fire Test Procedures.
- IV. The requirements for main propulsion shall be based on the installation of diesel engines. Where other types of main propulsion are proposed, the layouts and installation shall be specifically examined accordingly.
- V. For the purposes of approving gas-turbine installations, the competent authority shall take account of the rules of the IMO's HSC Code.
- VI. Notwithstanding the provisions of paragraph III, flexible pipe fittings, if used in a fuel supply system, shall be of the screw type or of an approved equivalent type. The flexible pipes shall be reinforced and fire-resistant. The materials and the fittings shall comply with a recognised national or international standard.

Article 242-6.03

Additional provisions

on the prevention of risks relating to the machinery of vessels of gross tonnage of less than 500

- I. Notwithstanding the provisions of Article 242-6.02 – ‘Additional provisions applicable to vessels of gross tonnage of less than 500’, the machinery, fuel tanks and associated pipework shall be designed and built for their intended use and shall be installed and protected in order to minimise the risks to persons moving about the vessel. Moving parts, hot surfaces and other hazardous parts shall be suitably protected.
- II. Any fuel source that could start a fire in a machinery space shall be suitably insulated. Fuel circuits shall contain stop valves that can be operated from outside the machinery spaces. Each valve shall be positioned as close as possible to the tanks served.
- III. All high-pressure fuel supply circuits between the pumps and injector nozzles shall be protected by a duct cladding system capable of containing fuel coming from a faulty high-pressure circuit. This duct cladding system shall include an alarm detector in case of leaks, as well as the means to collect the drips from such leaks.
- IV. Where a glass fuel gauge is installed, it shall be of the flat tubular type, with self-closing valves, at the top and bottom, between the gauge and the tank.

Section 2 – Steering gear

Article 242-6.04

General provisions

Steering gear shall comply with the requirements of the regulation of an approved body.

Article 242-6.05

Controls

- I. Vessels shall be fitted with sufficiently strong tiller control apparatus of a design suitable for keeping them on course at whatever speed they are travelling. The competent authority shall decide whether the tiller has to be motorised.
- II. Where the steering gear is fitted with a remote control, an emergency system shall be provided for in order to compensate for any fault in this control.

Article 242-6.06

*Additional provisions
for vessels of gross tonnage of 500 or more*

The steering gear of new and existing vessels of gross tonnage of 500 or more shall comply, as far as is possible and reasonable, with the rules of part C of Chapter 221-II-1 'Machinery installations'.

CHAPTER 242-7

ELECTRICAL INSTALLATIONS

Article 242-7.01 *General provisions*

Electrical installations shall meet the requirements of the regulation of an approved body, and the provisions of this Chapter. Electrical components contributing to the safety of vessels, including trim, shall also be subject to these requirements.

Article 242-7.02 *Installations*

- I. Installations shall be protected against overloading and short circuits, except for starter motor circuits powered by accumulator batteries.
- II. In potentially hazardous areas, in which hydrocarbon fumes may be emitted, electrical apparatus shall be explosion-proof.

Article 242-7.03 *Lighting and emergency power source*

- I. Lighting circuits, including emergency lighting, shall be distributed in enclosed spaces such that a total power cut cannot occur as the result of the failure of a protection device.
- II. Furthermore, there shall be an emergency power source independent of the main power source, located outside the machinery spaces, with a separate distribution. Aside from the general lighting system, it must ensure for at least 3 hours the power supply to the navigation lights, the lighting along the escape routes from the accommodation and work spaces to the muster points, and the launching and boarding of the collective survival craft. Furthermore, this lighting, supplemented, where necessary, by portable apparatus, must enable emergency repairs to be carried out on the machinery.

Article 242-7.04 *Accumulator batteries*

- I. The batteries used shall be of a type suitable for maritime use, which is not liable to cause leaks.
- II. Battery spaces shall be fitted with a ventilation system suitable for preventing the build-up of gas emissions.
- III. The provisions of this Article shall apply to the reserve source for radiocommunication equipment.

Article 242-7.05 *Additional provisions applicable to vessels of gross tonnage of 500 or more*

- I. The electrical installations on board new and existing vessels of gross tonnage of 500 or more shall comply, in so far as it is possible and reasonable to do so:
 - a) with the rules of part D of Chapter 221-II-1 ‘Electrical installations’, and;
 - b) with the rules of part E of Chapter 221-II-1 – ‘Additional requirements for

periodically unattended machinery spaces’.

- II. Where an emergency generator is installed, it shall be located above the highest full deck. However, it may be located below this deck provided that it is protected from the consequences of a fire or flooding. In all cases, the emergency generator shall be easily accessible from the weather deck, and it shall be separated from the main generators and the main switchboard by a partition ensuring its continuous operation. The space housing this emergency generator shall not have any partition in common with the machinery space and shall be situated more than one metre away from the plating.

CHAPTER 242-8

RESCUE

Article 242-8.01 *General provisions*

- I. All vessels covered by this Division shall comply with the provisions of this Chapter.
- II. Unless otherwise indicated, any rescue equipment or craft shall be approved in accordance with the provisions of Division 311 of this Regulation.

Article 242-8.02 *Availability of rescue equipment*

- I. Rescue equipment shall be installed and stowed on board in accordance with a plan approved by the competent authority. It shall be maintained in working order and be ready for immediate use at any time when the vessel is at sea.
- II. Each element of the collective rescue craft shall be serviced at intervals of no more than 12 months, in an approved servicing station. Hydrostatic release units approved for use over a two-year period and intended to be replaced at the end of this period shall not have to be serviced.
- III. Maintenance of the other equipment shall be carried out in accordance with the on-board maintenance instructions.
- IV. Stabilisers and appendages protruding from the hull shall not be liable to disrupt boarding on to the rescue craft. Similarly, outlets on the plating shall never be sited so that they end in the rescue craft.
- V. Where individual safety equipment is provided for in the context of sporting or recreational activities, it shall be stowed such that it cannot be mistakenly used as survival equipment during an emergency situation.

Article 242-8.03 *Lifeboats*

- I. Vessels of 85 m or more in length shall be obliged to have lifeboats, in accordance with the requirements of this Article.
- II. The lifeboats and their launching apparatus shall be of an approved model.
- III. The lifeboats shall be sited such that they enable every person on board to embark, from each side of the vessel. However, as an alternative, the lifeboats may be replaced by inflatable life rafts, in the following two cases:
 - a) the vessel meets the subdivision requirements of Division 221 with two flooded compartments;
 - b) the inflatable life rafts are davit-launched such that, in the event of a life raft being lost or rendered unusable, there remains a total capacity on each side of the vessel that is sufficient to board every person on board. Furthermore, an approved rescue boat shall be available on each side.
- IV. A lifeboat may be permitted to act as a rescue boat if it meets the requirements relating to lifeboats in the LSA Code.

Article 242-8.04

Life rafts

I. Each vessel shall have life rafts in accordance with the requirements of this Article.

II. On board short-range vessels or vessels sailing no further than 60 miles from a shelter, life rafts shall be of the SOLAS pack B type. On board all other vessels, life rafts shall be equipped with a SOLAS A kit. However, recreational vessels for personal use of gross tonnage of less than 300 may carry rafts required on board recreational vessels of less than 24 m in length.

III. The rigid containers of life rafts shall be stowed on the weather deck or in an open space and shall be fitted with hydrostatic release units, such that the rafts float freely and inflate automatically.

IV. Approval of each life raft shall incorporate the approval of its stowage, launch and free floating systems. Life rafts may form part of an approved sea evacuation system. The systems shall be provided in sufficient number such that, in the event of an entire system being lost or rendered unusable, there remains a total capacity on each side of the vessel that is sufficient to accommodate every person on board.

On board vessels of less than 85 m in length, and all those whose standard requirement lifeboats are replaced by life rafts in accordance with the provisions of Article 242-8.03 – ‘Lifeboats’, the life rafts shall be carried in sufficient number such that, in the event of one of them being lost or rendered unusable, there remains a total capacity on each side of the vessel that is sufficient for all the persons on board. However, this requirement shall be deemed to be met where it is possible to transfer the life rafts from one side of the vessel to the other in less than 5 minutes in the following conditions:

- a) Life rafts intended for 6 to 15 persons must be able to be carried by 2 persons;
- b) Life rafts intended for more than 15 persons must be able to be carried by 4 persons.

VI. On board vessels whose standard requirement lifeboats are not replaced by life rafts in accordance with the provisions of Article 242-8.03 – ‘Lifeboats’, the life rafts shall be carried in sufficient number such that, in the event of one of the lifeboats being lost or rendered unusable, there remains a total capacity on each side of the vessel that is sufficient for all the persons on board. Where the life rafts are transferable, this requirement shall be deemed to be met where it is possible to transfer the life rafts from one side of the vessel to the other in less than 5 minutes in the same conditions as in the paragraph above.

VII. The boarding systems in the life rafts shall comply with the following provisions:

- a) Where the distance between the embarkation deck and the top of the buoyancy chamber exceeds 1 metre at the lowest waterline, boarding shall take place by means of ladders. These shall be available at any time and must be able to be installed quickly and without the help of tools or power;
- b) Where the distance between the embarkation deck and the top of the buoyancy chamber of the life raft exceeds 4.5 metres at the lowest waterline, the life rafts shall be launched by means of davits. The life rafts must be able to be launched from each side.

VIII. The falls of the launching systems shall comply with the LSA Code. Where the falls are made of stainless steel, they shall be replaced at intervals not exceeding the life span recommended by the manufacturer or, where no life span is prescribed, they shall be treated as falls made of galvanised steel. The use of falls manufactured using other materials shall be subject to the approval of the competent authority.

Article 242-8.05

Rescue boats

- I. Each vessel shall have a type-approved rescue boat. Rescue boats that are white in colour may be approved.
- II. However, on board vessels of gross tonnage of less than 500, a brightly-coloured craft that can board at least 4 persons, of whom one is lying down or on a stretcher, may be deemed a rescue boat. Where the rescue boat is inflatable or semi-rigid, the tubes shall include at least 3 separate buoyancy compartments. The equipment for such boats may be stowed separately, provided that it is easily accessible at any time. In particular, a rescue boat must not be less than 3.5 metres long, and its motorisation must be fixed when the vessel is at sea.
- III. Rescue boat equipment shall comply in all cases with the provisions of 5.1.2 of Chapter V of the LSA Code.
- IV. Rescue boats may be launched from only one side of the carrier vessel.
- V. Launching systems shall meet the requirements of the LSA Code, except where a motorised crane is installed. Where such a crane is installed, it must be able to operate either manually or with an emergency power supply in case of failure of the main supply. Emergency supply circuits shall be installed taking into account the damage waterlines and the fire risk.
- VI. However, on board vessels of gross tonnage of less than 500, a system meeting the following requirements may be installed:
 - α) the rescue boat must be able to be launched in less than 5 minutes;
 - β) the launching system and its fittings have a minimum static test load equal to 2.2 times the maximum disposable load. The factors of safety are 6 for the cables, hooks and pulley wheels, and 4.5 for the rest of the launching system. The system and its fittings withstand 1.1 times the maximum disposable load when in dynamic manoeuvre;
 - χ) the rescue boat must either be able to be recovered in the same conditions, or no provisions concerning its recovery shall be required where there are other means of collecting injured persons and crew members from the rescue boat, for example from a platform or skirt providing access to the vessel;
 - δ) the design of the falls and the hoist system shall meet the requirements of paragraph VI/6.1.2 of the LSA Code;
 - ε) where the running rigging of a sailing vessel may be used, the provisions above shall apply.
- VII. Where the vessel is equipped with an external embarkation ladder or a landing net, the ladder or the net shall extend from the exposed deck to at least 600 mm below the lowest waterline.
- VIII. By contrast with the provisions of this Article, short-range vessels may be exempted from rescue boats where they have manoeuvrability sufficient to enable persons in the sea to be rescued along the side, far enough away from the stern and the propellers. In all cases, the vessel's steering post, including remote posts specifically reserved for sea rescue manoeuvres, shall provide the helmsman with a direct and permanent view of the person to be rescued.

Article 242-8.06

Life jackets

- I. Each vessel shall have a type-approved life jacket for each person on board. Spare adult life jackets for at least 10% of the total number of persons on board or two spare life jackets, if this number is greater, shall also be provided for.

II. Crew liable to board an inflatable or semi-rigid craft, or a rescue boat, shall have type-approved inflatable life jackets. These life jackets may also be used in order to comply with the provisions of the previous paragraph.

III. In addition to life jackets for adults, each child on board shall have an appropriate, type-approved, life jacket.

IV. Life jackets shall be positioned such that they may be accessed quickly. Their position shall be clearly indicated. If, following particular adjustments made to the vessel, the life jackets provided for are likely to be inaccessible, other provisions may be approved by the competent authority, for example an increase in the number of life jackets carried.

V. Each life jacket shall be marked in block capitals of the Roman alphabet with the name and port of registry of the vessel on which it is carried.

Article 242-8.07

Immersion suits

Each vessel shall have an approved immersion suit or thermal protection aid (TPA) for each person on board. However, a vessel shall not be obliged to carry this equipment where it contains fully or partially closed rescue boats, or where it sails in waters with a surface temperature of 20°C or more. In the first two cases, in which a dry evacuation system is provided for, only the crew operating the rescue boat shall have immersion suits.

Article 242-8.08

Lifebuoys

I. Lifebuoys shall be distributed such that they are readily available on each side of the vessel and, as far as possible, on all the exposed decks extending as far as the side of the vessel. At least one lifebuoy shall be situated close to the rear. They shall be stowed such that they can be removed quickly, and under no circumstances shall they be permanently secured.

II. Each vessel shall carry:

- a) two type-approved lifebuoys, with a self-activating signal light and smoke signal. This equipment shall be positioned such that it may be implemented quickly from the vessel's steering post;
- b) two lifebuoys with a waterline of no less than 30 m.

III. Vessels of 85 m or more in length, and vessels of gross tonnage of 500 or more, shall also carry four type-approved lifebuoys, of which two shall have signal lights.

IV. Each lifebuoy shall be marked with the name of the vessel and its home port. At times when the vessel is moored in a port or a harbour, one of the lifebuoys equipped with a launch line shall be permanently positioned on the gangway or at the hook point of the quayside ramp.

Article 242-8.09

Emergency position-indicating radio beacons

I. Each vessel shall carry a type-approved emergency position-indicating radio beacon (EPIRB).

II. This equipment shall be installed in order to be easily accessible and quickly placed in a rescue boat or a life raft.

Article 242-8.10

Radar transponders

I. Each vessel shall have a type-approved radar transponder (SART).

II. Vessels of 85 m or more in length, and vessels of gross tonnage of 500 or more, shall also carry a second SART.

III. This equipment and its accessories shall be installed in order to be easily accessible and quickly placed in a rescue boat or a life raft. Provisions shall be introduced to enable it to be manually installed inside a rescue boat or life raft, at a height of at least 1 metre above sea level.

Article 242-8.11

*Two-way
VHF radiotelephone apparatus*

All vessels covered by this Division shall carry at least two sets of GMDSS two-way VHF radiotelephone apparatus intended to be carried on rescue boats. A third similar item of equipment shall be carried on vessels of gross tonnage of 500 or more and of 85 m or more in length.

Article 242-8.12

Parachute flares

All vessels covered by this Division shall carry at least six parachute flares stowed on the navigating bridge or in proximity thereto. Vessels of gross tonnage of 500 or more shall carry at least 12 of these items of equipment.

Article 242-8.13

Line-throwing appliances

All vessels covered by this Division shall carry at least one line-throwing appliance.

Article 242-8.14

General alarm

I. On board vessels of gross tonnage of less than 500, this alarm may be provided by the vessel's audio signalling apparatus (whistle, bell, gong), provided that it can be heard throughout the vessel.

II. Other vessels shall have an approved general alarm system, which must be able to be powered by the vessel's main electric power supply and by the emergency power source.

III. Furthermore, vessels of gross tonnage of 500 or more or of 85 m or more in length shall have an approved public address system.

Article 242-8.15

Lighting

Corridors, internal and external stairways, emergency exits, muster and embarkation stations, as well as the positions of rescue boats and life rafts, their launching systems, if any, and the launch plan, shall be suitably lit. The lighting must be able to be provided by the emergency power source.

Article 242-8.16
Training and drills

The provisions of Articles 221-III/19 and 221-III/35 shall apply to vessels operated by a professional crew.

Article 242-8.17
Maintenance and inspections

The provisions of Articles 221-III/20 and 221-III/36 shall apply to vessels operated by a professional crew.

Article 242-8.18
Muster list and instructions in case of emergency

The provisions of Article 221-III/37 shall apply to vessels operated by a professional crew.

CHAPTER 242-9
SPECIFIC INSTALLATIONS
POSING A FIRE RISK
AND FIREFIGHTING PLAN

Article 242-9.01

Portable first-group fuel stocks

I. Tanks used to store or carry fuel with a flash point below 60°C shall contain a clear identification of their use and of the type of fuel being carried, and this identification shall meet the requirements of a recognised standard.

II. In spaces housing vehicles running on fuel with a flash point below 60°C, such as, for example, dinghies, cars, motorised watercraft, or aircraft, the quantity of fuel stored or carried in mobile tanks shall not exceed 150 litres.

Article 242-9.02

First-group fuel storage areas

I. Where they are used to store portable fuel tanks, cupboards and other spaces located outside, on the decks, shall meet the following requirements:

- α) they shall be kept away from risk areas (see NOTE);
- β) they shall be without electrical apparatus;
- χ) there shall be natural ventilation in the upper and lower parts;
- δ) a drainage system shall enable the drainage of all liquids overboard;
- ε) a system shall enable the securing of fuel tanks;
- φ) there is the possibility of cooling the space's enclosure.

NOTE: Risk area shall be understood to mean a space in which liquid leaking from a fuel tank could enter a risk space or be in a position to explode or ignite by being close to a source of regular heat.

II. Closed storage spaces on the open deck, designed specifically to house vehicles running on fuel with a flash point below 60°C, or to store their fuel, shall meet the following requirements:

- a) there is a manual sprinkler system providing 3.5 l/m²/minute coverage over the entire surface area of the deck. It may be connected to the bilge main by an isolation valve located outside the protected space;
- b) a permanent device shall ensure the drainage of water from the sprinkler system, which shall not under any circumstances end in the machinery spaces or other risk areas;
- c) there is a fixed fire detection and fire alarm system complying with the provisions of part A of Chapter 221-II – 2 and of Chapter IX of the FSS Code;
- d) a mechanical ventilation system, insulated from the other ventilated spaces, shall enable the gross volume of air in the space to be changed six times an hour. An audible and visual alarm on the bridge or at the control stations, where the vessel is not moving, shall signal any significant reduction in air flow. Extraction shafts shall be installed in such a way as to draw in air in the bottom part. Where the motors of fans are located in the space or the shafts, they shall be flameproof and explicitly intended for use in an environment of inflammable vapours and liquids. The ventilation system must be able to be cut off quickly and the space contained in case of fire;
- e) a gas detection system shall trigger an audible and visual alarm on the bridge, or at the control stations, where the vessel is not moving;
- f) electrical equipment located less than 450 mm from the deck shall be certified for use

- in an environment of inflammable vapours;
- g) electrical equipment located more than 450 mm from the deck shall either have an IP55 protection rating (Publication 529 of the IEC – Classification of Degrees of Protection provided), or be fitted with easily accessible isolation devices, on each pole, and outside the space. These isolation devices shall, as far as possible, be grouped together and clearly identified. However, the latter provision shall not be stipulated for safety systems such as rudder engines, or rudder angle indicators;
 - h) the gas detection and the fire detection systems, the flood alarms, and at least one lighting installation shall be of a type approved for use in an environment of inflammable vapours.

Article 242-9.03

Saunas

I. The perimeter of a sauna shall be delimited by type A bulkheads and may contain changing rooms, showers and toilets. On board vessels of gross tonnage of 500 or more, saunas shall be separated from other spaces by type A-60 bulkheads, unless these spaces are located inside the perimeter. On board vessels of gross tonnage of less than 500, bulkheads shall be type A-30. In the case of short-range vessels, they shall be type B-15.

II. Bathrooms providing direct access to saunas may be considered as forming part of those saunas. In this case, the door separating the sauna from the bathroom shall not be subject to any fire protection requirement.

III. A traditional wooden cover may be permitted on the bulkheads and the ceiling of the sauna. The ceiling shall be covered, above the stove, by a non-combustible plate containing an air vent no smaller than 30 mm. This protection shall ensure that no hot part is located less than 500 mm from a combustible covered part.

IV. Traditional wooden benches shall be permitted. The sauna door shall open outwards. The electrically-heated stoves shall be fitted with a timer.

V. All the spaces within the sauna perimeter shall be protected by a fire detection and fire alarm system and by an automatic sprinkler system.

Article 242-9.04

Thermal spas

I. Thermal spa shall be understood to mean any space or group of spaces containing hot-water installations such as hammams. The perimeter of a thermal spa may include changing rooms, showers and toilets.

II. Bathrooms providing direct access to the spa may be considered as forming part of the spa. In this case, the door between the spa and the bathroom shall not have to meet the fire protection requirements.

III. Where a steam generator is located within the perimeter, the bulkhead surrounding the spa shall be type A-0, or B-0 in the case of short-range vessels. Where the steam generator is not located within the perimeter, the bulkheads surrounding the spa shall be type B-0, and the steam generator shall be protected by bulkheads of type A-0, or B-0 in the case of short-range vessels.

IV. Where the installation includes a sauna, the standards or requirements of Article 242-9.03 – ‘Saunas’ shall apply, regardless of the position of the steam generator.

V. Spaces located within the perimeter shall be protected by a fire detection and fire alarm system, and by an automatic sprinkler system.

Article 242-9.05
Frying equipment

- I. The requirements of Article 221-II-2/10.6.4 on the fire-extinguishing systems for frying materials shall apply.
- II. However, in the case of fryers with an oil capacity of less than 15 litres, only an extinguisher suitable for Class-B fires and the possibility of manually cutting off the electrical supply may be required.

Article 242-9.06
Firefighting plans

- I. One or more firefighting plans shall be permanently displayed for the information of the captain and crew. Each plan shall show the main equipment and fire prevention and protection measures.
- II. The symbols used on the plans shall comply, as far as possible, with a recognised international standard. The firefighting plan may be combined with a 'fire and safety' plan showing the location of rescue and firefighting equipment.
- III. The plan(s) shall show, for each deck, the location of the control stations, the parts of the vessel that have type A and B bulkheads, the storage location of liquids with a flash point below 60°C, and the characteristics and locations of the fire alarms, the fire detection systems, the sprinkler systems, the fixed and portable fire-extinguishing equipment, the means of access and emergency exits for the compartments and decks, and the positions and control mechanisms of the systems and openings that should be closed in case of fire.
- IV. Each plan shall be kept up to date. Updates shall be added to each displayed copy.
- V. A copy of the plans shall be kept at all times in the external parts of the vessel, in a visibly marked and easily accessible weathertight box, in order to help the firefighters that are brought on board in case of fire.
- VI. Valid instructions concerning the maintenance and operation of all on-board firefighting and fire containment equipment and installations shall be kept in a readily available and easily accessible document holder.

CHAPTER 242-10
STRUCTURAL PROVISIONS ON THE PROTECTION
AGAINST FIRE
OF VESSELS OF GROSS TONNAGE OF LESS THAN 500

Article 242-10.01

General provisions

All vessels of gross tonnage of less than 500 shall comply with the provisions of this Chapter.

Article 242-10.02

Subdivision work

I. Any partition required under the provisions of this Chapter shall be constructed pursuant to the provisions of this Article.

II. Partitions using a material equivalent to steel, or other forms of construction, may be accepted if it can be demonstrated that the material, in itself or by virtue of the introduction of non-combustible insulation, guarantees the characteristics of fire resistance equivalent to the bulkheads required under paragraph I of Article 242-10.03 – ‘Protection of the Structure’.

III. In all cases, the insulation obtained shall be such that the temperature of the structural core shall not exceed the level at which the structure begins to lose resistance, at any time during the standard fire test. The applicable exposure time shall be 60 minutes for type A bulkheads and 30 minutes for type B bulkheads.

IV. For structures made of aluminium alloy, the insulation obtained shall be such that the temperature of the core shall not exceed the ambient temperature by more than 200°C at any moment during the applicable fire exposure time.

V. For structures made of composite materials, the insulation obtained shall be such that the temperature of the laminate shall not exceed the minimum creep temperature of the resin under load at any moment during the applicable fire exposure time. The creep temperature under load shall be set in accordance with an internationally recognised standard.

VI. Insulation shall not be applied anywhere other than to the exposed surface at the greatest risk of fire. A bulkhead located between two risk areas (for example machinery spaces) shall be insulated from both sides, except in the case of a steel bulkhead.

VII. The frameworks for fire doors in bulkheads constructed from materials other than steel shall be fixed according to very specific guidelines. The temperature of the fixings, when exposed to fire, shall not exceed the temperature at which the bulkhead itself loses resistance.

VIII. The following bulkheads covered with 100kg/m³ rockwool shall be accepted without undergoing a fire test

- a) made of steel – thickness 4 mm, A0, no insulation required, A30 – 50mm of rockwool;
- b) made of aluminium – thickness 5.5 mm, A30 – 80 mm of rockwool, B0 or B15 – 50 mm of rockwool;
- c) made of composite materials – A30 – 100 mm of rockwool, B0 or B15 – 60 mm of rockwool.

Article 242-10.03

Protection of the structure

I Category A machinery spaces shall have type A-30 partitions. For short-range vessels, category A machinery spaces shall have type B-15 partitions.

II. The openings of type A and B partitions shall be equipped with fixed devices to keep the partitions closed. They shall be made so that they provide fire resistance, and smoke and flame resistance, equivalent to the bulkheads in which they are fitted. In general, windows and sidescuttles shall be banned in machinery spaces.

III. Where type A partitions are crossed to allow for electric cables, pipes, wells and ducts to pass, or for girders, beams or any other structural element, the degree of insulation for the element crossing shall not be less than that of the partition.

IV. Where type B partitions are crossed to allow for electric cables, pipes, wells and ducts to pass, or for ventilation ducts, lighting or any other similar devices, the degree of insulation for the element crossing shall not be less than that of the partition.

V. Where it is stipulated that the structure or type A partition is to be insulated, the heat given off by the fire must not be passed on to the intersections and to the extremities of heat barriers or non-insulated bulkhead crossings. Where the insulation installed does not enable this objective to be met, measures shall be taken to prevent heat transmission by insulating the vertical and horizontal bulkheads, or crossings, at a distance of 450 mm beyond the crossing, intersection or extremity. This distance may be reduced to 380 mm on steel partitions only.

Article 242-10.04 *Insulating materials*

I. Except in the cold-storage chambers of service spaces, all insulation shall be made using fire-resistant materials, pursuant to Division 321 of this Regulation.

II. Crossings in type A or B partitions shall be made using materials approved on the basis of the temperature that the bulkheads must withstand.

III. Pipes carrying oil or other combustible liquids via the service facilities and spaces shall be made using materials approved on the basis of fire risk.

IV. Materials rendered ineffective by heat may not be used for discharge scuppers, sanitary evacuations and other discharges on the hull located close to the waterline, or where the failure of the material in the event of a fire is liable to lead to flood risk.

V. Anti-condensation screens, and adhesive products used in conjunction with said products for insulation, and the insulation of low-temperature liquid distribution systems and pipework therefor, are not obliged to be made of non-combustible materials. In this case, their use must be as limited as possible, and their surface must have low flame-spread characteristics.

VI. Padded furniture (fabric combined with a supporting or stuffing material) used on the vessel shall comply with part 8 of the International Code for Application of Fire Test Procedures. This provision does not apply, however, to areas equipped with water-spraying extinguisher systems or equivalent approved extinguisher systems.

VII. Organic foams used in the upholstery of furniture and mattresses must have medium flame-spread characteristics, as a minimum, pursuant to Division 321 of this Regulation.

VIII. Hanging textiles such as curtains or hangings shall comply with part 7 of the International Code for Application of Fire Test Procedures. This provision does not apply, however, to areas equipped with water-spraying extinguisher systems or equivalent approved extinguisher systems.

IX. In areas susceptible to infiltration from hydrocarbons, the surface of the insulation covering shall prevent impregnation, including from hydrocarbon vapour. All insulation parts shall be laid out so as not to be in contact with hydrocarbons that may be stagnating in the hold.

Article 242-10.05 *Provisions relating to fuel*

I. Fuel tanks and circuits for machines shall be installed in such a way as to minimise the risk of fire or explosion.

II. Where fuel is stored in tanks located close to or in contact with the bulkheads of category A machinery spaces, the fuel shall in all cases have a flashpoint above 60°C.

III. Inflammable hydrocarbons must never be stored in tanks in the forepeak nearest the prow.

IV. All fuel pipes that, when damaged, leak from a fuel tank located above the double bottom must be able to be insulated by means of valves located on the tanks controlled remotely from outside the area thereby enabling rapid closure in the event of a fire in the compartment.

V. Each hydrocarbon transfer pipe, liquid fuel boiler and separator must be able to be stopped from outside the machinery spaces.

VI. Petrol filters shall be made of metal.

Article 242-10.06

Means of escape

I. All steps shall be taken so that, in the event of a fire, the people on board can board life boats and rafts quickly and safely. In particular, safe escapes free from any form of obstacle must be usable safely at all times. Furthermore, evacuation assistance shall be provided where it is deemed necessary to facilitate accessibility or to give clear indications in order to ensure that emergency procedures work properly.

II. Staircases, ladders and corridors shall be laid out in such a way that can become quick escape routes from accommodation areas for passengers and crew, and areas other than machinery spaces in which the crew is normally obliged to work, as far as the decks for boarding the life boats and rafts.

III. Each area shall be equipped with means of escape. In accommodation areas, each area or group of areas shall have at least two means of escape. Masked exits and escapes shall be clearly identified in order to ensure rapid escape.

IV. Category A machinery spaces on vessels other than sailing vessels shall also be equipped with at least two escapes. For machinery spaces shorter than 6m, one escape may be acceptable, except where the cramped nature of the compartment does not allow for rapid evacuation. Other machinery spaces shall also have two escapes, as far apart as possible, except where this criterion cannot be fulfilled owing to the small size of the machinery space.

V. Wherever this is possible the main means of access to accommodation and service areas located under weather decks must allow for escape from these areas without passing via a galley, a machinery space or any area with a high fire risk.

VI. Where access to a compartment is via another compartment, the second means of escape shall be as far as possible from the main escape. This can be done via hatches of an adapted size, leading to the weather deck or to a separate area comprising access to the main escape.

VII. In exceptional circumstances, one escape may be acceptable for areas other than accommodation areas where they are occupied only occasionally, provided that the escape is not via a galley, a machinery space or waterproof door.

VIII. No furniture or equipment shall block an escape route. Moreover, furniture located on escape routes shall be removed in order to prevent it from being overturned during the movements of the ship.

IX. All doors located along the escape routes shall open from both sides. In the direction of the exit they must be able to be opened without a key. All door handles on the inside of doors and weathertight hatches shall be fixed immovably. If the doors can be locked, measures aimed at ensuring access out of the area shall be taken for lifesaving operations.

X. Lifts shall not be considered means of escape.

Article 242-10.07

Ventilation of enclosed spaces

I. In machinery spaces and closed galleys, the shut-down of ventilators and the closure of ventilation inlets must be operable from outside the areas served. Control mechanisms shall remain accessible at all times in the event of fire in the areas served.

II. No ventilation duct shall cross accommodation areas, service areas or control stations when the ventilation serves a category A machinery space, a galley, an area holding vehicles or engines transporting fuel in their tanks or a place in which this fuel is stored. Where the design of the boat does not allow for compliance with these provisions, ducts shall be of steel 3mm minimum or an equivalent material.

III. Ducts for ventilating accommodation areas shall be equipped with A-30 insulation, or B-0 for short-range vessels, which shall run for 5m beyond machinery spaces or galleys. Moreover, they shall be fitted with automatic fire shutters near the bulkheads that they penetrate. These shutters must also be able to be closed manually from outside the galley or machinery space concerned.

IV. Ducts for ventilating accommodation areas, service areas or control stations shall not cross category A machinery spaces, galleys, an area holding vehicles or engines transporting fuel in their tanks or a place in which this fuel is stored, unless these ducts are not made of steel and ensure the continuity of the insulation of the bulkheads penetrated.

V. Storage areas containing highly inflammable goods shall be equipped with ventilation devices separated from other ventilation systems. No inflammable vapour may be allowed to accumulate in the upper or lower part of the area. Ventilation inlets shall not pump or blow into a high-risk area and shall be equipped with flame-retardant devices.

VI. The ventilation systems of category A machinery spaces shall be independent of systems serving other areas.

VII. All enclosed areas containing permanently fixed stocks of fuel shall be ventilated independently of systems serving other areas.

VIII. A ventilation system for battery housings shall prevent the accumulation of inflammable gases that may be emitted, regardless of the type of battery.

Article 242-10.08

Stowage of liquid gas stocks for domestic use.

I. Liquid gas for domestic use shall be stored outside or in a place that is gasproof in relation to the rest of the vessel, away from any source of excess heat. This place shall be located above the waterline at a list angle of 30°. It shall be equipped with ventilation and drains of which the total section is no less than 280mm², in order to enable the gas accumulating at the bottom to escape quickly outside.

II. Bottles and stocks of gas shall be fixed firmly so as to prevent any unforeseen movement during sailing.

III. All electrical equipment in a location containing a stock of liquid gas shall be flame-resistant, pursuant to EN/ISO 8846.

IV. No storage of mobile elements liable to damage the bottle, the pressure reducing valve and the rigid and flexible pipes, or to obstruct the conduit of the well deck may be provided for in a well deck or a store for bottles.

Article 242-10.09

Sectioning devices of circuits of liquid gas stocks for domestic use

I. Each bottle or stock of gas shall be equipped with a valve mechanism placed on the pressurised part of the distribution circuit.

II. Each pressure-reducing valve shall comprise a boost device in order to prevent any uncontrolled increase in pressure on the low-pressure circuit. Gas evacuation shall take place in well-ventilated gas-storage places or directly outside. This device may be a boost regulator, a boost safety valve or an automatic stopcock.

III. An individual stopcock, located close to all equipment used and upstream from the nozzle of a flexible pipe, shall

make it possible to isolate the equipment even if it catches fire.

IV. Where several stocks are supplying one circuit, each shall be protected by a non-return valve placed as close as possible to the insulating valves. A single device comprising all of these functions may be installed.

V. It is prohibited to use a gas installation normally set aside for several throughputs if one of these is physically disconnected from the circuit, unless a gasproof termination is placed in the location of the removed throughput.

Article 242-10.10

Characteristics of circuits of liquid gas for domestic use

I. The rigid parts of the gas distribution circuits shall be made of copper alloy or stainless steel. Pipes made of another type of steel or aluminium or another low-melting metal shall be prohibited.

II. The rigid parts shall be assembled either by soldering at a minimum temperature of 450°C or by threaded or compressed couplings. They shall be suitably fixed at 0.5m for copper, 1m for stainless steel and protected wherever there is a risk of shock. There shall be as few junctions as possible and they shall be of a type suitable for liquid gas. They shall ideally be soldered. Copper-soldered couplings shall meet the provisions of Standard NF/EN 29591.

III. A flexible part shall be placed at the departure point of the bottle and at the arrival point of each piece of equipment. Where distance allows, a single flexible pipe may be installed to connect the bottle to the equipment. Flexible pipes shall comply with Standards EN 1763-1 and EN 1763-2, class 2 or 3 for the low-pressure side and class 3 and 4 for the supply pressure side. Flexible pipes shall remain visible and accessible throughout their length, shall never cross the machinery space and shall be located out of the reach of flames. They must also not be adversely affected by combustion gas, the hot parts of equipment or overflows from hot products, nor be damaged by friction and vibration. They shall be fixed by mouthpieces installed permanently, such as dished sleeves or threaded sleeves and pinhead adaptors, pursuant to Standard EN 1763-2.

IV. No gas distribution circuit coupling shall be located inside a machinery space.

Article 242-10.11

Apparatus of liquid gas for domestic use

I. Apparatus shall be equipped with a fixing device to prevent shifting, irrespective of the vessel's attitude.

II. Domestic gas burners shall be equipped with a device that automatically cuts out the gas supply in the event of the flame going out unexpectedly.

III. Apart from galley stoves and ovens, all domestic gas appliances shall comprise a closed furnace. Open furnace appliances may be installed on board provided that there is an external exhaust pipe, and that the furnace is physically separated by means of windows, arches, grilles or other similar devices.

Article 242-10.12

Heating

Heating equipment, where applicable, shall be fixed permanently and designed in such a way as to reduce fire-risk to a minimum. The design and location of this equipment must not lead to clothing, curtains and other such materials catching fire by means of irradiated heat.

Article 242-10.13

Fixed fire detection and fire alarm systems

All closed spaces, except those not posing a high fire risk (such as toilets, bathrooms, empty areas or similar) shall be

equipped with a fixed fire detection device and a fire alarm. Hand-operated alarms shall be distributed in such a way that they are quickly accessible. The fixed fire detection system and fire alarm shall comply with the obligations laid down in Article 221-II-2/7 and Chapter 9 of the Fire Safety Systems Code (FSS Code).

Article 242-10.14

Fixed fire-extinguishing systems not required by this Chapter

Even if not mandatory, all additional fire-extinguishing devices must meet the requirements of this chapter and the Fire Safety Systems Code (FSS Code).

CHAPTER 242-11
STRUCTURAL PROVISIONS
ON THE PROTECTION AGAINST FIRE
OF VESSELS OF GROSS TONNAGE OF 500 OR MORE

Article 242-11.01

General provisions

I. Vessels with a gross tonnage of 500 or more shall meet the provisions of this chapter.

II. The terms used shall have the same meaning as in the SOLAS Convention, apart from 'fire resistant', which means that the surface in question will not continue to burn for more than 20 seconds after the standard fire test flame has been removed.

Article 242-11.02

Subdivision work

I The purpose of this article is to help restrict a fire to the place in which it started. To this end, the following functional requirements shall be met:

- a) The ship must be sectioned off by means of partitions with heat and mechanical resistance;
- b) The heat insulation of partitions must take account of the fire risk of each area and adjacent areas; and
- c) The fire integrity of the partitions shall be maintained at the openings and crossings.

II. The hull, the superstructures, the structural partitions, the decks and the deckhouses shall be made of steel or other materials ensuring equivalent performance.

III. Where aluminium alloy is used, the following provisions shall apply:

- a) The insulation of parts of category A or B partitions made of aluminium alloy shall be designed so that the temperature of the structural core is no more than 200°C above the ambient temperature at any time during the standard fire test. This insulation shall be applied to all surfaces except the outer surfaces of decks and the exterior of the ship. The competent authority may, however, exempt non-load-bearing parts of the structure from these provisions.
- b) For parts needed for the stowage and launch of life boats and life rafts, launch and embarkation areas and category A partitions made of aluminium alloy, the temperature limits specified in paragraph (a) shall apply after one hour of testing.
- c) For parts of the structural components of category B partitions made of aluminium alloy, the temperature limits specified in paragraph (a) shall apply after half an hour of testing.
- d) Parts of partitions made of aluminium alloy equivalent to steel (identified in tables 1 and 2 with an asterisk) shall be insulated with 25mm thick mineral wool, approved for category A partitions or with equivalent insulation approved by the competent authority.

IV. Where composite materials are used, the following provisions shall apply:

- a) The insulation shall be designed in such a way that the temperature of the laminate shall not exceed the minimum creep temperature of the resin under load at any time during the standard fire test. The creep temperature of the resin shall be set in accordance with an internationally recognised standard. This insulation shall be applied to all surfaces except the outer surfaces of decks and the exterior of the ship.
- b) For parts needed for the stowage and launch of life boats and life rafts, launch and embarkation areas and category A partitions made of composite, the temperature limits specified in paragraph (a) shall apply after one hour of testing.

- c) For parts of the structural components of category B partitions made of composite, the temperature limits specified in paragraph (a) shall apply after half an hour of testing.

V. Under no circumstances shall the bindings of door frames in bulkheads made of materials other than steel lose their resistance at a temperature lower than the temperature at which the bulkhead itself loses its resistance.

VI. The partitions of casings and chimneys of category A machinery spaces shall be at least type A-60. Their openings shall be located and protected so as to prevent the spread of fire.

VII. For structures in contact with sea water, the insulation laid down shall reach at least 300mm below the waterline in the lightest condition.

VIII. Fire partitions using a material equivalent to steel or alternative forms of construction may be accepted provided that it is proven that the material, either of itself or thanks to the installation of non-combustible insulation, provides fire integrity properties equivalent to the required provisions for type A or B partitions.

IX. The insulation thus required shall ensure that the temperature of the structural core never exceeds the temperature at which the structure loses its resistance, at all times during the standard fire test. For type A partitions, the test shall last 60 minutes and for type B partitions the test shall last 30 minutes.

Article 242-11.03

Main vertical and horizontal zones

I. The hull, the superstructure and the deckhouses, to the right of accommodation and service areas, shall be divided into main vertical zones by type A partitions, which shall have the degree of insulation laid down in tables 1 and 2.

II. As far as possible, the bulkheads demarcating the main vertical zones above the deck of the partition shall be situated perpendicular to the watertight compartment bulkheads located immediately above this deck. The length and width of the main vertical zones may be up to 48m so that the extremities of the main vertical zones match the bulkheads of the watertight compartments, or in order to contain a large meeting area extending along the entire length of the main vertical zone, provided that the total surface of this zone does not exceed 800m² on any deck.

III. The length or width of a main vertical zone shall be the maximum distance between the farthest points of the bulkheads demarcating it.

IV. These bulkheads shall extend from deck to deck and up to the outer edge or two other divisions, where applicable.

V. Where a main vertical zone is divided by type horizontal partitions in order to make an appropriate barrier between areas protected by a sprinkler system and the other areas, these partitions shall be insulated pursuant to the integrity and insulation criteria laid down in tables 1 and 2.

Article 242-11.04

Bulkheads located within a main vertical zone

I. Bulkheads located in accommodation and service areas that are not type A must be type B or C, as laid down in tables 1 and 2. All bulkheads may be covered with combustible materials.

II. The bulkheads of corridors that are not type A shall be type B, and shall extend from deck to deck, except in the following cases:

- a) Where the installation comprises continuous type B ceilings or linings on either side of the bulkhead, the part of the bulkhead located behind the continuous ceiling or lining shall be made of materials of which the thickness and composition shall meet the standards applicable to type B partitions but of which the level of integrity is considered type B only insofar as the competent authority deems this feasible and reasonable.

- b) The bulkheads of the corridors made with type B materials may stop at a ceiling of the corridor, provided that the ceiling is made of a material of which the thickness and composition meet the standards applicable to type B partitions. Doors located in these bulkheads and the rigging thereof shall be made and assembled so as to preserve the type B partition.

III. All type B bulkheads, except the bulkheads of corridors, shall extend from deck to deck as far as the edge or the other divisions, unless the installation comprises continuous type B ceilings or linings on either side of the bulkhead, in which case the latter can stop at the continuous ceilings or linings.

Article 242-11.05

Fire integrity of bulkheads and decks

I. The minimum fire integrity of bulkheads and decks shall be pursuant not only to the particular provisions applicable to the fire integrity of bulkheads and decks of passenger vessels, but also to the provisions laid down in tables 1 and 2.

II. Tables 1 and 2 shall apply to the bulkheads and the decks separating adjacent areas respectively. In order to determine the fire integrity standards applicable to the separations between adjacent areas, these shall be placed in categories numbered from 1 to 9 according to their fire risk. The title of each category shall be of a general rather than a restrictive nature.

III. The categories are as follows:

1. Control stations

- Areas in which emergency energy sources (power and lighting) are located;
- Wheelhouse and chart room;
- Areas containing the vessel's radioactive material;
- Areas containing firefighting material;
- Fire material control rooms and fire detection stations;
- Control rooms for the propulsion apparatus, where located outside the area related to this apparatus;
- Areas containing centralised warning devices.

2. Corridors and hallways

- Corridors and hallways for the use of passengers and crew.

3. Accommodation areas

- Cabins, dining rooms, lounges and offices not containing any cooking appliances, other than microwave ovens and toasters, and similar areas

4. Stairways

- Internal stairways, lifts and escalators (other than those located entirely in the machinery space), and the enclosures thereof;
- In this regard, a stairway that only has an enclosure on one level shall be considered as forming part of an area when it is not separated by a fire door.

5. Service areas (low risk)

- Locker rooms and stores not provided for storing inflammable liquids with a surface area less than 4m², tumble driers and laundries.

6. Category A machinery spaces

- Areas defined in Article 242-1.02.

7. Other machinery spaces

- Areas defined in Article 242-1.02, except type A machinery spaces;
- Sprinkler and fire-hose areas.

8. Service areas (high risk)

- Galleys, offices containing a galley appliance, paint stores, locker rooms and stores with a surface area of 4m² or above, areas for storing inflammable liquids, workshops other than those located in machinery spaces and areas containing vehicles and vessels with fuel in their tanks, or storage containers for this fuel, storage

containers for gas fuel for domestic use.

9. Exposed decks

- Exposed decks spaces and covered walkways posing a zero fire risk. Exposed spaces located outside superstructures and deckhouses.

IV. Continuous type B ceilings and linings fixed to decks and bulkheads respectively may be considered to be ensuring, either entirely or partly, the required insulation and integrity.

V. External partitions made of steel or other equivalent materials may be drilled in order to install windows and sidescuttles where there are no provisions requiring that partitions have type A fire integrity. Furthermore, doors used in the external partitions not required to have type A fire integrity may be made of combustible materials.

Table 1 – Fire integrity of bulkheads separating adjacent areas

Sites	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Control stations	A-0 _c	A-0	A-60	A-0	A-15	A-60	A-15	A-60	*
2. Corridors and hallways		C _d	B-0 _d	A-0 _a B-0 _d	B-0 _d	A-60	A-0	A-0	*
3. Fitted areas			C _d	A-0 _a B-0 _d	B-0 _d	A-60	A-0	A-0	*
4. Stairways				A-0 _a B-0 _d	A-0 _a B-0 _d	A-60	A-0	A-0	* *
5. Service areas (low risk)					C _d	A-60	A-0	A-0	*
6. Category A machinery spaces						*	A-0	A-60	*
7. Other machinery spaces							A-0 _b	A-0	*
8. Service areas (high risk)								A-0 _b	*
9. Exposed decks									

Table 2 – Fire integrity of decks separating adjacent areas

Areas below	Areas above	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Control stations		A-0	A-0	A-0	A-0	A-0	A-60	A-0	A-0	*
(2) Corridors and hallways		A-0	*	*	A-0	*	A-60	A-0	A-0	*
3. Accommodation areas		A-60	A-0	*	A-0	*	A-60	A-0	A-0	*
4. Stairways		A-0	A-0	A-0	*	A-0	A-60	A-0	A-0	*
5. Service areas (low risk)		A-15	A-0	A-0	A-0	*	A-60	A-0	A-0	*
6. Category A machinery spaces		A-60	A-60	A-60	A-60	A-60	*	A-60 _e	A-60	*
7. Other machinery spaces		A-15	A-0	A-0	A-0	A-0	A-0	*	A-0	*
8. Service areas (high risk)		A-60	A-0	A-0	A-0	A-0	A-60	A-0	A-0	*
9. Exposed decks		*	*	*	*	*	*	*	*	-

Notes: the following notes apply to tables 1 and 2.

- a) For the applicable provisions, please see Article 242-11.04 – ‘Bulkheads located within a main vertical zone’ and Article 242-11.06 ‘Protection of stairways and lifts in accommodation and service areas’.
- b) Where the areas belong to the same numerical category and where the ‘d’ index appears, a bulkhead or deck of the type shown in the tables shall only be necessary where there the adjacent areas are for different purposes. For example, in category 9 a bulkhead is not necessary in a galley located next to another galley, but a galley located next to a paint store room shall be equipped with a type A-0 bulkhead.
- c) Bulkheads separating the wheelhouse and the chart room may be type B-0;
- d) For the application of the first paragraph of Article 242-11.03 – ‘main vertical and horizontal zones’, B-0 and C shall have the meaning of A-0 when they appear in the table;
- e) It is not necessary to put fire insulation in a category 7 machinery space where, in the view of the competent authority, the fire risk is low to zero;
- f) Where there is an asterisk (*) in the tables, the required partitions shall be made of steel or other equivalent materials, albeit not necessarily type A;
- g) For the application of the first paragraph of Article 242-11.03 – ‘main vertical and horizontal zones’, an asterisk pursuant to A-0 when it appears in table 2, except in the case of category 9;

Article 242-11.06

Protection of stairways and lifts in accommodation and service spaces

I. Stairways shall comprise a steel frame, except where the competent authority approves the use of other equivalent materials. They shall be located in enclosures made up of type A partitions, and equipped with the means of closing all openings directly.

II. However:

- a) insulated stairways leading only to one deck may only be protected on one level by type B partitions at least and by automatic closing doors; and
- b) Stairways may be installed without a closure in a meeting area, provided they are located completely inside the space.

III. Stairway enclosures shall comprise direct access to corridors. Their surface shall be sufficient to prevent obstacles,

given the number of people liable to use them in the event of an emergency. Where possible, staircase enclosures must not allow direct access to galleys, machinery or service areas, or other areas containing fuels and in which fire is liable to start.

IV. Lift shafts shall be installed in such a way as to prevent flames from spreading from one tweendeck to another. They shall be provided with the means of closure prevent drafting and the spreading of smoke.

Article 242-11.07

Openings used in Type A bulkheads

I. Apart from hatches located between the stores and baggage holds, and between areas and the deck exposed to the elements, all openings shall be equipped with permanently fixed closure devices of which the fire resistance shall be at least equal to that of the partitions on which they are fixed.

II. All doors and door frames fitted in type A partitions and devices with which these doors closed can be kept closed shall be made in such a way as to provide fire resistance and to prevent the spread of smoke and flames equivalent, where possible, to that of the bulkheads in which the doors are situated. These doors and door frames shall be made of steel or other equivalent materials. It is not necessary to insulate watertight doors.

III. Each of these doors must be able to be opened and closed by one person from each side of the bulkhead.

IV. Fire doors located in the bulkheads of main vertical zones, enclosure bulkheads of galleys and the enclosures of stairways, other than watertight doors driven by a source of energy and doors normally locked must meet the following provisions:

- a) Doors shall be equipped with automatic closure devices, capable of functioning despite an unfavourable angle of 3.5°;
- b) Hinged doors shall close at 40s maximum and 10s minimum, from the moment when they begin to move, when the vessel is upright. Sliding doors shall close at an almost constant speed of 0.2m/s maximum and 0.1m/s minimum when the vessel is upright;
- c) Apart from emergency escape doors, doors must be able to be remotely activated, at the same time or in groups, from the main safety post, and must be able to be activated separately from either side of the door. The activation devices shall comprise an on/off function in order to prevent the system from being reactivated automatically;
- d) All restraint systems must be able to be activated from the main safety post;
- e) A door closed remotely from the main safety post must be able to be reopened from each side by means of a local control mechanism. Having been opened locally in this way, the door must close automatically;
- f) The table indicating fire doors from the permanently staffed central safety post shall comprise a closure indicator for each door;
- g) The activation mechanism shall be designed in such a way that the doors close automatically in the event of failure of the control device or the central energy supply;
- h) Local energy accumulators shall be laid down for the immediate vicinity of doors driven by an energy source so that they can be handled at least ten times (complete opening and closing) by means of local control in the event of failure of the control device or the central energy supply;
- i) A failure of the control device or the central energy supply of a doors must not adversely affect the safe functioning of the other doors;
- j) Sliding doors or doors driven by a source of energy that are remotely activated shall be equipped with a sound alarm retaining at least 5s and 10s maximum after the door has been activated from the central control room and before the closing movement of the door is started, and which continues to retain until the complete closure of the door;
- k) A door designed to reopen after hitting an obstacle on its route must not reopen more than 1m from the point of contact;
- l) In the case of doors opening on both sides equipped with a latch necessary to their fire tightness, the latch shall be activated automatically by handling the doors when they are activated by the system;
- m) The components of local controls shall be accessible for the purposes of maintenance and control;
- n) Doors driven by a source of energy shall be provided with a control device of an approved type capable of functioning in the event of a fire, this being determined in compliance with the Code of Fire Test Procedures. This control device can handle the door at least up to a temperature of 200°C for a minimum of 60 minutes

using the energy source. The energy supply of all other doors not affected by the fire must not be compromised. Where the temperature exceeds 200°C, the control device shall automatically be insulated from the energy source and it must be able to keep the door closed up to a temperature of at least 945°C.

V. Where type A partitions are crossed by electric cables, pipes, wells, ducts, etc or by girders, beams or any other structural element, the fire integrity of the partition shall be maintained in all cases.

Article 242-11.08

Openings used in Type B bulkheads

I. Doors and door frames fitted in type B partitions and devices with which these doors closed can be kept closed shall provide equivalent fire resistance, where possible, to that of the partitions. Ventilation outlets may be used in the lower part of these doors. The total net surface of the openings used in or under the doors shall not exceed 0.05m². Where an opening is used in a door it shall be equipped with a grille made of non-combustible materials. The doors shall be made of non-combustible materials.

II. V. Where type B partitions are crossed by electric cables, pipes, wells, ducts, etc or by ventilation devices, lighting materials and similar devices, the fire integrity of the partition shall be maintained in all cases.

Article 242-11.09

Windows and sidescuttles

I. Windows and sidescuttles located in bulkheads inside accommodation areas, service areas and safety posts shall be made in such a way as to meet the integrity standards applicable to the bulkheads in which they are installed.

II. Glass shall never be used for the partition of a main vertical zone, a stairway enclosure or inside machinery spaces.

Article 242-11.10

Construction details

I. Accommodation and service areas, safety posts, corridors and stairways shall meet the provisions of this article.

II. Airwaves and empty spaces behind ceilings, panels and linings shall be suitably divided by adjusted screens in order to prevent draughts. These screens shall be spaced out at intervals of no more than 14m. On the vertical axis, these airwaves and empty spaces, including those behind the linings of stairway enclosures, wells etc., shall be closed at each deck level.

III. Where possible, the anti-draught screens shall be made of non-combustible materials, and shall form a continuity, above the lining, of the bulkhead below or the other side of the panel or of the lining of the bulkhead.

IV. The insulation of a structure or a type A partition shall prevent the heat of the fire from being transmitted via the intersections and extremities of the partitions or penetrations in the non-insulated bulkheads. Where the insulation does not allow for this requirement to be met, the vertical and horizontal partitions or penetrations shall be insulated for 450mm in order to prevent such heat transmission.

V. Without reducing the effectiveness of fire protection, the construction of ceilings and bulkheads must make it possible, during a fire patrol, to detect any smoke from hidden or inaccessible areas, except where the fire poses no risk of breaking out in this space.

VI. Naked flame gas appliances for cooking, heating or any other use shall be installed in accordance with the regulatory requirements applicable to equivalent areas on dry land.

Article 242-11.11

Restricted use of combustible materials

I. Except in areas protected by an automatic water-spraying extinguishing device, by an accessible detection device and

by a fire alarm pursuant to Article 242-11.27, all linings, floors and ceilings shall be made of non-combustible materials.

II. The use of combustible materials shall be kept to a minimum. In refrigerated areas, thermal insulation materials shall be non-combustible.

III. The following normally have low flame-spreading characteristics:

- a) the visible surfaces of corridors and stairway enclosures, and of bulkheads, walls and linings of ceilings of all service spaces and control stations,
- b) hidden or inaccessible spaces of accommodation and service areas and safety posts may, however, have one surface that does not have low flame spread characteristics. In this case, screens made of low flame spread materials shall be located in such a way as to restrict the spread of flames. They shall be at least 5m apart. Each such space shall be protected by an automatic water-spraying extinguishing device, by an accessible detection device and by a fire alarm.

IV. The crossings of pipes via type A or B partitions shall be done using materials approved on the basis of the temperature at which the partitions must resist.

V. Where they pass via accommodation or service areas, fuel pipes with a flashpoint above 60°C shall be made of materials approved on the basis of fire risk.

VI. Materials easily rendered ineffective by heat must not be used for discharge scuppers, sanitary evacuations and other outlets on the hull located close to the waterline, or where a breach in the material during a fire would lead a flood risk.

VII. Furniture located in corridors and escapes shall be located so as not to obstruct people from passing. Furniture, furniture alongside escapes shall be tied down permanently to prevent it from falling over in the event of the vessel moving accidentally.

VIII. The undercoats of deck coatings inside accommodation and service areas and safety posts shall be made of materials that are not liable to catch flame, to be toxic or to explode at high temperatures, this being laid down in accordance with Annex I to the International Code of Fire Test Procedures.

IX. Vapour-block screens, adhesives and insulation equipment of refrigeration circuits do not have to be non-combustible, on condition that there are as few of them as possible and that their exposed surfaces have low flame spread characteristics.

X. Except where an accessible fire detection device is installed, upholstery items (fabric relating to support or padding) shall be approved in accordance with Part 8 of the International Code for the Application of Fire Test Procedures, or equivalent standard recognised by the competent authority.

XI. Except where an accessible fire detection device is installed, bedding articles shall be approved in accordance with Part 9 of the International Code for the Application of Fire Test Procedures, or equivalent standard recognised by the competent authority.

XII. Except where an accessible fire detection device is installed, hanging textiles such as curtains and blinds shall be approved in accordance with Part 7 of the International Code for the Application of Fire Test Procedures, or equivalent standard recognised by the competent authority.

XIII. Upholstery items, bedding articles and hanging textiles found to comply with the International Code for the Application of Fire Test Procedures or equivalent recognised standard shall be clearly labelled by the manufacturer indicating the standard applied and showing all washing and cleaning instructions with a view to ensuring that they retain their fire integrity characteristics. These labels must not be removable.

XIV. In areas susceptible to infiltration from hydrocarbons, the surface of the insulation covering shall prevent impregnation, including from hydrocarbon vapour. All insulation parts shall be laid out so as not to be in contact with hydrocarbons that may be stagnating in the hold.

Article 242-11.12

Means of escape

- I. All vessels shall comprise the necessary means of escape whereby those on board can quickly and safely make their way along the embarkation deck into life boats and life rafts. To this end, safe escapes are provided for. They must be usable safely at all times and must be completely free of obstacles. Additional assistance for evacuation shall be provided for where necessary in order to facilitate access, to give clear indications to guarantee the right configuration for emergencies.
- II. Lifts shall not be considered means of escape.
- III. Where two means of escape are required under the provisions of this chapter, one means of escape may, under exceptional circumstances, be accepted for rarely used areas other than accommodation areas, provided the escape does not pass via a galley, a machinery space or a watertight area.
- IV. Staircases and ladders shall be laid out in such a way that can become quick escape routes from areas for passengers and crew, and service areas other than machinery spaces in which the crew is normally obliged to work, as far as the decks for boarding the life boats and rafts.
- V. Below the bulkhead deck, all watertight compartments or areas or group of areas similarly demarcated shall be provided with two means of escape. At least one of these means shall not oblige people to go through a watertight door. In exceptional cases, one means of escape may be authorised, given the nature and configuration of the areas and the number of people liable to be in, and be working in, this place.
- VI. Above the bulkhead deck, all main vertical zones or group of areas similarly demarcated shall be provided with two means of escape. At least one of these means shall provide fast access to an accessible escape providing continuous fire shelter from the level of its origin to the appropriate life boat embarkation deck.
- VII. All main vertical zones shall comprise at least one easily accessible closed stairway providing continuous fire shelter, where possible, from the level on which the fire started to the embarkation deck of life boats and life rafts, or to the highest exposed deck served by the staircases. The width, number and continuity of stairways shall be provided for taking account of the number of people who may use them.
- VIII. Access from stairway enclosures to embarkation areas for life boats and life rafts shall avoid high fire risk areas.
- IX. Stairways serving only one area and a platform in this area shall not be deemed one of the required means of escape.
- X. Where it does not include direct access to the weatherdeck, the radio and telegraph area shall be provided with two means of escape or access, one of which may be made up of a sidescuttle or a window of a sufficient size or any other equivalent means.
- XI. No staircase shall exceed 3.5m of elevation without having a landing.
- XII.** Where direct access to the embarkation deck for life boats is impossible, the competent authority may accept an escape providing continuous fire shelter from the level on which the fire started to the weatherdeck, with direct access thereafter to the embarkation deck. Such an escape shall comprise emergency lighting and anti-skid coating against the sun.
- XIII.** Continuous fire shelter from stairway enclosures to embarkation areas for life boats and life rafts shall be realised either directly or via protected internal walkways. The degrees of fire integrity and insulation for stairway enclosures shall be determined according to the appropriate case in tables 1 and 2.
- XIV.** Where public spaces extend over three or more open decks, contain more combustible elements such as furniture and give access to other enclosed areas, each of the floors of the area shall be provided with two means of escape. They shall give direct access to an escape providing continuous fire shelter from the level on which the fire started to the embarkation deck for life boats.

Article 242-11.13

Additional provisions applicable to machinery spaces

All machinery spaces shall be provided with two means of escape. That shall be made up of a set of steel ladders as far apart as possible, which shall terminate at doors similarly separated from one another situated in the upper part of the area and enabling access to the embarkation deck for life boats and life rafts. One of these ladders shall be located in a protected enclosure meeting the structural protection requirements for category 4 areas, from the lower part of the space that it serves up to a secure area outside the space. The enclosure shall be provided with automatically closing fire doors offering the same structural protection at each level.

II. Means of escape from a machinery space may also be made up, on the one hand, of a steel ladder terminating at a door located in the upper part of the area and enabling access to the embarkation deck, and, on the other hand, in the lower part of the area and in a place sufficiently far from the ladder, a steel door operable from both sides shall constitute a safe escape from the lower part of the area to the embarkation deck.

III. One of the means of escape required under paragraph I may be omitted on sailing vessels with small machinery spaces, based on the extent to which either a door or a steel ladder and bridges provide a means of safety to the embarkation deck taking account of the nature and layout of the area and the people normally employed in the area.

IV. A machine control room within a machinery space shall be provided with two means of escape. One of these at least shall provide continuous fire shelter to a safe place outside a machinery space.

Article 242-11.14

Muster stations

Assembly points and embarkation areas for life boats and life rafts shall be made by deck areas based on the number of people anticipated. In general, assembly points shall be laid out close to embarkation areas. All assembly points shall have sufficient free deck space to host all those who have to assemble at that point, on the basis of at least 0.35m² per person.

Article 242-11.15

Emergency escape breathing devices

I. Emergency escape breathing devices (EEBD) shall comply with the FSS Code.

II. At least one spare breathing device for emergency evacuations shall be brought on board.

III. All vessel shall carry at least two EEBDs in the accommodation areas and at least two EEBDs for emergency escape in each main vertical zone.

IV. On all vessels, EEBDs in machinery spaces shall be located in such a way as to be ready for use in easily noticeable places, which can be reached quickly and easily at any time in case of fire. Furthermore, the number and location thereof shall take account of the layout the machinery space and the number of people normally working in the area.

V. The number and location of EEBDs shall be indicated on the firefighting plan.

Article 242-11.16

Ventilation

I. Ventilation ducts shall be made of non-combustible materials.

II. This provision shall not be imposed for parts of ducts less than 2m long or interior section of less than 0.02m². These parts do not have to be non-combustible, provided that the following conditions are met:

- a) they are only used at the end point of the ventilation device;
- b) they are not located at less than 600mm, along the conduit, from an opening used in a type A or B partition, including type B continuous ceilings;
- c) their material is adapted to fire risk.

III. Where ventilation ducts with an interior area greater than 0.02m² pass through type A bulkheads or decks, the bulkhead or deck crossings shall comprise a steel flange. These flanges shall not be mandatory if the ducts are made of steel. In both cases, ducts and flanges, where required, shall meet the following requirements:

- a) they shall be at least 3mm thick and at least 900mm long. For bulkhead crossings, this minimum length shall preferably be divided up on the basis of 450mm on each side of the bulkhead;
- b) they shall have fore insulation. The fire integrity of the insulation shall be at least equal to that of the bulkhead or deck crossed.

Furthermore, the free section ducts above 0,075 m² shall have fire shutters. All fire shutters shall function automatically and must be operable manually from both sides of the bulkhead or deck. The shutter shall be fitted with a position indicator to show whether it is open or closed. Fire shutters shall not, however, be compulsory where ducts penetrate, without serving, spaces surrounded by type A bulkheads, provided that these ducts have the same fire integrity as the bulkheads that they penetrate.

IV. Ventilation ducts in category A machinery spaces, galley areas, areas holding vehicles or boats with fuel in their tanks or places in which this fuel is stored. shall not cross accommodation areas, service areas or control stations unless they meet the following requirements:

- a) they shall be made of steel and at least 3mm thick if they have a width or diameter less than or equal to 300mm, or at least 5mm thick if they have a width or diameter equal to or greater than 760mm; in the case of ducts that have a width or diameter between 300 and 760mm, the thickness shall be obtained by interpolation;
- b) they shall be suitably supported and reinforced;
- c) they shall be equipped with automatic fire shutters close to the bulkheads they cross and shall have A-60 insulation from machinery spaces and galleys to a point at least 5m beyond each fire shutter. Alternatively, they may be insulated in compliance with Standard A-60 in all accommodation spaces, service areas and safety posts. In this case the penetrations of bulkheads of main zones shall also meet the standards or provisions laid down in paragraph IX.

V. Ventilation ducts in cross accommodation areas, service areas or control stations shall not cross category A machinery spaces, galleys, areas holding vehicles or boats with fuel in their tanks or places in which this fuel is stored unless they meet the following requirements:

- a) they are made of steel and at least 3mm thick if they have a width or diameter less than or equal to 300mm, or at least 5mm thick if they have a width or diameter equal to or greater than 760mm; in the case of ducts that have a width or diameter between 300 and 760mm, the thickness shall be obtained by interpolation;
- b) they are suitably supported and reinforced;
- c) they are fitted with automatic fire shutters near the bulkheads that they cross the integrity of the bulkheads delimiting the machinery spaces or galleys is maintained in the place or the ducts cross these bulkheads. Alternatively, ducts may be insulated in accordance with standard "A-60" inside machinery spaces and galleys. In this case the penetrations of bulkheads of main zones must also meet the standards or provisions laid down in paragraph IX.

VI. The passage of ventilation ducts with an interior section greater than 0.02m² crossing type B bulkheads shall have 900mm steel flanges spaced out 450mm either side of the bulkhead unless the ducts are not made of steel on this length.

VII. Control rooms situated outside machinery spaces and those normally hosting people shall be designed and equipped so that in the event of a fire, the machines and equipment therein can be monitored and can continue to function effectively. All measures shall be taken to ensure that ventilation, visibility and absence of smoke shall be ensured in the event of a fire. At least two different fresh air inlets shall be provided for these areas. They shall be configured in such a way as to minimise the risk of smoke penetration. These provisions shall not apply to control rooms located on an open deck and with access thereto or where local closing devices are provided for in order to prevent smoke penetration.

VIII. The extraction ducts of galley ranges shall comprise type A bulkheads when they pass through accommodation spaces or spaces containing combustible materials. In addition to the provisions laid down in paragraph IV, an evacuation duct shall be equipped:

- α) with a removable grease filter for cleaning;
- β) a fire shutter located at the lower end of the duct;
- γ) devices enabling contaminated air extraction ducts to be switched off from the galley;
- δ) a fixed device enabling a fire inside the duct to be extinguished.

IX. Where it is necessary for a ventilation duct to cross a main vertical zone, an automatically closing safety fire shutter shall be installed next to the partition. This shutter must be able to be closed by hand from either side of the partition. The control shall be bright red, and shall be located in an easily accessible place. The duct between the partition and the closing shutter shall be made of steel or other equivalent materials. The provisions of Article 221-II-2/9.3.1 shall apply to determine the insulation level. Shutters shall be equipped, on at least one side of the partition, with a prominent indicator showing whether the shutter is in open position.

X. Inlets of fresh air and outlets of polluted air shall be closed from the outside of the areas that they ventilate.

XI. Ventilators serving accommodation areas, service areas, safety posts and machinery spaces must be able to be stopped from an easily accessible position outside the area concerned. Access to this position shall not be at risk of being cut off in the event of a fire in the areas concerned. The means provided for in order to stop the mechanical ventilation of machinery spaces shall be entirely separate from those in order to stop ventilation in other areas.

XII. Where public spaces cross three or more decks and contain combustible materials such as furniture, and other enclosed areas, the area shall be equipped with a smoke extraction device. This device shall be activated by a smoke detection system meeting the requirements of Article 242-11.17 on 'Fire detection and alarm devices and automatic water-spraying extinguishing and fire detection and alarm devices', and must be manually operable. Ventilators must be able to ventilate the whole volume of the area in less than 10 minutes.

XIII. Storage areas containing highly inflammable goods shall be equipped with ventilation devices separated from other ventilation systems. Ventilation shall be installed in such a way as to prevent the accumulation of inflammable vapours in the upper and lower parts of the area. Inlets and outlets of air from the ventilators shall be positioned so that air is not taken in or expelled in a risk area, and shall be equipped with flame resistance devices.

XIV. The ventilation systems of category A machinery spaces shall be independent of systems serving other areas.

XV. All closed areas containing separate stocks of fuel shall be ventilated independently of systems serving other areas.

XVI. A ventilation system shall be installed in order to prevent dangerous accumulation of inflammable gases given off by batteries.

XVII. Ventilation openings may be used in the upper part of cabins and of the doors of public areas fitted in the bulkheads of corridors. The section of these openings shall not exceed 0.05m².

XVIII. Ducts laid down for the extraction of air from laundries shall be equipped with correctly positioned cleaning and inspection openings.

XIX. All fire shutters shall comply with point A.11 of Resolution A.754(18) of the IMO, as amended, referred to in the International Code for Application of Fire Test Procedures.

Article 242-11.17

Fire detection, fire alarm and water-spraying fire-extinguishing systems

I. Fixed fire detection and alarm systems shall be adapted to the nature of the area protected, to the risk of the spread of fire and to the possible release of smoke and gas.

II. Manually controlled fire alarms shall be distributed so as to ensure that the alarm is set off quickly.

III. Each separate area within accommodation areas and in services areas, with the exception of areas that pose no significant fire risk such as empty areas and bathrooms, shall be equipped with an automatic water-spraying fire extinguishing, detection and alarm device of an approved type, and pursuant to the provisions laid down in Article 221-II-2/7 and in Chapter 8 of the FSS Code.

IV. The system shall be designed so as to enable all sprayers installed to work at the same time, thus requiring strongest total flow. The minimum area for simultaneous functioning may be either the largest area marked out by type A-0 partitions or a notional square surface, the side of which is the biggest width of the vessel, keeping the larger of these two values. Moreover, a fixed fire detection and alarm system of an approved type pursuant to the provisions of Article 221-II-2/7 and Chapter 9 of the FSS Code, shall be installed and fitted so as to ensure that, for accommodation areas, smoke is detected in corridors, stairways and escapes.

Article 242-11.18

Fire communication network

I. Manually operated fire alarms complying with the provisions of Article 221-II-2/7 and Chapter 9 of the FSS Code shall be installed.

II. For vessels of 85m or longer, a centralised device for communicating with the public pursuant to the provisions laid down in Article 221-III/6 shall be available throughout accommodation areas, service areas, control rooms and open decks.

Article 242-11.19

Provisions relating to liquid fuel

I. All measures must be taken for the storage, distribution and use of liquid fuel in order to minimise the risk of fire and explosion.

II. Where possible, liquid fuel tankers shall form part of the vessel's structure and shall be located outside category A machinery spaces.

III. Where tankers other than double bottom tankers are next to, or in, category A machinery spaces at least one of their vertical walls shall be adjacent to the end of the machinery space, and must ideally share an end with double-bottom tankers. The surface of the part shared with the machinery space shall be as small as possible. Where the intersection of the vertical wall of a tank located in a machinery space and the vessel's side makes an acute angle, a small horizontal surface at the bottom of the tank may be authorised on the grounds of simplicity of construction. Where the fitting of a machinery space is such that a large surface at the bottom of the tank is needed, a suitably ventilated cofferdam shall be installed in order to protect the bottom of the tank from the impact of a fire in a machinery space. Where such tankers are situated within the boundaries of machinery spaces of category A they shall not contain oil fuel having a flashpoint of less than 60°C.

IV. The use of steel fuel tankers separate from the structure shall be prohibited, except where the vessel is constructed using materials other than steel.

Article 242-11.20

Provisions relating to hydrocarbons

I. All measures must be taken for the storage, distribution and use of lubricating oil pressure in order to minimise the risk of fire and explosion.

II. The storage, distribution and use of other inflammable oils for pressure use in power transmission systems, control systems, driving and heating shall be subject to these measures.

III. The forepeak shall never be used to store hydrocarbons.

Article 242-11.21

Provisions relating to gaseous fuels for domestic use

All measures must be taken for the storage, distribution and use of gaseous fuels for domestic use in order to minimise the risk of fire and explosion. The installation shall comply with the provisions laid down in Articles 242-10.08 to 242-10.11 "Storing liquid gas for domestic use, valves from circuits of liquid gas for domestic use, characteristics of circuits

of liquid gas for domestic use, equipment of liquid gas for domestic use”.

Article 242-11.22

Electric radiators

All electric radiators shall be installed in such a way as to minimise the risk of fire. The heating element shall be configured so as to prevent overheating of clothing, curtains or other such items.

CHAPTER 242-12

FIREFIGHTING

Article 242-12.01

Scope

- I. Vessels of gross tonnage of less than 500 shall comply with the provisions of this chapter.
- II. Vessels of gross tonnage of 500 and above shall comply with the provisions of Article 221-II-2/10, depending on its appropriateness regarding the vessel and its equipment. Rules on cargo ships shall apply where the vessel in question does not carry more than 12 passengers. The rules on vessels not carrying more than 36 passengers shall apply to vessels permitted to carry up to 30 people. In no case shall the provisions applied be lower than those applicable to a vessel of gross tonnage of less than 500.

Article 242-12.02

General provisions

- Fire fighting equipment shall be of an approved type and shall comply with the provisions laid down in this chapter.
- II. The possibility of taking on board equipment in addition to the minimum required under this chapter shall be examined in advance by the competent authority.
- III. The position of fire fighting equipment shall be clearly marked.

Article 242-12.03

Pressurised water

At least one jet of water from one single-length jet must be able to serve all parts of the vessel normally accessible to passengers or the crew when sailing and all storage areas or parts of storage areas when empty.

Article 242-12.04

Fire pumps

All vessels shall carry a main fire pump. Whether it is towed by a propulsion engine or driven by a dedicated energy source, its flow shall be no less than:

$$2.5 \times \{1 + 0.066 \times (L(B+D))^{0.5}\}^2 \text{ m}^3/\text{hour}$$

where:

L is the length,

B is the maximum width excluding frames,

D is the moulded depth measured to the partition deck in the middle of the vessel.

- II. When unloading at full capacity using 2 adjacent fire hydrants, the pump must be able to maintain water pressure of 0.2 N/mm² at each fire hydrant, provided that the hose can be handled effectively under that pressure.
- III. All vessels must also have a second fire pump, which may be portable. It should not be located in the same place as the main pump and it shall have its own means of power. It shall provide a flow of 80% or more of the flow of the main pump. There must be a permanent link to the sea, outside the machinery space. Sea water suction overboard shall be prohibited.

Article 242-12.05

Fire main system and fire hydrants

I The fire pumps and hydrants shall be linked to a fire main. The circuit shall be designed to ensure the maximum delivery rate from the pumps connected thereto.

II. The fire main, pipes and fire hydrants shall be installed in such a way as not to be rendered ineffective by the heat, not to corrode rapidly and to be protected against ice.

III. When a fire main is fed by two pumps, one in the machinery space and another elsewhere, it must be possible to insulate it in the machinery space and to supply it and the fire hydrants from the second pump. Cut-off valves shall be manual and installed outside the machinery space in an area that is easily accessible in the event of a fire.

IV. The fire main shall comprise only the connections needed for firefighting or for washing.

V. Fire hydrants shall be installed in such a way that hoses can be connected easily thereto. They shall be protected and distributed so that all parts of the vessel can be served by a hose.

VI. Fire hydrants shall be equipped with valves enabling a fire hose to be insulated and taken out when a fire pump is operated.

Article 242-12.06

Fire hoses

I. Fire hoses shall be no longer than 18m, and their diameter no less than 45mm.

II. Fire hoses and the necessary tools and accessories shall be located in quickly accessible places. They shall be placed prominently close to the fire hydrants or fittings on which they are used. Fire hoses shall comprise a diffused-jet and a full-jet nozzle, equipped with a stopping device, of a minimum 12mm in diameter. For accommodation and services areas, nozzle diameters shall not exceed 12mm. In machinery spaces and external areas, the nozzle size shall make it possible to obtain the maximum flow and pressure required on two jets, with the pump with the smallest capacity.

III. In the internal areas of the vessel, the hoses shall be permanently connected to the fire hydrants.

IV. Regardless of other applicable provisions, all vessels shall have at least three fire hoses with jet.

Article 242-12.07

Portable fire extinguishers for accommodation spaces and service spaces

I. All vessels shall have a sufficient number of portable extinguishers, the capacity, type and distribution of which shall meet the requirements of this article.

II. On each deck there shall never be more than 10m between two extinguishers, and there must be at least three extinguishers.

III. Where possible, extinguishers shall have the same functioning procedure.

IV. Accommodation areas cannot be protected by carbon dioxide extinguishers.

V. Apart from portable extinguishers laid down to respond to a risk inherent in an area occupied by the crew, such as a galley, all other extinguishers shall be located outside, whilst remaining close to the area where they are to be used. Extinguishers shall be installed in easily accessible, clearly marked places.

VI. The number of spare charges to be provided on board shall be at least 50% for each type and capacity of portable extinguisher on board. Where an extinguisher is not rechargeable, an additional equivalent portable extinguisher shall be taken on board.

Article 242-12.08

Extinguishing apparatus in machinery spaces

I. All vessels shall have a sufficient number of portable extinguishers, the capacity, type and distribution of which shall meet the requirements of this article.

II. All machinery spaces housing internal combustion machinery shall be protected by a fixed fire extinguishing system approved pursuant to the requirements of the FSS Code. The area must also be protected by one of the following additional devices:

- a) a set of portable extinguishers. At least one portable shall be brought on board for an installed machine power of less than 74.6kW in the area. In addition to this power, an additional extinguisher shall be brought on board for each section of 74.6kW, up to a maximum of seven extinguishers.
- b) two portable extinguishers of a type adapted to fuel fires and one foam extinguisher with a capacity of 45l or a CO₂ extinguisher with a capacity of 16kg.

III. All machinery spaces containing a liquid fuel boiler, a fuel settling tank or a liquid fuel processing unit shall be protected by means of a fixed fire extinguishing system complying with the FSS Code.

IV. All areas housing a boiler and all those containing any part of liquid fuel equipment shall have at least two extinguishers. Boiler rooms shall have at least one extinguisher.

Article 242-12.09

Firefighters' equipment

All vessels shall bring on board at least two firefighting kits including breathing apparatus for each. The competent authority may accept one such kit on board vessels with limited storage capacity.

Article 242-12.10

Fire blankets

All galleys must have a fire blanket of an approved type.

CHAPTER 242-13

RADIOCOMMUNICATION

Article 242-13.01

Definitions

For the purposes of this chapter, the following expressions shall have the meanings shown:

- 1) Bridge to bridge communication shall mean communication relating to safety between vessels from the vessel's usual navigation posts.
- 2) Permanent surveillance shall mean that the radio surveillance in question must not be interrupted if this is not during brief time periods in which the vessel's reception is disrupted or blocked by communication from the vessel or in which the installations are undergoing periodic maintenance or inspections. As regards the receiving of EGC messages, there must be at least 98% reception as defined in the IMO's SafetyNET International' manual.
- 3) Digital selective calling (DSC) shall mean a technique based on the use of digital codes of which the application enables a radio station to enter into contact with another or a group of stations and to send messages to them, and which meets the relevant recommendations of the International Radio Consultative Committee (CCIR).
- 4) Direct-printing telegraphy shall mean automatic telegraphy techniques meeting the relevant recommendations of the International Radio Consultative Committee (CCIR) (2).
- 5) General radio communication shall mean public operations and correspondence other than distress signals, emergency and safety messages, communicated by radio.
- 6) INMARSAT denotes the organisation set up by the Convention on the Creation of the International Maritime Satellite Organisation (INMARSAT) adopted on 3 September 1976.
- 7) International NAVTEX service denotes the coordinated emissions and automatic reception service on 518kHz of information regarding maritime safety by means of narrow-band direct-printing telegraphy, in English.
- 8) Marking shall mean the location of vessels, aircraft, units or persons in distress.
- 9) Maritime Safety Information shall mean warnings on navigation and the weather, weather forecasts and other urgent safety messages sent out to vessels.
- 10) Polar orbiting satellite services shall mean a service based on the use of polar orbiting satellites for receiving and sending distress warnings from emergency position indicating radio beacons.
- 11) Radio regulations denotes the annexed, or considered as annexed, radio regulation in the most recent International Telecommunications Convention in force at any given time.
- 12) Sea area A1 shall mean an area located within the radio-telephone coverage area of at least one coastal station working on VHF and in which the DSC warning function is permanently available, as definable by a contracting government.
- 13) Sea area A2 shall mean an area, outside sea area A1, located within the radio-telephone coverage area of at least one coastal station working on MF and in which the DSC warning function is permanently available, as definable by a contracting government. For mainland France, the limits of this area shall be those of the 2nd sailing category. For vessels operated from overseas territories and communities, the representative of the State in that territory or community may designate as a sea area A2 any sector with radio-telephone coverage meeting the above criteria.
- 14) Sea area A3 shall mean an area, outside sea areas A1 and A2, located within the radio-telephone coverage area of the INMARSAT geostationary satellite and in which the DSC warning function is permanently available.

- 15) Sea area A4 shall mean an area located outside sea areas A1, A2 and A3.
- 16) Global Maritime Distress Safety System (GMDSS) denotes identity in mobile maritime services, the vessel's call sign, the INMARSAT identities and the serial number identity that can be issued by the vessel's equipment and that are used to identify the vessel.

II. All other expressions and abbreviations used in this Chapter and defined in the Radio Regulations and in the 1979 International Maritime Search and Rescue Convention (SAR), subject to amendment, shall have the meanings attributed to them in the said Regulations and Convention.

Article 242-13.02
General provisions

Vessels of gross tonnage of less than 300 shall comply with the provisions of this chapter. Other vessels shall be subject to the provisions of Division 219 applicable to cargo vessels.

Article 242-13.03
Radio communication: Global Maritime Distress and Safety System (GMDSS)

All vessels shall have the necessary radio communication equipment to be able to perform distress functions and the following communication during any voyage:

- a) issue ship-to-coast distress signals by means of two separate means each using a different radio communication system;
- b) receive coast-to-ship distress signals;
- c) send and receive ship-to-coast distress signals;
- d) send and receive communications relating to the coordination of search and rescue operations;
- e) send and receive in-situ communication;
- f) send and receive signals for tracking;
- g) send and receive maritime safety information;
- h) send and receive bridge to bridge communication;
- i) send and receive general radio communication to and from land radio communication systems or networks.

Article 242-13.04
All-zone radio installations

All vessels must have at least one VHF radio with which DSC communications can be sent and received on the 156,525 MHz frequency (channel 70) and by voice transmission on the 153,300 MHz (channel 6), 156,650 MHz (channel 13) and 156,800 MHz (channel 16) frequencies. It must be possible to issue distress warnings on channel 70 from the vessel's normal navigation post.

Article 242-13.05
Zones A2 and A3 radio installations

I. Vessels called on to sail in sea areas A2 and A3 shall have the equipment laid down in this Article.

II. At least one MF radio whereby DSC communications can be sent and received on the 2187.5 MHz frequency and by voice transmission on the 2182 kHz frequency. It must be possible to issue distress warnings by DSC from the vessel's normal navigation post. Such equipment on board vessels sailing into sea area A3 shall also make it possible to send and receive DSC communication on the HF band. No equipment shall be obligatory if the vessel has the equipment laid down in the following paragraph.

III. At least one INMARSAT ship earth station shall make it possible to send and receive distress and safety communication using direct-printing telegraphy, to send and receive priority distress calls, to maintain surveillance for

receiving coast-to-ship distress warnings including those intended for the specifically defined geographical areas. The equipment shall make it possible to send and receive general radio communication using either radio telephony or direct-printing telegraphy. This equipment is not obligatory if the vessel has the equipment laid down in the previous paragraph on the basis of its sailing area, A2 or A3.

IV. At least one set capable of receiving messages sent out as part of the international NAVTEX service. If the vessel sails in a sea area in which there is no international NAVTEX service, INMARSAT equipment capable of receiving maritime safety information sent out as part of the enhanced group call system shall also be brought on board.

V. To the north of the 70th parallel north and to the south of the 70th parallel south, the INMARSAT system is not considered usable all the time and the use of an IRIDIUM installation may be acceptable as a replacement.

Article 242-13.06

Installation and use of equipment

All radio communication equipment, along with its installation and use, shall be subject to a type approved by the competent authority complying with the provisions of [décret n° 2003-961](#) of 8 October 2003 on the assessment of the conformity of telecommunications terminal equipment and radio equipment and the conditions for the installation and use thereof, amending the Posts and Telecommunications Code.

II. All radio installations shall be located in the right position to enjoy the best possible safety and coverage conditions. They shall be protected from the harmful effects of water, extreme temperatures and other unfavourable atmospheric conditions. They shall also bear, prominently, the call sign, the identity of the ship's station and other codes that may aid operations.

Article 242-13.07

Energy sources

I. An electricity supply sufficient to power radio equipment and all batteries forming part of the standby supply for the radio equipment shall be provided at all times while the vessel is at sea.

II. A standby electricity supply shall be provided on all vessels in order to power radio equipment for at least one hour, in order to guarantee distress and safety communication in the event of a breakdown in the vessel's main and emergency electricity supplies.

III. Where a standby energy supply is made up of one or more rechargeable accumulator batteries, a means of recharging the batteries automatically shall be provided, which must be capable of recharging the batteries up to the minimum capacity required within 10 hours. All means of recharging shall set off a visual and sound alarm in the event of a breakdown.

IV. Accumulator batteries forming a standby supply shall be located and installed so as to ensure their protection during operation. They must at least be sheltered from the elements.

Article 242-13.08

Maintenance of the vessel's position

Fixed radio communication equipment capable for sending DSC shall automatically receive up to date information on the position of the vessel so that it is included in any initial distress warning.

CHAPTER 242-14

SAFETY OF NAVIGATION

Article 242-14.01

Navigation lights, horns and sound signals

- I. All vessels shall comply with the provisions laid down in the 1972 International Regulation for Preventing Collisions at Sea (COLREG 72), updated by its amendments.
- II. Navigation lights shall be supplied by two separate electricity supplies, including in all cases the vessel's emergency supply.
- III. For vessels obliged to duplicate the navigation lights that must be lit when sailing, the competent authority may deem this obligation to have been met if a spare bulb can easily be installed in less than three minutes for a given light.

Article 242-14.02

Navigation equipment and systems

- I. All vessels shall be provided with the following equipment:
- a) A correctly configured magnetic compass, or equivalent, not requiring an energy supply, so that the vessel's direction can be ascertained at all times. For vessels made of steel, it shall be possible to configure the compass for coefficients B, C and D and the list angle. The magnetic compass and each of its repeaters shall be positioned so that they can be clearly read by the helmsman in the main driving position. It shall also be equipped with electric lighting based on a two-wire circuit;
 - b) an automatic sounder;
 - c) a receiver for satellite positioning system or land radio navigation system or other adapted resources, which may be used at any moment during the planned voyage in order to be able to establish and update the position of the vessel automatically;
 - d) a log measuring distances;
 - e) a gyro compass or spare fixed magnetic compass. For vessels with a gross tonnage of less than 300, a magnetic detector compass may be used, provided that an adapted emergency electricity supply is provided to supply the compass in the event of the main electricity supply being cut.
 - f) a rudder angle indicator;
 - g) a radar functioning in particular on the 9GHz frequency.

For vessels of gross tonnage below 300, this equipment is not required to be of an approved type.

- II. Moreover, a taximeter or, on a vessel other than a vessel made of steel, a manual plotting compass, or any other equivalent equipment, must allow positions to be plotted on a horizon arc of 360°.
- III. When a magnetic detector compass is able to measure and register the magnetic deviation by software calibration, the deviation curve shall not be required.
- IV. All vessels with a gross tonnage above 300 shall be equipped with an automatic identification system pursuant to Chapter V of Division 221.

Article 242-14.03

Visibility from the navigating bridge

- I. Visibility from the navigating bridge shall comply with Chapter V of Division 221. Vessels shorter than 45m shall comply with the provisions laid down in Division 221.
- II. Where the windows in the field of visibility for driving the vessel are inclined, all steps must be taken to prevent

unwanted reflections inside.

III. The windows of the navigation post shall never be made of polarised or tinted glass. Removable tinted screens may, however, be installed.

Article 242-14.04

Nautical publications

I. All vessels shall have maps and maritime publications with which the plan and track the voyage, and to trace and control the vessel's position throughout the journey.

II. A Electronic Chart and Information Display System (ECDIS) may be accepted by the competent authority. Where two ECDISs are brought on board so as to ensure continuity of navigation in the event of one of the systems breaking down, publications on paper do not need to be taken on board.

Article 242-14.05

Measuring instruments

All vessels must have a barometer. Sailing vessels must also have an anemometer and a clinometer.

Article 242-14.06

Daylight signalling lamps

All vessels shall have on board a daylight signalling lamp or other resources for communicating night and day via luminous signals, using an electricity supply not dependant solely on the vessel's fixed installations. Daylight lamps may be the searchlight required under Article 242-14.07 – 'Searchlight'.

Article 242-14.07

Searchlight

All vessels shall be equipped with a portable or fixed projector adapted for rescue operations.

Article 242-14.08

Mooring

I. Vessels shall be deemed to comply with the provisions laid down in this chapter if they are equipped with mooring devices pursuant to the regulation laid down by an approved classification society.

II. All vessels shall have at least two anchors, of which one shall be fixed. Motorised mooring devices shall have an emergency energy supply, or must be able to be operated by hand.

Article 242-14.09

Radar reflectors

Vessels with gross tonnage under 150 shall have an approved reflector radar.

Article 242-14.10

IMO number

Vessels with gross tonnage above 300 shall display the IMO number given to them on the outside, in an immediately visible location. Marking on deck or on another surface may be accepted provided that the IMO number is clearly visible from an aircraft.

CHAPTER 242-15 FITNESS FOR HABITATION OF CREW AREAS

Article 242-15.01

Scope

I. All vessels falling within the scope of this Division shall have at least one set of rooms compliant with the provisions of this Chapter, for the purposes of accommodating professional crew in sufficient numbers to ensure the operation of the vessel. The plans and documents shall clearly indicate areas potentially or normally allocated to a professional crew.

II. Vessels of gross tonnage of 500 or more shall be subject to the provisions of Division 215 applicable to cargo vessels. Other vessels shall comply with the provisions of this Chapter only.

Article 242-15.02

Location of areas

I. In general, sleeping areas shall be located amidships or aft, and above the load waterline. However, the competent authority may permit such areas to be partially immersed in case of leaks, provided that there is sufficient air volume in the area after flooding and until the margin line is reached, in order to enable the crew to evacuate the area.

II. All accommodation spaces shall be located at the rear of the first watertight peak from the fore of the vessel. This peak may be used as a dry mesh, chain locker, shelter for various appliances, or storeroom, but under no circumstances for the storage of liquids in bulk.

III. Cabins shall not open directly on to machinery spaces, kitchens, storerooms, drying rooms or communal sanitary installations. The parts of bulkheads separating these cabin areas, together with the external bulkheads, shall be suitably made of steel or of any other approved material, and shall be watertight and gastight.

Article 242-15.03

Construction of areas

I. In all areas intended for crew accommodation, the space shall not be less than 203 centimetres in height. The competent authority may permit a reduction, within certain limits, in the height of the free space in all or part of the space of these areas if it believes that this reduction is reasonable and that it does not compromise comfort.

II. The external bulkheads of cabins and dining halls shall be suitably insulated. Machinery space casings and bulkheads that bound kitchens or other heat-emitting areas shall be suitably insulated where this heat could be an inconvenience in adjacent accommodation spaces and corridors. Measures shall also be taken to provide protection against the effects of heat emitted by steam pipes or hot water pipes, or both.

III. Materials used to build internal bulkheads, panels and covers, and floors and connections

shall be adapted for use and shall be able to provide an environment that poses no risks to health.

IV. Bulkheads and ceilings shall be made of a material with a surface that can be kept clean easily. Any type of construction that is liable to harbour vermin shall be avoided.

V. The bulkheads and ceilings of cabins and dining halls must be able to be kept clean easily. The covering of these bulkheads and ceilings shall be light in colour, resistant and non-toxic.

VI. The materials and method of construction of the deck coverings in each area allocated to crew accommodation shall be of a type approved by the competent authority. These coverings shall be non-skid and moisture-proof, and may be kept clean easily.

VII. Where deck coverings are made of a composite material, the joint with the walls shall be shaped so as to prevent cracks.

Article 242-15.04

Ventilation

I. Cabins and dining halls shall be suitably ventilated. The cabin and dining hall ventilation system shall be adjustable in order to maintain satisfactory air conditions and to ensure sufficient air circulation at all times and in all climates.

II. The ventilation of all sanitary installations shall be achieved through direct contact with the free air, independently of any other part of the accommodation.

Article 242-15.05

Air conditioning

I. Except for those that regularly sail in areas in which the temperate climate does not require it, crew accommodation, radio rooms and any central machinery control stations shall be equipped with an air conditioning system.

II. Air conditioning systems, whether of the individual or central type, shall be designed in order:

a) to maintain the atmosphere at a satisfactory temperature and degree of related moisture when compared with the external atmospheric conditions, to ensure a sufficient air renewal rate in all air-conditioned areas, to take account of the specific characteristics of operations at sea and not to produce excessive vibrations or noise;

b) to facilitate maintenance and disinfection in order to prevent or control the spread of disease.

III. The power needed to operate the air conditioning system and the other ventilation systems provided for in the previous paragraphs of this guideline shall be available at all times when the crew is living or working on board and when circumstances require it. However, it shall not be necessary to use an emergency power source for this purpose.

Article 242-15.06

Heating

I. A satisfactory heating system shall provide the required heat, except on board vessels that sail exclusively in tropical climates.

II. The heating system of the crew accommodation shall operate, as circumstances require, at all times when the crew is living or working on board.

III. On all vessels in which a heating system is required, the heating shall be provided by hot water, hot air, electricity, steam or an equivalent means. However, in the area reserved for accommodation, steam shall not be used to transmit heat. The heating system must be able to maintain the temperature inside the crew accommodation at a satisfactory level in the normal weather and climatic conditions that the vessel is liable to encounter during navigation. The competent authority shall lay down the conformity conditions to be met by the systems.

IV. Radiators and other heating appliances shall be placed and, where necessary, protected, so as to prevent the risk of fire and so as not to endanger or inconvenience the areas' occupants.

Article 242-15.07

Lighting

I. Dining halls shall be illuminated by natural light and provided with appropriate artificial lighting.

II. All vessels shall be provided with a system enabling the crew accommodation to be illuminated by electricity. Where two independent electricity-generating sources are not present on board, additional emergency lighting shall be provided in the form of type-approved lamps or lighting appliances.

III. In cabins, an electric reading light shall be placed at the top of each bunk.

Article 242-15.08

Appointment of cabins

I. Cabins shall be of a suitable size and appointed in order to provide a reasonable level of comfort and to help maintain them in good order.

II. Each crew member shall have his own bunk in all circumstances.

III. The inside dimensions of bunks shall not be less than 198 cm by 80 cm.

IV. On board vessels of gross tonnage of 200 or more:

- the surface area of an officer's cabin shall not be less than 7.5 m²;
- the surface area of the other cabins shall not be less than 4.5 m² per person, or 7 m² in the case of a cabin occupied by only two people;
- the space occupied by bunks, wardrobes, chests of drawers and chairs shall be included in the calculation of surface area. Cramped or irregularly-shaped spaces that do not actually increase the available space in which to move around and that may not be used to contain furniture shall not be included in this calculation.

V. The furniture for each occupant shall include a clothes wardrobe with a capacity of at least 475 litres and a drawer or equivalent space with a capacity of at least 56 litres. Where the drawer is incorporated into the wardrobe, the combined minimum volume of the wardrobe shall be 500 litres. It shall be equipped with a shelf, and its user must be able to lock it.

VI. Where bunks are positioned one on top of the other, the lower bunk shall never be positioned less than 30 cm from the floor. The upper bunk shall be at mid-height, approximately between the bottom of the lower bunk and the underside of the deckhead beams.

VII. The component parts of a bunk and, where appropriate, the bunk board, shall be made of an approved material, which is hard, smooth and not liable to corrode or to harbour vermin.

VIII. Each bunk shall be equipped with a comfortable mattress and a mattress support or with a combined mattress-mattress support. The mattress and its stuffing shall be made of an approved material. The mattress stuffing may not be made of a material that is liable to harbour vermin. On certain vessels with an old design, the competent authority may allow the bedding to consist of hammocks or cloth stretched on to frames.

IX. Where bunks are positioned one on top of the other, a dust-proof bottom shall be fitted below the box spring of the top bunk.

X. Furniture shall be made of a smooth and hard material, which is not liable to lose its shape or to corrode.

XI. Cabin sidescuttles shall be decorated with curtains or an equivalent.

Article 242-15.09

Dining halls

I. Dining halls shall be separated from cabins and located as near as possible to the galley.

II. Dining halls shall be sufficiently large and comfortable and shall be suitably furnished and appointed, including with regard to the possibility of procuring beverages at any time, taking account of the number of crew members liable to use them at any given time. Separate or communal dining halls shall be provided for, where appropriate.

III. The surface area of dining halls for crew use shall not be less 1.5 m² per seating place provided for.

Article 242-15.10

Bathrooms

I. Separate bathrooms shall be provided for men and for women.

II. Each vessel shall have bathrooms, namely toilets, a wash basin and a bathtub or shower, or both, as a minimum, for each group of six crew members, or less, who do not have their own installations.

III. On board vessels of gross tonnage of 200 or more, each cabin shall be equipped with a wash basin supplied with hot and cold running fresh water, except where one exists in an adjoining bathroom.

IV. All water points designated for hygiene care shall be supplied with hot and cold running fresh water.

V. On board vessels of gross tonnage of 200 or more, suitably located and appointed laundry installations shall be provided for.

VI. Wash basins and bathtubs shall be of a sufficient size and made of an approved material, and shall have a smooth surface that is not liable to crack, chip or corrode.

VII. All toilets shall be of an approved model and shall be equipped with a powerful flush or other appropriate means of disposal, such as an air-suction device, in constant working order and with an individual control.

VIII. Sanitary installations that are intended to be used by several people shall comply with the following:

- a) the floor coverings shall be made from an approved durable material, which is

- moisture-proof; they shall be equipped with an effective water run-off system;
- b) the walls shall be made from steel or from any other approved material and shall be watertight over a height of at least 23 centimetres from the floor;
 - c) the areas shall be sufficiently illuminated, heated and ventilated;
 - d) the toilets shall be located in a place that is easily accessible from the cabins and the water points designated for hygiene care, but they shall be separated from them.

Article 242-15.11

Provisions relating to the preservation of food and beverages

The provisions of Title 4 of Division 215 shall apply.

CHAPTER 242-16

PROTECTION OF PERSONNEL

Article 242-16.01

Deckhouses and superstructures

The structural resistance of deckhouses and superstructures shall comply with the regulation of an approved body, taking account of the vessel and its area of operation.

Article 242-16.02

Bulwarks and railings

I. Effective bulwarks or railings shall be installed in all parts of exposed decks. The bulwarks or railings shall be at least 1 m in height above the deck. However, where this height is liable to hinder operations, the competent authority may permit lower heights if it believes that sufficient protection is provided. No opening in these protections shall be greater than 380 mm in size. Where there are no bulwarks or where the bulwark itself is less than 230 mm, the clear height under the lowest part shall not exceed 230 mm in height. Bulwarks and railings shall be supported at intervals not exceeding 2.2 m.

II. Satisfactory means shall be provided (railings, walkways, bridges or underdeck passages) to protect crew members when they move between their accommodation, the machinery spaces and any other areas used during normal operation of the vessel.

Article 242-16.03

Work in the rigging of sailing vessels

I. All measures shall be taken to enable the crew to work in complete safety where overhead work is required in the rigging.

II. To this end, the measures laid down shall be based on safe working practices recognised for the type of vessel. These measures may include, but are not limited to, the following elements:

- a) safety nets below the bowsprit;
- b) safety railings or lifelines of metal or textile fitted along the bowsprit and serving as handrails or hook points for safety harness;
- c) the mandatory use of safety harness for overhead work, on the plating and the bowsprit;
- d) a sufficient quantity of footropes and trestles of cable (or rope), permanently rigged to enable the men to stand up while working on the spars or the bowsprit;
- e) lifelines (metal or cable) fitted on the top of the spars to serve as handrails or hook points for safety harness;
- f) means for climbing safely at heights, such as fixed steps or ladders of metal attached to the mast, or traditional ratlines fastened across the shrouds to form a permanent ladder.

Article 242-16.04

Crew clothing

I. Each vessel shall have protective clothing adapted and in sufficient number for all members of the crew. This clothing shall be chosen to withstand the prevailing air and water temperature conditions in the area of operation.

II. Each crew member shall have shoes with non-slip soles.

Article 242-16.05

Noise

- I. Vessels shall be subject to the provisions of Resolution A.468(XII) of the IMO.
- II. In order to indicate the need to wear noise attenuation helmets, a safety sign shall be displayed at all entrances to areas in which the noise level exceeds 85 dB(A).

Article 242-16.06

Medical supplies

- I. Short-range vessels, whatever the capacity of their crew, and vessels without a professional crew, shall carry the C-type medical supplies of Division 217.
- II. Other vessels, where they are operated by a professional crew, shall be subject to the provisions of Division 217 applicable to cargo vessels.

Article 242-16.07

Dinghies

- I. On board vessels operated by a professional crew, any dinghy intended for the transfer of personnel between the vessel and land, or for trips, shall meet the requirements of this Article.
- II. Dinghies shall meet the essential safety requirements applicable to recreational vessels for personal use, i.e. a division of Volume 2 of this Regulation.
- III. Each dinghy shall be clearly marked with the number of people (75 kg mass) that it can transport safely and with the name of the vessel to which it is attached.
- IV. A dinghy shall carry the same equipment and safety equipment as a recreational vessel for personal use of a similar type and size. No dinghy may sail more than 6 miles from the carrier vessel, and no solely human-powered dinghy may sail more than 300 m from the carrier vessel or from a shelter on land.

Article 242-16.08

Helicopters

- I. All special installations for helicopters shall meet the requirements of Article 221-II-2/18 'Installations for helicopters'.
- II. The competent authority shall specifically examine all helicopter refuelling installations.

Article 242-16.09

Pilot transfer

The embarkation provisions laid down for pilots shall comply with Article 221-V/23.

Article 242-16.10

Gangways, bridges and gangway ladders

- I. In port, a safe means of accessing the vessel shall be extended or ready to be extended. If this means is not extended, another means shall ensure communication between persons quayside and those on board.

II. All boarding gangways shall be built in accordance with a recognised national or international standard and shall be clearly marked with the manufacturer's name, the model number, the anticipated maximum angle of use and the recommended maximum load (by number of persons or by total weight). Side-guards or railings shall be provided for. However, a gangway whose conformity with recognised standards cannot be established may be approved by the competent authority. In this case, a manufacturer's load test certificate shall be provided by the owner, or practical tests may be carried out. In all cases, the maximum operating angle, the maximum number of persons and the maximum total weight shall be clearly marked.

III. Gangway ladders shall be provided for on vessels of 120 m or longer.

IV. The means of access and its immediate surroundings shall be properly lit.

Article 242-16.11
Protection of workers

I. With regard to the design of the vessel and of the lifting apparatus, Division 214 shall apply regardless of the type of operation of the vessel.

II. With regard to periodic examinations and tests of lifting apparatus, Division 214 shall apply where the vessel is operated by a professional crew.

ANNEX 242-1.A1

DOCUMENTS AND INFORMATION TO BE PROVIDED

Unless otherwise indicated, the grouping together of several pieces of information into one document shall be permitted, provided that the document is clear and legible. Plans and documents shall be dated and shall bear the identification of their issuer. They shall be accompanied by reports containing technical comments by the classification society that examined them. References of approval for all on-board marine equipment shall be provided (see the list of equipment in question in the annexes relating to Division 311).

I- GENERAL INFORMATION

I.A – Information document

The following shall be provided: a document containing the following information, once known:

1. Name of the vessel or hull number for a new vessel
2. Flag of origin for an existing vessel
3. Detail of the type(s) of operation carried out
4. IMO No, where applicable
5. Port of registry
6. Owner: name, address, telephone, fax, person in charge of the file
7. Building yard: same information
8. Date of signing of the contract
9. Date of declared start of building work
10. Date of installation of the keel
11. Date of intended launch
12. Date of intended placing in service
13. Approved body in charge of classification
14. Classification register no
15. Length (Lr)
16. Hull length (Lh)
17. Width
18. Depth
19. Tonnage (gross, net)
20. Deadweight (maximum load)
21. Corresponding F B and T.E.(specifying, where necessary, summer, winter)
22. Method of propulsion
23. Propulsion power
24. Number and type of propellers
25. Auxiliary power sources
26. Operating speed (under sail, and with 1 or 2 engines)
27. Number of persons on board
28. Type of navigation (national or international)
29. GMDSS oceanic area
30. Radio call sign
31. MMSI
32. Marine Safety Centre responsible for placing in service
33. Marine Safety Centre responsible for monitoring vessels in service
34. Areas of operation

I.B – General documents

The following shall be provided:

- a) classification certificates, where necessary;
- b) a copy of the declaration of start of building work;
- c) a general plan of the vessel, on one or more A4 sheets;
- d) at the end of the file: plans of the vessel 'as built' (for plans covered by this Annex and that have been amended since being submitted for examination by the

competent authority), if possible in electronic form, specifying the amendments made.

II- CONSTRUCTION – STRUCTURE – FREEBOARD – SUBDIVISION – DRAINAGE – STABILITY – MACHINES – ELECTRICAL INSTALLATIONS

II.1- Construction - Structure - Freeboard - Subdivision

The following shall be provided:

- a) attestation of structure drawn up by a recognised classification society;
- b) a general structural diagram;
- c) a structural diagram of the masts and spars, and of the standing rigging;
- d) an overall diagram showing the position of the decks, bulkheads, superstructures or deckhouses, the load line at maximum displacement, the exits and the sidescuttles;
- e) a cutaway diagram amidships indicating the main dimensions;
- f) any request for exemption from the conditions of assignment of freeboard, with the preliminary opinion of the classification society;
- g) a diagram of the transverse bulkheads indicating the openings and their means of closure;
- h) description, operation and instructions for use of watertight doors;
- i) a test diagram of the capacities, with the height of the air releases;

II.2 - Drainage

A single diagram grouping together information on the various drainage devices shall be provided. The following shall be indicated on this plan: the number and location of the pumps, the water level alarms, the hull valve control positions, and the pump(s) supplied by the emergency switchboard or by an energy source other than that coming from the main electrical switchboard.

II.3- Stability

II.3.A – Intact stability

The complete stability file, weight experiment report and technical file examination notes drafted by a recognised classification society shall be provided.

II.3.B – Damage stability

The damage stability file stamped by the approved body and accompanied by its technical examination notes, if any, shall be provided.

II.4 - Machines

II.4.A- Machines et auxiliary machines

II.4.A.1 – Machinery installations

The following shall be provided:

- a) a general diagram of the machinery installation;
- b) the list of the main materials and equipment, together with their main characteristics;
- c) diagrams of the fuel, lubrication, cooling and fresh water circuits;

II.4.A.2- Steering gear

The following shall be provided:

- a) a mimic diagram of the installation;
- b) a description of the emergency operation possibilities.

II.4.A.3- Hydraulic installations

A description of the installation and its characteristics shall be provided.

II.4.A.5- Electrical installations

The following shall be provided:

- a) a mimic diagram of the installation;
- b) the characteristics of the battery groups and battery packs, the services provided by the main and emergency switchboards. The positions shall be indicated;
- c) the electrical load analyses on the emergency source;
- d) a description of the load-shedding devices;
- e) a description of the fire and bilge pump supplies;
- f) a description and layout of the insulation monitoring devices;
- g) a description of the means of starting up the emergency power generating set, where one exists;
- h) a description of the devices for protection against electrocution, fire and other electricity-related accidents.

III- FIRE PREVENTION, DETECTION AND EXTINGUISHING

III.A – Prevention

III.A.1- Subdivision

The fire subdivision diagrams containing the following information, in particular, shall be provided:

- a) fire integrity of the doors, bulkheads and decks;
- b) references of approval for the materials and doors;
- c) bulkhead passage devices.

III.A.2- Ventilation and heating

The following shall be provided:

- a) a general diagram;
- b) a description of the remote stops and their positions;
- c) a description of the valve blades, shutters, bulkhead passage devices and their positions;
- d) a description of the heating appliances and their positions.

III.A.3- Provisions relating to liquid fuels, lubricating oil and other inflammable liquids

The following shall be provided:

- a) a description of the storage of the various fluids;
- b) a description of the circuits;
- c) a description of the ventilation of the machinery spaces;
- d) a description of the sampling methods;
- e) the characteristics of the piping.

III.B – Detection

The following shall be provided:

- a) a diagram of the installations;
- b) a description of the loops;
- c) the positions and characteristics of the detectors.

III.C – Extinguishing

III.C.1- Fire system

The following shall be provided:

- a) a diagram of the pipes and the positions of the fire hydrants;
- b) the characteristics, positions, supply and means of starting-up of the

- pumps;
- c) the number of hoses and their lengths.

III.C.2- Detection and automatic water-spraying extinguishing devices

The following shall be provided:

- a) a diagram of the installation with an indication of the protected areas;
- b) the supporting calculations of the size of the installations;
- c) the characteristics, positions and supplies of the pumps;
- d) a description of the pressure maintaining device;
- e) a description of the alarms.

III.C.3- Fixed extinguishing devices

The following shall be provided:

- a) a diagram of the installation with an indication of the protected areas and the control and maintenance devices;
- b) the supporting calculations of the size of the installations;
- c) a description of the sound and light alarm devices;
- d) a description of the air renewal methods.

III.C.4 – Mobile equipment

The characteristics and positions of extinguishers and firefighters' equipment shall be provided.

IV- LIFE-SAVING EQUIPMENT AND APPLIANCES

IV.A – General plan

A diagram of the layout of the life-saving equipment shall be provided.

IV.B – Rescue craft – collective equipment

The following shall be provided:

- a) the maximum number of persons allowed on board;
- b) the number, capacity and positions of the inflatable lifeboats and life rafts;
- c) the characteristics and position of the rescue boat(s) and the launching apparatus therefor;
- d) a description of the stowage devices;
- e) a copy of the certificates of approval per type of equipment.

IV.C – Individual items of equipment

The following shall be provided:

- a) the number, description and location of the lifebuoys;
- b) the number, description and location of the life jackets;
- c) the number, description and location of the immersion suits;
- d) a copy of the certificates of approval per type.

V- RADIOCOMMUNICATION

The following shall be provided:

- a) the list of materials, with copies of the certificates of approval;
- b) a diagram of the layout of the material;
- c) a plan of the antennae;
- d) a mimic diagram of the power supplies;
- e) the layout of the battery packs;
- f) the electrical load analysis on batteries;
- g) an indication of the maintenance method provided for;
- h) a copy of the certificates of approval per type.

VI- SAFETY OF NAVIGATION

VI.A- Collision prevention

The following shall be provided:

- a) a diagram showing the horizontal and vertical angles of visibility at the steering post;
- b) a diagram indicating the positions of the navigation lights;
- c) a description of the navigation light power supplies, controls and alarms;
- d) the certificates of approval of the lights.

VI.B – Navigation devices

The list of navigation devices and their references of approval shall be provided.

VI.C- Mooring and docking

The following shall be provided:

- a) diagrams showing the positions of the equipment;
- b) details of the devices (lines, anchors provided for).

VII - HYGIENE – HABITABILITY

The following shall be provided:

- a) a diagram of the accommodation;
- b) the surface areas of the accommodation spaces;
- c) a description of the heating, ventilation and, where appropriate, air conditioning, appliances;
- d) a description of the lighting apparatus;
- e) a description of the cooking appliances;
- f) a description of the means of producing and storing drinking water and of the distribution system;
- g) examination of compliance with Division 215 of the Regulation.

VIII - PREVENTION OF POLLUTION

See Division 213 of the Regulation.

AFS CONVENTION (rendered applicable by Regulation (EC) No 782/2003):

Monitoring of relevant provisions shall be carried out by the Marine Safety Centre.