Draft Regulations on the construction, equipment and supervision of small cargo ships

Legal basis: Laid down by the Norwegian Maritime Authority on dd Month 2025 under the Act of 16 February 2007 No. 9 relating to ship safety and security (Ship Safety and Security Act) sections 2, 6, 9, 11, 12, 13, 14, 15, 19, 20, 21, 41 third section, 43, 45 and 47, cf. Formal Delegation of 16 February 2007 No. 171 and Formal Delegation of 31 May 2007 No. 590.
EEA references: EEA Agreement Annex XIII point 55a (Directive 2002/59/EC as amended by Directive 2009/17/EC, Directive 2009/18/EC, Directive 2011/15/EU and Directive 2014/100/EU). The EFTA Surveillance Authority (ESA) will be notified of the Regulations pursuant to the requirements of Act of 17 December 2004 No. 101 on European notification of technical rules, etc. (EEA Hearing Act) and the EEA Agreement, Annex II Chapter XIX point 1 (Directive (EU) 2015/1535).

1. Chapter Introductory provisions

Section 1. *Scope of application*

(1) These Regulations apply to Norwegian cargo ships of less than 24 metres in length (L) and less than 500 gross tonnage.

(2) Chapters 6 to 14 of these Regulations apply only to ships required to have vessel instructions or a trading certificate.

(3) These Regulations do not apply to ships covered by the Regulations of 14 January 2020 No. 63 on vessels of less than 24 metres carrying 12 passengers or less, and engaged solely in activities described therein.

(4) These Regulations do not apply to ships used by approved educational institutions for training programmes leading to a certificate of competency for recreational craft.

Section 2. *Vessel instructions*

(1) The following ships of 8 metres in overall length and upwards, but less than 15 metres, shall have vessel instructions:

a. ships engaged in towing operations;
b. ships engaged in anchor-handling operations;
c. ships intended to carry more than 1000 kg of cargo;
d. ships equipped with a lifting appliance that may create a heeling arm exceeding 0.10 metres;
e. ships used for transferring persons between the ship and offshore renewable energy production facilities. Renewable energy production refers to the generation of electrical energy by exploiting renewable energy resources, such as wind, waves and tidal energy.

(2) The vessel instructions shall include information about the vessel and any limitations on its use and shall be posted in a clearly visible location on board.

Section 3. *Construction of ships required to have vessel instructions or a trading certificate*

(1) Ships shall be constructed in accordance with one standard or one set of class rules from a recognised classification society, or another recognised standard accepted by the Norwegian Maritime Authority, covering the following aspects of the ship:

a. hull, including bulkheads and means of closure, in terms of construction quality, strength, watertight integrity and material properties;
b. machinery, including auxiliary systems;
c. piping systems;
d. electrical installations;
e. automation systems.

(2) The ship and its intended use shall fall within the scope of application defined by the relevant standard or class rules and comply with the conditions underlying the standard or class rules.

Section 4. *Construction of ships of less than 15 metres in overall length for which vessel instructions are not required*

Ships of less than 15 metres in overall length for which vessel instructions are not required shall either be CE-marked or constructed in accordance with the Nordic Boat Standard for Commercial Boats less than 15 metres, 1990, or another recognised standard.

Section 5. *Definitions*

For the purpose of these Regulations, the following definitions shall apply:

a. Anchor-handling: Deploying and retrieving anchors, as well as tensioning and testing the anchoring and mooring of floating constructions. Work involving the anchoring and mooring of light objects, such as a floating wharf or similar, is not considered as anchor-handling. In aquaculture, anchor-handling includes deploying and retrieving anchors, tensioning and testing anchor lines, and work on frame moorings where ropes that are part of the frame mooring are connected or disconnected. Handling of bridle legs, which are external to the frame, and inspection of connection plates within the frame mooring system, are not considered part of anchor-handling.
b. BP: The maximum continuous pulling force of the vessel (bollard pull).
c. Recreational craft: Ships not used for commercial purposes.
d. IS Code: The International Code on Intact Stability 2008, as amended by MSC.413(97), MSC.414(97), MSC.443(99) and MSC.444(99).
e. Heeling arm: The heeling moment divided by the ship’s displacement (MK/displ.). The displacement calculation shall use the lightest condition for lifting.
f. Load Line Convention: The International Convention on Load Lines of 1966, as amended by the Protocol of 1988, consolidated edition 2021 as amended by MSC.491(104).
g. Cargo ship: A ship that is not a passenger ship, fishing vessel, barge, recreational craft or a vessel considered part of another ship's outfitting. A barge is defined as a hull or ship without propulsion machinery, which is towed or pushed for all movements and used for carrying cargo.
h. Length (L): The length defined in the Load Line Convention applicable at the time of construction.
i. Enclosed ship: A ship with a deck that can be closed weathertight from the stern to the stem, uninterrupted except by superstructures or deckhouses, and constructed to prevent sea water from flooding spaces below the deck.
j. Tow: The towing or pushing of one or more objects. The towing of light objects, such as a dinghy, a light floating wharf, or similar, and short-distance movements of an object within a limited area are not considered towing.

Section 6. *Ships used for training purposes*

Ships used exclusively for catching fish, whales, seals, or other living marine resources in vocational training may, as an alternative to the legislation for issuing vessel instructions or trading certificates for cargo ships, comply with the legislation for issuing of vessel instructions or trading certificates for fishing vessels.

Section 7. *Ships with fishing gear and arrangements for fishing and catching*

Fishing gear and arrangements for fishing and catching on cargo ships shall comply with the requirements applicable to corresponding equipment and arrangements on fishing vessels.

Section 8. *Maintenance*

(1) The ship and its associated equipment shall be maintained in accordance with the manufacturer's recommendations or recognised methods.

(2) The company shall have a maintenance plan.

Section 9. *Ships for which the building contract is placed before (dd.mm.yyyy) and delivered no later than (dd.mm.yyyy+1) (date of entry into force + 1 year)*

(1) For ships for which the building contract is placed before (dd.mm.yyyy) and delivered no later than (dd.mm.yyyy+1), the provisions applicable to Norwegian ships at the time of construction shall apply. Later amendments applicable to existing ships, as laid down in regulations previously in force and in chapter 15 of these Regulations, shall also apply. For ships without a building contract, the keel shall be laid, or they shall be at a similar stage of construction, no later than (three months after the entry into force of these Regulations).

(2) The Norwegian Maritime Authority may order that a ship, in whole or in part, comply with the requirements applicable to ships for which the building contract is placed on or after (effective date), or which are delivered on or after (one year after the effective date) in the event of:

a. changed use of the ship;
b. replacement of equipment;
c. repairs;
d. conversions or other modifications;
e. increased draught.

(3) The Norwegian Maritime Authority may also impose such requirements for reasons other than those mentioned in the second paragraph, following a specific assessment of safety based on the ship's overall construction, equipment, arrangement and condition.

Section 10. *Ships transferred to the Norwegian flag and imported ships*

(1) Ships certified, or documented as having been used, as cargo ships in other countries and subsequently transferred to the Norwegian flag or imported from abroad shall, as a minimum, comply with the legislation applicable to Norwegian cargo ships with the same date of construction. The date of construction refers to the ship's contract date, keel-laying date or delivery date, as specified in the relevant Regulations.

(2) Ships not covered by the first paragraph that are required to hold a Norwegian certificate or vessel instructions for cargo ships for the first time upon transfer to the Norwegian flag or importation from abroad shall comply with the legislation applicable to new cargo ships, as specified by the relevant Regulations.

2. Chapter Navigation and navigational aids

Section 11. *Maintenance and repair*

(1) All reasonable measures shall be taken to ensure that navigational aids are maintained in good working order.

(2) Malfunctions of navigational aids occurring while underway or in a port where repairs cannot be performed shall not be considered to render the ship unseaworthy, provided that the master conducts a risk assessment and implements measures to ensure safe navigation to a port where repairs can be carried out. Documentation of the risk assessment and arrangements for ordering repairs or parts shall be maintained.

Section 12. *IAMSAR Manual and International Code of Signals*

(1) Ships of 8 metres in overall length and upwards shall carry an up-to-date paper copy of the IAMSAR Manual (International Aeronautical and Maritime Search and Rescue) Volume III.

(2) Ships of 300 gross tonnage and upwards engaged on international voyages and equipped with radio installations shall carry an up-to-date paper copy of the International Code of Signals.

Section 13. *Signals to be used in distress situations*

(1) Ships operating in the Small Coasting trade area or greater trade area shall have an up-to-date table of signals from the International Code of Signals readily available on board. These signals shall be used exclusively for distress communication with rescue coordination centres, maritime rescue units and aircraft engaged in search and rescue operations.

(2) International distress signals shall only be used to indicate that someone is in distress.

(3) The use of signals that could be confused with an international distress signal in non-distress situations is prohibited.

Section 14. *Ice Patrol Service*

Ships navigating through waters guarded by the Ice Patrol during the ice season shall use the services provided by the Ice Patrol.

Section 15. *Danger messages*

(1) The master shall notify nearby vessels and relevant authorities of the following:

a. areas with dangerous ice, a dangerous derelict or any other direct danger to navigation;
b. tropical storms;
c. sub-freezing air temperatures combined with gale force winds causing ice accretion;
d. winds of force 10 or above on the Beaufort scale for which no storm warning has been received.

(2) Messages mentioned in the first paragraph may be transmitted in English or using the International Code of Signals. The content of danger messages shall comply with the International Convention for the Safety of Life at Sea, 1974 (SOLAS) regulation V/32, as adopted by IMO Res. MSC.99(73).

Section 16. *Operation of steering gear*

When the steering gear is equipped with multiple power units that can be operated simultaneously, at least two of these power units shall be engaged in waters requiring special caution during navigation.

Section 17. *Steering gear – testing and drills*

(1) The crew shall inspect and test the steering gear at least once a week.

(2) The steering gear's functionality shall be tested in accordance with the ship's procedure, and the procedure shall include:

a. the main steering gear;
b. the auxiliary steering gears;
c. steering positions not located on the navigation bridge;
d. steering positions located on the navigation bridge;
e. the emergency power supply;
f. rudder angle indicators in relation to the actual position of the rudder;
g. remote steering gear control system power failure alarms;
h. steering gear power unit failure alarms; and
i. automatic isolating arrangements and other automatic equipment.

(3) The testing as described in the second paragraph shall demonstrate the full movement of the rudder according to the required capabilities of the steering gear, and ensure the proper operation of the means of communication between the navigation bridge and steering gear compartment. Additionally, a visual inspection of the steering gear's connecting linkage shall be carried out.

(4) Emergency steering drills shall take place at least every three months. These drills shall include direct control of the rudder from within the steering gear compartment and the established communication procedure with the navigation bridge. The emergency steering drills shall include operation of alternative power supplies, where applicable.

(5) Simple operating instructions outlining the procedures for switching between remote control systems shall be posted on the navigation bridge and in the steering gear compartment. Crew members responsible for operating and maintaining the steering gear shall be familiar with its use and the procedures for switching between systems.

(6) For ships regularly undertaking voyages exceeding 1,000 nautical miles between the port of departure and the final port of destination, the steering gear shall be checked and tested by the crew within 12 hours before departure.

Section 18. *Wheelhouse design*

For ships of 12 metres in overall length and upwards, the following requirements shall apply:

a. The size and layout of the wheelhouse shall allow for the proper placement and safe operation of navigational aids and equipment. The location and operation of workstations shall not interfere with the primary functions associated with the navigational watch.
b. If instruments are to be placed beneath the wheelhouse ceiling, the headroom shall allow for unobstructed visibility and free passage underneath the instruments. This requirement does not apply to the reflector device of the magnetic compass.

Section 19. *Visibility from wheelhouse*

(1) Ships of 12 metres in overall length and upwards, constructed on or after 1 July 1998, and equipped with a wheelhouse, shall comply with the following requirements:

a. From the conning position, the ship shall:
    i. provide an unobstructed view of the sea surface which is not obscured by more than two ship lengths forward of the bow to 10 degrees on either side;
    ii. not have any individual blind sectors exceeding 5 degrees, regardless of the ship’s draught, trim and deck cargo;
    iii. not have blind sectors exceeding 10 degrees caused by cargo, cargo gear or other objects outside the wheelhouse forward of the beam that obstruct the view of the sea surface. The total arc of blind sectors shall not exceed 20° and the clear sector between two blind sectors shall be at least 5°;
    iv. offer a horizontal field of vision extending over an arc of not less than 225 degrees, from right ahead to not less than 22.5 degrees abaft the beam on either side of the ship.
b. There shall be a clear view forward from the wheelhouse.
c. There shall be no polarised or tinted windows.
d. The ship’s side shall be visible during manoeuvring. This requirement may be met using a camera.
e. The height of the lower edge of the wheelhouse front windows above the bridge deck shall be kept as low as possible, ensuring it does not obstruct the forward view.
f. The upper edge of the wheelhouse front windows shall provide a forward view of the horizon for a person with an eye height of 1,800 mm above the wheelhouse deck at the conning

position when the ship is pitching in heavy seas, or 1,600 mm if 1,800 mm is structurally impractical.

g. At least one of the front windows shall be equipped with a clear-vision screen or a window heater with freshwater rinsing and window wiper. Depending on the wheelhouse construction, additional windows shall be installed if necessary to always ensure a clear view forward and to the sides, regardless of weather conditions.

h. The framing between the navigation bridge windows shall be kept to a minimum. The framing cannot be installed immediately forward of any workstation.

(2) Ships of 12 metres in overall length and upwards constructed before 1 July 1998 shall meet the requirements of the first paragraph subparagraphs a (i) and (ii), unless this necessitates structural alterations or additional equipment.

(3) Ships that, in the opinion of the Norwegian Maritime Authority, cannot comply with the requirements of the first paragraph shall have arrangements ensuring a level of visibility from the bridge that, to the greatest extent possible, meets these requirements.

Section 20. *Navigational aids*

(1) Ships shall have the following navigational aids on board:

Navigational aids				
Ship's overall length in metres (m) or ship's gross tonnage	<12m	≥12m<150	≥150<300	≥300
Global Navigation Satellite System (GNSS)	1	1	1	1
Magnetic compass class B	1	1	-	-
Magnetic compass class A	-	-	1	1
Spare magnetic compass	-	-	1	1
Radar reflector	1	-	-	-
AIS Class A	-	1	1	1
Bridge navigational watch alarm system	-	1	1	1
Transmitting heading device (THD)	-	-	-	1
Radar, 9 GHz (3 cm)	-	-	-	1
Echo-sounding device	-	-	-	1
Additional requirements for ships engaged on international voyages				
Pelorus or compass bearing device	-	-	1	1
Daylight signalling lamp	-	-	1	1
Log indicating the speed through water	-	-	-	1

(2) If there is an emergency steering position on board, communication between the bridge and the emergency steering position shall be possible.

(3) Navigational aids and systems offering alternative modes of operation shall indicate the actual mode of use.

(4) Ships of less than 12 metres in overall length shall have a radar reflector or a radar reflectivity that enables detection by ships navigating by radar at both 9 and 3 GHz.

(5) Instead of a Class A standard magnetic compass, ships of less than 300 gross tonnage engaged on domestic voyages may carry a Class B magnetic compass, combined with a Transmitting Heading Device (THD) connected to emergency power.

(6) Ships of less than 15 metres in overall length may keep a magnetic compass of the standard applicable at the time it was brought on board until it is replaced.

(7) GNSS-THD or gyro compass may be used as an alternative to the spare magnetic compass.

(8) Ships of less than 8 metres in overall length may use a CE-marked Global Navigation Satellite System (GNSS).

Section 21. *Nautical charts and nautical publications*

(1) The intended voyage shall be planned prior to departure.

(2) The ship shall have up-to-date official nautical charts on board. This requirement can be met with one of the following solutions:

a. paper charts on a chart table in the wheelhouse, where the ship's position can be plotted and monitored throughout the voyage;
b. an Electronic Chart Display and Information System (ECDIS) with a back-up arrangement.

(3) As an alternative to the second paragraph, the requirement for updated official nautical charts may be met in one of the following ways:

a. a chart system with a back-up arrangement approved by the Norwegian Maritime Authority. Ships of less than 12 metres in overall length may, instead of a back-up arrangement, have a permanently installed CE-marked chart plotter with nautical charts based on updated chart data from the Norwegian Mapping Authority. A gyro compass, THD or log displaying speed through the water shall be wheel-marked and connected to the chart system.
b. for ships of less than 8 metres in overall length and for ships without a wheelhouse: a CE-marked chart plotter with nautical charts based on updated chart data from the Norwegian Mapping Authority.

(4) The ship shall have the necessary nautical publications on board. These may be in digital form, cf. SLS.14/Circ.213.

Section 22. *Magnetic compass*

(1) The magnetic compass and pelorus or compass bearing device shall be independent of any power supply.

(2) The standard magnetic compass shall be properly adjusted and display the reading at the main steering position of the ship.

(3) The pelorus or compass bearing device shall be capable of taking bearings over a 360-degree arc of the horizon.

(4) Ships with a standard magnetic compass shall have a deviation table or curves for correcting headings and bearings to true.

Section 23. *Bridge navigational watch alarm system*

The bridge navigational watch alarm system (BNWAS) shall be automatically activated when the ship is underway.

Section 24. *Automatic Identification System (AIS)*

(1) AIS shall always be in operation, except where international agreements, rules or standards provide for the protection of navigational information.

(2) AIS shall be tested in connection with the annual radio survey. The test shall verify the programming of the ship's static information, correct data exchange with connected sensors and the radio performance by radio frequency measurement and on-air test (for instance using a Vessel Traffic Service (VTS)). One copy of the test report shall be kept on board.

Section 25. *Global satellite-based system for identification and tracking of ships (LRIT)*

(1) Information regarding the identity and position (latitude and longitude), and the date and time of the position provided shall be transmitted automatically in the LRIT system from ships of 300 gross tonnage and upwards engaged on international voyages outside sea area A1.

(2) The systems and equipment used to meet the LRIT requirements shall be capable of being switched off on board or capable of ceasing the distribution of LRIT information when:

a. international agreements provide for the protection of navigational information; or
b. the master deems it necessary for the safety or security of the vessel.

(3) If the transmission of LRIT information is stopped pursuant to the second paragraph subparagraph b, the master shall inform the Norwegian Maritime Authority.

Section 26. *Spare magnetic compass*

Spare magnetic compasses shall comply with the requirements of section 22 second paragraph.

Section 27. *Integrated navigation and bridge systems*

(1) Integrated bridge systems on ships shall be arranged so that the failure of one sub-system immediately alerts the officer in charge of the navigational watch through audible or visual alarms and does not cause a failure of any other sub-system.

(2) In case of a failure in any part of the integrated navigational system, it shall be possible to operate each individual item of equipment or part of the system separately.

Section 28. *Pilot transfer arrangements*

(1) Ships under compulsory pilotage that are underway in waters where the use of pilots is required shall be provided with equipment and arrangements that enable the pilot to safely embark and disembark on both sides of the ship. The provisions of IMO Resolution A.1045(27) shall be followed when implementing sections 28 to 31.

(2) Shipside doors used for pilot transfer shall not open outwards.

Section 29. *Access requirements for pilots*

When the ship is boarded from a height of 1.5 to 9 metres above the water surface, safe access shall be provided to a pilot ladder, which shall be positioned and secured so that:

a. it is clear of any possible discharges from the ship;
b. it is located within the parallel body length of the ship and, as far as practicable, within the mid-ship half length;
c. each step rests firmly against the ship's side. If constructional features prevent the steps from resting firmly against the ship's side, alternative arrangements shall be made to ensure the safe embarkation and disembarkation of pilots;
d. a single length of the pilot ladder reaches the water from the point of access or egress from the ship, even in the event of an adverse list of 15 degrees, and regardless of the loading and trim conditions of the ship;
e. the fastening points, shackles and securing ropes are at least as strong as the side ropes.

Section 30. *Precautions for access to the ship's deck*

(1) The rigging of the pilot transfer arrangements shall be supervised by a responsible officer having means of communication with the navigation bridge.

(2) The officer shall arrange for the escort of the pilot by a safe route to and from the navigation bridge.

(3) Personnel engaged in rigging and operating the transfer arrangements shall be instructed in the safe procedures to be adopted.

(4) The equipment shall be tested prior to use.

(5) Means shall be provided to ensure safe, convenient and unobstructed passage for any person embarking on or disembarking from the ship, between the head of the pilot ladder or any other appliance, and the ship's deck. The passage shall meet the following requirements:

a. When the passage is a gateway in the rails or bulwark, adequate handholds shall be provided on both sides of the opening.
b. When the passage is a bulwark ladder, two handhold stanchions, rigidly secured to the ship's structure at or near their bases and at higher points, shall be fitted. The bulwark ladder shall be securely attached to the ship to prevent overturning.

Section 31. *Equipment and lighting*

(1) The following equipment shall be kept at hand for immediate use:

a. two manropes of between 28 and 32 mm in diameter, secured to the ship;
b. a lifebuoy with a self-igniting light;
c. a heaving line.

(2) Adequate lighting shall be provided to illuminate the transfer arrangements and the position on deck where a person embarks or disembarks.

(3) The pilot transfer arrangements shall be:

a. maintained and kept clean;
b. properly stowed;
c. regularly inspected;
d. used solely for the purpose of embarkation and disembarkation.

(4) The date of the first use of the pilot ladder and the dates of any repairs shall be recorded in the maintenance system.

3. Chapter Life-saving appliances

Section 32. *General alarm*

Ships of 12 metres in overall length and upwards shall be equipped with a system to sound an alarm signal to summon all on board to muster stations and to initiate actions outlined in the muster list. The alarm may be given by the ship's whistle, siren or any other equivalent audible signal.

Section 33. *Life-saving appliances*

(1) Ships shall, as a minimum, carry the following life-saving appliances:

Life-saving appliances	**Capacity or number**		
Ship's overall length	**< 8 metres**	**≥ 8 metres < 15 metres**	**≥ 15 metres**
Lifejackets with a light	For everyone on board	For everyone on board	For everyone on board
Immersion suits, thermal	-	For everyone on board	For everyone on board
Liferaft(s) with sufficient capacity to accommodate all persons on board	-	1	2
Lifebuoy with a lifeline	1	1	1
Lifebuoy with a light	-	1	2

Hand flares	3	3	3
Rocket parachute flares	-	3	3

(2) Ships of 15 metres in overall length and upwards, excluding tankers, may operate in trade area 2 or lesser trade area with one liferaft, provided it can be launched from either side of the ship.

(3) The liferaft container shall be marked with the type of emergency pack enclosed. Ships operating in the North Sea and Baltic Sea trade area or lesser trade area may use liferaft containers marked "SOLAS B PACK", as specified in paragraph 4.1.5.3 of the LSA Code.

(4) Cargo ships of 8 metres in overall length and upwards, but less than 15 metres, engaged on domestic voyages and not carrying more than three persons on board may, instead of complying with the requirement of the first paragraph, be provided with two liferafts that are not wheel-marked, provided each liferaft is:

a. intended for at least four persons;
b. manufactured in accordance with ISO 9650-1 (Group A);
c. placed in accordance with the recommendations from the manufacturer, but not more than six metres above the waterline in the least favourable loading condition;
d. provided with a float-free arrangement in accordance with section 4.1.6 of the LSA Code (IMO Res. MSC48(66) and MSC.81(70);
e. packed in a container of sufficient buoyancy to pull the painter and release it automatically if the ship sinks, cf. LSA Code paragraph 4.2.6.

(5) Ships of less than 12 metres in overall length may carry a buoyant rescue quoit, attached to not less than 30 metres of buoyant line, in place of a lifebuoy with a lifeline.

(6) All lifesaving equipment mentioned in the first paragraph shall be in working order and ready for immediate use.

Section 34. *Stowage of liferafts*

(1) Liferafts shall be placed:

a. in a secure and sheltered position, protected from damage by fire and explosion;
b. abaft of the collision bulkhead;
c. to ensure safe launching, as well as safe embarkation and launching, with clearance from the propeller;
d. in such a way that avoids the risk of liferafts being trapped between the hulls of multi-hull craft.

(2) Liferafts shall be stowed:

a. in a state of continuous readiness, with their painter attached to the ship;
b. in a float-free arrangement with a hydrostatic release unit.

(3) The liferafts shall be capable of being safely moored to the embarkation station.

(4) Muster and embarkation stations shall be clearly marked and be adequately illuminated.

(5) Liferafts that are boarded from a position on deck more than 4.5 metres above the waterline, when the ship is in its lightest seagoing condition, shall be launched using launching appliances that comply with the requirements of paragraph 6.1 of the LSA Code.

Section 35. *Placement and storage of lifejackets and immersion suits*

(1) Lifejackets shall be stored in the vicinity of the muster or embarkation stations, or in locations where they are readily accessible and ready for immediate use. Their positions shall be clearly marked.

(2) Separate lifejackets for children and infants, specifically designed for their size, shall be kept apart from adult lifejackets.

(3) Immersion suits shall be placed so that they are readily accessible, and their location shall be clearly marked.

Section 36. *Embarkation ladder*

(1) Ships equipped with a liferaft shall have one embarkation ladder on each side of the ship to ensure safe access to the liferaft.

(2) If the liferaft mentioned in the first paragraph is boarded from a position on deck that is less than 2.8 metres above the waterline when the ship is in its lightest seagoing condition, alternative equivalent arrangements may be used.

Section 37. *Automatic emergency stop and rescue ladder*

(1) Ships with only an outdoor steering position and manned by a single person shall have an automatic emergency stop capable of stopping the propulsion machinery.

(2) Ships manned by a single person shall be equipped with a permanently mounted rescue ladder. The rescue ladder shall be arranged so that the lowest step is submerged at least 300 mm in all loading conditions. The rescue ladder shall be ready for immediate use and designed to sustain a static load of at least 200 kg. A roll-up ladder is not considered permanently mounted. If the permanently mounted ladder is hinged, it shall be easily deployable by a person in the water.

Section 38. *Recovery of persons from the water*

Ships shall have ship-specific plans and procedures for recovering persons from the water. These plans and procedures shall identify the equipment intended for recovering a helpless person from the water and outline measures to minimise the risks to shipboard personnel involved in these operations.

Section 39. *Operating instructions*

Posters or signs shall be provided on or near life-saving appliances, including liferafts and their launching arrangements, and shall:

a. illustrate the purpose of the life-saving appliances and their operational procedures, and provide relevant instructions or warnings;
b. be readable under all lighting conditions in an emergency;
c. use symbols in accordance with IMO Resolution A.760(18) "Symbols related to life-saving appliances and arrangements", as amended by Resolution MSC.82(70).

Section 40. *Muster list*

(1) An up-to-date muster list shall be kept on board. The crew members shall be aware of their duties before the voyage commences.

(2) The muster list shall be posted in the wheelhouse and in the ship’s rest room, recreation room or another visible location on board, and shall be prepared before the ship leaves port.

(3) The muster list shall specify details on:

a. the general alarm;
b. where each person shall meet;
c. the duties to be performed by each person in the case of a fire on board and the evacuation of the ship.

Section 41. *Drills*

(1) On ships of 12 metres in overall length and upwards, both an abandon ship drill and a fire drill shall be conducted monthly. The drills shall, as far as practicable, be conducted as if there were an actual emergency.

(2) The drills shall be planned in such a way that due consideration is given to regular practice in the various emergencies that may occur depending on the type of ships and the cargo.

(3) Each drill shall at least include:

a. summoning to muster stations;
b. checking and use of fire-fighting equipment and life-saving appliances;
c. checking and use of communication equipment.

(4) Crew members with responsibilities for enclosed space entry or rescue shall participate in an enclosed space entry and rescue drill at least once every three months.

Section 42. *Inspection and maintenance of life-saving appliances*

(1) All inflatable liferafts and inflatable lifejackets shall be serviced at intervals not exceeding 12 months. Liferafts mentioned in section 33 fourth paragraph shall be maintained according to the intervals specified by the manufacturer.

(2) Maintenance shall be carried out by an approved service provider for inflatable life-saving equipment.

(3) Maintenance instructions for life-saving appliances shall be available and include the following:

a. instructions and checklists for use when carrying out on-board maintenance and inspections;
b. a schedule for periodic maintenance;
c. a diagram of lubrication points with recommended lubricants.

4. Chapter Radio communication equipment for ships of less than 300 gross tonnage

Section 43. *Scope of application for chapter 4*

This chapter shall apply for ships of less than 300 gross tonnage.

Section 44. *Radio equipment*

(1) Ships shall have the following radio equipment on board:

Sea area	A1			A2	A3/A4
Trade area	1 and 2	3 and 4	Greater trade area		
VHF radio with DSC	1	1	1	1	2
VHF-radio, hand-held	1	1	1	1	1
AIS-SART (ship ≥ 8 metres)	-	1	1	1	1
EPIRB, float-free	-	1	1	1	1
EPIRB, manual	-	-	1	1	1
Recognised MSS ship earth station	-	-	-	1	2

(2) Maritime Safety Information (MSI) messages relevant to the voyage shall be up-to-date and available on board.

(3) Ships of less than 8 metres in overall length and ships without a wheelhouse may be equipped with a CE-marked hand-held VHF radio with DSC, instead of a fixed VHF radio with DSC and a hand-held VHF radio.

(4) MF radio equipment with DSC, along with NAVTEX, may be used as an alternative to the approved MSS ship earth station in sea area A2.

(5) The requirement for a manual EPIRB applies when a float-free EPIRB cannot be reached from the wheelhouse deck.

(6) The requirement for AIS-SART does not apply when the EPIRB is equipped with an integrated AIS transmitter.

(7) A DSC distress alert shall include information about the ship's position.

Section 45. *Watchkeeping and listening duty*

During the voyage, a continuous listening watch shall be maintained on emergency and call channel 16.

Section 46. *Radio records*

(1) Radio records shall be maintained on board, including records of functional testing, maintenance, significant communication events, and distress, urgency and safety messages.

(2) The deck log-book may be used to record radio events.

Section 47. *GMDSS emergency procedures and channel plan*

GMDSS emergency procedures and channel plan shall be posted at the radio station.

Section 48. *Placement of radio equipment*

(1) The VHF radio with DSC shall be stationary and installed near the conning position.

(2) The manual EPIRB shall be installed in the wheelhouse.

(3) The float-free EPIRB shall be installed as high and freely as possible.

(4) A satellite phone shall be stationary and installed in the wheelhouse.

Section 49. *Power supply*

(1) Radio equipment shall have a sufficient power supply for the entire planned voyage.

(2) On ships with an emergency power source, this source shall be capable of supplying power to the fixed radio equipment.

(3) On ships without an emergency power source, the radio equipment shall be directly supplied by the ship’s main batteries.

Section 50. *Reserve source of power*

(1) For vessels operating in the Small Coasting trade area and greater trade areas, a separate reserve source of power shall be provided, which shall be capable of supplying power to fixed radio equipment for one hour if the vessel has an emergency power source, or six hours if it does not.

(2) The reserve power source shall be connected to a dedicated charging unit. This charging unit shall be designed for maritime use and compatible with the specific battery type.

(3) The reserve power source shall be located in a suitable ventilated area above the waterline in a fully loaded condition.

(4) Hand-held VHF radios shall be equipped with a sealed emergency battery.

Section 51. *Maintenance*

(1) Radio equipment shall be tested and maintained in accordance with the manufacturer’s recommendations.

(2) The reserve power source shall undergo and pass an annual capacity test.

(3) Batteries in the reserve power source showing signs of reduced capacity shall be replaced.

(4) Lead-acid batteries shall be replaced at least every five years. Batteries designed for a longer lifespan than five years shall be replaced according to their documented service life, at the latest.

(5) The EPIRB shall be inspected by the manufacturer or their representative at least every five years and marked with the date of the last performed periodic maintenance.

5. Chapter Transfer of persons between the ship and offshore renewable energy production facilities

Section 52. *Transfer of persons*

(1) On ships used for the transferring of persons between the ship and offshore renewable energy production facilities, procedures for such transfer shall be available. These procedures shall comply with MSC-MEPC.7/Circ.10 "Guidance of safety when transferring persons at sea".

(2) The transfer shall be conducted using arrangements that ensure the safe transfer of persons. The transfer arrangements shall be:

a. maintained and kept clean;
b. properly stowed;
c. regularly inspected.

(3) Persons being transferred shall wear appropriate flotation devices.

(4) Adequate illumination shall be provided for both the deck and the water surface in the transfer area.

(5) At least one 360-degree rotating light, suitable for search purposes, shall be available.

(6) Communication shall be established between the transfer area and the conning position.

6. Chapter Construction

Section 53. *Hull accessibility*

Safe access to all parts of the hull shall be ensured, both during construction and afterwards.

Section 54. *Strengthening of the hull and use of doubling plates*

(1) Hull areas subject to additional stresses or potential damage shall be reinforced.

(2) Hull areas that cannot be reinforced shall be equipped with an internal watertight barrier to prevent further flooding of the ship in the event of damage.

(3) Doubling plates may only be used if permitted by the selected construction standard or the applicable rules of the recognised classification society, cf. section 3.

(4) The Norwegian Maritime Authority or an approved company may grant permission for the use of doubling plates for temporary hull repairs.

Section 55. *Ice-strengthening*

Ships operating in ice-prone areas shall be ice-strengthened. If the selected construction standard, cf. section 3, does not include specific rules on ice-strengthening, the rules of a recognised classification society shall apply.

Section 56. *Production conditions for ships constructed of cast materials*

For ships constructed entirely or partially of glass fibre-reinforced polyester or other moulded materials, the production conditions shall comply with the relevant rules set by a recognised classification society, or the Nordic Boat Standard for Commercial Boats less than 15 metres, 1990, C26, for ships built in accordance with this standard.

Section 57. *Anchor and mooring equipment*

(1) Ships shall have anchor and mooring equipment installed.

(2) The anchor and mooring equipment shall comply with rules on such equipment from either a recognised standard approved by the Norwegian Maritime Authority or a recognised classification society.

(3) Ships operating on international voyages more than 30 nautical miles from a port or an approved anchorage shall have anchor and mooring equipment in accordance with the rules of a recognised classification society.

(4) The anchor equipment shall be arranged to ensure that it is always ready for use.

Section 58. *Watertight subdivision on enclosed ships*

(1) Enclosed ships of less than 15 metres in overall length shall have at least two watertight bulkheads.

(2) Enclosed ships of 15 metres in overall length and upwards shall have at least three watertight bulkheads, one of which shall be a collision bulkhead positioned at a distance of at least 0.05 x L from the forward perpendicular.

(3) For enclosed ships with a full superstructure or a superstructure in the forebody that extends beyond one-fourth of the ship's length, the collision bulkhead shall be extended weathertight to the first deck above the freeboard deck. If the extension is not located directly above the collision bulkhead below, the deck section forming the step shall be weathertight. Openings in the collision bulkhead above the freeboard deck shall be capable of being closed weathertight.

Section 59. *Openings in watertight bulkheads on enclosed ships*

(1) Watertight bulkheads on enclosed ships shall have as few openings as possible. Cable and pipe penetrations shall be so designed and constructed that the watertight integrity of the bulkhead is maintained.

(2) Doors and hatches in watertight bulkheads shall also be watertight and of equivalent strength to the unpierced bulkhead. Manholes shall be bolted watertight.

Section 60. *Openings in collision bulkheads on enclosed ships*

(1) Collision bulkheads below the freeboard deck on enclosed ships shall not have openings or penetrations.

(2) The collision bulkhead may be provided with one pipe penetration to convey liquid in the forepeak tank. This pipe shall have a valve fitted where the pipe penetrates the bulkhead. The valve shall be operable from above the freeboard deck.

Section 61. *Moving parts penetrating the hull*

(1) Ships with moving parts penetrating the hull below the deepest waterline, such as sonar, shall have an internal watertight barrier which prevents the further flooding of the ship in the event of a leak. The compartment that can be flooded shall not be greater than what is necessary to be able to carry out maintenance, repairs and similar.

(2) Openings in the internal watertight barrier below the freeboard deck shall have watertight means of closure of the same strength as the adjacent structure. The means of closure shall be marked on both sides stating that it shall be kept closed while at sea. The compartment within the opening shall have a water level meter with an alarm to the wheelhouse, which is activated when the water level in the compartment reaches a maximum of 0.3 m.

7. Chapter Deck equipment

Section 62. *Definitions*

For the purposes of this chapter, the following definitions shall apply:

a. MBS: minimum breaking strength of the line
b. R_{eH}: minimum yield stress of the material
c. $R_{P0,2}$: 0.2 % elongation of the material
d. WLL (Working Load Limit): the safe working load of the equipment, which in these Regulations refers to the maximum allowable pulling force on the innermost layer.

Section 63. *Deck equipment*

(1) Deck equipment shall be of adequate scope and dimensioned and arranged to ensure safe operation.

(2) Deck equipment intended for operation from the wheelhouse shall be positioned to ensure good visibility of the equipment from the operating position. If visibility is obstructed, cameras may be used.

Section 64. *Safe zone*

All deck equipment shall be arranged in such a way that it is possible to remain in a safe zone while the deck equipment is in operation.

Section 65. *Towing winch or towing hook for towing ships*

(1) Ships engaged in towing operations shall be equipped with a towing winch or towing hook. The towing hook shall be mounted to allow free movement within the relevant horizontal and vertical sectors of towline movement. The tow shall be attached to either the towing winch or the towing hook.

(2) The towing equipment shall be arranged to ensure the tow remains under control.

(3) The towing connection shall be protected against wear caused by movement of the tow and be of sufficient length or arranged to minimise the impact of shock loads.

(4) When towing in trade areas beyond protected waters, a complete spare towing connection shall be readily available, either on board the vessel or on the towed object.

(5) Ships engaged in towing operations on international voyages more than 30 nautical miles from a port or approved anchorage shall be equipped with a towing winch.

Section 66. *Equipment for ships engaged in anchoring-handling operations*

Ships engaged in anchor-handling operations shall be equipped with an anchor-handling winch and equipment that:

a. prevents unintended line movement, such as mooring lock and closed guide pins;
b. relieves tension in the line by securing it, such as rope lock and shark jaw;
c. protects lines from wear, including devices like stern rollers, bow rollers, guide rollers and fairleads.

Section 67. *Automatic audible alarm*

Ships fitted with shark jaws, rope lock, closed guide pins, chain stopper plates or other equipment presenting similar hazards during use shall be equipped with an automatic audible alarm on the working deck. The alarm shall be activated when the equipment is set in motion.

Section 68. *Requirement for emergency release*

(1) Equipment installed in accordance with sections 65 and 66, and equipment used in operations with similar hazards, shall be fitted with a reliable and appropriate emergency release mechanism to

release tension on the line. The emergency release mechanism shall be protected against unintentional activation.

(2) Emergency release shall be possible:

a. without manual intervention on or near the equipment;
b. from the control panel of the equipment;
c. from the relevant steering position of the ship;
d. in the event of a dead ship; and
e. at the equipment's working load limit (WWL).

(3) When the emergency release mechanism is activated, the tension on the line shall be gone within 10 seconds. If the equipment includes a brake to prevent uncontrolled unwinding, the braking force shall not exceed 0.2 BP.

(4) The emergency release mechanism shall undergo testing to ensure the following functions are maintained, provided this does not conflict with the manufacturer's recommendations:

a. It shall be verified that the residual holding load of the winch does not exceed 20 % of the ship's BP.
b. When multiple components, such as winch, guide pins, shark jaws or other relevant equipment, are installed and used in the same operation, the emergency release shall occur in a sequence that ensures tension on the line is released within 10 seconds of activation. This shall be confirmed by conducting the following tests:
    i. The emergency release and emergency stop functions shall be tested from the control panel and the conning position.
    ii. The emergency release shall be tested in dead ship situations, both with the brake activated and deactivated.
    iii. The emergency release shall be tested with a force equivalent to the ship's BP. This can be performed as a static test where the line is attached to a point on deck.
c. When the winch is re-engaged after an emergency release, the motors shall engage, without the drum automatically rotating. This also applies in dead ship situations.

(5) During inspections of the emergency release on towing winches and anchor-handling winches, a dynamic test of the winch shall be conducted, where the line is pulled off the drum after the emergency release is activated.

Section 69. *Design of towing winch and anchor-handling winch*

(1) The winch controls shall be designed so that pushing the lever away from the operator pays out the winch line, and pulling the lever back towards the operator hauls it in. All levers shall automatically return to the stop position when released by the operator. All components used to control the winch shall be permanently marked to indicate the direction of operation.

(2) It shall be possible to adjust the winch speed between stop and maximum speed, even during operation. On a winch with gears, the speed shall be adjustable at each gear stage.

(3) Emergency stop controls shall be installed locally at the winch and on the bridge.

Section 70. *Dimensioning of maximum stress during operation of towing winch and anchor-handling winch*

The towing winch and anchor-handling winch shall be dimensioned so that no stresses exceed 0.4 R_{eH} during normal operation. When the brake is engaged, no stresses shall exceed 0.9 ReH. For materials that do no exhibit a proportional yield point, the stress at $R_{P0,2}$ shall be used instead of R_{eH}.

Section 71. *Brake on towing winch*

(1) A winch used for towing shall be equipped with a brake that acts directly on the drum.

(2) The holding power of the brake shall not be less than the Minimum Breaking Strength (MBS) and shall be at least 0.8 times the MBS without power supply.

(3) The brake shall be capable of being manually operated.

Section 72. *Brake on anchor-handling winch*

(1) Winches used for anchor-handling shall be equipped with a brake that acts directly on the drum.

(2) The holding power of the brake shall be at least 1,25 times the WLL. Additionally, the brake shall be capable of stopping the rotation of the drum at its maximum speed.

(3) The braking force shall not exceed the force that the foundation is designed to withstand.

(4) The brake holding force shall not be affected by power failure. The brake shall be automatically activated in the event of a power failure if the load is not controlled by the winch motors or similar systems. An override of the brake shall be possible.

Section 73. *Drum and clutch on towing winch and anchor-handling winch*

(1) The drum shall be capable of disengagement via a clutch mechanism.

(2) The drum shall be capable of manual disengagement in a dead ship condition.

(3) There shall be a minimum of three turns of line on the drum to ensure adequate friction force. The attachment of the line end to the winch drum shall be designed as the weak link and shall not exceed 0.15 x MBS.

(4) For towing winches, the ratio between MBS and BP shall be at least as follows:

BP <300 kN	MBS = 3.5 BP
300 kN < BP < 800 kN	MBS = 2.75 BP
BP > 800 kN	MBS = 2.25 BP

(5) For anchor-handling winches, the ratio between MBS and WLL shall be at least as follows:

WLL < 200 kN	MBS = 2.5 WLL
WLL > 1000 kN	MBS = 2 WLL
Linear interpolation for 200 kN < WLL < 1000 kN	

(6) If steel wire ropes are used, the drum core diameter shall be at least 14 times the design rope diameter.

(7) If a fibre rope is used on the drum, the rope diameter shall not exceed 0,25 times the drum core diameter. However, if the rope manufacturer specifies stricter minimum drum core diameter requirements, those requirements shall be adhered to.

(8) The drum flange shall extend 1.5 times the design rope diameter beyond the outermost layer when the rope is fully wound on the winch drum.

(9) If a warping end is fitted for manual handling of the rope, the pulling force shall not exceed 100 kN. The warping end shall comply with a recognised standard or rules from a recognised classification society adapted to the relevant equipment.

Section 74. *Marking of towing winch and anchor-handling winch*

Winches shall be permanently marked with the following information on a clearly visible, corrosion-resistant plate:

a. product name
b. product model
c. drum load

d. nominal speed
e. holding force
f. WLL.

Section 75. *Control panel with load monitor for towing winch and anchor-handling winch*

(1) A control panel with a load monitor for the towing winch and anchor-handling winch shall be installed on board.

(2) The control panel shall be located on the bridge where the operator has a clear view of the deck, winch and lines.

(3) If the winch can also be operated from locations other than the bridge, the load monitor shall be accessible at those locations.

(4) The load monitor shall continuously measure the load on the line during spooling in, spooling out and holding operations. The load monitor shall have an overload alarm, which is triggered at 0.5 times the MBS of the selected line.

(5) If lines other than the design line are used, the winch shall have a function enabling the user to adjust the winch's maximum pulling force in relation to the line's minimum breaking load for tension control.

Section 76. *De-rating the winch capacity*

(1) De-rating and programming of the winch capacity shall be performed by the manufacturer only.

(2) If the winch is de-rated to the extent that it has a lower WLL or equal pulling force at all layers, the winch's pulling force limitation shall not be increased, and the braking force shall be re-rated in accordance with section 72.

Section 77. *Documentation for towing winch and anchor-handling winch*

(1) Certificates for movable equipment and documentation for the towing arrangement and anchor-handling arrangement shall be kept on board.

(2) Documentation from the manufacturer shall be available to demonstrate compliance with the requirements of these Regulations.

(3) The manufacturer's instructions for safely conducting an annual functional test shall be readily accessible.

(4) Manufacturer-provided information detailing the operational limitations of the winch, including allowable types of wire, rope, and chain on the drum, as well as constraints related to weather and sea conditions, shall be available.

Section 78. *Pull-in equipment*

(1) Pull-in equipment shall be protected against unintentional activation and shall stop if the control lever or pedal is released.

(2) The equipment shall allow the load to be handled in a controlled manner.

(3) Pull-in equipment shall be fitted with a brake.

(4) The pull-in equipment shall have an emergency stop function. The emergency stop shall be positioned so that it is easily accessible to the operator of the pull-in equipment.

(5) The WLL of the equipment shall be clearly indicated.

Section 79. *Dimensioning of deck equipment*

(1) The foundation and mounting for equipment used for towing shall be dimensioned to withstand the ship's BP, with a safety factor of at least 3.5 relative to the material's minimum yield strength (R_{eH}).

(2) For towing operations involving a towing hook, all components of the towing line shall be dimensioned to withstand the ship's BP with a safety factor of at least 3.

(3) The foundation and mounting for equipment used for anchor-handling, either separately or in conjunction with a winch, shall be dimensioned to withstand a force corresponding to 120 % of the anchor-handling operation's working load limit load (WLL) with a safety factor of at least 3.5 relative to the material's minimum yield strength (R_{eH}).

(4) The foundation and mounting for other deck equipment not mentioned in the first and third paragraphs, excluding lifting appliances, shall be dimensioned in accordance with the equipment's maximum working load limit (WLL) with a safety factor of at least 3.5 relative to the material's minimum yield strength (R_{eH}).

(5) When equipment for towing or anchor-handling may be subjected to forces in horizontal or vertical directions, it shall be dimensioned to handle the ship's BP in the least favourable stability directions, from 0 to 60 degrees to either side relative to the ship's centre line and 30 degrees upwards relative to the horizontal plane.

Section 80. *Alternative dimensioning requirements*

As an alternative to the requirements of section 79, deck equipment, except lifting appliances, with foundation and mounting, may be dimensioned in accordance with a recognised standard or a set of rules from a recognised classification society.

Section 81. *Certificates for movable equipment used during towing and anchor-handling operations*

Movable equipment used in conjunction with deck equipment, such as shackles, rings, wires and hawsers, shall have a certificate for its intended use.

8. Chapter Stability documentation

Section 82. *Approval of stability information*

(1) Before the ship is put into service, approved stability information shall be available to allow the master to quickly and easily obtain accurate guidance on the ship's trim and stability under all conditions.

(2) Hull geometry, hydrostatics, cross curves, limit curves and supporting documentation shall be prepared using software listed on the Norwegian Maritime Authority's list of approved stability calculation programmes.

Section 83. *Stability information on board*

(1) A stability poster with information about the ship's limitations shall be posted in the wheelhouse. The stability poster shall be prepared on a form specified by the Norwegian Maritime Authority.

(2) Ships equipped with a lifting appliance that may create a heeling arm exceeding 0.10 metres on the ship shall have a diagram specifying information on maximum permitted weight as a function of extension and direction. This diagram shall be posted in the wheelhouse.

(3) The following stability documentation shall be kept on board:

a. tank plan and tables or curves specifying, at a minimum, the volume, centre of gravity and free surface effects at different levels for each tank;
b. hydrostatics;
c. cross curves;
d. limit curves;
e. loading conditions;

f. examples of the preparation of other loading conditions and checks against permitted limit curves.

(4) When limitations of the capacity or similar are assumed for ships engaged in towing, lifting or anchor-handling operations, cf. sections 88 to 90, these limitations shall be clearly stated in the instructions for the master in the stability manual.

Section 84. *Determination of lightship data*

(1) When the vessel is fully constructed and equipped, an inclining test shall be conducted. Before the vessel is put into service, the actual displacement and position of the centre of gravity for the lightship condition shall be determined.

(2) When constructing multiple ships in a series with identical main dimensions, structure and hull design, and with equal weight and placement of equipment, an inclining test shall be conducted for the first two ships in the series. For subsequent ships in the series, the inclining test may be omitted if displacement measurement or weighing can document that the deviation in lightship weight is less than 2 per cent and the deviation in longitudinal centre of gravity is less than 1 per cent of the overall length of the ship.

(3) A displacement measurement shall be conducted at least once within 10 years after the last approved inclining test or displacement measurement. A new inclining test shall be performed whenever a deviation in the lightship weight exceeding 2 per cent of the ship's weight, or a deviation of the longitudinal centre of gravity exceeding 1 per cent of overall length, is found or anticipated.

(4) When alterations are made to a ship that affect its lightship condition or the position of the centre of gravity, an approved company or the Norwegian Maritime Authority shall assess whether a new inclining test should be conducted or if previously established lightship data can be accepted with corrections for the alterations made. Revised stability calculations based on new lightship data shall be prepared when alterations exceed 1 per cent of the lightship weight or 0.5 percent of the ship's longitudinal or vertical centre of gravity.

(5) Inclining tests and displacement measurements shall be conducted in accordance with procedures established by the Norwegian Maritime Authority.

Section 85. *Determination of BP*

For ships engaged in towing or anchor-handling operations, the BP shall be determined through a towing test conducted according to procedures established by the Norwegian Maritime Authority.

Section 86. *Calculation of loading conditions*

(1) Loading conditions shall be calculated for all ship operations.

(2) Calculations as mentioned in the first paragraph shall include:

a. ship fully equipped without cargo;
b. ship fully equipped with cargo holds fully loaded and any cargo uniformly distributed in all holds, including hatches;
c. ship fully equipped with maximum deck cargo and any cargo below deck uniformly distributed;
d. ship fully equipped with maximum deck cargo.

(3) Loading conditions shall be calculated as specified in this section, including less favourable cargo distributions relevant to the ship's operations.

(4) The loading conditions described in the second paragraph subparagraphs a to c shall be calculated for the ship with 100 % stores and 100 % fuel, and with 10 % stores and 10 % fuel.

(5) For loading conditions described in the second paragraph subparagraphs b and c, the ship shall be loaded to its deepest waterline.

(6) When the ship is carrying liquid cargo and the density of the cargo in the homogeneous conditions described in subparagraphs b and c of the second paragraph is less than the liquid cargo to be carried, loading conditions shall also be calculated up to the load line using the actual density of the cargo, taking into account the effect of the free surface of the liquid.

(7) For ships equipped with one or more anti-rolling tank(s), stability calculations shall account for reduced stability due to their use. If such tank(s) cannot be used for all loading conditions for stability reasons, usage instructions and loading conditions corresponding to these instructions shall be prepared.

(8) If the amount of water ballast differs between the departure condition and the arrival condition, intermediate conditions shall be calculated to indicate when water ballast should be replenished or drained. The calculations shall show the stability situation immediately before replenishment or after drainage of water ballast. As an alternative to intermediate conditions, the maximum free surface effect may be used for both conditions for the affected tanks.

(9) If one specific loading conditions require water ballast or a particular store distribution to achieve a particular capacity, the stability manual shall provide clear instructions on the quantity and placement needed.

Section 87. *Calculation of loading conditions for free flooding or circulation in wells*

(1) For ships with openings or ventilators for free flooding or circulation in wells, loading conditions as described in subparagraphs a to e below shall be calculated instead of the loading conditions in section 86 second paragraph:

a. ship fully equipped, with 100 % stores and 100 % fuel, empty well and no cargo in the cargo holds, if applicable;
b. as for subparagraph a, but with 10 % stores and 10 % fuel;
c. ship fully loaded, with 100 % stores and 100 % fuel, full equipment, flooded well and the amount of water ballast necessary to achieve immersion in accordance with the freeboard;
d. as for subparagraph c, but with 10 % stores and 10 % fuel;
e. ship with cargo well partly loaded, indicating the least favourable stability situation that will occur with regard to free surfaces, cargo distribution and similar.

(2) If a ship is constructed so that the water level inside the well can be increased relative to the water level outside, stability calculations shall demonstrate that the requirements for stability have been complied with in such loading conditions. The water level inside the well shall not be below the water level outside in any loading conditions.

Section 88. *Preparation of additional conditions for ships engaged in towing operations*

When ships engaged in towing operations do not meet the towing criteria specified in section 98 while loaded according to the conditions outlined in section 86, revised loading conditions shall be calculated, indicating the limitations of the loading capacity during towing operations.

Section 89. *Preparation of additional conditions for ships engaged in lifting operations*

For ships engaged in lifting operations that may create a heeling arm exceeding 0.10 metres, loading conditions shall be calculated to account for the ship's operational pattern and the maximum permitted heeling moment from the lifting appliance. These loading conditions shall demonstrate the ship's lifting capabilities and comply with the criteria specified in section 99. Under no circumstances shall the working load limit of the lifting appliance be exceeded.

Section 90. *Preparation of additional conditions for ships engaged in anchor-handling operations*

(1) Ships engaged in anchor-handling operations shall calculate loading conditions that represent the least favourable conditions under which the ship can perform these operations. As a minimum, the following loading conditions shall be prepared:

a. ship fully equipped without cargo;
b. ship fully equipped with the maximum deck cargo that can be carried during anchor-handling operations.

(2) If the ship, pursuant to the first paragraph, requires counterbalancing to conduct anchor-handling operations, loading conditions shall be shown before the moment is applied as a point load.

(3) The loading conditions specified in the first paragraph shall be calculated for the ship with 100 % stores and 100 % fuel, and with 10 % stores and 10 % fuel.

(4) When using a winch, the stability criteria in section 99 shall be met when the winch's maximum pulling force is applied as a point load on the ship. The point load shall be placed in the outermost point within the range of movement of the anchor-handling line.

Section 91. *Preparation of additional conditions for ships operating in areas where there is a risk of ice accretion*

(1) When the ship is operating in areas where there is a risk of ice accretion:

a. loading conditions with the weight of ice added shall be prepared;
b. the ship shall be capable of meeting the stability requirements in all loading conditions, with the added weight of ice;
c. the weight of ice shall not cause the deepest waterline to become submerged.

(2) The weight of ice shall be assumed to be at least 30 kg/m² for exposed weather decks, gangways and front bulkheads of superstructures and deckhouses, and at least 7.5 kg/m² for the projected lateral planes on both sides of the ship above the waterline. The weight of ice on discontinuous surfaces, such as railings, rigging, spars (except masts) and equipment, shall be considered by increasing the total area of the projected lateral plane of the ship’s sides by 5 %. The static moment of this area shall be increased by 10 %.

Section 92. *Conditions for calculating loading conditions*

When calculating the loading conditions described in sections 86 to 91, the following conditions shall apply:

a. In fully loaded conditions, cargo shall be assumed to be homogeneously distributed across all holds, hatch coamings and any trunks.
b. When calculating the free surface effects in tanks for consumable liquids, it shall be assumed that, for each type of liquid, at least one pair of transverse side tanks or at least one centre tank has a free surface. The tank(s) assumed to have free liquid surface shall be the tank(s) where the free surface effect is greatest. The maximum free surface effect that the tank(s) can exhibit between departure and arrival conditions shall be considered. This applies to both departure and arrival conditions.
c. For vessels with cargo wells constructed to allow free flooding, meaning direct communication with the sea, the following additional considerations shall apply:
    i. The loading conditions shall be calculated including a correction for free surface effects in the cargo well. Cargo holds shall be included in the stability calculations as an integrated part of the hull, and documented in the specifications for other hull components. A cargo density of 1.025 tonnes/m³ shall be used for these calculations.
    ii. When the ship is fully fuelled and equipped, the draught shall not exceed the draught corresponding to the assigned freeboard. The water level inside the well shall be assumed to be equal to the water level outside.

iii. If the ship has more than one cargo well separated by longitudinal bulkheads, the wells shall be treated as a single well when calculating the free surface effect.

Section 93. *Calculation of stability curves*

(1) Hydrostatic curves shall be prepared, containing the hydrostatic parameters necessary for the calculation of stability.

(2) Cross curves shall be calculated for a sufficient number of heel angles, based on the ship's shape and size.

(3) For the calculation of cross curves, the ship shall be capable of trimming freely during heeling.

(4) Hydrostatic curves, cross curves and KG limit curves shall be calculated for the ship at no trim, maximum trim and intermediate trim values. These curves shall be prepared for the same trim values, for a total of at least three trim values and cover all relevant draughts.

(5) Superstructures, deckhouses, trunks and similar structures may be included in the buoyancy calculations, provided their openings are fitted with means of closure in accordance with these Regulations.

(6) If the ship is at risk of sinking due to flooding through an opening, the GZ curve shall terminate at the angle of flooding, and the ship shall be considered to have lost all stability.

(7) The KG limit curves, or equivalent tables, shall indicate the maximum permissible height of the ship’s centre of gravity for intact stability at the various draughts and trim values. The KG limit curves shall be based on the applicable stability criteria for the ship.

(8) Ships engaged in towing operations shall have limit curves indicating KG_{max} for such operations.

9. Chapter Stability criteria

Section 94. *Stability*

(1) All ships shall have adequate stability and proper trim in all relevant loading conditions. The list shall not exceed 1.5 degrees in seagoing conditions.

(2) Ballast shall be positioned and secured in such a way that it cannot shift. Permanent ballast shall not be removed or relocated.

(3) When liquid ballast is to be used as permanent ballast, it shall be stored in sealed tanks that are completely filled. Detailed information regarding the liquid ballast shall be provided in the stability manual.

Section 95. *Stability in intact condition for enclosed ships*

(1) For enclosed ships, the following stability criteria shall be satisfied for all loading conditions, unless otherwise provided by sections 96 to 99:

a. The area under the righting arm curve (GZ curve) shall be at least 0.055 metre-radians up to an angle of heel of 30 degrees, and at least 0.09 metre-radians up to 40 degrees or the angle of flooding, if this angle is less than 40 degrees. Additionally, the area under the GZ curve between the heeling angles of 30 and 40 degrees, or between 30 degrees and the angle of flooding if that angle is less than 40 degrees, shall be at least 0.03 metre-radians.
b. The righting arm (GZ) shall be at least 0.20 metres at an angle of heel of 30 degrees or more.
c. The angle of heel at which the righting arm (GZ_{max}) reaches its maximum value shall not be less than 25 degrees.
d. The initial metacentric height (GM) shall be at least 0.15 metres.

(2) If the ship’s shape prevents compliance with the criteria in the first paragraph subparagraph c, the first paragraph subparagraphs a and c may be replaced by the following:

a. The area under the GZ curve shall be at least 0.07 metre-radians up to an angle of heel of 15 degrees when the maximum righting arm (GZ_{max}) occurs at 15 degrees, and at least 0.055 metre-radians up to 30 degrees when GZ_{max} occurs at 30 degrees or more. When GZ_{max} occurs between 15 and 30 degrees, the required area under the GZ curve up to the angle where GZ_{max} occurs shall be determined using the following formula:
Minimum area = 0.055 + 0.001 (30 degrees – θ_{max}),
where θ_{max} is the angle at which GZ_{max} occurs. Additionally, the area under the GZ curve between 30 and 40 degrees, or between 30 degrees and the angle of flooding if the latter is less than 40 degrees, shall be no less than 0.03 metre-radians.
b. The angle of heel where GZ_{max} occurs shall not be less than 15 degrees.

(3) Ships operating on international voyages more than 30 nautical miles from a port or approved anchorage shall comply with the requirements of the IS Code Part A chapter 2.3.

Section 96. *Alternative stability requirement for vessels with cargo wells partly flooded*

Loading conditions for partly flooded wells may have a GZ_{max} of at least 0.10 m and a positive GZ curve up to at least 20 degrees, provided that the flooding and discharging of the well takes place only in completely sheltered waters, and that the cargo well is either completely empty or completely flooded when the ship is at sea.

Section 97. *Intact stability for open ships*

Open ships shall comply with the Nordic Boat Standard for Commercial Boats less than 15 metres, 1990, C3 paragraph 4, but with a requirement for minimum GM equal to 0.50 metres.

Section 98. *Additional stability requirements for ships engaged in towing operations*

(1) Ships engaged in towing operations shall be enclosed ships.

(2) When ships engaged in towing operations are subjected to a transverse force resulting in a transverse speed through the water of 5 knots, the first intersection between the heeling arm curve and the righting arm curve (GZ curve) shall occur at an angle less than the angle of flooding.

(3) When ships carrying out towing operations are subjected to a transverse force equal to 0.65 times the BP of the ship, the area between the righting arm curve (GZ curve) and the heeling arm curve, calculated from the first point of intersection to the first occurrence of either 40 degrees, the angle of GZ_{max} or the angle of flooding, shall be equal to or greater than 0.010 metre-radians. The vertical arm of the heeling moment shall be considered as the distance from the centre of the propeller(s) to the towing connection point.

(4) As an alternative to the requirements in the second and third paragraphs, compliance with the requirements of the IS Code Part B paragraphs 2.8.2.1 and 2.8.2.2 is acceptable.

Section 99. *Additional stability requirements for ships with lifting appliances and ships intended for anchor-handling operations*

(1) Ships equipped with lifting appliances shall be enclosed ships.

(2) Ships intended for anchor-handling operations shall be enclosed ships.

(3) The maximum angle of heel due to the heeling moment from the lifting appliance or anchor-handling winch shall be 7 degrees or the angle at which any part of the freeboard deck is within 200 mm of the waterline, whichever is smaller. The area under the righting arm curve (GZ curve) shall be at least 0.090 metre-radians up to an angle of 40 degrees or the angle of flooding, whichever occurs first. The angle of heel shall be taken into account.

(4) The maximum angle of heel may be between 7 and 10 degrees if the following conditions are satisfied when the lifting appliance or anchor-handling winch is operating at maximum loading moment:

a. The righting arm curve (GZ curve) shall have a positive extent of at least 20 degrees beyond the state of equilibrium. Openings without weathertight means of closure shall be treated as points of flooding.
b. The area requirement of the third paragraph is satisfied.
c. No part of the freeboard deck is located less than 200 mm from the waterline.

(5) If other deck equipment is used simultaneously with the lifting appliance or anchor-handling winch, the total heeling moment shall not exceed the moment used in the calculations in the third and fourth paragraphs.

(6) Information from the manufacturer shall be available concerning the maximum angle of heel for which the lifting appliance is intended. The maximum permitted angle of heel in the third and fourth paragraphs shall not exceed the manufacturer's stated maximum angle.

(7) Information from the manufacturer shall be available concerning the maximum pulling force for which the anchor-handling winch is designed.

(8) If counter-ballasting is used to balance the heeling moment caused by the weight in the lifting appliance, the consequences of load loss shall be considered. This assessment shall be conducted in accordance with the IS Code Part B paragraph 2.9.5 or equivalent rules from a recognised classification society.

10. Chapter Load lines and freeboard

Section 100. *Exception for high-speed, light-built craft*

Sections 104 to 107 do not apply to ships constructed in accordance with the rules of a recognised classification society for high-speed, light-built craft.

Section 101. *Freeboard for enclosed ships*

(1) The freeboard, measured from the surface of the freeboard deck at the side amidships, shall be determined based on factors such as stability, trim, hull strength and the location of accommodation, among other factors.

(2) The freeboard shall not be less than 200 mm in any loading condition.

(3) The bow height in any seaworthy condition shall comply with the chosen construction standard or the rules of the selected recognised classification society, cf. section 3. If the selected standard or the rules of the recognised classification society do not contain provisions on bow height, the bow height requirements of the Load Line Convention shall apply.

Section 102. *Application of draught marks for enclosed ships*

(1) Ships shall have draught marks and a deck-line on both sides in accordance with the marking form established by the Norwegian Maritime Authority.

(2) Ships that do not carry cargo are exempt from the requirement in the first paragraph.

Section 103. *Freeboard for open ships*

(1) The freeboard shall be determined based on factors such as stability, trim and hull strength; however, the freeboard amidships shall not be less than the greater of the following:

a. $F = (4.5 \times \Delta)/(1000 \times \text{overall length} \times \text{breadth})$ m
b. F= 0.5 m

(2) The forward freeboard shall not be less than 1.2 × F. The aft freeboard shall not be less than 0.8 × F.

Section 104. *Freeing port area*

(1) Ships shall be equipped with freeing ports if there is a risk of water accumulating on the deck between the bulwark, end bulkheads of enclosed superstructures, deckhouses or similar structures.

(2) The freeing port area (A) on each side of the ship, measured in square metres, shall be calculated and at least meet the following requirements:

$$A(m^2) = 0{,}02\left(\frac{1}{m}\right) * V(m^3)$$

V = The volume, in m^3, shall be calculated as the total area of locations where water may accumulate on the deck to the top of the bulwark. Volume related to hatches, deckhouses, etc., shall be deducted.

(3) The freeing port area may be reduced by up to one-third on one side if it is correspondingly increased on the opposite side.

(4) Freeing ports shall be arranged along the bulwark to effectively clear the deck of water. The lower edge of the freeing ports shall be positioned as close to the deck as possible.

(5) Freeing ports with a height exceeding 300 millimetres shall be fitted with bars spaced no more than 230 mm and no less than 150 mm apart or be provided with other suitable protective arrangements.

(6) Ships operating on international voyages more than 30 nautical miles from a port or an approved anchorage shall have a freeing port area that complies with rules from a recognised classification society.

Section 105. *Side scuttles and windows*

(1) Windows shall not be fitted below the freeboard deck.

(2) Side scuttles located below the freeboard deck shall be fitted with hinged deadlights on the inside and be capable of being closed watertight.

(3) Side scuttles and windows on the freeboard deck in spaces considered buoyancy volumes or spaces with openings leading below the freeboard deck, shall be provided with deadlights capable of being closed weathertight. Where deadlights are not permanently attached, there shall be one for each window or side scuttle. These shall be stored in a readily accessible location.

(4) For ships intended for operation on international voyages more than 30 nautical miles from a port or approved anchorage, the following shall also apply:

a. Windows shall not be fitted in the first tier of spaces considered buoyant volumes or spaces with openings leading below the freeboard deck.
b. Side scuttles in the first tier of spaces considered buoyant volumes or spaces with openings leading below the freeboard deck shall be fitted with hinged deadlights on the inside and be capable of being closed weathertight.
c. Side scuttles and windows in the second tier of spaces considered buoyancy volumes, or spaces with openings leading below the freeboard deck, shall be provided with deadlights capable of being closed weathertight. Where deadlights are not permanently attached, they shall be stored in a readily accessible location.

Section 106. *Ventilators*

(1) Ventilation openings to spaces containing the propulsion machinery shall not be submerged until an angle of heel of 40 degrees is reached, unless they:

a. are fitted with spray-proof gratings;
b. are equipped with drainage; and
c. can be closed weathertight.

(2) Ventilation openings to spaces containing the main propulsion machinery shall be considered flooding points in the stability calculations.

(3) Ventilation openings, other than ventilation openings to spaces containing the main propulsion machinery, which are submerged before an angle of heel of 40 degrees, shall be provided with at least manual weathertight closures.

(4) The lower edge of ventilation openings shall be positioned at least 450 mm above decks that are not the freeboard deck.

(5) Compliance with the first to third paragraphs of this section is acceptable even if the selected standard or rules from a recognised classification society have stricter requirements, cf. section 3.

Section 107. *Air pipes*

(1) The flooding point of air pipes shall be at least 450 mm above decks that are not the freeboard deck.

(2) Ships intended for operation on international voyages more than 30 nautical miles from a port or approved anchorage shall have air pipes equipped with automatic closing devices.

Section 108. *Bulwarks and guard rails*

(1) Open deck spaces intended for persons on board shall be fitted with bulwarks or guard rails. Bulwarks and guard rails may be detachable if necessary for the operation of the ship.

(2) Based on a risk assessment, chains may replace detachable bulwarks or guard rails in the stern, cf. the first paragraph.

(3) The height of bulwark and guard rails shall be at least 1,000 mm above the deck.

(4) The lowest opening in the guard rails shall not exceed 230 mm. Other openings shall not exceed 380 mm.

(5) The distance between the stanchions in the guardrails shall not exceed 1,500 mm.

(6) On ships engaged in towing operations in international voyages more than 30 nautical miles from a port or approved anchorage, open deck spaces intended for use by persons on board shall be fitted with bulwarks, regardless of the provision of the first paragraph.

Section 109 *Descent from deck to water level*

(1) The descent from the deck to the water level shall be protected with a hinged gate or hinged guard rails.

(2) The gate or guard rails mentioned in the first paragraph shall be marked with "To be kept closed at sea".

(3) Stairs in the descent from the deck to the water level shall be slip-resistant.

(4) A handrail shall be provided along the descent to the water level.

(5) The descent shall be oriented along the length of the ship.

11. Chapter Machinery and electrical installations

Section 110. *Machinery*

(1) Propulsion and auxiliary machinery, gears and associated control and monitoring systems shall be suitable for maritime use and intended for commercial operations.

(2) Boiler installations and pressure vessels with a working pressure of 3.5 bar or higher and flexible pipes and hoses carrying flammable liquids shall be type-approved by a recognised classification society.

(3) On ships of 15 metres in overall length and upwards, the following shall be type-approved for maritime use by a recognised classification society:

a. propulsion and auxiliary machinery with a 100 kW rating and above, including gears and associated control and monitoring systems;
b. steering gear installations with associated control and monitoring systems.

(4) Couplings on oil fuel lines shall be screened to avoid oil spray onto hot surfaces or other ignition sources. Such piping systems shall have as few couplings as possible. Flexible hoses shall only be used where necessary to accommodate movement between machinery and fixed piping systems.

(5) Drip trays with sufficient capacity shall be provided to collect leakages from couplings on fuel and oil tanks, as well as from parts of the fuel system that are regularly opened for maintenance.

(6) Sight glasses for visual indication of tank filling levels shall be designed for maritime use and protected against mechanical damage. Sight glasses shall be fitted with self-closing valves.

(7) Air pipes from oil fuel tanks shall be led to the open deck.

(8) It shall be possible to restore the ship's propulsion from a dead ship condition within 30 minutes.

Section 111. *Main source of electrical power*

(1) Where the auxiliary services necessary for the safety and propulsion of the ship depend on electrical power, the ship shall be equipped with two or more main sources of power. One of these main sources of power may be driven by the main propulsion engine.

(2) Where electrical power is the sole means of maintaining auxiliary services necessary for the safety and propulsion of the ship, these auxiliary services shall be restored automatically within 45 seconds. Restoration shall be achieved without the use of emergency power.

(3) All electrical services necessary for maintaining the ship in a normal operational and habitable condition shall be ensured without use of the emergency source of electrical power.

(4) The ship shall be equipped with both a main and an emergency source of power, constructed in such a way that a malfunction in one installation does not affect the other.

Section 112. *Emergency source of electrical power*

(1) Ships shall be equipped with an independent emergency source of electrical power with an emergency switchboard.

(2) The emergency source of electrical power shall be either an accumulator battery or a generator.

(3) If the emergency source of electrical power is an accumulator battery, it shall be able to support the required load as specified in section 115, with a voltage reduction of no more than 12 % of its nominal voltage, without recharging.

(4) If the emergency source of electrical power is a generator, it shall have independent operational and supply systems.

(5) The emergency source of electrical power shall be capable of operating at an angle of heel up to 22,5 degrees and with a trim of up to 10 degrees from an even keel.

(6) If the main electrical power source fails, the emergency power source shall automatically connect to the emergency switchboard within 45 seconds.

(7) The emergency source of electrical power with an emergency switchboard shall be located above the bulkhead deck, in a readily accessible area that is not contiguous with the boundaries of category A machinery spaces or spaces containing the main source of electrical power or the main switchboard.

(8) The emergency switchboard shall be located as close as possible to the emergency power source. Where the emergency source of power is a generator, the emergency switchboard shall be located in the same area.

Section 113. *Ships with main source of electrical power located in two independent machinery spaces*

The requirement for an independent emergency source of electrical power, as outlined in section 112 first and seventh paragraphs, shall be considered satisfied if:

a. the main source of power is located in two or more rooms which are not adjacent, and each room:
   i. has its own independent system, including power distribution and control systems;
   ii. is completely independent from the other, so that a fire or other accidents in any one room will not affect the power distribution from the others or the services listed in section 115; and
b. an emergency source of electrical power is provided, with at least enough capacity to supply the services listed in section 115 first paragraph subparagraph a (i) and (ii) and subparagraph b.

Section 114. *Transitional source of power*

(1) Where a generator is used as the emergency source of power, a transitional source of electrical power shall be provided.

(2) The transitional source shall consist of accumulator batteries capable of supplying electrical power for 30 minutes without recharging to the following:

a. emergency lighting, cf. section 115 first paragraph subparagraph a;
b. the fire detection system;
c. the fire alarm system;
d. the general alarm;
e. signal and alarm systems necessary in emergency situations;
f. electronic charts, GNSS and AIS.

(3) If the emergency generator automatically starts and is capable of supplying the services listed in subparagraphs a to e of the first paragraph within 45 seconds of the loss of main power, the requirement for a transitional power source for these consumers will be considered met.

Section 115. *Capacity of the emergency source of power*

(1) The emergency power source shall have enough capacity to supply the following consumers simultaneously:

a. emergency lighting:
   i. at every muster or embarkation station and over the sides;
   ii. in all alleyways, stairways and exits providing access to muster or embarkation stations;
   iii. in the machinery spaces and at the source of emergency power;
   iv. at the main switchboard and the emergency switchboard;
   v. in spaces where radio and main navigating equipment are located; and
   vi. at the fire pump and at the starting position of the fire pump's engine;
b. navigation lights;
c. electronic charts, GNSS and AIS;
d. equipment for internal and external communication in emergency situations;
e. the general alarm;
f. the fire detection system;
g. the fire alarm system;
h. all signal and alarm systems which may be required in an emergency, if they are electrically operated by the ship’s main generating sets;
i. the ship’s sprinkler pump, if any and if it is electrically operated;

j. the ship’s daylight signalling lamp, if it is operated by the ship’s main source of electrical power.

(2) The emergency source of power shall be capable of supplying the consumers mentioned in the first paragraph for 3 hours. For ships intended for operation on international voyages more than 30 nautical miles from a port or approved anchorage, the emergency source of power shall have sufficient capacity to supply consumers mentioned in the first paragraph for 18 hours.

(3) On ships of 15 metres in overall length and upwards, the emergency source of electrical power shall have sufficient capacity to supply the ship's fire pump for 30 minutes. This requirement does not apply if the fire pump can be operated for 30 minutes by another source of power located outside of the machinery space and independent of both the main and emergency sources of power.

(4) If consumers other than those mentioned in the first paragraph are connected to the emergency switchboard, they shall either be supplied simultaneously or be automatically disconnected.

Section 116. *Main and emergency electrical lighting system*

(1) Ships shall have a main electrical lighting system that provides illumination throughout all normally accessible areas of the ship. This system shall be powered by the main source of electrical power. Fire or other damage in spaces containing the main source of electrical power, including any transformers, shall not render the emergency lighting system inoperative.

(2) Ships shall be equipped with an emergency electric lighting system. This system shall be powered by the emergency source of electrical power. Fire or other damage in spaces containing the emergency power source, including any transformers, shall not cause the main lighting system to fail.

Section 117. *Power supply to the general alarm system or public address system*

If the general alarm system or public address system relies on electrical power, it shall be supplied by both the ship's main source of power and an emergency source of power.

12. Chapter Fire safety

Section 118. *Definitions*

For the purposes of this chapter, the following definitions shall apply:

a. Fire load (MJ): the total thermal energy released by combustion of all fixed and mobile combustible materials in a space, i.e. combined permanent and variable fire loads. The calculated fire load shall include all combustible content in the building and the relevant parts of the construction, including linings and accommodation.
b. Fire-restricting material: a material meeting the fire-restricting material requirements set out in the FTP Code.
c. Dangerous goods: goods governed by the Regulations of 1 July 2014 No. 944 on dangerous goods on Norwegian ships.
d. FRD 30: fire-resisting divisions as defined in the 2000 HSC Code paragraph 7.2.1 with a protection time of 30 minutes.
e. FSS Code: the International Code for Fire Safety Systems (Fire Safety Systems Code), as adopted by the Maritime Safety Committee by resolution MSC.98(73), as last amended by MSC.484(103).
f. FTP Code: the International Code for Application of Fire Test Procedures, 2010 (Fire Test Procedures Code), as adopted by the Maritime Safety Committee by resolution MSC.307(88), as amended by MSC.437(99).
g. 2000 HSC Code: the International Code of Safety for High-Speed Craft (High-Speed Craft Code), as adopted by the Maritime Safety Committee by resolution MSC.97(73), as amended by MSC.499(105).

h. Low flame spread: the surface thus described will adequately restrict the spread of flame, this being determined in accordance with the FTP Code.
i. Class A divisions: those divisions formed by bulkheads and decks which comply with the following criteria:
    i. they are constructed of steel or other equivalent material;
    ii. they are suitably stiffened;
    iii. they are insulated with approved non-combustible materials, ensuring that the average temperature on the unexposed side does not exceed 140 °C above the initial temperature, and that the temperature at any single point, including any joint, does not exceed 180 °C above the initial temperature within the following time limits:

Class "A-60":	60 minutes
Class "A-30":	30 minutes
Class "A-15":	15 minutes
Class "A-0":	0 minutes

    iv. they are so constructed as to be capable of preventing the passage of smoke and flame through the division to the end of the one-hour standard fire test.
j. Class B divisions: those divisions formed by bulkheads, decks, ceilings or linings which comply with the following criteria:
    i. They are constructed of approved, non-combustible materials, and all materials entering into the construction and erection of Class B divisions shall be non-combustible.
    ii. they have an insulation value such that the average temperature on the unexposed side will not exceed 140 °C above the initial temperature, and the temperature at any single point, including any joint, does not exceed 225 °C above the initial temperature, within the following time limits:

class "B-15"	15 minutes
class "B-0"	0 minutes

    iii. they are constructed to prevent the passage of flame before the end of the first half-hour of the one-hour standard fire test described in the FTP Code.
k. Fire load density (MJ/m^2): total fire load per area unit in a fire cell. The area unit can be the enveloping surface (the sum of the floor, ceiling and wall surfaces) or the floor surface. The area unit to use depends on the applied method or standard.
l. Steel or equivalent material: Any non-combustible material that, either on its own or when combined with insulation, possesses structural and integrity properties equivalent to steel after exposure to the standard fire test (e.g. aluminium alloy with appropriate insulation).
m. Non-combustible material: material that neither burns nor emits flammable vapours in sufficient quantities to self-ignite when heated to approximately 750 °C, as determined in accordance with the FTP Code.

Section 119. *Insulating materials and materials used in accommodation spaces*

(1) Except in cargo spaces and refrigerated compartments, insulating materials shall be non-combustible.

(2) Insulation near engines, fuel oil lines and surfaces with temperatures of 220 °C or higher shall be protected against absorbing flammable liquids or gases.

(3) The following shall apply in accommodation spaces, service spaces and control stations:

a. sheeting, ceilings, smoke barriers and associated fixings shall be made of non-combustible materials; and
b. interior surfaces shall have low flame-spread characteristics and shall not produce smoke at hight temperatures, emit toxic substances or create an explosion hazard.

(4) Ships of less than 15 metres in overall length, constructed of composite material or aluminium, may use fire-restricting material as an alternative to non-combustible material specified in the first paragraph and the third paragraph subparagraph a.

Section 120. *Possibility of restricted use of combustible materials*

The interior sheeting, ceilings and associated fixings in accommodation spaces and service spaces may be of combustible material, provided these spaces are enclosed by non-combustible bulkheads and decks that meet the requirements of section 119 third paragraph subparagraph b, and that the fire load density of combustible materials on the surfaces does not exceed 45 MJ/m^2 within a fire cell. The total volume of combustible material shall not exceed the equivalent of 2.5 mm of sheeting across the surfaces of the space.

Section 121. *Fire-resisting divisions*

(1) Fire-resisting divisions shall be provided in bulkheads and decks as specified in the table in the third paragraph.

(2) In machinery spaces on ships constructed of composite material or aluminium, the ship's sides shall be fitted with thermal boundaries meeting fire class standard A-15 or FRD 30, extending 300 mm below the minimum draught.

(3) If the classification of a space is uncertain, or if it may fall into multiple categories, it shall be treated according to the category with the most stringent division requirement.

Space category		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Control stations	(1)	*	B-15[b]	B-15	A-15	B-15	A-15	A-15	*
Accommodation spaces	(2)		*	B-15	A-15	B-15	B-15	A-0	*
Service spaces	(3)			B-15[a]	A-15	B-15	B-15	A-0	*
Machinery spaces of category A	(4)				*	A-15	A-0[c]	A-0	*
Galley	(5)					*	B-15	A-0	*
Cargo spaces	(6)						B-15	A-0	*
Other machinery spaces	(7)							*	*
Open decks	(8)								-

Note a: Bulkheads or decks are required to meet the specified rating in the tables only when adjacent spaces are for a different purpose. If the spaces serve the same purpose, the division shall be made of non-combustible material.

Note b: On ships of less than 15 metres, public spaces, mess rooms, offices and lavatories may be arranged in connection with the wheelhouse without the requirement for a fire-resisting division.

Note c: This applies only if no dangerous goods regulated under other applicable regulations are being carried.

The symbol *: The division shall be made of non-combustible material.

(4) In the table of the third paragraph, the following definitions shall apply:

a. Control stations (1): Includes the navigation bridge, control rooms for propulsion machinery when located outside category A machinery spaces, and spaces containing sources housing emergency power sources, radio equipment, gas-based fire-extinguishing mediums or fire alarm centres.
b. Accommodation spaces (2): Spaces used as public spaces, corridors, stairways, lavatories and bathrooms, wardrobes, cabins, offices, hospitals, recreation rooms and pantries that contain no cooking appliances.
c. Service spaces (3): Paint lockers and storerooms, spaces containing flammable liquids, saunas, laundries and workshops other than those forming part of the machinery spaces of category A.
d. Machinery spaces of category A (4): Spaces containing internal combustion machinery used for propulsion, internal combustion machinery with a total power output of not less than 375 kW, and spaces with oil-fired boilers or other oil-fired equipment such as gas generators or incinerators.
e. Galley (5): Spaces, except for pantries, containing electrical cooking plates, stoves, deep fryers, gas stoves, gas-fired installations without open flames and similar kitchen appliances. "Pantry" refers to an area connected to the wheelhouse or mess room that contains electrical cooking plates or other kitchen appliances with a total output of up to 5 kW.
f. Cargo spaces (6): All spaces used for the storage of cargo, including tanks for carrying oil, and trunks and hatch coamings to such spaces.
g. Other machinery spaces (7): Ventilation rooms, control panel rooms, technical rooms and rooms containing electrical equipment and machinery not specified in subparagraphs a and d.
h. Open deck spaces (8): Open deck spaces include areas on the deck and enclosed promenades with minimal or no fire risk. To qualify as deck spaces, enclosed promenades shall present no significant fire risk, limiting furnishings to deck furniture. These spaces shall also be naturally ventilated through fixed openings. Air spaces, the areas outside superstructures and deckhouses, are also considered open deck spaces.

(5) Ships of less than 15 metres in overall length may, as an alternative to the first to fourth paragraphs, comply with a standard or set of rules from a recognised classification society or another recognised standard accepted by the Norwegian Maritime Authority.

Section 122. *Alternative requirements for ships constructed of composite material or aluminium*

Ships constructed of composite material or aluminium may, as an alternative to section 119, section 121, section 123 first paragraph and section 124 first and fifth paragraphs comply with the 2000 HSC Code paragraphs 7.2, 7.3 and 7.4.1 to 7.4.3. Protection time requirements specified in the 2000 HSC Code shall not exceed 30 minutes.

Section 123. *Arrangement of fire insulation*

(1) Fire insulation shall extend at least 450 mm beyond the intersection and terminal points of struts, bulkheads and decks, including penetrations of bulkheads and decks. Where there are different class standard requirements for the fire insulation in accordance with the table in section 121, the insulation with the highest-class standard shall be carried at a distance of 450 mm past the relevant area.

(2) Surfaces with temperatures of 220 °C or higher that may contact flammable liquids due to system failure shall be adequately insulated.

Section 124. *Openings and penetrations of bulkheads and decks*

(1) Doors, hatches and other openings in bulkheads and decks shall have the same fire integrity as the bulkhead or deck where they are installed. Watertight doors do not need to be insulated. Doors and hatches separating open deck spaces from the wheelhouse, accommodation spaces and corridors may be made of fibre-reinforced polymer (FRP) material.

(2) Ventilation openings may be installed in the lower sections of doors or below doors in accommodation spaces leading to corridors, except in stairway enclosures. The combined area of such openings shall not exceed 0.05 m^2.

(3) Doors between accommodation spaces and category A machinery spaces shall be self-closing and gas-tight. Direct access between a control station or cabin and category A machinery spaces shall not be permitted.

(4) If self-closing doors are fitted with hold-back mechanisms, these shall be capable of remote release from the navigation bridge.

(5) Penetrations for pipes, cables, ducts, trunks, beams and similar items shall not reduce the fire integrity of the bulkhead or deck.

(6) Ventilation duct penetrations may use steel sleeves fixed directly to the duct. The steel sleeves shall have a minimum thickness of 3 mm and a minimum length of 900 mm. The length of the steel sleeve shall be distributed evenly on either side of the division where feasible.

Section 125. *Stairways in accommodation spaces, service spaces and control stations*

(1) Stairways in accommodation spaces, service spaces and control stations that penetrate only a single deck shall be enclosed with at least "B-0" class divisions against adjacent spaces on one of the decks and shall have a self-closing door.

(2) Stairways in accommodation spaces, service spaces and control stations that penetrate more than one single deck shall be enclosed with at least "B-0" class divisions against adjacent spaces and shall have a self-closing door on each deck.

Section 126. *Means of escape*

(1) Stairways, ladders or corridors, or combinations thereof, which provide safe escape to the open deck, muster stations and life-saving appliances shall be provided. The means of escape shall be free of obstructions.

(2) In accommodation spaces, service spaces, machinery spaces other than those of category A and control stations, there shall be at least two separate means of escape from each space or each group of spaces on each deck, except for spaces that are only entered exceptionally.

(3) On ships with superstructure where only one door may be arranged, a window may be used as one of the means of escape if deadlights are not required for the window. Ships with only a wheelhouse may have one means of escape from the wheelhouse.

(4) Machinery spaces of category A shall have at least two separate means of escape, except in the following cases where only one means of escape is permitted:

a. the machinery space is so small that two separate means of escape are not practicable; or
b. the machinery space has direct access to the open deck.

(5) Dead-end corridors shall not exceed 7 metres in length.

(6) Doors and hatches in escape routes shall open in way of the direction of escape, except that:

a. individual cabin doors may open into the cabins; and
b. doors in vertical emergency escape trunks may open out of the trunk.

(7) Doors and hatches in escape routes shall be operable from both sides in a simple manner.

(8) Means of escape shall have a clear width of at least 700 mm. For hatches, a clear width of 700 mm x 700 mm or 600 mm x 800 mm is acceptable.

(9) Corridors and other alleyways shall have grab rails or other means to ensure safe passage. There shall be a distance of at least 700 mm from the grab rail to the opposite bulkhead or between two grab rails.

(10) Means of escape shall be clearly marked.

Section 127. *Ventilation systems*

(1) Ventilation openings shall be equipped with closures made of non-combustible material. These openings and their associated ventilation fans shall be capable of being closed and stopped from outside the space.

(2) Ventilation systems serving category A machinery spaces shall be separated from other ventilation systems.

Section 128. *Arrangement of ventilation ducts*

(1) Ventilation ducts shall be constructed of non-combustible material.

(2) Ventilation ducts leading to and from galleys shall be independent of other ventilation ducts. Galleys and pantries shall be provided with separate exhaust ventilation discharging directly to the open air.

(3) Ventilation ducts leading to galleys or category A machinery spaces that pass through accommodation spaces, service spaces or control stations and ventilation ducts leading to accommodation spaces, service spaces or control stations that pass through galleys or category A machinery spaces shall meet one of the following requirements:

a. The ventilation ducts shall be fitted with automatic fire dampers at the point of penetration and be insulated so that the fire integrity of category A machinery spaces or galley is maintained at a distance of at least 5 metres from the damper.
b. The ventilation ducts shall be insulated so that the fire integrity of category A machinery spaces or galleys is maintained throughout the entire length of the duct.

Section 129. *Materials in piping systems*

(1) Pipes conveying oil and other pipelines required for the safety of the ship shall be made of non-combustible material.

(2) Seawater pipes and bilge pipes shall be made of fire-resistant material.

(3) Short, flexible pipe connections may be used in oil-conveying pipes if necessitated by vibrations. These connections shall be oil-resistant, reinforced, and made from fire-resistant material.

(4) Where material failure due to fire could result in flooding, scuppers, sanitary discharges or other drains near the waterline shall be constructed of fire-resistant material.

Section 130. *Fuel oil tanks and piping systems*

(1) Pipes from a storage, settling, or daily service tank situated above a double bottom shall be fitted with a valve secured to the tank. This valve shall be capable of being closed from a position outside the space in which the tank is located.

(2) Deep tanks adjacent to a shaft or pipe tunnel shall be equipped with a valve secured to the tank. Pipelines outside the pipe tunnel shall be equipped with an additional valve.

(3) Oil fuel pipes and other pipelines carrying liquids that could pose a fire hazard in the event of a leak shall be positioned as far as practicable from hot surfaces.

(4) Pumps associated with pipelines described in the third paragraph shall be capable of being stopped from a location outside the space in which they are located.

Section 131. *Heating installations*

(1) Heating elements shall be arranged and secured to minimise fire risk. The design and placement of these heat sources shall ensure that nearby materials do not char or ignite.

(2) Heating by means of an open flame shall not permitted in accommodation spaces.

(3) Heating installations, such as diesel heaters, shall be placed at a suitable location outside the accommodation spaces.

Section 132. *Storage of combustibles*

(1) Combustible materials not carried as cargo shall be stored in a dedicated storeroom that:

a. has direct access from the open deck;
b. is ventilated to prevent the accumulation of gases;
c. contains only the necessary electrical equipment; and
d. does not contain sources of heat.

(2) One of the following fixed fire-extinguishing systems shall be installed in spaces for the storage of combustibles:

a. a CO_2 system providing a minimum volume of free gas equal to 40 % of the gross volume of the space;
b. a dry powder system providing 0.5 kg of powder per m^3 of the gross volume of the space; or
c. a water-based sprinkler system supplying 5 l/m^2 per minute, which may be connected to the fire main.

(3) In storerooms with a deck area of less than 4 m^2, a portable CO_2 fire extinguisher providing a minimum volume of free gas equal to 40 % of the space's gross volume may be used in place of a fixed fire-extinguishing system. In such cases, a hatch shall be provided to allow the extinguisher to be used without requiring entry into the space.

(4) Cylinders, valves, regulators and pipes shall be protected from damage, large temperature fluctuations and frost.

Section 133. *Fire detection and fire alarm*

(1) Ships shall be equipped with fire detection and alarm systems that ensure timely alerting of persons on board and personnel on the bridge in the event of danger.

(2) The type, number and placement of detectors shall be tailored to the specific conditions of the area being monitored.

(3) In category A machinery spaces and cargo spaces designated for dangerous goods, a sufficient number of fire detectors and alarms, relative to the size of the spaces, shall be installed. At least one smoke detector and one heat detector shall be installed.

(4) Where five or more detectors are installed in category A machinery spaces or more than ten detectors are installed in the accommodation spaces, the detectors shall be distributed across separate loops: one loop serving category A machinery spaces and another serving the accommodation spaces.

(5) Manually operated call points shall be installed at exits of escape routes and at other strategic locations on the ship in adequate numbers.

(6) A sufficient number of audible alarms shall be installed, with at least one on every deck. In addition to the audible signal, the system shall trigger an audio-visual alarm at the steering position or another manned control room. In areas where high noise levels on board make it difficult to hear an audible alarm, a visual fire alarm shall be installed.

Section 134. *Fire pumps*

(1) All enclosed ships, except those with only a wheelhouse, shall be equipped with at least one fire pump.

(2) The fire pump shall:

a. be capable of being started from the steering position or other readily accessible position;
b. be equipped with relief valves if the fire pump's delivery pressure can exceed the designed working pressure of the fire main; and
c. have a non-return valve if there is a risk of backflow.

(3) Sanitary, ballast, bilge and other general service pumps may serve as fire pumps if they meet the fire pump requirements, do not hinder the ability to pump bilges, and are normally not used for pumping oil or other flammable liquids.

(4) When more than one fire pump is installed, each pump shall have a capacity of at least 80 % of the total capacity divided by the number of pumps.

Section 135. *Capacity of fire pumps*

(1) The minimum total fire pump capacity (Q) shall be calculated using the following formula:

$$Q = (0{,}15\sqrt{L_{pp}(B + D)} + 2{,}25)^2 \quad [m^3/t]$$

where the following is indicated in metres:

L_{pp} = the ship's length between perpendiculars
B = the ship's maximum moulded breadth
D = the ship's moulded depth to bulkhead deck amidships
In all cases, the fire pump capacity (Q) shall be at least 16 m^3/h.

(2) When the fire pump is delivering the quantity of water indicated in the first paragraph, the pressure at the hydrant(s) shall be maintained at a minimum of 2.5 bar.

Section 136. *Fire mains*

(1) Ships equipped with fire pumps shall have a fire main. The ship's deck washing system may serve as a fire main if it satisfies the requirements related to a fire main.

(2) The fire main and its associated valves shall be arranged to prevent damage from deck cargo or routine operations.

(3) The fire main shall:

a. have a diameter suitable for the pump capacity and sufficient to ensure uniform distribution and consistent pressure to all fire hoses;
b. be constructed of non-combustible, heat-resistant materials;
c. be self-draining or equipped with drain cocks to prevent frost damage.

Section 137. *Hydrants*

(1) The ship shall have one or more hydrants so positioned that:

a. at least one water jet from a single hose length is capable of reaching any area of the ship to which the crew has access;
b. the entire category A machinery space can be covered by a water jet from a single hose length;
c. they remain accessible regardless of deck cargo or the ship's operational activities; and
d. fire hoses may be readily connected.

(2) Hydrants shall have couplings that enable fire hoses to be disconnected while the fire pump(s) are operating.

Section 138. *Hose stations*

(1) A hose station shall be located near each hydrant. The station shall include a fire hose connected to the hydrant, an appropriate nozzle and two sets of coupling spanners.

(2) In addition to the fire hoses specified in the first paragraph, at least one spare hose shall be provided.

(3) Fire hoses shall not exceed 20 metres in length.

Section 139. *Portable fire extinguishers*

(1) The fire-extinguishing medium shall be suitable for extinguishing the types of fires that may occur, as outlined in the table below.

Fire-extinguishing medium	**Suitable for use on fires involving:**
Water	Wood, paper, textiles and similar materials
Foam	Wood, paper, textiles and flammable liquids
Dry powder/dry chemical (standard/classes B, C)	Flammable liquids, electrical equipment and flammable gases
Dry powder/dry chemical (standard/classes A, B, C)	Wood, paper, textiles, flammable liquids, electrical equipment and flammable gases
Dry powder/dry chemical (metal)	Combustible metals
CO_2	Flammable liquids and electrical equipment
Wet chemical	Cooking grease, fats or oil fires

(2) The quantity of fire-extinguishing medium in fire extinguishers shall be at least as follows:

a. Dry powder extinguishers: 5 kg
b. CO_2 extinguishers: 5 kg
c. foam extinguishers: 9 l

(3) Fire extinguishers with a total weight of more than 23 kg are not considered portable.

(4) The number of appropriate fire extinguishers in various spaces shall be at least as indicated in the table below:

Type of space	***Minimum number of fire extinguishers***
Accommodation spaces	One extinguisher per deck, placed easily accessible from all spaces. The walking distance between the extinguishers shall not exceed 15 metres.
Galleys and pantries	One extinguisher. An additional extinguisher is required if a deep fryer is installed in the galley.
Machinery spaces of category A	Two extinguishers. These shall be so located that no point in the machinery space is more than 10 metres walking distance from an extinguisher. One of the extinguishers shall be placed near the entrance.
Service space/other machinery space	One extinguisher
Room for main electrical switchboard	One extinguisher
Wheelhouse/bridge	One extinguisher. Two extinguishers where the wheelhouse is larger than 50 m^2.

(5) A fire extinguisher may be placed by the entrance, either inside or outside the space in question. Extinguishers can be arranged so that one extinguisher covers multiple spaces.

(6) Fire extinguishers placed in locations where they may be exposed to frost shall be of a frost-proof type.

(7) CO_2 extinguishers shall not be placed in accommodation spaces.

(8) Spare extinguishers, equal to 50 % of the number required in the table in the fourth paragraph, shall be provided. For ships with five or fewer fire extinguishers, one spare extinguisher is sufficient.

Section 140. *Fire blanket*

A fire blanket shall be placed in an easily accessible location in the galley and pantry.

Section 141. *Fixed fire-extinguishing system in machinery spaces of category A and cargo spaces for dangerous goods*

Fixed fire-extinguishing systems shall be installed in machinery spaces of category A and cargo spaces for dangerous goods.

Section 142. *Fixed fire-extinguishing system, etc.*

(1) One of the following fixed fire-extinguishing systems shall be provided:

a. gas-based system in compliance with chapter 5 of the FSS Code;
b. foam-based system in compliance with chapter 6 of the FSS Code;
c. water-based system in compliance with chapter 7 of the FSS Code.

(2) Ventilation fans to spaces protected by fire-extinguishing systems shall be capable of being stopped from a location near the activation point of the fire-extinguishing system. This requirement also applies to arrangements as described in section 96.

(3) A description of the fire-extinguishing system, including instructions for use and maintenance in accordance with the manufacturer's specifications, shall be provided on board. Instructions for use shall be posted near the operating point of the system.

(4) Necessary spare parts for the fire-extinguishing system shall be available on board.

Section 143. *Alternative solutions for fire-extinguishing systems in small machinery spaces of category A*

In machinery spaces of category A with a gross volume of up to 10 m^3, an arrangement with a fire extinguisher meeting the following requirements may be used as an alternative to a fixed fire-extinguishing system specified in the first paragraph of section 142:

a. The quantity of fire-extinguishing medium shall be sufficient to achieve a sufficient extinguishing effect.
b. It shall be possible to verify that the fire extinguisher is intact and operational.
c. When the fire extinguisher is placed outside the category A machinery space, it shall be possible to distribute the fire-extinguishing medium into the machinery space through a pipe penetration or hatch.
d. When the fire extinguisher is placed inside the category A machinery space, it shall be fixed in position and equipped with one or more nozzles to ensure proper distribution of the fire-extinguishing medium within the space, and be capable of being activated from a position outside the machinery space. The release mechanism shall be designed so that it cannot be easily rendered inoperative in the event of a fire.

Section 144. *Fire control plan*

The fire control plan shall be posted in a central and clearly visible location. The plan shall accurately reflect the current location of the fire safety equipment on board at all times and be drawn to a scale that provides a clear overview of the ship's layout and equipment relevant to fire control and evacuation. Spaces containing equipment or cargo that could pose a risk of fire or explosion shall be clearly marked on the fire control plan. A copy of the fire control plan shall be permanently stored in a clearly marked, weathertight container outside the deckhouse for use by external fire-fighting personnel. The fire control plan shall be in the language used on board.

Section 145. *Maintenance*

(1) Fire extinguishers shall undergo maintenance, inspection and service in accordance with IMO Resolution A.951(23) "Improved guidelines for marine portable fire extinguishers". Maintenance, inspection and service shall be carried out by a person with documented qualifications.

(2) Fire safety equipment on board shall be maintained and tested in accordance with MSC.1/Circ.1432, as amended by MSC.1/Circ.1516; for CO_2 systems, MSC.1/Circ.1318 shall be followed.

13. Chapter General requirements for supervision and inspection

Section 146. *Duty to notify*

(1) The company shall promptly submit a notification using the prescribed form, accompanied by a drawing of the ship's general arrangement, when a decision is made or a contract is placed concerning any of the following:

a. construction
b. conversion
c. major repair
d. modifications in use
e. purchase of a ship from abroad.

(2) The company shall promptly provide notification in the event of cancellation or changes to the contractual relationship, the ship's design or similar circumstances.

(3) For ships that have or are required to have a trading certificate, the form shall be submitted to the Norwegian Maritime Authority. For ships that have or are required to have vessel instructions, the form shall be submitted to an approved company.

Section 147. *Submission of documentation*

(1) The company shall submit documentation in accordance with the applicable list of drawings provided by the Norwegian Maritime Authority or an approved company. This documentation shall demonstrate compliance with the relevant requirements for the ship. The Norwegian Maritime Authority or approved companies may request additional documentation as necessary.

(2) Documentation for ships required to have a trading certificate shall be submitted to the Norwegian Maritime Authority. Documentation for ships required to have vessel instructions shall be submitted to an approved company.

(3) A report on the inclining test and calculation of lightship data shall be received before the ship is put into operation or undergoes a trial voyage.

(4) Final loading conditions, adjusted for lightship data, based on preliminary loading conditions, shall be submitted no later than one month after the ship's delivery date.

Section 148. *Supervision during construction, conversion, alteration or major repairs*

The company shall arrange for supervision during a construction, conversion, alteration or major repair of ships and ensure that the Norwegian Maritime Authority or an approved company is granted sufficient access to carry out the necessary supervision. The necessary documentation shall be available to the inspector.

14. Chapter Supervision of ships required to have vessel instructions

Section 149. *Supervision for vessel instructions*

(1) To obtain vessel instructions, the ship shall undergo a complete inspection by an approved company.

(2) The validity of the vessel instructions shall be renewed by conducting a periodic inspection carried out by an approved company within 30 months of the date of the last comprehensive inspection or periodic inspection.

(3) A periodic inspection may be carried out up to six months before the expiration of the vessel instructions' validity period without affecting the date of the next inspection. If the ship does not undergo a periodic inspection before the validity period expires, a new comprehensive inspection shall be conducted.

(4) Comprehensive and periodic inspections shall be conducted in accordance with inspection forms issued by the Norwegian Maritime Authority. Completed forms for comprehensive and periodic inspections shall be kept on board and submitted to the Norwegian Maritime Authority via an approved company.

(5) Inspections of the exterior of the ship's bottom shall be performed during comprehensive inspections and subsequently at each periodic inspection. At least once every five years, an external inspection of the ship's bottom shall be conducted in dry dock.

Section 150. *Requirement to present an inspection form issued by accepted electrical enterprise and a Non-Convention Cargo Ship Safety Radio Certificate*

(1) Before vessel instructions can be issued, documentation shall be provided confirming that the electrical system has been inspected and approved by an accepted electrical enterprise. Additionally, a Non-Convention Cargo Ship Safety Radio Certificate shall be issued by an approved radio inspection company.

(2) The documentation mentioned to in the first paragraph shall be valid at the time of issuance or renewal of the vessel instructions and remain valid at least until the next renewal.

Section 151. *Special provisions for inspection of towing and anchor-handling winches, towing hooks and safety equipment for use during towing and anchor-handling*

(1) On ships engaged in towing or anchor-handling operations, qualified personnel shall conduct thorough tests and inspections at least once a year on the following equipment:

a. towing winch and anchor-handling winch with associated equipment, including emergency release testing at full towing power;
b. towing hook and associated equipment; and
c. guide pins, wire, shark-jaw, towing eyes and similar equipment, including load tests and emergency release tests, if applicable.

(2) Tests shall be conducted in accordance with the manufacturer's instructions.

(3) Completion of such inspections shall be documented, and the documentation shall be kept on board.

(4) The tests and inspections mentioned in the first paragraph shall also be included as part of the complete inspection and every second periodic simplified inspection.

Section 152. *Inspection in the event of modification, damage or loss of function and issue of trading permit*

(1) In the event of damage, loss of function, repairs or changes to the ship or its equipment, the ship shall be inspected by an approved company before it is put back into service. This does not apply to normal maintenance.

(2) Approved companies may, upon written application from the company, issue a trading permit for single journeys without cargo, provided that the following conditions are met:

a. It is necessary in connection with inspection, trial runs or transfer to another port.
b. It is justifiable in terms of safety.

c. Necessary compensating measures have been implemented to maintain the required level of safety.

15. Chapter Requirements for ships for which the building contract is placed before (dd.mm.yyyy) and delivered no later than (dd.mm.yyyy+1) (date of entry into force + 1 year)

Section 153. *Ships for which the building contract is placed before (dd.mm.yyyy) and delivered no later than (dd.mm.yyyy+1) (date of entry into force + 1 year)*

For ships for which the building contract is placed before (dd.mm.yyyy) and delivered no later than (dd.mm.yyyy+1) (date of entry into force + 1 year), the following apply:

a. Chapter 1 on introductory provisions.
   i. Section 1 on scope of application.
   ii. Section 2 on vessel instructions.
   iii. Section 5 on definitions.
   iv. Section 6 on ships used for training purposes.
   v. Fishing gear and arrangements for fishing and catching taken on board or installed on or after the effective date of these Regulations shall comply with section 7.
   vi. Section 8 on maintenance.
   vii. Section 9 on ships for which the building contract is placed before the effective date and delivered one year after the effective date.
   viii. Section 10 on ships transferred to the Norwegian flag and imported ships.
b. Chapter 2 on navigation and navigational aids. Ships of less than 300 gross tonnage and of 12 metres in overall length and upwards, equipped with AIS Class B taken on board prior to the entry into force of these Regulations, shall comply with the requirement specified in section 18 first paragraph for AIS Class A no later than 1 January 2027.
c. Chapter 3 on life-saving appliances.
d. Chapter 4 on radio-communication equipment Ships that have taken on board a radar SART before the entry into force of these Regulations shall comply with the AIS-SART requirement stipulated in section 44 when the equipment is replaced.
e. Chapter 5 on transfer of person between the ship and offshore renewable energy production facilities.
f. Chapter 6 regarding construction:
   Section 57 on anchor and mooring equipment, third paragraph. If the trade area increases on or after the effective date of these Regulations, the third paragraph shall be complied with.
g. Chapter 7 on deck equipment:
   i. Section 65 on towing winch or towing hook for ships engaged in towing operations, fifth paragraph. If the trade area increases on or after the effective date of these Regulations, the fifth paragraph shall be complied with.
   ii. Section 66 on equipment for ships engaged in anchoring-handling operations.
   iii. Section 76 on re-rating the winch capacity.
   iv. Section 78 on pull-in equipment. This section shall be complied with no later than the first periodic or complete inspection, whichever comes first, or within the first intermediate or renewal inspection, whichever comes first, after the entry into force of these Regulations.
   v. Additionally, all deck equipment taken on board or installed on or after the effective date of these Regulations shall be in compliance with section 7.
h. Chapter 9. Stability criteria:
   Section 95 on stability in intact condition for enclosed ships. If the trade area increases on or after the effective date of these Regulations, the third paragraph shall be complied with.

i. Chapter 10 on load lines and freeboard.
    i. Section 104 on freeing port area. For ships required to have vessel instructions on board, the first to fifth paragraphs of this section shall be complied with no later than the first periodic or complete inspection, whichever occurs first, following the entry into force of these Regulations. For ships with a trading certificate, the first to fifth paragraphs of this section shall be complied within the first intermediate or renewal inspection, whichever occurs first, following the entry into force of these Regulations. If the trade area increases on or after the effective date of these Regulations, the sixth paragraph shall be met.
    ii. Section 105 on side scuttles and windows, fourth paragraph. If the trade area increases on or after the effective date of these Regulations, the fourth paragraph shall be met.
    iii. Section 107 on air pipes, second paragraph. If the trade area increases on or after the effective date of these Regulations, the second paragraph shall be met.
    iv. Section 108 on bulwarks and railings, first and second paragraphs, for ships of less than 15 metres. On ships of less than 15 metres in overall length for which the building contract is placed before 1 January 2015 and delivered before 1 January 2016, a chain complying with the requirements of section 108 fourth paragraph may be used as a substitute for detachable bulwarks or guard rails as required in the first paragraph. The requirements of section 108 first and second paragraphs shall be fulfilled no later than the first periodic or complete inspection, whichever occurs first, following the entry into force of these Regulations.
    v. Section 108 on bulwarks and guard rails, sixth paragraph. If the trade area increases on or after the effective date of these Regulations, the sixth paragraph shall be met.
    vi. Section 109 on descent from deck to water level, first to fourth paragraphs. For ships required to have vessel instructions on board, this section shall be complied with no later than the first periodic or complete inspection, whichever occurs first, following the entry into force of these Regulations. For ships with a trading certificate, this section shall be complied within the first intermediate or renewal inspection, whichever occurs first, following the entry into force of these Regulations.
j. Chapter 11 on machinery and electrical installations:
    i. Section 115 the capacity of the emergency source of power, second paragraph. If the trade area increases on or after the effective date of these Regulations, the second paragraph shall be met.
k. Chapter 12 regarding fire safety:
    i. Section 139 on portable fire extinguishers.
    ii. Section 145 on maintenance.
l. Chapter 13 on general requirements for supervision and inspection.
m. Chapter 14 on supervision of ships required to have vessel instructions.
n. Chapter 15 on ships for which the building contract is placed before (dd.mm.yyyy) and delivered no later than (dd.mm.yyyy+1) (date of entry into force + 1 year)
o. Chapter 16 regarding concluding provisions.

16. Chapter Concluding provisions

Section 154. *Exemptions*

(1) The Norwegian Maritime Authority may, upon written application, permit alternative solutions to those specified in these Regulations if it is established that such solutions are equivalent to the requirements of these Regulations.

(2) The Norwegian Maritime Authority may grant exemption from one or more provisions of these Regulations if the company submits a written application demonstrating that at least one of the following conditions is met:

a. Specific circumstances render the requirement, from which exemption is sought, less critical for the ship in question, and the exemption is otherwise justifiable in terms of safety.
b. Compensating measures ensure that the safety level is maintained.

Section 155. *New technology*

(1) The Norwegian Maritime Authority may, upon written application, permit the use of the use of new technology to comply with the requirements of these Regulations or as basis for an exemption.

(2) The process of demonstrating the safety of new technology with alternative design and arrangements shall adhere to one of the following guidelines:

a. MSC.1/Circ.1212 "Guidelines on alternative design and arrangements for SOLAS Chapters II-1 and III"
b. MSC.1/Circ.1455 "Guidelines for the approval of alternatives and equivalents as provided for in various IMO instruments"
c. MSC/Circ.1002 «Guidelines on alternative design and arrangements for fire safety».

(3) Alternative methods or guidelines may be applied by mutual agreement with the Norwegian Maritime Authority.

Section 156. *Use of equivalent legislation in another EEA country*

As an alternative to the provisions of these Regulations, ships required to have vessel instructions or a trading certificate may be constructed in compliance with a complete and equivalent body of legislation from another EEA country. This body of legislation shall be accepted as equivalent by the Norwegian Maritime Authority before construction begins. The same requirement applies when purchasing ships from another EEA country.

Section 157. *Entry into force*

This Regulation enters into force immediately. As from the same date, the Regulations of 19 December 2014 No. 1853 on the construction and supervision of small cargo ships are repealed.

Section 158. *Amendments to other regulations*

From the day these regulations enter into force, the following amendments are made to other regulations:

1. Regulations of 5 September 2014 No. 1157 on navigation and navigational aids for ships and mobile offshore units are amended as follows:

The EEA reference should read:
EEA Agreement Annex XIII point 55a (Directive 2002/59/EC, as amended by Directive 2009/17/EC, Directive 2009/18/EC, Directive 2011/15/ EU and *Directive 2014/100/ EU)*.

Section 1 first paragraph subparagraph a should read:

a. cargo ships of 24 metres in length (L) and upwards, or of 500 gross tonnage and upwards, including recreational craft of 24 metres in overall length and upwards

Section 10 second paragraph should read:

(2) Messages pursuant to the first paragraph may be transmitted in English or in accordance with the International Code of Signals. The content of danger messages shall comply with the International Convention for the Safety of Life at Sea, 1974 (SOLAS) regulation V/32, as adopted by *IMO Res*. MSC.99(73).

Section 13 first paragraph should read:
(1) All decisions which affect bridge design and arrangement of navigational systems and equipment on the navigation bridge shall be taken in accordance with SOLAS regulation V/15, as adopted by *IMO Res.* MSC.99(73), MSC/Circ.982 and SN.1/Circ.288.

Section 24 first paragraph should read:
(1) Ships likely to use pilots shall be provided with equipment and arrangements enabling the pilot to embark and disembark the ship safely on both sides. The content of *IMO Resolution* A.1045(27) shall be adhered to when implementing section 24 to section 27.

Appendix II to the Regulations is repealed.

2. Regulations of 1 July 2014 No. 1019 on life-saving appliances on ships are amended as follows:

Section 1 subparagraph a should read:
a. cargo ships *of 24 metres in length (L) and upwards, or of 500 gross tonnage and upwards;*

Section 3 first paragraph should read:
Cargo ship of less than 200 gross tonnage shall be capable of sounding an alarm signal to summon all on board to muster stations and initiate actions outlined in the muster list. The alarm may be given by the ship's whistle, siren or any other equivalent audible signal.

The existing first and second paragraphs become new second and third paragraphs.

Section 5 a is repealed.

Section 6 should read:
Section 6. *Life-saving appliances on cargo ships of less than 500 gross tonnage and manned barges*
Cargo ships of less than 500 gross tonnage and barges shall, in lieu of meeting the requirements for number of life-saving appliances laid down in SOLAS chapter III, as a minimum carry the following number of life-saving appliances:

Equipment	*Gross tonnage and length parameters*	*Cargo ships in trade areas 1 and 2*	*Cargo ships in trade area 3 to Small Coasting*	*Cargo ships engaged on international voyages*	*Barges*
Survival craft		2 x capacity to accommodate the total number of persons on board	2 x capacity to accommodate the total number of persons on board		1 x capacity to accommodate the total number of persons on board, cf. section 8
Immersion suits		1 x the total number of persons on board			
Lifejackets		1.5 x the total number of persons on board			
Lifejackets for children		All children on board (cf. section 12 second paragraph)			
Lifebuoys	ships < 300 GT 300 GT ≤ ships < 500 GT	3 5			
Rescue boat	*Ships of 30 metres in length (L) and upwards*	1			See section 9
Line-throwing appliance	Ships < 100 GT		Four projectiles with four lines, cf. SOLAS III/18		
	100 GT ≤ ships < 500 GT	Four projectiles with four lines, cf. SOLAS III/18			
Rocket parachute flares (SOS flares)		3	6		
Hand flares		3	6		

Section 8 seventh paragraph is repealed.

Existing section 8 eighth paragraph becomes seventh paragraph.

Section 9 a is repealed.

Section 11 second paragraph should read:

Passenger ships of less than 15 metres in overall length shall be provided with one lifebuoy on each side of the ship. One of the lifebuoys shall be fitted with a lifeline of at least 30 metres in length, and the other lifebuoy *shall be* fitted with a self-igniting light and shall be without a lifeline.

3. Regulations of 1 July 2014 No. 955 on radio communication equipment for Norwegian ships and mobile offshore units are amended as follows:

Section 1 subparagraph a should read:

a. cargo ships *of 24 metres in length (L) and upwards, or of 300 gross tonnage and upwards;*

Section 3 should read:

Section 3 *Exemptions for cargo ships operating in trade area 2 and lesser trade area*

Cargo ships operating in trade area 2 and lesser trade area need not comply with the radio equipment requirements specified in sections 2 and *3a*,

cf. SOLAS regulations IV/7 and IV/8, provided that the ship *is equipped with the following:*

a. *VHF-DSC radio installation;*
b. *two hand-held VHF radios;*
c. *of 100 tons gross tonnage and above and equipped with a SART.*

Section 3a should read:

Section 3a. *Requirement for SART and hand-held VHF radios on cargo ships less than 300 gross tonnage*

Cargo ships of less than 300 gross tonnage shall be equipped with the following number of SARTs and hand-held VHF radios:

a. two hand-held VHF radios;
b. one SART.

For cargo ships of less than 100 gross tonnage, the requirement of the first paragraph subparagraph b only applies in trade area 3 or greater grade area.

Section 4 should read:

Section 4 *EPIRB requirement for cargo ships operating in trade area 3 or greater*

Cargo ships operating in trade area 3 or greater shall be equipped with a manual satellite EPIRB installed in the wheelhouse, easily accessible for activation and capable of being carried into a survival craft.

4. Regulations of 22 December 2014 No. 1893 on supervision and certificates for Norwegian ships and mobile offshore units are amended as follows:

Section 32 second paragraph should read:

(2) "Towing" means the towing or pushing of one or more objects. The towing of light objects, such as a dinghy, a light floating wharf or similar *and short movements of an object within a limited area* are not considered towing.

5. Regulations of 14 January 2020 No. 63 on vessels of less than 24 metres carrying 12 passengers or less are amended as follows:

New section 1 second paragraph (c) should read:

c. *vessels used for transferring persons between the vessel and offshore renewable energy production facilities. Renewable energy production refers to the generation of electrical energy by exploiting renewable energy resources, such as wind, waves and tidal energy.*