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CANADA SHIPPING ACT 2001 (CSA 2001)

REGULATORY REFORM PROJECT

PUBLIC CONSULTATION

FISHING VESSEL SAFETY REGULATIONS

Parts 3 & 4

CANADIAN MARINE ADVISORY COUNCIL (CMAC)

INFORMATION PAPER

June 2011

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RDIMS 6761601

This Information Paper has been prepared for comment and discussion.

This discussion draft of Parts 3 and 4 of the proposed *Fishing Vessel Safety Regulations* (Regulations) supersedes the draft version of the proposed Regulations dated February 2009. There are no major changes to Parts 3 and 4 of the proposal; however, the appearance of the document has changed. Text intended as guidelines has been removed, and Parts 3 and 4 have been laid out side-by-side so that it is easy to see the differences between Part 3 (which is intended for smaller vessels) and Part 4.

This document is intended to be read in conjunction with Parts 1 and 2 of the proposed Regulations, which were released in September of 2010. To obtain copies of Parts 1 and 2, or to make comments on this document, please contact Kevin.Monahan@tc.gc.ca or Ian.W.Campbell@tc.gc.ca

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
PART 3 DESIGN, CONSTRUCTION AND EQUIPMENT FOR DECKED VESSELS 9 m AND MORE LOA BUT LESS THAN 15 m LOA AND UNDECKED VESSELS 9 m AND MORE LOA	PART 4 DESIGN, CONSTRUCTION AND EQUIPMENT FOR DECKED VESSELS 15 m AND MORE LOA	
Application 3000. (1) This part applies to decked vessels 9m LOA and more but less than 15m in LOA and undecked vessels 9m LOA and more. (2) This part does not apply to; (a) a vessel that is not fitted with an engine for propulsion or auxiliary purposes; (b) a vessel powered by an inboard gasoline engine or an outboard motor.	Application 4000. (1) This part applies to decked vessels 15m and more LOA (2) This part does not apply to; (a) a vessel that is not fitted with an engine for propulsion or auxiliary purposes; (b) a vessel powered by an inboard gasoline engine or an outboard motor.	
DIVISION 1-GENERAL Maintenance 3100. The hull, machinery, and equipment as well as the crew accommodation of every vessel shall be constructed and installed so as to be capable of being regularly maintained to ensure that they are at all times, in all respects, satisfactory for the vessel’s intended service.	DIVISION 1-GENERAL Maintenance 4100. Same as 3100 .	
Structure and fittings 3101. Proper alignment and continuity of structural members and efficiency of structural connections and endings shall be ensured. All openings and cutouts shall have well-rounded corners and not impair the required structural strength of the hull and superstructure. 3102. Seats, thwarts, bulkheads, and other major structural components that are attached to the shell of the vessel shall be robustly connected in a manner that does not create stress concentrations.	Structure and fittings 4101. Same as 3101 . 4102. Same as 3102 .	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
3103. Materials subjected to stress at high or low temperatures shall have properties resistant to failure at the full range of anticipated temperatures.	4103. Same as 3103.	
3104. When provided, solid ballast shall be secured to prevent movement during vessel operations.	4104. Same as 3104.	
3105. Where a shaft access cover is fitted in a fish hold, it shall be fitted and secured in such a manner as to prevent dislodgement.	4105. Same as 3105.	
3106. Means of sounding all tanks, cofferdams and compartments that are not readily accessible shall be provided.	4106. Same as 3106.	
3107. All heavy items of equipment or gear should be securely fastened in position to prevent movement when the vessel is at sea.	4107. Same as 3107.	
3108. Local stiffening and reinforcement shall be provided for deck-mounted machinery, equipment, fairleads, masts, mooring cleats, towing bollards, and other miscellaneous fittings. Such stiffening and reinforcement shall take into account the maximum anticipated deck loading.	4108. Same as 3108.	
3109. For vessels intended for operation in freezing temperatures and where systems or equipment may be subject to frost damage, icing spray or other operational impairment, the design and location of such systems and equipment, in particular fluid systems, shall be specially considered to ensure necessary protection (such that operational effectiveness is not impaired).	4109. Same as 3109.	
3110. Materials readily rendered ineffective by heat or age degradation shall not be used for overboard scuppers, sanitary discharges and other hull connections where these are situated in machinery spaces or elsewhere below the working deck.	4110. Same as 3110.	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
3111. All metallic through hull fittings and associated valves, fittings and components and piping shall be of galvanically compatible materials or be sufficiently isolated from each other so as to avoid corrosion due to dissimilar metals. Account shall be taken of the need for electrical bonding if necessary to prevent wastage.	4111.	Same as 3111
3112. Safe access shall be provided to machinery for operational and maintenance purposes with particular attention being given to locations where fluid leakage may occur.	4112.	Same as 3112
3113. Permanent identifying nameplates and, where necessary, indication of operational status, shall be provided for remote control devices required for the normal operation of the vessel.	4113.	Same as 3113 .
3114. Where practicable, valves shall be equipped with permanent identifying nameplates indicating their function and an indicator showing whether the valve is open or closed.	4114.	Same as 3114 .
3115. For complex piping systems, or where the function of pipes is uncertain, the pipes shall be marked with appropriate colour coded bands to indicate the fluid they contain.	4115.	Same as 3115
	4116.	Measuring devices shall be so installed as to be readily visible.

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
<p>DIVISION 2- HULL ARRANGEMENT AND WEATHERTIGHT INTEGRITY</p> <p>SUB-DIVISION 1-GENERAL</p> <p>Construction, material and structure</p> <p>3200. Strength and construction of the hull and other structures and vessel’s equipment shall be sufficient to withstand all foreseeable conditions of the intended service and shall be in accordance with recommended practices and standards.</p> <p>3201. The hull of vessels intended for operation in ice shall be strengthened in accordance with the anticipated conditions of navigation and area of operation. Steel vessels shall comply with the applicable requirements for vessels navigating in ice in accordance with recommended practices and standards. Wooden and FRP vessels, operating from harbours subject to freezing should have appropriate ice protection sheathing in way of the ice area to resist ice abrasion.</p> <p>3202. Any bulkhead or deck adjoining engine spaces and accommodation spaces shall be made gas-tight so as to prevent the migration of carbon monoxide or other noxious gas fumes or products of combustion for the protection of persons on board. Access openings shall be capable of being made gastight.</p> <p>Structural Tanks</p> <p>3203. Despite the requirements of any recommended practices or standards, tanks that form part of the structure of the vessel, shall be designed to withstand a head of water equal to the maximum head to which the tanks can be subjected in service but not less than 2.44 m above the crown (i.e.; or not less than the height of the vent).</p>	<p>DIVISION 2 -CONSTRUCTION, WATERTIGHT INTEGRITY AND EQUIPMENT</p> <p>Construction</p> <p>Objective</p> <p>4200 The objective of this division is to</p> <ul style="list-style-type: none"> (a) maintain watertight integrity below the deck (b) prevent water ingress to the interior spaces of the vessel (c) maintain adequate degree of freeboard (d) ensure that water-freeing arrangements are sufficient (e) ensure sufficient watertight subdivision and reserve buoyancy and (f) ensure adequate strength of the vessel <p>4201. Same as 3200</p> <p>4202. Same as 3201</p> <p>4203. Same as 3202</p> <p>4204. (1) Vessels shall be fitted with a collision bulkhead and with watertight bulkheads bounding the main machinery space.</p> <p>(2) Watertight bulkheads shall be capable of preventing the passage of water through it in any direction, under a head of water up to the working deck.</p> <p>(3) Such bulkheads shall be extended up to the working deck. In vessels constructed of wood such bulkheads, shall be as watertight as possible.</p> <p>(4) The collision bulkhead shall not be located any further forward than the intersection of the load waterline and the stem of the vessel.</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
	<p>4205. The forepeak or any compartment forward of the collision bulkhead shall not be used for carrying fuel oil or any other combustible liquids.</p> <p>4206. Same as 3231 (3)</p> <p>Structural Tanks</p> <p>4207. Same as 3203</p> <p>Openings in Watertight Bulkheads</p> <p>4208. Same as 3232 (1)</p> <p>4209. (1) Same as 3232 (3)</p> <p>(2) Same as 3232 (2)</p> <p>(3) Same as 3232 (4)</p> <p>4210 (1) Same as 3232 (5)</p> <p>(2) Same as 3232 (6)</p> <p>(3) Transverse watertight bulkheads shall not be stepped or recessed unless</p> <ul style="list-style-type: none"> (a) it can be demonstrated that the bulkhead complies with recommended practices and standards that provide an equivalent level of safety as a plane bulkhead, or (b) additional subdivision is provided in way of the step or recess to maintain the same measure of safety as that obtained by a plane bulkhead. <p>4211. If fitted, sliding watertight doors shall be capable of being operated when the vessel is listed up to 15° either way.</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
	<p>4212. (1) No door, manhole, ventilation duct or any other opening shall be fitted in the collision bulkhead below the working deck.</p> <p>(2) Access to the forepeak shall be from the deck only and shall be capable of being closed by a bolted watertight manhole or a watertight hatch that has been approved by a marine classification society or listed by a product certification body.</p> <p>(3) Access may be allowed from the side provided the access is closed by a bolted watertight cover only.</p>	
<p>Inlets and discharges</p> <p>3204. Through-hull penetrations shall:</p> <ul style="list-style-type: none"> a) be kept to the minimum necessary to be consistent with the operational needs of the vessel; and b) have adequate local strength compensation equivalent to the unpierced structure in which it is located and be of such construction that it will maintain watertight integrity. <p>3205. Pipe systems connected to a hull penetration shall be arranged such that water will not enter the vessel by siphoning if valves are open.</p> <p>3206. Sea inlets shall be fitted with valves that have a positive means of closing from a readily accessible position. The valve shall be provided with an indicator, showing whether the valve is open or closed.</p> <p>3207. Discharges passing through the hull shall be fitted with an automatic non-return valve (or an equivalent stop and check valve) with a positive means of closing from a readily accessible position. The valve shall provide indication showing whether the valve is open or closed.</p>	<p>Inlets and discharges</p> <p>4213. Same as 3204</p> <p>4214. Same as 3205</p> <p>4215. Same as 3206</p>	

CONSULTATION DRAFT — PARTS 3 & 4	SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m
<p>3208. A vessel need not comply with 3207 if</p> <ul style="list-style-type: none"> a) the installation is in accordance with recommended practices and standards that are suitable for the type of installation or b) the authorized representative can demonstrate that <ul style="list-style-type: none"> (i) under operational loads or angles of heel, the penetration will not become submerged, or (ii) if the penetration does become submerged under operational loads or angles of heel, water will not enter the vessel and the pipe has sufficient strength that it is unlikely to fracture under normal conditions. <p>3209. (1) Seacocks or valves of sea inlets and discharges shall be fitted as close to the hull as possible.</p> <p>(2) No seacock or non-return valve is required for weatherdeck scupper pipes of metal construction that penetrate the hull above the deepest operating full load waterline.</p> <p>3210. Inlet and discharge valves not accessible in an emergency shall be fitted with remote means of operation such as by extended spindle or wire pull device. Where fitted in a fire risk area, the means of shut-off shall be made of material that is fire resistant</p> <p>3211. (1) Subject to (2), fittings attached to the hull, all valves and all pipes between the shell and the valves shall be of steel, bronze or other ductile material, and the materials shall be galvanically compatible or suitably isolated from each other.</p>	<p>4216 (1) Discharges passing through the hull from spaces below the freeboard deck shall be fitted with</p> <ul style="list-style-type: none"> (a) an automatic non-return valve (or an equivalent stop and check valve) with a positive means of closing that is operable <ul style="list-style-type: none"> (i) from above the freeboard deck, or (ii) from a readily accessible location if the discharge originates in a space that is equipped with a high bilge level alarm, or (b) two automatic non-return valves, one of which is fitted at the shell and one inboard that is accessible for examination when the vessel is in service. <p>(2) The valve shall provide indication, showing whether the valve is open or closed.</p> <p>4217 (1) Same as 3209 (1)</p> <p>(2) Same as 3209 (2)</p> <p>4218. In machinery spaces main and auxiliary sea inlets and discharges essential for the operation of machinery shall be controlled locally. Controls shall be readily accessible and shall provide indication showing whether the valves are open or closed.</p> <p>4219. The attachment of sea cocks to the hull or to a seabox shall be in accordance with the recommended practices and standards for such attachments.</p> <p>4220. Same as 3210</p> <p>4221 Fittings attached to the shell and all valves shall be of steel, bronze or other ductile material and the materials shall be galvanically compatible or suitably isolated from each other. All pipes between the shell and the valves shall be of steel, except that in spaces other than machinery spaces of vessels constructed of material other than steel other materials may be used.</p>

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
<p>(2) For non-steel vessels, through hull fittings and seacocks shall be of metal or shall be certified by their manufacturers or listed by a product certification body as meeting the requirements of ISO 9093-1 “<i>Small Craft-Seacocks and through hull fittings</i>”, ANSI/UL 1121 <i>Marine through hull fittings and sea-valves</i> or an equivalent standard for marine use.</p> <p>(3) Despite subsection (2) in FRP or wood hulls, fittings made of bronze, brass or stainless steel are allowed in all positions. Plastic through hull fittings and seacocks certified by their manufacturers or listed by a product certification body as meeting ISO 9093-2 Small Craft-Seacocks and through hull fittings certified by their manufacturers or listed by a product certification body as meeting ANSI/UL 1121 may be used outside the machinery space in positions above 100 mm above the load waterline.</p> <p>3212. Any penetration prone to be damaged by fishing gear, equipment or crew shall be suitably protected.</p> <p>3213. (1) Where sea inlet piping systems comprise flexible hose, the connections shall be fitted with double, corrosion-resistant hose clips at both ends.</p> <p>(2) The hose shall be wire-reinforced non-collapsible type suitable for the intended purpose. Clamps shall not rely solely on spring tension.</p>		
<p style="text-align: center;"><i>Keel Coolers</i></p> <p>3214. Where keel coolers are installed provision shall be made to isolate them by fitting valves inside the hull at the inlet and outlet connections.</p> <p>3215. Keel coolers and associated piping systems shall be constructed of metal.</p>	<p style="text-align: center;"><i>Keel Coolers</i></p> <p>4222. Same as 3214</p> <p>4223. Same as 3215</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
<i>Other Penetrations</i>	<i>Other Penetrations</i>	
<p>3216. All electronic devices fitted in the bottom shell such as echo sounders, speed logs, etc., shall be fitted with efficient and accessible arrangements for preventing admission of water into the vessel.</p>	<p>4224. Same as 3216</p>	
SUB-DIVISION 2 - UNDECKED VESSELS		
<p>3217. This sub-division applies to undecked vessels.</p> <p>3218. (1) The objective for undecked vessels is to maintain watertightness below the load waterline and to provide protection against swamping.</p> <p>(2) Where a weathertight deck structure is fitted, the objective is to:</p> <ul style="list-style-type: none"> a) maintain watertightness below the load waterline; b) maintain a reasonable degree of weathertightness of the decked or covered structures; and c) to provide quick drainage overboard or adequate drainage into the bilge, of areas where water may accumulate. 		
Deck structures		
<p>3219. (1) Unless otherwise indicated, a vessel that has a weathertight deck structure that does not cover the entire hull or from which water drains into the bilge shall comply with sections XXX, XXX and XXX of this sub-division and the other provisions of this sub-division as appropriate.</p> <p>(2) Deck structures shall meet the applicable provisions for weathertightness as set out in recommended practices and standards or the requirement for weathertightness as for a decked vessel (subdivision 3).</p>		

CONSULTATION DRAFT — PARTS 3 & 4	SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m
<p>Construction</p> <p>3220. Engine spaces shall be framed and enclosed by casings of strength equivalent to the surrounding structure. Bulkheads if fitted, shall be watertight below the deck.</p> <p>Hull Integrity</p> <p>3221. Access openings to engine spaces or covered accommodation spaces shall be provided with closing devices of equivalent strength to the surrounding structure.</p> <p>Hatchways</p> <p>3222. Where fitted, hatchways shall comply with sections on decked vessels 3243 to 3246 or comply with “<i>ISO 12216, Small Craft- Stability, Watertightness and Drainage Standards</i>” or the recommended practices and standards that provide an equivalent level of safety.</p> <p>Buoyancy, Flotation and Drainage</p> <p>3223. Every vessel shall</p> <p>(a) be fitted with inherently buoyant material or buoyant systems or chambers that comply with the requirements for Reserve Buoyancy and Flotation in the swamped condition as set out in <i>ISO 12217-1 Small Craft- Stability and Buoyancy Assessment and Categorization Part 1- Boats >6m</i> or the recommended practices and standards that provide an equivalent level of safety, or</p> <p>(b) meet the watertightness, stability and drainage specifications set out in <i>ISO 12216 Small Craft- Stability, Watertightness and Drainage Standards.</i>” or the recommended practices and standards that provide an equivalent level of safety.</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
<p>3224. Cockpit bottoms or floors shall be of equivalent strength to the surrounding structure and adequate drainage shall be ensured into the bilge or where a partial deck is fitted, comply with “<i>ISO 12216-Small Craft- Stability, Watertightness and Drainage Standards</i>” or the recommended practices and standards that provide an equivalent level of safety.</p> <p>3225. Any deck structure shall be adequately drained either inboard to the bilge or overboard.</p> <p>3226. Where a deck is fitted above the light waterline but is submerged when the vessel is loaded, drainage overboard shall be accommodated by fitted scuppers and plugs with keeper chains instead of freeing ports.</p> <p>Ventilators and Air Pipes</p> <p>3227. Ventilation openings or air pipes if fitted shall be designed and located to minimize the possibility of ingress of water into the interior spaces of the hull, taking into account all service conditions of heel, trim, wave action, loading and astern operations.</p> <p>Windows and Skylights</p> <p>3228. (1) Windows, port lights, and skylights shall be fitted with safety glass or equivalent material of equal strength.</p> <p>(2) In critical locations, windows, ports and skylights shall meet <i>ISO 12216-Small Craft- Stability, Watertightness and Drainage Standards</i> or shall meet the requirements for decked vessels set out in Subdivision 3 or the recommended practices and standards that provide an equivalent level of safety.</p> <p>(3) Skylights leading to spaces below the working deck should be of substantial construction and capable of being closed and secured weathertight, and with provision for adequate means of closing in the event of damage to the inserts.</p> <p>(4) Skylights leading to engine spaces are not permitted.</p>		

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
SUB-DIVISION 3 - DECKED VESSELS		
Objective		
<p>3229. The objective of this sub-division is to</p> <ul style="list-style-type: none"> (a) maintain watertight integrity below the deck (b) prevent water ingress to the interior spaces of the vessel (c) maintain adequate degree of freeboard (d) ensure that water-freeing arrangements are sufficient (e) ensure sufficient watertight subdivision and reserve buoyancy 		
Reductions in heights of coamings, sills, ventilators, air pipes etc.		
<p>3230. (1) If the Minister determines that, based on operational experience, the reduction of minimum heights of coamings, sills, ventilators, air pipes, or other deck openings, will not subject a vessel to increased risk of downflooding, the Minister may, on request, subject to the limitations set out in sections 3242, 3246 or 3249, permit the reduction of such minimum heights.</p> <p>(2) When considering the reduction of heights , under subsection (1), the Minister shall take into account</p> <ul style="list-style-type: none"> (a) the nature of the vessel’s operations (b) the operating environment of the vessel (c) the operational history of the vessel and other vessels of a similar class (d) the amount the height is to be reduced (e) the nature of any closing appliance installed in the opening (f) whether the reduction in height will be compensated by an increase in freeboard (g) the angle of downflooding (h) the distance of the opening from the centerline of the vessel (i) any other condition that may affect the safe minimum height of the opening (j) the recommended practices and standards to which the vessel is constructed 		
<p>4225. (1) If the Minister determines that, based on operational experience, the reduction of minimum heights of coamings, sills, ventilators, air pipes, or other deck openings, will not subject a vessel to increased risk of downflooding, the Minister may, on request, subject to the limitations set out in sections 4233, 4237 or 4241, permit the reduction of such minimum heights.</p> <p>(2) When considering the reduction of heights , under subsection (1), the Minister shall take into account</p> <ul style="list-style-type: none"> (a) the nature of the vessel’s operations (b) the operating environment of the vessel (c) the operational history of the vessel and other vessels of a similar class (d) the amount the height is to be reduced (e) the nature of any closing appliance installed in the opening (f) whether the reduction in height will be compensated by an increase in freeboard (g) the angle of downflooding (h) the distance of the opening from the centerline of the vessel (i) any other condition that may affect the safe minimum height of the opening (j) the recommended practices and standards to which the vessel is constructed 		

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
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(3) If necessary to ensure an equivalent level of safety, the Minister may apply operational restrictions.	(3) If necessary to ensure an equivalent level of safety, the Minister may apply operational restrictions.	
<p>Construction</p> <p>3231. (1) Subject to (3), Vessels shall be fitted with transverse watertight bulkheads bounding the engine space.</p> <p>(1.1) Watertight bulkheads shall be capable of preventing the passage of water through it in any direction, under a head of water up to the working deck.</p> <p>(2) Such bulkheads shall be extended up to the working deck. In vessels constructed of wood, the bulkhead shall be as watertight as possible.</p> <p>(3) An additional transverse watertight bulkhead or equivalent sub-division, such as may be provided by fish holds or tanks, shall be fitted separating the steering compartment or lazarette from any other space unless it can be demonstrated that the fitting of such a bulkhead would be impractical due to the limited volume of the space relative to the reserve buoyancy of the vessel.</p> <p>3232. (1) Openings in bulkheads shall be kept to the minimum number and size necessary for the operation of the vessel and if fitted, shall be equipped with a watertight means of closing,</p> <p>(2) If doors are fitted in watertight bulkheads, they shall be watertight, of a type approved by a Marine Classification Society or listed by a product certification body and be of equivalent strength to the adjacent unpierced structure.</p> <p>(3) Watertight doors may be of the hinged type, and shall be capable of being operated locally from each side of the door and be fitted with open/closed status indicators in the wheelhouse of the vessel visible by the helmsman at the primary operating position.</p>		

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
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<p>(4) The means for securing doors watertight shall consist of gaskets and quick closing clamping devices or other equivalent means and shall be permanently attached to the bulkhead or to the doors themselves, and shall be so arranged that they can be operated from each side of the bulkhead.</p> <p>(5) Where a watertight door is fitted, a notice shall be attached to the door on each side stating that the door is to be kept closed at sea when not being used.</p> <p>(6) Closing appliances that are not operable from both sides, (such as bolted hatches and manhole covers) need only be marked on the operable side.</p> <p>(7) Valves and cocks not forming part of a piping system shall not be fitted in any bulkhead required to be watertight.</p> <p>(8) Heat sensitive material shall not be used in systems which penetrate watertight bulkheads, where deterioration of the material in the event of fire would impair the watertight integrity of the bulkheads.</p> <p>3233. Where pipes and electrical cables are carried through watertight bulkheads or decks, penetrations shall preserve the watertight integrity of the bulkhead or deck and, (a) in the case of non metallic piping, be fitted with a metallic spool piece and isolation valves, and (b) in the case of electrical cables, be fitted with watertight glands.</p> <p>3234. Where they pass through watertight or fire control bulkheads or decks, non-metallic pipes and flexible hoses shall include compatible metallic bulkhead components for penetration purposes (preserve the integrity of the bulkhead).</p>	<p>4226. Same as 3232 (7)</p> <p>4227. Same as 3232 (8)</p> <p>4228. Same as 3233</p> <p>4229. Pipes piercing the collision bulkhead shall be fitted with suitable valves operable from above the working deck and the valve chest should be secured at the collision bulkhead inside the forepeak.</p>	

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<p>3235. (1) Piping systems utilizing plastic or fibre-reinforced plastic material shall, where penetrating a steel watertight or fire-control bulkhead or deck, include a steel spool-piece attached to the bulkhead or deck so that the integrity of the division is not diminished and on a watertight division, a metallic shut-off valve shall be installed to the spool; however no valve is required on ballast or fresh water piping located within ballast or fresh water tanks.</p> <p>(2) Remote controls operable from above the bulkhead deck shall be fitted to the shut-off valve except where:</p> <ul style="list-style-type: none"> (a) the piping on one side of the bulkhead or deck is completely metallic and the valve is fitted to the metallic piping and easily accessible; or (b) two valves are installed, one on either side of the bulkhead or deck, with each being easily accessible. <p>3236. Where penetrating a bulkhead or deck of material other than steel, a system utilizing plastic or fibre-reinforced plastic piping shall be such that the integrity of the area is not diminished where the penetration occurs.</p>		
<p>Hull integrity</p> <p>3237. (1) A decked vessel shall have positive freeboard in all conditions of loading.</p> <p>(2) Drainage of decks shall be accomplished by freeing ports.</p> <p>3238. External openings shall be capable of being closed <i>weathertight</i> so as to prevent water from entering the vessel. Deck openings which may be open during fishing operations shall be arranged as close as practicable to the vessel's centreline unless the safety of the vessel will not be impaired.</p>	<p>Hull integrity</p> <p>4230. Same as 3237</p> <p>4231. Same as 3238</p> <p>4232. Fish flaps on stern trawlers shall be power-operated and capable of being controlled from any position which provides an unobstructed view of the operation of the flaps.</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
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<p>Weathertight doors</p> <p>3239. (1) All access openings in bulkheads of enclosed superstructures and other outer structures through which water could enter and endanger the vessel, shall be fitted with doors permanently attached to the bulkhead, framed and stiffened and weathertight when closed.</p> <p>(2) The means for securing these doors weathertight shall consist of gaskets and quick closing clamping devices or other equivalent means and shall be permanently attached to the bulkhead or to the doors themselves, and shall be so arranged that they can be operated from each side of the bulkhead.</p> <p>(3) Hinged doors shall be arranged to open outward against the weather and sea and generally be hinged on the forward or outboard side. Doors shall be located as close as practicable to the centerline of the vessel.</p> <p>(4) Side doors should be located on the same side as the operating station.</p> <p>3240. Door closures shall be operable from each side of the opening.</p> <p>3241. The height above deck of sills in those doorways, in companionways, erections and machinery casings which give direct access to parts of the deck exposed to the weather and sea shall be at least 380 mm. of which at least 300 mm shall be permanent and the remaining height of the sill may be portable provided it is securely stowed in a readily accessible location.</p> <p>3242. (1) The Minister may reduce the height above deck of sills in the doorways specified in 3230, except in the doorways giving direct access to machinery spaces, to not less than 150 mm. In vessels of design category D operating within the limits of a sheltered waters voyage, the Minister may further reduce the height to 50 mm.</p> <p>(2) On a raised forecastle deck or superstructure deck the height of sills shall not be reduced to less than 150 mm.</p>	<p>Weathertight doors</p> <p>4233. (1) Same as 3239 (1)</p> <p>(2) Same as 3239 (2)</p> <p>(3) Same as 3239 (3)</p> <p>(4) Same as 3239 (4)</p> <p>4234. The height above deck of sills in those doorways, in companionways, erections and machinery casings which give direct access to parts of the deck exposed to the weather and sea shall be at least 600 mm on the working deck and at least 300 mm on the superstructure deck, <i>raised forecastle or enclosed shelter deck.</i></p> <p>4235. (1) The Minister may reduce the height above deck of sills in the doorways specified in 4234, except in the doorways giving direct access to machinery spaces, to not less than 380 mm on the working deck for vessels 24 m in length, or not less than 150 mm on the working deck for vessels of 15 m in length. For vessels of intermediate length the minimum acceptable reduced height for sills in doorways on the working deck should be obtained by linear interpolation.</p> <p>(2) On a raised forecastle deck or superstructure deck the height of sills shall not be reduced to less than 150 mm.</p>	

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<p>Hatchways</p> <p>3243 (1) [External] hatchway [covers exposed to weather or sea] shall be</p> <ul style="list-style-type: none"> (a) weathertight when closed, (b) fitted with quick closing clamping devices and gaskets or other equivalent arrangements, (c) capable of being rapidly closed, and (d) located as close to the centerline of the vessel as practicable. <p>(2) On vessels of design category D, or any vessel engaged in sheltered waters voyages, a hatch need not be capable of being rapidly closed.</p> <p>(3) Hatch covers of the single cross-bar type are not acceptable (See SSB 12/2007).</p> <p>(4) On small hatchways, the covers shall be permanently attached by hinges or equivalent means except for vessels of design category D on sheltered waters voyages.</p> <p>3244. The strength of hatchway covers shall be in accordance with recommended practices and standards.</p> <p>3245. The height above deck of hatchway coamings on exposed parts of the working deck shall be at least 450mm.</p> <p>3246. (1) The Minister may reduce the height of hatchway coamings, except those which give direct access to machinery spaces, from the height as specified in 3245.</p> <p>(2) The coamings may be omitted entirely, provided that efficient watertight hatch covers other than wood are fitted. Such hatchways shall be kept as small as practicable and the covers shall be permanently attached by hinges or equivalent means and be capable of being rapidly closed.</p> <p>(3) On a raised forecastle, enclosed shelter deck or superstructure deck, the coaming height shall not be reduced to less than 150 mm.</p>	<p>Hatchways</p> <p>4236 (1) Same as 3243 (1)</p> <p>(2) Same as 3243 (3)</p> <p>(3) Same as 3243 (4)</p> <p>(4) Same as 3244</p> <p>4237. The height above deck of hatchway coamings on exposed parts of the working deck shall be at least 450 mm for vessels of 15 m LOA and at least 600 mm for vessels 24 m in length. For vessels of intermediate length the, minimum height shall be obtained by linear interpolation.</p> <p>4238. (1) The Minister may reduce the height of hatchway coamings, except those which give direct access to machinery spaces, from the height as specified in 4237</p> <p>(2) Same as 3246 (2)</p> <p>(3) On exposed parts of the superstructure deck, raised forecastle or enclosed shelter deck the height shall not be reduced to less than 300 mm.</p>	

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<p>(4) An efficient watertight hatch cover shall be of equivalent strength to the surrounding unpierced structure and:</p> <ul style="list-style-type: none"> (a) of a type approved by a marine classification society or listed by a product certification body or (b) manufactured in accordance with recommended practices and standards and demonstrated to be watertight when closed. 	<p>(4) Same as 3246 (4)</p>	
<p>Machinery space openings</p> <p>3247. External access machinery space openings shall be of strength equivalent to the surrounding structure and fitted with doors or hatch covers complying with 3239-3246 as applicable.</p>	<p>Machinery space openings</p> <p>4239. Machinery space openings shall be framed and enclosed by casings of strength equivalent to the surrounding structure. External access openings therein shall be fitted with doors complying with the provisions of 4233-4235 or with hatch covers other than wood complying with the provisions of 4236-4238.</p> <p>4240. Openings other than access openings shall be fitted with covers of equivalent strength to the unpierced structure, permanently attached thereto and capable of being closed weathertight.</p>	
<p>Other deck openings</p> <p>3248. Where it is essential for fishing operations or the working of the vessel, flush deck covers may be fitted, provided these meet the requirements of 3246 (4) and are capable of being rapidly closed watertight and such devices, on vessels of design categories A, B, C1 and C2, <i>or any vessel engaged in voyages other than sheltered waters voyages</i>, shall be permanently attached by hinges or equivalent means to the adjacent structure. Such hatchways shall be kept as small as practicable.</p>	<p>Other deck openings</p> <p>4241. Where it is essential for fishing operations or the working of the vessel, flush deck covers may be fitted, provided these meet the requirements of 4238 (4) and are capable of being rapidly closed watertight and such devices shall be permanently attached by hinges or equivalent means to the adjacent structure. Such hatchways shall be kept as small as practicable.</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
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<p>Ventilators</p> <p>3249. (1) The coamings of ventilators shall be as high as practicable and protected from weather and physical damage. On the working deck the height above deck of coamings of ventilators other than machinery space ventilators shall be not less than 450 mm and on superstructure decks, enclosed shelter decks or raised forecastle decks, not less than 300mm.</p> <p>(2) If the height of such ventilators may interfere with the fishing operation of the vessel, the Minister may reduce their coaming heights except that the height above deck of machinery space ventilator openings shall not be less than 600mm.</p> <p>3250. Coamings of ventilators shall be of equivalent strength to the adjacent structure and capable of being closed weathertight by devices permanently attached to the ventilator or adjacent structure. Ventilators shall be arranged as close to the vessel’s centreline as possible and, where practicable, should extend through the top of a deck erection or companion-way.</p>	<p>Ventilators</p> <p>4242. (1) The coamings of ventilators shall be as high as practicable and protected from weather and physical damage.. On the working deck the height above deck of coamings of ventilators other than machinery space ventilators shall be not less than 760 mm and on superstructure decks enclosed shelter decks or raised forecastle decks, not less than 450 mm.</p> <p>(2) If the height of such ventilators may interfere with the fishing operation of the vessel, the Minister may reduce their coaming heights, except that the height above deck of machinery space ventilator openings shall not be less than 760mm.</p> <p>4243. (1) Same as 3250</p> <p>(2) Where the coaming of any ventilator exceeds 900 mm in height it shall be specially supported.</p> <p>4244. Closing appliances need not be fitted to ventilators the coamings of which extend more than 2.5 m above the working deck or more than 1.0 m above a deckhouse top or superstructure deck.</p>	
<p>Air pipes</p> <p>3251. (1) Where air pipes to tanks and void spaces below deck extend above the working or superstructure decks, the exposed parts of the pipes shall be of strength equivalent to the adjacent structures and fitted with appropriate protection and protected from damage by fishing or lifting gear. Openings of pipes shall be provided with means of closing, permanently attached to the pipe or adjacent structure, except that where they are protected against water trapped on deck, these means of closing may be omitted.</p> <p>(2) If the exposed end of the air pipe is finished in a “goose neck,” then the means of closing may be omitted.</p> <p>3252. The height of air pipes above deck to the point where water may have access below shall be at least 450mm on the working deck.</p>	<p>Air pipes</p> <p>4245. Same as 3251</p> <p>4246. (1)The height of air pipes above deck to the point where water may have access below shall be at least 760 mm on the working deck and at least 450 mm on the superstructure deck.</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
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3253 The Minister may reduce the height of an air pipe to avoid interference with fishing operations.	(2) Same as 3253	
3254. Provision shall be made to prevent a vacuum forming in the pipe or tank.	4247 Same as 3254	
3255. Exposed air pipes, in excess of 25 mm in diameter, serving fuel oil, and other oil tanks shall be fitted with anti-flame screen protection or other equivalent devices.	4248. Same as 3255	
Sounding devices	Sounding devices	
3256. Sounding devices shall be fitted to the bilges of those compartments which are not readily accessible at all times during the voyage; and to all tanks and cofferdams.	4249. Same as 3256	
3257. Where sounding pipes are fitted, their upper ends shall be extended to a readily accessible position and, where practicable, above the working deck. Their openings shall be provided with permanently attached means of closing. Sounding pipes which are not extended above the working deck shall be fitted with automatic self-closing devices.	4250. Same as 3257	
3258. Sounding pipes shall be fitted with a striking plate beneath their lower end.	4251 Same as 3258	
3259. Sounding arrangements on fuel service tanks shall be such that in the event of the tanks being overfilled, spillage through the means of sounding cannot occur.	4252. Same as 3259	
3260. Fuel tank sounding pipe openings shall not be located in crew accommodation.	4253. Same as 3260	
Windows portlights and skylights	Windows, portlights and skylights	
3261. (1) Skylights leading to spaces below the working deck shall be of substantial construction and capable of being closed and secured weathertight, according to recommended practices and standards. Skylights shall be provided with adequate means of closing in the event of damage to the inserts.	4254. (1) Same as 3261 (1)	

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<p>(2) Skylights, windows, portlights or other glazed openings leading to machinery spaces are <i>not allowed</i>.</p> <p>3262. (1) Construction of windows, skylights and portlights shall conform to ISO 12216 Small Craft, Windows, portlights, deadlights and doors or recommended practices and standards that provide an equivalent level of safety. Those prone to be damaged by fishing gear shall be suitably protected</p> <p>(2) Portholes, together with their glasses and deadlights shall be installed in such a manner that the area strength is not diminished where the penetration occurs.</p> <p>(3) In addition, on vessels of Design Categories A and B, or on any vessel engaged in voyages beyond the limits of a near coastal voyage class 2, toughened safety glass or suitable permanently transparent material of equivalent strength shall be fitted in all wheelhouse windows exposed to the weather. Surrounding structure shall be framed and stiffened. Windows, port lights, and skylights shall be fastened within a fixed frame that is mechanically attached in place in accordance with the manufacturers instructions and the width of bearing surfaces shall be such that when the glass is facing external loads, the glass cannot be pushed through the frame. The frame shall be of a non-corrosive material or be compatible with the material of the surrounding structure. If openings within a structure lead to spaces below deck from a wheelhouse (space) whose windows are not provided with such protection, the opening shall be fitted with a weathertight closing appliance.</p> <p>3263. Storm shutters shall be provided for each forward facing window in the wheelhouse on vessels of Design Categories A and B or on voyages beyond the limits of a near coastal class 2 voyage which can be readily fitted in an emergency where there is no other method of preventing water from entering the vessel through a broken window.</p> <p>3264. Vertical framing between all windows in the wheelhouse shall not be installed immediately forward of the steering position, or positions.</p>	<p>(2) Same as 3261 (2)</p> <p>4255. (1) Same as 3262 (1)</p> <p>(2) Same as 3262 (2)</p> <p>(3) In addition, toughened safety glass or suitable permanently transparent material of equivalent strength shall be fitted in all wheelhouse windows exposed to the weather. The surrounding structure shall be framed and stiffened. Windows, port lights, and skylights shall be fastened within a fixed frame that is mechanically attached in place in accordance with the manufacturers instructions and the width of bearing surfaces shall be such that when the glass is facing external loads, the glass cannot be pushed through the frame. The frame shall be of a non-corrosive material or be compatible with the material of the surrounding structure.</p> <p>4256. Same as 3263</p> <p>4257. Same as 3264</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
<p>3265. The height of the lower edge of the forward facing windows of the wheelhouse shall be as low as practicable to reduce the blind zone created by the lower edge of the window.</p> <p>3266. (1) The upper edge of the forward facing windows of the wheelhouse shall be high enough to allow a person at the steering position with height of eye of 1800 mm a clear forward view to at least 10 degrees above the horizontal at height of eye level.</p> <p>(2) The view of the sea surface from the conning position should extend from right ahead to 22.5° abaft the beam on either side of the vessel. Blind sectors caused by any obstruction outside the wheelhouse should be kept as small as possible.</p> <p>(3) From each side of the wheelhouse, the horizontal field of vision should extend over an arc of at least 225°, that is from at least 45° on the opposite bow through right ahead and then from right ahead to right astern through 180° on the same side of the vessel.</p> <p>3267. Neither polarized nor tinted glass shall be used in any wheelhouse window.</p> <p>3268. Forward facing windows serving the helmsman shall be able to be maintained in a clear condition during conditions of spray and precipitation.</p> <p>Portlights</p> <p>3269. (1) Portlights in the shell below the working deck shall be of a non-opening type and fitted with hinged inside deadlights permanently attached so that they can be readily closed and secured watertight.</p> <p>(2) No porthole shall be fitted in a position so that its sill is below a line drawn parallel to the working deck at side and having its lowest point not less than 500 mm above the maximum operating water line.</p>	<p>4258. Same as 3265</p> <p>4259. Same as 3266</p> <p>4260. Same as 3267</p> <p>4261. Same as 3268</p> <p>4262. same as 3269 (1)</p> <p>4263. same as 3269 (2)</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
<p>(3) Portable plates or plugs instead of deadlights may be provided on vessels of Design Category D or any vessel operating on voyages not exceeding the limits of a sheltered waters voyage.</p>	<p>4264. Portlights fitted less than 1000 mm above the deepest operating waterline shall be of the fixed type.</p> <p>4265. Deadlights or storm shutters shall be fitted to portlights or windows in side or aft bulkheads of deck erections located on or above the working deck if the safety of the vessel would be impaired by the breaking of the portlight or window.</p> <p>4266. The number of openings in the sides of the vessel below the working deck shall be the minimum compatible with the design and proper working of the vessel and such openings shall be provided with closing arrangements of adequate strength to ensure watertightness and the structural integrity of the surrounding structure.</p>	
<p>Freeing ports</p> <p>3270. Freeing ports or other means of natural deck drainage overboard such as scuppers drains etc. shall be arranged along the length of bulwarks forming enclosed wells so as to provide rapid and effective freeing of water from the deck of the vessel and the lower edges of the freeing ports shall be as close to the deck as possible.</p> <p>3271. (1) The minimum freeing port area on each side of the vessel for each well shall:</p> <p style="margin-left: 20px;">a) not be not less than 5% of the total bulwark area; or</p> <p style="margin-left: 20px;">b) conform with the requirements as detailed in Schedule 2 of these Regulations</p> <p>(2) The minimum freeing port area on each side of the vessel for each well on the superstructure deck shall be not less than one-half of the value calculated in subsection (1), except that, where the superstructure deck forms a working deck for fishing operations, the minimum area each side shall not be less than 75% of the calculated value.</p> <p>(3) The freeing port area shall be increased where the vessel's sheer is not sufficient to ensure rapid and effective freeing of the deck of water.</p>	<p>Freeing ports</p> <p>4267. Where bulwarks on weather parts of the working deck form wells, the minimum freeing port area (A) in square m, on each side of the vessel for each well on the working deck shall be determined by either;</p> <p>a) in relation to the length (<i>l</i>) and height of bulwark in this well as follows:</p> <p style="margin-left: 40px;">.1 $A = K \times l$ where: $K = 0.07$ for vessels of 24 m in length $K = 0.035$ for vessels of 12 m in length; for intermediate lengths the value of K should be obtained by linear interpolation. (<i>l</i> need not be taken as greater than 70% of the length of a vessel.)</p> <p style="margin-left: 40px;">.2 Where the bulwark is more than 1.2 m in average height the required area shall be increased by 0.004 m² per metre of length of well for each 100 mm difference in height.</p> <p style="margin-left: 40px;">.3 Where the bulwark is less than 900 mm in average height, the required area may be decreased by 0.004 m² per m of length of well for each 100 mm difference in height.</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
<p>3272. When the main deck is prepared for carrying deck load by dividing it with pound boards, or any division capable of trapping water, there should be slots between them of suitable size to allow easy flow of water to freeing ports. Poundboards shall be so constructed that they can be locked in position when in use.</p> <p>3273. Every freeing port over 300 mm in depth shall be fitted with bars spaced not more than 230 mm and not less than 150 mm apart, or have arrangements offering similar protection.</p> <p>3274. Where closing appliances are fitted, they</p> <ul style="list-style-type: none"> (a) shall not impair the operation of the freeing port, (b) shall always be easily accessible (c) shall be capable of being easily removed to restrict ice accumulation, and (d) in no circumstances shall closing appliances be permanently closed. <p>3275. If devices are necessary for locking freeing port covers during fishing operations they shall be easily operable from a readily accessible position.</p>	<p>Or,</p> <p>b) the minimum freeing port area on each side of the vessel for each well shall not be less than 7% of the total bulwark area</p> <p>4268. The freeing port area calculated according to 4267 shall be increased if the vessel's sheer is not sufficient to ensure rapid and effective freeing of the deck of water.</p> <p>4269. The minimum freeing port area for each well on the superstructure deck shall be not less than one half the area (A) given in 4267 except that where the superstructure deck forms a working deck for fishing operations the minimum area each side shall be not less than 75% of the area (A).</p> <p>4270. Freeing ports shall be so arranged along the length of bulwarks as to provide the most rapid and effective freeing of the deck from water. Lower edges of freeing ports shall be as near the deck as practicable.</p> <p>4271. Same as 3272</p> <p>4272. (1) Same as 3273</p> <p>4273 Same as 3274</p> <p>4274 Same as 3275</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
<p>3276. Where freeing ports are fitted with hinged flaps or shutters, sufficient clearance or greasing points or nipples are to be provided to prevent jamming is to be provided and hinges are to be fitted with pins of non-corrodible material.</p> <p>3277. Where water is apt to accumulate on exposed decks other than the working deck, scuppers shall be provided to drain water overboard.</p>	<p>4275 Same as 3276</p> <p>4276 Same as 3277</p>	
<p>Working spaces within an enclosed superstructure</p> <p>3278. Working spaces within an enclosed superstructure shall be arranged, taking into account where practicable:</p> <ul style="list-style-type: none"> .1 efficient drainage .2 openings necessary for fishing operations .3 means of escape .4 stowage of catch .5 headroom .6 ventilation 	<p>Working decks within an enclosed superstructure</p> <p>4277. Working decks within an enclosed superstructure shall be fitted with an efficient drainage system having an appropriate drainage capacity to dispose of washing water and fish guts.</p> <p>4278. All openings necessary for fishing operations shall be provided with means for quick and efficient closures by one person.</p> <p>4279. Where the catch is brought on to such decks for handling and processing, the catch shall be placed in a pound. An efficient drainage system shall be fitted. Adequate protection against inadvertent influx of water to the working deck shall be provided.</p> <p>4280. At least two exits from such decks shall be provided.</p> <p>4281. There shall be adequate headroom at all points in the working space.</p> <p>4282. A fixed ventilation system shall be provided for fresh air supply in accordance with recommended practices and standards.</p>	
<p>Tanks for fish in refrigerated sea water (RSW) or slush ice</p> <p>3279. (1) If RSW-tanks or similar tank systems are used, such tanks shall be provided with a separate permanently fitted arrangement for the filling and emptying of sea water.</p>	<p>Tanks for fish in refrigerated sea water (RSW) or slush ice</p> <p>4283. Same as 3279</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
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<p>(2) Pipe systems shall be arranged such that water will not enter the vessel if valves are left open and shall prevent the possibility of backflooding (dangerous flooding to interior spaces) through the piping system.</p> <p>3280. If such tanks are to be used also for other purposes, (such as carrying dry cargo) the tanks shall be arranged with a bilge pumping system and provided with adequate means to avoid ingress of water from the bilge system into the tanks.</p>	4284. Same as 3280	
<p>Drainage of partial decks.</p> <p>3281. Means shall be provided for any partial decks either inboard or outboard to be adequately drained.</p>		
<p>DIVISION 3 STABILITY AND ASSOCIATED SEAWORTHINESS (Reserved)</p>	<p>DIVISION 3 STABILITY AND ASSOCIATED SEAWORTHINESS (Reserved)</p>	
<p>DIVISION 4- MACHINERY AND PUMPING AND PIPING INSTALLATIONS</p> <p>Objective</p> <p>3400. The objective of this Division is provide measures:</p> <ul style="list-style-type: none"> <input type="checkbox"/> enhancing the safety and reliability and efficiency in operation of the vessel machinery and systems; <input type="checkbox"/> to minimize the consequences of potential failure of critical machinery, equipment and systems; <input type="checkbox"/> to reduce the risk of injury to personnel; <input type="checkbox"/> to facilitate ease of maintenance; and <input type="checkbox"/> to prevent pollution of the marine environment 	<p>DIVISION 4- MACHINERY AND PUMPING AND PIPING SYSTEMS</p> <p>Objective</p> <p>4400 The objective of this Division is provide measures:</p> <ul style="list-style-type: none"> <input type="checkbox"/> enhancing the safety and reliability and efficiency in operation of the vessel machinery and systems; <input type="checkbox"/> to minimize the consequences of potential failure of critical machinery, equipment and systems; <input type="checkbox"/> to reduce the risk of injury to personnel; <input type="checkbox"/> to facilitate ease of maintenance; and <input type="checkbox"/> to prevent pollution of the marine environment 	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
<p>3407. Piping materials, including plastic piping <i>or hose</i> shall be suitable for their intended purpose; in choosing the material to be used it should be ensured that there will be no failure or degradation of the pipe as a result of any reaction with the fluid.</p> <p>3408. Valves, piping and flexible hoses shall be of sound and efficient construction and installation. All piping systems should be well supported with pipe clips or mounts and protected against vibration and chafing.</p> <p>3409. Where pipework is replaced, alignment of the replacement part shall be as close as possible to the original.</p>	<p>4405. (1) Same as 3407</p> <p>(2) Same as 3408</p> <p>(3) Same as 3409</p> <p>4406. Exhaust pipes and other hot surfaces within reach of personnel shall be properly insulated or otherwise protected to prevent accidents or burns. Likewise, hot surfaces, which could cause ignition, shall be protected from all possible contacts with combustible materials.</p> <p>4407. Moving external parts of engines and mechanical and electrical equipment shall be suitably protected to prevent injury to attendant personnel.</p> <p>4408. Platforms and gratings in machinery spaces, and openings to machinery space bilges shall be provided, where practicable, with adequate handrails or handholds and toeboards.</p> <p>4409. Walking surfaces shall be properly fitted and secured in place and should have a non-slip surface.</p> <p>4410. Machinery space ladders shall be permanently attached, made of metal such as steel and fitted with non-slip treads.</p> <p>4411. Where water-cooled internal combustion engines are installed provision shall be made for an emergency means of supplying cooling water. Strainers shall be capable of being cleaned without interrupting the flow of cooling water. Where keel coolers are installed provision should be made to isolate them by fitting valves inside the hull at the inlet and outlet connections</p> <p>4412. Information on operation and maintenance of machinery, usage of fuel and lubricating oils shall be provided (i.e. Owners Manuals-operation and service.)</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
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<p>Propulsion and Auxiliary Machinery and Stern Gear</p> <p>3410. (1) Propulsion and auxiliary engines and associated stern gear shall be of a design, type and rating to suit the design and size of the vessel taking account of the operating conditions and area of operation.</p> <p>(2) Essential machinery (on vessels of design category A or B or operating on voyages beyond the limits of a near coastal voyage class 2) should be designed to operate when the vessel is upright and when heeled at any angle up to and including 15 degrees either way under static conditions and 22.5 degrees either way under rolling conditions and simultaneously trimmed 7.5 degrees by the bow or stern under pitching conditions.</p> <p>3411. (1) An Engine shall be a unit of a manufacturers model of which a representative engine has been satisfactorily performance tested.</p> <p>(2) Engines adapted for marine use from industrial or surface applications shall be made suitable for the marine environment to manufacturer’s requirements.</p> <p>3412. Gearing shall be a unit of a manufacturer's model from which a representative gearing unit has been satisfactorily performance tested with respect to reliability and sufficiency in accordance with manufacturers data appropriate to the gearing type.</p> <p>3413. Propulsion and auxiliary machinery shall be installed in accordance with manufacturer’s recommendations</p> <p>3414. (1) Flexibly mounted engines should be fitted with short flexible connections of an appropriate type, fitted to associated piping and exhaust systems. Flexible shaft couplings should be properly constructed and suitable for the power being transmitted.</p> <p>(2) Where Power Take-Offs are fitted to the main or auxiliary engines for auxiliary drives, the power taken off shall not exceed the manufacturer’s recommended limits.</p>	<p>MACHINERY INSTALLATIONS Propulsion and auxiliary machinery</p> <p>4413. Same as 3410 (1)</p> <p>(2) Same as 3410 (2)</p> <p>4414 (1) Same as 3411 (1)</p> <p>(2) Same as 3411 (2)</p> <p>4415 Same as 3412</p> <p>4416. Same as 3413</p> <p>4417. Propulsion engines shall be mounted on seatings fitted with mounting chocks such that any modes of their vibrations shall not cause undue stress in such engines, machinery systems or the hull of the vessel in the normal operating ranges.</p> <p>4418. Same as 3414 (2)</p>	

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<p>3415. A vessel shall have adequate means and power for going astern in order to maintain control of the vessel in all foreseeable circumstances.</p>	<p>4419. Hydraulic installations for fishing equipment shall have a means of disengaging the hydraulic pump from the driving engine or other means to stop the flow of hydraulic fluid.</p> <p>4420. Auxiliary engines shall be securely mounted in rigid seats and should be fully independent of all other systems.</p>	
<p>Engine Starting</p> <p>3416. Propulsion engines, excepting those engines fitted with hand starting arrangements, shall be provided with a secondary means of (providing energy for) starting.</p> <p>3417. Charging facilities for starting batteries shall be automatic and in accordance with the requirements of Part 1 Electrical of these Regulations.</p>	<p>Engine Starting Arrangements</p> <p>4421. (1) Same as 3416</p> <p>(2) Same as 3417</p> <p>(3) Where the main engine is arranged for electric starting, two separate batteries or banks of batteries are to be fitted. The arrangement is to be provided with a change-over switch or similar means of connection, such that such that the batteries are not normally connected to the starting motor at the same time.</p> <p>(4) Each battery is to be capable of starting the main engine when in cold and ready to start conditions.</p> <p>(5) The starting batteries are to be used for starting and the engine’s own monitoring purposes only.</p>	

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<p>Controls and Instruments</p> <p>3418. Controls shall be properly constructed and operate efficiently (for the convenient operation by the person at the helm position). Instrumentation for the propulsion engine shall be provided at the operating station and be clearly and permanently identified and, where practicable, show the following parameters:</p> <ul style="list-style-type: none"> .1 RPM, .2 Cooling water temperature, .3 Lubricating oil pressure. <p>3419. High water temperature and low lubricating oil pressure alarms shall be fitted, where practicable.</p> <p>3420. Propulsion engines fitted below deck in a machinery space and arranged for remote operation from the wheelhouse or helm position shall be provided with an arrangement to stop it:</p> <ul style="list-style-type: none"> (a) on or adjacent to the engine, and (b) remotely at the control station. <p>3421. (Reserved)</p>	<p>Controls and Instruments</p> <p>4422. The main engine instrument panel shall where applicable have the following gauges:</p> <ul style="list-style-type: none"> .1 RPM; .2 Cooling water temperature; .3 Lubricating oil pressure; and .4 any other gauges that are necessary for the safe and reliable operation of the machinery <p>4423. High water temperature and low lubricating oil pressure alarms shall be fitted. Unless safety would not be compromised, the alarms shall be visible and heard in both the machinery space and in the wheelhouse.</p> <p>4424 Same as 3420</p>	
	<p>Means of going astern</p> <p>4425. Vessels shall have sufficient power for going astern to secure proper control of the vessel in all normal circumstances.</p>	

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<p>Shaft and propeller</p> <p>3422. The propeller shaft and any intermediate shaft, together with the stern tube, bearings and bushes, shall be constructed according to recommended practices and standards and shall operate efficiently. Shaft materials, diameter and eventual free span between bearings should be suitable for the power being transmitted and according to manufacturer’s requirements. Inboard stern glands shall be accessible for adjustment.</p> <p>3423. The minimum shaft diameter shall be in accordance with recommended practices and standards for the type of vessel and operation; taking into consideration the applicable design coefficient, safety factor and service rating of the vessel propulsion machinery.</p> <p>3424. If the recommended practice or standard does not provide for vessels operating in waters covered by ice, the diameter of the propeller shaft and any intermediate shaft shall be multiplied by 1.15.</p>	<p>Shaft and propeller</p> <p>4426. Same as 3422</p> <p>4427 Same as 3423</p> <p>4428 Same as 3424</p>	
<p>Propeller</p> <p>3425. Propeller dimensions shall be such that the propulsion system is not overloaded at the maximum engine rating, taking into account loading due to all vessel operations.</p>	<p>Propeller</p> <p>4429 Same as 3425</p>	

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<p>Steering Gear</p> <p>3426. (1) The steering arrangements including the rudder and associated fittings shall be of adequate strength and capable of steering the vessel at maximum speed and shall be so designed and constructed that they are not damaged at maximum astern speed or by manoeuvring during fishing operations</p> <p>(2) Scantlings of rudders, rudder stocks and shafts, shall be in accordance with recommended practices and standards. If recommended practice or standard does not provide for vessels operating in waters covered by ice, their diameter shall be multiplied by 1.15.</p> <p>(3) The steering gear shall be designed and installed to ensure safe manoeuvring of the vessel at maximum draft and service speed and shall be demonstrated to meet recommended practices and standards.</p> <p>(4) Running astern at maximum speed, the main steering system shall be designed for, but not necessarily demonstrated at, maximum rudder angle operation (Except systems that do not use rudders)</p> <p>(5) The steering gear shall be designed and installed so that it will not come into contact with cargo or equipment which may hinder the steering.</p> <p>(6) Where steering is by remote control, rudder stops shall be fitted to prevent the rudder from swinging beyond its normal operating range on either side of the midship position (Except systems that do not use rudders)</p> <p>(7) Where the possibility exists for the rudder to be lifted from the lower bearing, suitable means shall be provided to prevent the rudder stock from lifting out of the lower bearing during all normal modes of vessel operation or in cases of mild contact of the rudder with fishing gear, other objects or the sea-bed (Except systems that do not use rudders).</p>	<p>Steering Gear</p> <p>4430. Same as 3426</p>	

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<p>3427. All parts of the steering gear shall be easily accessible for maintenance.</p> <p>3428. (1) Vessels shall be provided with an emergency means of steering that is easily accessible and which can be brought into operation if the main system fails</p> <p>(2) The emergency steering system should be designed and demonstrated capable of putting the rudder over from one side to the other side under operational conditions and have the capability of being brought safely into action without undue delay in case of an emergency . (Except systems that do not use rudders).</p> <p>(3) Where necessary for safe operation of the system, a means of communication for emergency steering control between the wheelhouse and steering space shall be provided.</p> <p>(4) Where a hydraulically driven main steering system is power operated, an auxiliary system is not required where there is provision for manual operation of the hydraulic drive on power failure and the change-over switch arrangement and instructions are located in the wheelhouse.</p> <p>3429 Where a steering device other than a rudder is fitted, its construction and operation shall be adequate and suitable for its intended purpose and shall comply with the recommended practices and standards.</p>	<p>4431 (1) Same as 3427</p> <p>(2) As far as practicable, the steering gear compartment shall be separated from the machinery space by a watertight bulkhead.</p> <p>4432. Same as 3428</p> <p>4433. Same as 3429</p> <p>4434. Where the steering device is remotely operated, a rudder angle indicator shall be provided at the steering position. The rudder angle indicator for power-operated steering gear shall be independent of the steering gear control system.</p> <p>4435. The wheelhouse should be so arranged that the person steering the vessel should have a clear view ahead and that as far as practicable an all-round vision should be possible from within the wheelhouse.</p>	

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<p>Pumping and Piping Systems</p> <p>General Requirements</p> <p>3430. Piping systems shall be of sound construction and suitable for the service intended.</p> <p>3431. Unless overpressure is prevented by pump characteristics, means shall be provided to prevent overpressure in all system components</p> <p>3432 (1) Flexible hoses shall be suitable for the intended service, suitably supported and protected against chafing.</p> <p>(2) All components of piping systems shall be independently supported and installed to minimize strain on connected lines and accessible for examination and maintenance</p> <p>(3) The minimum radius of bends shall be in accordance with manufacturer's recommendations.</p>	<p>Pumping and Piping Systems</p> <p>General Requirements</p> <p>4436. Same as 3430</p> <p>4437. Same as 3431</p> <p>4438 (1) Same as 3432 (1)</p> <p>(2) Same as 3432 (2)</p> <p>(3) Same as 3432 (3)</p>	
<p>Fuel Oil Installations</p> <p>3433 Fuel oil installations shall be constructed so as to</p> <ul style="list-style-type: none"> (a) minimize the risk of fire or explosion from accumulation of combustible vapours. (b) reduce the risk of leakage of fuel from tanks, piping systems or components due to corrosion, shock or fire (c) reduce the risk of pollution of the marine environment from accidental spillage, and (d) minimize the risk of unintended engine stoppage. <p>3434. (1) The fuel system shall be permanently installed and be liquid and vapour tight to the hull interior.</p> <p>(2) Fuel distribution and return systems as well as fill and venting piping should have the minimum number of connections practicable.</p>	<p>Arrangements for fuel oil, lubricating oil and other flammable oils</p> <p>4439 Same as 3433</p> <p>4440 (1) Same as 3434 (1)</p> <p>(2) Same as 3434 (2)</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
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<p>(3) Except as otherwise noted, permanently installed fuel oil installations shall comply the requirements for such installations as prescribed by ABYC H-33 Diesel Fuel Systems or recommended practices and standards that provide an equivalent degree of safety.</p> <p>3435. (1) Each metal or metallic plated component of the fuel fill system that is in contact with the fuel and the fuel tank shall be grounded so that its resistance to the vessel ground is less than one (1) ohm</p> <p>(2) Ground wire ends shall not be clamped between the metal fill pipe and any hose.</p> <p>3436. Each valve in the fuel system shall be clearly and permanently marked with its function. Manually operated valves shall be designed with positive stops in the open and closed positions, or shall clearly indicate their open and closed positions.</p> <p>3437. (1) Tanks for fuel oil shall be of sound and efficient construction and safe in operation and shall not be located near or above hot surfaces, exhaust piping or electrical equipment (components).</p> <p>(2) Tanks and piping shall be arranged to minimize, in the event of leakage or rupture, the possibility that fuel will come into contact with hot surfaces, exhaust piping or electrical equipment (components).</p>	<p>4441. Permanently installed fuel oil installations shall be of sound construction and suitable for their intended purpose.</p> <p>4442 (1) Same as 3435 (1)</p> <p>(2) Same as 3435 (2)</p> <p>4443 Same as 3436</p> <p>4444 (1) Same as 3437 (1)</p> <p>(2) Same as 3437 (2)</p> <p>(3) Non-structural tanks shall be securely chocked, fastened in place and electrically bonded to the vessel’s ground plate. Unless specifically designed for the purpose, non-structural tanks shall be installed in such a manner that they do not support decks, bulkheads or other structure.</p> <p>(4) Metallic tanks shall be galvanically compatible with or isolated from dissimilar metals.</p> <p>(5) Non-metallic tanks shall be protected from metallic supports or hold-downs by non-abrasive, non-absorbent and non-conductive materials.</p> <p>(6) Every fuel tank shall be provided with adequate supports or stiffeners to ensure its structural integrity.</p>	

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Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
<p>3438. Where practicable, each fuel tank shall be provided with a means of access for cleaning.</p> <p>3439. (1) Fuel oil tanks shall not be located in accommodation spaces.</p> <p>(2) Fuel tank sounding pipe openings or any other openings such as hand-holes or manholes shall not be located in accommodation spaces.</p> <p>3440 (1) All fuel tanks shall be fitted either with a level gauge or able to be sounded manually. Contents gauges containing fuel, where fitted, shall be protected or have self-closing valves at the base. Fixed tanks shall be fitted with separate filling and air pipes.</p> <p>(2) On the fuel pipe line there shall, as close as possible to every fuel tank, be mounted a closing valve which is also closable from a readily accessible location outside the machinery space or compartment in which the fuel tank is located.</p> <p>(3) Where practicable, as close as possible to the tank’s lowest point there shall be a means of draining the tank, fitted with a threaded plug.</p> <p>3441 Fuel filling and vent pipes blow back and overflow tests as set out in ABYC H-33-17.5 are not required if adequate measures have been taken to reduce the risk of fuel entry into the vessel or the environment in the event of fuel blow back or overflow</p>	<p>(7) Non-structural tanks should comply with the scantlings, strength and other details as set out in the recommended standards and practices</p> <p>(8) Despite the requirements of any recommended practices or standards, fuel oil tanks that form part of the structure of the vessel, shall be designed to withstand a head of water equal to the maximum head to which the tanks can be subjected in service but not less than 2.44 m above the crown (ie; or not less than the height of the vent)</p> <p>(9) All tanks shall be capable of resisting the pressures to which they will be subjected in service.</p> <p>4445 (1) Each fuel tank shall be provided with a means of access for cleaning.</p> <p>(2) Same as 3439 (1)</p> <p>(3) Same as 3439 (2)</p> <p>4446 (1) Same as 3440 (1)</p> <p>(2) Same as 3440 (2)</p> <p>(3) As close as possible to the tank’s lowest point there should be a drain valve.</p> <p>4447 Fuel filling and tank vent pipes shall be sized and installed so as to reduce the risk of fuel entry into the vessel or the environment in the event of fuel blow back or overflow</p>	

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<p>3442 Tank vent pipes shall terminate on the open deck located as far as practicable away from accommodation space openings, fresh air intakes or sources of ignition.</p> <p>3443 Fuel oil pipes shall be adequately secured and protected and (a) of metallic pipe or (b) of reinforced hose listed by a product certification body as suitable for the application.</p> <p>3444. Flexible hoses (located in the machinery space) shall be of an appropriate reinforced fire-resistant hose listed as such by a product certification body, with screw fittings.</p> <p>3445 Fuel system pressure test as set out in ABYC H-33-17.5, is not required if, following installation, the entire fuel system is checked for leaks under the maximum operating pressure to which it may be subjected in service.</p> <p>3446. All fuel lines, including fill, vent, distribution and return shall be protected from physical damage.</p> <p>3447. Except where required for galley service and space heating requirements, fuel system lines shall not be led through accommodation spaces.</p> <p>3448. Fuel system shall be designed to permit fuel to be returned to the tank from which it was drawn.</p> <p>3449. The fuel system shall be equipped with at least one fuel filter and water separating device.</p>	<p>4448 Where a drain valve or cock is provided on a fuel tank, it shall have a standard (NPT) screwed outlet that shall be kept plugged with a screwed plug whenever the cock or valve is not in use.</p> <p>4449 Piping in machinery spaces shall be metallic. Flexible connections between lengths of pipe are permitted but shall be of an appropriate reinforced fire-resistant hose listed as such by a product certification body, with screw fittings, and kept as short as practicable.</p> <p>4450 The fuel system shall be checked for leaks under the maximum operating pressure to which it may be subjected in service.</p> <p>4451 Same as 3446</p> <p>4452 Same as 3447</p> <p>4453. Vents and filling connections of fuel tanks shall be located in a safe, open-air position and remote from any ventilation intake. Vent openings shall be fitted with suitable wire gauze screens or equivalent protective devices.</p> <p>4454. A valve capable of shutting off the supply to the engine shall be mounted on or adjacent to the fuel tank and control of this valve shall be accessible from outside the machinery space.</p> <p>4455. The fuel system shall be equipped with a fuel filter and water-separating device that is capable of being cleaned while in service.</p> <p>4456. (1) Fuel storage tanks shall be located remote from heated surfaces and shall not be situated above stairways and ladders, boilers, hot surfaces and electrical equipment.</p>	

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<p>3450 (1) Where fuel of a flashpoint of less than 60°C (closed cup test) is used, the temperature of the space in which such fuel is stored should not rise to within 10°C below the flashpoint of the fuel.</p>	<p>(2) Tanks and piping shall be arranged to minimize in the event of leakage or rupture the possibility that fuel will come into contact with hot surfaces or electrical components.</p> <p>4457. (1) Safe and efficient means of ascertaining the amount of fuel oil contained in any oil tank shall be provided. If sounding pipes are installed, their upper ends shall terminate in safe positions and shall be fitted with suitable means of closure.</p> <p>(2) Contents gauges containing fuel, where fitted, shall be protected or have automatic self-closing valves at the base. Other means of ascertaining the amount of fuel oil contained in any fuel oil tank may be permitted providing their failure or overfilling of the tanks will not permit release of fuel.</p> <p>4458. Fuel tanks shall not be located forward of a collision bulkhead.</p> <p>4459. Except where required for galley service and space heating requirements, fuel oil piping shall not be led through accommodation spaces.</p> <p>4460. Fuel return pipes shall be connected to a fuel oil service tank in use, an empty fuel tank or to the suction side of the fuel pump.</p> <p>4461. Plastic piping shall not be used for the fuel supply to machinery or to fuel tanks or for any purpose in the machinery space where its destruction by fire would present a safety hazard.</p> <p>4462. Emergency controls shall be provided, located on deck outside machinery and accommodation spaces, for stopping every fuel pressure pump and every fan supplying air to machinery spaces and for closing all suction from fuel tanks. Such controls shall be in a readily accessible location outside the machinery space.</p> <p>4463. Same as 3450</p> <p>4464. Lubricating oil tanks, their associated piping and valves should be carefully installed and maintained so as to prevent leakage of lubricating oil within the hull.</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
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<p>Sea Water Systems—Materials for Valves and Associated Piping</p> <p>3455 (1) Non-metallic piping shall not be used for any purpose in the machinery space where its destruction by fire would present a safety hazard.</p> <p>(2) Despite subsection (1), non-metallic piping may be used in piping systems containing sea water if the connection between the sea and the piping system is capable of being operated from a readily accessible position outside the space.</p> <p>(3) In order to facilitate installation or to reduce vibration, a short length of reinforced, non-collapsible hose, listed by a product certification body as suitable for the application, may be fitted.</p> <p>(4) Pipe connections shall be flanged, screwed or securely clamped using double stainless steel clamps that are not dependent on spring tension, or any other equivalent means of connection.</p> <p>3456. Valves, pipes and fittings serving sea inlets and discharges attached directly to the hull of the vessel below the loaded waterline shall be of steel, bronze, or other equivalent and compatible material except where non-metallic through hull fittings are permitted under Division 2.</p> <p>3457. The sea inlet valve shall be as close as possible to the hull. Where the sea inlet valve or fitting is connected to the hull by means of a tube or distance piece, the tube or distance piece should be of a material that is compatible with the hull and valve.</p>	<p>Sea Water Systems—Materials for Valves and Associated Piping</p> <p>4469 (1) Non-metallic piping shall not be used for any purpose in the machinery space.</p> <p>(2) Same as 3455 (3)</p> <p>4470. Same as 3456</p> <p>4471. Same as 3457</p>	
<p>Cooling Water Systems</p> <p>3458. (1) The piping and fittings are to be of sound construction and efficient in operation.</p> <p>(2) Cooling water inlets for main and auxiliary machinery shall be kept to a minimum and comply with the requirements of sea inlets, in 3204-3213.</p>	<p>Cooling water systems</p> <p>4472. (1) Same as 3458 (1)</p> <p>(2) Same as 3458 (2)</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
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<p>(3) Sea inlet trunks or boxes built into the hull structure shall be of such a design that they remain below the waterline at all normal conditions of trim and heel, and shall be fitted with arrangements for purging of trapped air.</p> <p>(4) The sea inlet pipe to the propulsion engine and other essential machinery shall be fitted with an accessible strainer.</p> <p>(5) Where a common sea main supplying a number of services is installed, each branch pipe shall be fitted with an easily accessible isolating valve, with open/closed indication.</p> <p>3459. (1) Vessels operating where ice may choke seawater inlets shall provide for an emergency means of maintaining essential seawater supply to the propulsion machinery by</p> <ul style="list-style-type: none"> (a) a method of supplying cooling water from an alternate source (b) a means of clearing ice blockages, or (c) a means of reducing the risk of ice blockages. <p>(2) Vessels fitted with closed circuit cooling systems such as keel cooling need not comply with subsection (1).</p>	<p>(3) Same as 3458 (3)</p> <p>(4) Same as 3458 (4)</p> <p>(5) Same as 3458 (5)</p> <p>4473. (1) If practicable, where water-cooled internal combustion engines are installed, provision shall be made for maintaining essential seawater supply to the propulsion machinery by an alternate source of cooling water.</p> <p>(2) Same as 3459 (1)</p> <p>(3) Vessels fitted with closed circuit cooling systems such as keel cooling need not comply with subsections (1) or (2).</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
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<p>Bilge Pumping Systems</p> <p>3460. (1) Vessels fitted with watertight deck structures or erections [and watertight sub-divisions] shall be fitted with a permanently installed bilge main pumping system fitted with bilge suction pipes at suitable drainage levels and located so that all water within any compartment, other than spaces permanently appropriated for the carriage of oil, fresh water or other liquids, can be pumped out through at least one suction pipe [under normal service conditions] [when the ship is on an even keel and is either upright or is listing by not more than 5°].</p> <p>(2) In every bilge main pumping system water shall be prevented from inadvertently passing from</p> <p style="margin-left: 20px;">a) water-containing spaces or the sea into cargo or machinery spaces; or</p> <p style="margin-left: 20px;">b) from one compartment to another.</p> <p>(3) Each watertight compartment shall have at least one bilge suction and each suction shall be fitted with an easily cleanable strainer.</p> <p>(4) Bilge branch lines from individual watertight compartments shall be connected to the bilge main suction line.</p> <p>3461 On vessels without watertight deck structures or erections [or watertight sub-divisions] arrangements shall be provided for draining any watertight compartment (other than small buoyancy compartments) under normal all service conditions.</p> <p>3462. Where, due to size or location of a particular compartment, the installation of a bilge suction pipe would be impracticable, and where flooding calculations indicate that the safety of the ship will not be impaired, the installation of a bilge suction pipe is not required to be installed in that compartment provided</p> <p style="margin-left: 20px;">a) the compartment is drained to an adjacent space and the drainage opening in such cases shall be fitted with a screwed plug, permanently attached and securely tightened in place when not in use; or</p>	<p>Bilge Pumping Systems</p> <p>4474 (1) Vessels shall be fitted with a permanently installed bilge main pumping system fitted with bilge suction pipes at suitable drainage levels and located so that all water within any compartment, other than spaces permanently appropriated for the carriage of oil, fresh water or other liquids, can be pumped out through at least one suction pipe [under normal service conditions]</p> <p style="margin-left: 20px;">(2) Same as 3460 (2)</p> <p style="margin-left: 20px;">(3) Same as 3460 (3)</p> <p style="margin-left: 20px;">(4) Same as 3460 (4)</p> <p style="margin-left: 20px;">4475 Same as 3462</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
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3467. Where two power driven pumps are fitted, one of the power pumps shall be driven from a source other than the main engine	4480 Same as 3467	
3468. Sea suction priming and overboard discharge pipes shall be connected to readily accessible valves or cocks (distribution boxes).	4481 Same as 3468	
3469. Unless it is operated under a positive head or a flooded suction condition, a bilge pump shall be of the self-priming type.	4482 Same as 3469	
3470. In the case of a pump with a rubber impeller, a spare impeller shall be kept on board.	4483 Same as 3470	
3471. (1) Bilge piping shall be of metal, or of rigid plastic or FRP pipe or non-collapsible oil resistant hose listed by a product certification body [as suitable for the purpose], with flanged, screwed or robust double clamped connections or equivalent. Piping shall be efficiently secured in place to prevent movement or chafing.	4484. (1) Same as 3471 (1)	
(2) The bilge piping shall be appropriately sized to the output capacity of the pump.	(2) Same as 3471 (2)	
(3) Bilge piping or hose shall be secured and protected from damage.	(3) Same as 3471 (3)	
(4) Clamps shall be of corrosion resistant material not dependant on spring tension.	(4) Same as 3471 (4)	
3472. Flexible connections and hoses, where fitted, shall be soundly constructed and operate efficiently, and shall be readily accessible.	4485. Same as 3472	
3473. Every valve, valve chest or distribution manifold that is part of a bilge main piping system shall be labeled as to its function and if it is not obvious, shall indicate whether it is opened or closed	4486. Same as 3473	

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<p>High Bilge Water Level Alarms</p> <p>3474. (1) In every bilge space in which the bilge level is not visible to a person at the primary operating position, a high bilge level alarm device shall be fitted. Alarm indication shall be audible and visible at the primary operating position.</p> <p>(2) A watertight compartment that forms part of a permanent water tank e.g. a tanked fish hold or live fish well does not require a high bilge level alarm.</p> <p>3475. A visual indicator shall be fitted at the primary operating position to indicate whenever an automatic bilge pump is operating.</p> <p>3476. Automatic bilge pumps shall be fitted with a manual override switch. (on/auto/off) and the location and setting of the sensing device shall be such that the pump will cease to operate before sucking oil from the surface of the bilge.</p>	<p>High Bilge Water Level Alarms</p> <p>4487 (1) High bilge level alarms shall be fitted in every bilge space. Alarm indication shall audible and visible at the primary operating position.</p> <p>(2) Same as 3474 (2)</p>	

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<p>(3) The exhaust system and piping shall be gas-tight to prevent the passage of toxic fumes into any interior spaces of the vessel.</p> <p>3481. (1) Each exhaust system installation shall be such as to arrest any sparks or flame; and in the case of exhaust piping leading upwards to the atmosphere, the outlet shall;</p> <ul style="list-style-type: none"> (a) be protected against the ingress of rain or other accumulated water. (b) be clear of combustible material and electronic devices which may be damaged by the gases, and (c) be at a height sufficient to minimize flow of gases back down to the deck. <p>3482 Exhaust systems leading from heating and cooking appliances shall be gas-tight, prevent the transmission of heat to combustible surfaces and be installed in accordance with manufacturer’s recommendations if any. If there are no applicable recommendations the system shall meet the recommended practices and standards applicable to the installation.</p>	<p style="text-align: center;">4492 Same as 3481</p>	
<p>Other Piping</p> <p>3483. Piping and components of [Schedule 80 fire resistant plastic or fibre reinforced plastic listed by a product certification body as suitable for the purpose:</p> <ul style="list-style-type: none"> (a) domestic and sanitary seawater, fresh water and waste water systems; (b) scupper systems draining inboard but not led through the boundaries of refrigerated chambers, and provided that the piping is visible and easily accessible. (c) ballast water and fresh water piping situated inside tanks used exclusively for ballast water or fresh water, (d) sounding and vent pipes to tanks used exclusively for ballast water or fresh water except for sections above the weather deck, (e) sounding pipes to hold spaces, (f) chilled and/or refrigerated sea water piping system in fish holds or tanks where the piping material is permitted under other federal or provincial legislation to be used in contact with food. (g) in accommodation areas provided the piping is kept to a minimum and protected from any heat source, or 	<p>Other Piping</p> <p style="text-align: center;">4494 Same as 3483</p>	

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<p>(h) any other location where its destruction by fire would not present a safety hazard</p> <p>3484. Plastic or fibre-reinforced plastic piping and components shall not be used in: (a) fire extinguishing systems; (b) boiler feed and condensate systems</p> <p>3485. Plastic or fibre-reinforced plastic piping shall not be fitted outboard of metallic sea inlet or overboard discharge valves.</p> <p>3486. Plastic or fibre-reinforced plastic piping shall be protected against failure due to: (a) vibration or expansion restriction; (b) chafing where secured in hangers; and (c) crushing due to overtightening of hanger clamps; such protection may be obtained by fitting nut-locking or other suitable devices.</p> <p>3487. Hoses shall also be protected against chafing, such as where secured in hangers or other supports.</p>	<p>4495 Same as 3484</p> <p>4496 Same as 3485</p> <p>4497 Same as 3486</p> <p>4498 Same as 3487</p>	
<p>Steam, Hot Water Heating and Compressed Air Systems</p> <p>3488 Piping and components shall be designed constructed and installed to withstand the maximum working stresses to which they will be subjected.</p> <p>3489. (1) Pressure containers for steam, hot water heating and air pressure system installations shall bear a manufacturer’s mark or label indicating that it has been constructed in accordance with requirements of (a) the American Society of Mechanical Engineers, (b) ISO or (c) a marine classification society</p>	<p>Steam, hot water heating, and compressed air systems</p> <p>4499. Same as 3488</p> <p>44100. (1) Same as 3489 (1)</p>	

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<p>3492 (1) All discharge pipes from starting air compressors shall lead directly to the starting air receivers and all starting pipes from the air receivers to main or auxiliary engines shall be entirely separate from the compressor discharge pipe system.</p> <p>(2) Means to drain oil and water shall be fitted to the lowest part of air receivers.</p>	<p>44103. Same as 3492</p>	
<p>Refrigeration systems for the preservation of the catch</p> <p>3493. Refrigeration plants and cold store-rooms, where provided, shall be of a design and construction suitable for the service for which they are intended and be so installed and protected as to reduce to a minimum any danger to the crew.</p> <p>3494. Refrigerating installations shall be adequately protected against vibration, shock, expansion, shrinkage, etc. and should be provided with an automatic safety control device to prevent a dangerous rise in temperature and pressure.</p>	<p>Refrigeration systems for the preservation of the catch</p> <p>44104. Same as 3493</p> <p>44105. Same as 3494</p> <p>44106.(1) Cold store-rooms and spaces where evaporators are fitted shall be provided with:</p> <ul style="list-style-type: none"> a) tight-fitting doors operable from each side; b) alarms operable from within rooms and giving a signal to the control station; c) means for indicating the location of the exit door, in the event of lights in the room being switched off or failing; and d) mechanical means for the extraction of refrigerant gases, provided that the associated controls are operable from inside and outside the room, but they shall have no permanently open vent or channel which would permit the passage of refrigerants to other parts of the vessel. <p>(2) Refrigeration systems in which toxic (ammonia) or flammable refrigerants are used shall be provided with drainage devices leading to a place where the refrigerant presents no danger to the vessels or to persons on board.</p> <p>44107. In refrigerating machinery spaces and refrigerating rooms, alarms shall be connected to the wheelhouse or control stations or escape exit to prevent persons being trapped.</p>	

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<p>3495. Adequate guidance for the safe operation and emergency procedures for the refrigeration system shall be provided by suitable notices displayed on board the vessel.</p>	<p>44108 Same as 3495</p> <p>44109 Where any refrigerant harmful (ammonia) to persons is used in a refrigeration system, at least two sets of breathing apparatus shall be provided, one of which shall be placed in a position not likely to become inaccessible in the event of leakage of refrigerant. Breathing apparatus provided as part of the vessel’s fire-fighting equipment may be considered as meeting all or part of this provision provided its location meets both purposes. Where self-contained breathing apparatus is used, spare cylinders shall be provided.</p> <p>44110. (1) Subject to (2) Any space containing refrigerating machinery including condensers and gas tanks utilizing toxic (ammonia) refrigerants shall be separated from any adjacent space by gastight bulkheads. Any space containing the refrigerating machinery including condensers and gas tanks shall be fitted with a leak detection system having an indicator outside the space adjacent to the entrance and shall be provided with an independent ventilation system and a water spray system.</p> <p>(2) When such containment is not practicable, due to the size of the vessel, the refrigeration system may be installed in the machinery space provide that the quantity of refrigerant used will not cause danger to persons in the machinery space, should all the gas escape, and provided that an alarm is fitted to give warning of a dangerous concentration of gas should any leakage occur in the compartment.</p>	

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<p>Ventilation of Machinery Spaces</p> <p>3496 Ventilation of machinery spaces shall be arranged so as to : (a) minimize the risk of fire or explosion from accumulation of combustible vapours; (b) minimize the risk of unintended engine stoppage, and (c) maintain the safety and comfort of the crew with regard to protection against exposure to noxious fumes.</p> <p>3497 Machinery space air intakes shall be of a size capable of meeting the manufacturers recommendations for the engines and other fuel burning appliances in the space.</p> <p>3498. Neither supply nor exhaust air ducts from machinery spaces or engine exhausts shall open into accommodation spaces.</p> <p>3499. Exhaust openings shall vent to the atmosphere.</p> <p>34100. Machinery air inlet openings shall be located as far as practicable from exhausts of engines or other fuel burning appliances and fuel fill and tank vent openings so as to minimize entry and recirculation of exhaust fumes and to prevent entry of fuel vapours to the machinery space.</p> <p>34101. Engine spaces shall be sealed from enclosed accommodation spaces</p>	<p>Ventilation of Machinery Spaces</p> <p>44111. Same as 3496</p> <p>44112 same as 3497</p> <p>44113 Same as 3498</p> <p>44114 Same as 3499</p> <p>44115 Same as 34100</p> <p>44116 Same as 34101</p>
<p>Ventilation Ducts</p> <p>34102. Non-metallic materials used for ventilating ducts and components installed below deck shall be resistant to failure at the full range of anticipated environmental conditions.</p> <p>34103. Ventilation ducts for a machinery space shall not pass through an accommodation space, galley or wheelhouse unless the ducts are gastight and are capable of preserving the integrity of the division penetrated</p>	<p>Ventilation Ducts</p> <p>44117. Same as 34102</p> <p>44118 (1) Same as 34103</p>

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<p>34104. Ventilation ducts for an accommodation space, galley or wheelhouse shall not pass through a propulsion machinery space unless the ducts are capable of preserving the integrity of the division penetrated.</p>	<p>(2) On vessels where structural fire insulation is required... the ducts shall be metallic or be insulated with a material that will provide structural integrity for at least 30 minutes... and a fire damper fitted)</p> <p>44119 Same as 34104</p>	
<p>DIVISION 5- FIRE PROTECTION AND FIREFIGHTING</p> <p>3500. The objective of this Division is to identify the hazards occurring during operation of the vessel, minimize the consequences of potential fire on board and provide means to:</p> <ul style="list-style-type: none"> (a) detect, control and extinguish a fire in the space of origin; (b) arrange immediate availability of effective fire extinguishing appliances. (c) evacuate persons from inside the vessel to locations on the open deck or lifesaving equipment stations, in case of fire or sinking. 	<p>DIVISION 5- FIRE PROTECTION AND FIREFIGHTING</p> <p>4500. Same as 3500</p>	
<p style="text-align: center;">MEANS OF ESCAPE</p> <p style="text-align: center;"><i>Means of Escape</i></p> <p>3501 (1) A fishing vessel shall be provided with a minimum of two means of escape in each accommodation, service and engine space, in accordance with this section.</p> <p>(2) Only one means of escape is required in an accommodation, service or engine space if</p> <ul style="list-style-type: none"> (a) the space is not normally occupied; or (b) the dimensions of the space do not permit more than one means of escape. <p>(3) The two (2) means of escape shall be as remote from each other as practicable so as to minimize the possibility of one incident blocking both escapes.</p>	<p style="text-align: center;">MEANS OF ESCAPE</p> <p style="text-align: center;"><i>Exits</i></p> <p>4501 (1) In addition to the primary means of exit from an accommodation space, wheelhouse, machinery space or any other space where the crew is normally employed, an emergency exit must be provided for the space. An emergency exit is not required if the space is too small to have both the primary means of exit and an emergency exit.</p> <p>(2) The primary means of exit and the emergency exit must</p> <ul style="list-style-type: none"> (a) be unobstructed, be readily accessible and lead as directly as possible to an open deck; (b) have a clear opening that has a width and length of at least 560 mm or that provides a means of egress that is equivalent; 	

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<p>(4) The two (2) exits shall have egress to different rooms or spaces to minimize the possibility of one incident blocking both exits.</p> <p>(5) Unless not practicable, the exits shall have a minimum clear opening size of 560 mm x 560 mm.</p> <p>(6) Stairways, corridors, doors and ladders must be arranged to provide ready means of escape to the open deck.</p>	<p>(c) be operable from both sides;</p> <p>(d) be capable of being retained in an open position while being used as part of an escape route; and</p> <p>(e) be so located that a single incident occurring inside or outside the space would be unlikely to prevent the use of the exit and the primary means of access at the same time.</p> <p>(3) Despite paragraph (2)(e), the primary means of exit and the emergency exit from the wheelhouse must, if feasible, be located on opposite sides of the vessel.</p>	
	<p><i>Escape Routes</i></p> <p>4502. (1) This section applies to the escape routes from an accommodation space, service space or wheelhouse, or from any other space accessible to passengers or where the crew is normally employed.</p> <p>(2) The stairways, corridors, doors and ladders must be arranged to provide ready means of escape to the muster and embarkation stations. The doors must be constructed to open outwards and be hinged on the forward side.</p> <p>(3) If the location of an exit is such that egress from a space would be difficult without an aid such as a hand hold or a ladder, an appropriate aid must be permanently fitted.</p> <p>(4) A hand hold or ladder that is for use to or from a deck must, if feasible, extend sufficiently above the level of the deck to allow safe and rapid access.</p> <p>(5) A ladder or stairway from a space other than a machinery space must be constructed of a non-combustible material or be coated with a fire retardant coating, and must be equipped with anti-skid rungs or stairs.</p> <p>(6) Every ladder or stairway from a machinery space must be constructed of a non-combustible material and be equipped with anti-skid rungs or stairs.</p>	

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	<p>(7) An intumescent coating must not be used on a stairway or ladder.</p> <p>(8) Every stairway of more than one metre in height must be equipped with handrails or hand holds on both sides and must maintain a clear width of 760 mm.</p> <p>(9) Every portable ladder must be</p> <p style="padding-left: 20px;">(a) stowed in a readily accessible and clearly identified location that is as close as feasible to where it is meant to be used; and</p> <p style="padding-left: 20px;">(b) designed so that it can be securely fixed in place without the use of tools.</p>	
<p>STRUCTURAL FIRE PROTECTION</p> <p><i>Insulation, Fire Retardant Coatings and Fire Retardant Resins</i></p> <p>3502 (1) The exposed surface of any insulation fitted on the interior of the machinery space must be impervious to oil and oil vapour.</p> <p>(2) All thermal insulation and acoustic insulation, including pipe and ventilation lagging, must be non-combustible.</p> <p>(3) Polyurethane foam or other organic foam insulation must not be used unless it is</p> <p style="padding-left: 20px;">(a) used to insulate a cargo space or a cold room or a similar galley service space, sealed with a fire retardant coating of the intumescent type and covered with a steel-sheet protective facing; or</p> <p style="padding-left: 20px;">(b) used as a flotation material that is enclosed in a dedicated space and protected from fire risks.</p> <p>(4) If insulation, fire retardant coating and fire retardant resin is used to meet the structural fire requirements set out in this division, the installation shall be made in accordance with section 4504</p>	<p>STRUCTURAL FIRE PROTECTION</p> <p><i>Insulation, Fire Retardant Coatings and Fire Retardant Resins</i></p> <p>4503. (1) The exposed surface of any insulation fitted on the interior of the machinery space must be impervious to oil and oil vapour.</p> <p>(2) All thermal insulation and acoustic insulation, including pipe and ventilation lagging, must be non-combustible.</p> <p>(3) Polyurethane foam or other organic foam insulation must not be used unless it is</p> <p style="padding-left: 20px;">(a) used to insulate a cargo space or a cold room or a similar galley service space, sealed with a fire retardant coating of the intumescent type and covered with a steel-sheet protective facing; or</p> <p style="padding-left: 20px;">(b) used as a flotation material that is enclosed in a dedicated space and protected from fire risks.</p> <p>4504. (1) This section applies in respect of the insulation, fire retardant coating and fire retardant resin required by this Part.</p> <p>(2) The insulation, fire retardant coating or fire retardant resin on a deck or bulkhead must</p>	

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	<p>(a) cover the entire surface of the deck or bulkhead;</p> <p>(b) be carried past the penetration, intersection or terminal point of the deck or bulkhead for a distance of at least 380 mm;</p> <p>(c) be installed on the side of the higher fire risk unless it is not possible to do so; and</p> <p>(d) if the insulation, coating or resin is vulnerable to damage, be protected to prevent any loss of its fire resistant properties.</p> <p>(3) The insulation on a deck or bulkhead must be held in place by closely spaced studs and clips or another method that will</p> <p style="padding-left: 20px;">(a) hold the insulation in place for a minimum of 60 minutes when it is exposed to fire; and</p> <p style="padding-left: 20px;">(b) hold the insulation in place taking into account the vibration and motion of the vessel and the normal wear.</p> <p>(4) If insulation is installed on the stiffener side of a deck or bulkhead, a minimum of 50% of the thickness of the insulation must be installed on top of the stiffener.</p> <p>(5) The surfaces for the application of fire retardant coating or fire retardant resin must be prepared, and the coating or resin applied, in accordance with the specifications of its manufacturer.</p>	
<i>Cooking and Heating Appliances</i>	<i>Cooking and Heating Appliances</i>	
<p>3503 (1) Every cooking or heating appliance must be installed in accordance with the appliance manufacturer’s recommendations, if any, with regard to clearances and materials, including insulation, fitted in way of the appliance. If space constraints do not allow the minimum clearance, if any, recommended by the manufacturer,</p> <p style="padding-left: 20px;">(a) 30-minute fire rated insulation must be fitted to the surfaces in way of the appliance;</p>	<p>4505 Same as 3503</p>	

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<p>(b) all surfaces around the appliance must be non-combustible; and</p> <p>(c) the appliance must be installed so that the temperature of every surface adjacent to the appliance will not, when the appliance is operated, exceed 90°C or, if the surface is readily accessible, 60°C.</p> <p>(2) If life saving equipment, a muster station or an embarkation station is located on the deck above, or on the other side of a bulkhead from, a space that contains a cooking or heating appliance,</p> <p style="padding-left: 40px;">(a) in the case of a steel or aluminum vessel, the deck or bulkhead must be of “A-15” class divisions in way of the life saving equipment, muster station or embarkation station; and</p> <p style="padding-left: 40px;">(b) in the case of a wooden or composite vessel, 30-minute fire rated insulation must be fitted to the deck or bulkhead in way of the life saving equipment, muster station or embarkation station.</p>		
<p><i>Machinery Spaces and Storage of Flammable or Combustible Materials</i></p> <p>3504 (1) Reserved</p> <p>(2) The machinery space boundaries must, to the extent feasible, prevent the passage of smoke.</p> <p>(3) Every space where-flammable or combustible liquids are stored shall</p> <p style="padding-left: 40px;">(a) be of a construction that reduces the propagation of flame on the inside of the locker by the installation of 30-minute fire rated insulation or fire retardant coating of the intumescent type;</p>	<p style="text-align: center;"><i>Wheelhouses, Machinery Spaces and Lockers for Flammable or Combustible Materials</i></p> <p>4506. (1) Decks and bulkheads separating a wheelhouse from any other space must</p> <p style="padding-left: 40px;">(a) be of “F” class divisions or “B-15” class divisions;</p> <p style="padding-left: 40px;">(b) be insulated with 30-minute fire rated insulation; or</p> <p style="padding-left: 40px;">(c) be coated with a fire retardant coating of the intumescent type.</p> <p>(2) The machinery space boundaries must, to the extent feasible, prevent the passage of smoke.</p> <p>(3) Every space where flammable or combustible liquids are stored shall</p> <p style="padding-left: 40px;">(a) not permit the escape of gas within an enclosed space;</p>	

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<p>(b) not permit the escape of gas within an enclosed space; and (c) be vented outside independently of the ventilation from any other space.</p>	<p>(b) be vented outside independently of the ventilation from any other space, and; (c) be either <ul style="list-style-type: none"> (i) in a stand alone unit of a type that is approved for the purpose by a product certification body, or (ii) of a construction that reduces the propagation of flame on the inside of the locker by the installation of 30-minute fire rated insulation or fire retardant coating of the intumescent type. </p>	
<p><i>Wooden or Composite Vessels</i> Machinery Spaces</p> <p>3505. On a wooden or composite vessel, the exposed internal surfaces of the machinery space and supporting structure, including engine seats, must be coated with a final layer of fire retardant coating or fire retardant resin.</p> <p>3506 (1) On a wooden or composite vessel, every deck or bulkhead that separates the machinery space from an accommodation space, a galley, a wheelhouse, a space containing a fixed gas fire-extinguishing system or a compartment to store gas containers must be (a) of “F” class divisions or “B-15” class divisions (b) be insulated with 30-minute fire rated insulation, or (c) coated with fire retardant coating of the intumescent type or with fire retardant resin.</p>	<p><i>Wooden or Composite Vessels</i> Machinery Spaces</p> <p>4507. [Same as 3505]</p> <p>4508 [1] On a wooden or composite vessel, every deck or bulkhead that separates the machinery space from an accommodation space, a galley, a wheelhouse, a space containing a fixed gas fire-extinguishing system or a compartment to store gas containers must be of “F” class divisions or “B-15” class divisions or be insulated with 30-minute fire rated insulation.</p>	

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<p style="text-align: center;"><i>Steel or Aluminum Vessels</i></p> <p>3507 (1) On a steel or aluminum vessel, every deck or bulkhead that separates the machinery space from an accommodation space, a galley, a wheelhouse, a space containing a fixed gas fire-extinguishing system or a compartment to store gas containers shall be of “A-0” class divisions.</p> <p>(2) In the case of an aluminum vessel, the decks or bulkheads referred to in subsection (1) may instead be coated with fire retardant coating of the intumescent type or with fire retardant resin.</p> <p style="text-align: center;"><i>Openings in Boundaries, Decks, Bulkheads and Lockers</i></p> <p>3508. (1) The fire integrity of the boundaries, decks, bulkheads and lockers referred to in sections 3503, 3504 3506 and 3507 must not be impaired by the passage of electrical cables, pipes, trunks, ducts or other transit devices through the divisions.</p> <p>(2) The doors and other closures of openings in the boundaries, decks, bulkheads and lockers referred to in sections 3503, 3504 3506 and 3507 must have fire-resistant properties equivalent to those of the class divisions of the structures in which they are fitted.</p>	<p style="text-align: center;"><i>Steel or Aluminum Vessels</i></p> <p>4509. [Same as 3507 (1)]</p> <p style="text-align: center;"><i>Openings in Boundaries, Decks, Bulkheads and Lockers</i></p> <p>4510. (1) The fire integrity of the boundaries, decks, bulkheads and lockers referred to in sections 4505 to 4509 must not be impaired by the passage of electrical cables, pipes, trunks, ducts or other transit devices through the divisions.</p> <p>(2) The doors and other closures of openings in the boundaries, decks, bulkheads and lockers referred to in sections 4505 to 4509 must have fire-resistant properties equivalent to those of the class divisions of the structures in which they are fitted.</p>	
<p style="text-align: center;">INTERIOR FINISH AND FURNITURE</p> <p>3509 Curtains or other suspended textiles must not be installed within 600 mm of any cooking appliance, any heating or fuel-burning appliance or any similar appliance.</p>	<p style="text-align: center;">INTERIOR FINISH AND FURNITURE</p> <p>4511 (1) Subject to section 4512 the exposed surfaces within an accommodation space, service space or wheelhouse must</p> <p style="margin-left: 20px;">(a) be made of a material that</p> <p style="margin-left: 40px;">(i) a product certification body, testing laboratory or classification society has certified has a flame spread rating or index of 25 or less and a smoke developed classification or index of</p>	

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	<p>100 or less when tested in accordance with <i>Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies</i>, Can/ULC-S102, or <i>Standard Test Method for Surface Burning Characteristics of Building Materials</i>, ASTM E 84, or</p> <p>(ii) meets the flame-spread, smoke and toxicity requirements set out in Annex 1 to the FTP Code; or</p> <p>(b) be coated with fire retardant coating or fire retardant resin.</p> <p>(2) No paint, varnish or similar preparation that contains a nitro-cellulose base may be applied, and no fabric that contains nitro-cellulose may be fitted, to the interior finish or the furniture.</p> <p>4512 (1) The primary deck coverings within an accommodation space, service space or wheelhouse must</p> <p>(a) be certified by a product certification body, testing laboratory or classification society as</p> <p>(i) having a radiant panel index that does not exceed 20 when tested in accordance with <i>Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source</i>, ASTM Test No. E 162, and having a specific optical smoke density of 450 or less when tested in flaming mode in accordance with <i>Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials</i>, ASTM E 662, or</p> <p>(ii) having a critical radiant flux of at least 0.45 W/cm² when tested in accordance with <i>Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source</i>, ASTM E 648, and having a specific optical smoke density of 450 or less when tested in flaming mode in accordance with <i>Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials</i>, ASTM E 662; or</p> <p>(b) meet the flame-spread, smoke, toxicity and non-ignitable requirements set out in Annex 1 to the FTP Code.</p> <p>(2) The surface finish material, other than soft floor coverings, within an accommodation space, service space or wheelhouse must</p>	

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	<p>(a) be certified by a product certification body, testing laboratory or classification society as</p> <p style="padding-left: 20px;">(i) having a radiant panel index that does not exceed 20 when tested in accordance with <i>Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source</i>, ASTM Test No. E 162, and having a specific optical smoke density of 450 or less when tested in flaming mode in accordance with <i>Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials</i>, ASTM E 662, or</p> <p style="padding-left: 20px;">(ii) having a critical radiant flux of at least 0.45 W/cm² when tested in accordance with <i>Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source</i>, ASTM E 648, and having a specific optical smoke density of 450 or less when tested in flaming mode in accordance with <i>Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials</i>, ASTM E 662; or</p> <p>(b) meet the flame-spread, smoke, and toxicity requirements set out in Annex 1 to the FTP Code.</p> <p>(3) Soft floor coverings within an accommodation space, service space or wheelhouse must</p> <p style="padding-left: 20px;">(a) be certified by a product certification body, testing laboratory or classification society as</p> <p style="padding-left: 40px;">(i) having a flame spread rating or index of 300 or less and a smoke developed classification or index of 300 or less, in the case of wool, or of 500 or less in the case of nylon or a nylon/wool blend, when tested in accordance with <i>Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Coverings, and Miscellaneous Materials and Assemblies</i>, CAN/ULC-S102.2, or</p> <p style="padding-left: 40px;">(ii) having a critical radiant flux of at least 0.45 W/cm² when tested in accordance with <i>Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source</i>, ASTM E648, and having a specific optical smoke density of 450 or less when tested in flaming mode in accordance with <i>Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials</i>, ASTM E662; or</p> <p style="padding-left: 20px;">(b) meet the flame-spread, smoke, and toxicity requirements set out in Annex 1 to the FTP</p>	

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	<p>4513. Curtains or other suspended textiles must not be installed within 600 mm of any cooking appliance, any heating or fuel-burning appliance or any similar appliance.</p>	
<p style="text-align: center;">FIRE DETECTION AND ALARMS</p> <p>3510 A fishing vessel shall be fitted, in accordance with the standards set out in the <i>Construction Standards for Small Vessels</i> (TP1332), with</p> <ul style="list-style-type: none"> (a) a fire alarm panel; (b) a dual action rate-of-rise and fixed temperature detector in each engine space; and (c) a fire detector in each accommodation and service space, other than in low-risk spaces such as washrooms and void spaces. <p><u>Technical detail from <i>Construction Standards for Small Vessels</i> TP1332 included here for reference only.</u></p> <p>10.3.2 Fire alarm panel for all vessels more than 9 metres and not more than 12 metres in length and workboats of more than 12 metres in length with no overnight accommodations</p> <p>10.3.2.1 The fire alarm panel at the operating position shall be provided with:</p> <ul style="list-style-type: none"> (a) a visual (red) and audible alarm; (b) a power available light (green) for supervising power as close as possible to the detector; (c) two independent sources of power when the vessel is fitted with an emergency power source; and (d) monitoring of the main power source and automatic change over to the emergency power source. <p>10.3.2.2 A fire alarm shall initiate a continuous visual and audible alarm at the operating position that can be silenced by the operator only.</p>	<p style="text-align: center;">FIRE DETECTION, ALARMS AND COMMUNICATIONS</p> <p style="text-align: center;"><i>Automatic Fire Detection and Alarm Systems</i></p> <p>4514 (1) An automatic fire detection and alarm system must be installed in order to detect the presence and location of a fire in the accommodation spaces, machinery spaces and service spaces.</p> <p>(2) The system must indicate the presence of the fire by an audio signal given at one or more points on the vessel so as to come rapidly to the notice of the vessel’s master and crew. In an occupied machinery space with high ambient noise level, the system must also indicate the presence of the fire by flashing red lights or beacons of sufficient intensity and number to alert the occupants of the space.</p> <p>(3) The system must be designed so that</p> <ul style="list-style-type: none"> (a) power supplies and electric circuits necessary for the operation of the system are monitored for losses of power and fault conditions; (b) a loss of power or a fault condition initiates a visual and audible fault signal at the control panel that is distinct from a fire signal; (c) there are at least two sources of power supply for the system, one of which is an emergency source; (d) visual and audible alarm signals at the control panel indicate when the normal supply has failed and the system is operating on the emergency source of power; (e) the power supply for the system is provided by separate feeders reserved solely for that 	

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<p>10.3.2.3 When indicator lights other than LED type are used, a test button and a dimmer without off position shall be provided.</p> <p>10.3.2.4 The audible alarm shall have a minimum intensity of 84 dB.</p> <p>10.3.3 Fire alarm panel for passenger-carrying vessels of more than 12 metres in length and workboats of more than 12 metres in length with overnight accommodations</p> <p>10.3.3.1 The panel shall meet the requirements listed in 10.3.2 and additionally be provided with:</p> <ul style="list-style-type: none"> (a) two independent power sources, one of which is an emergency power source, with automatic change over to the emergency power source; (b) two independent supervised zones, one for the engine space and one for other spaces; (c) an automatic means to sound an alarm through the vessel if the alarm signal has not received attention within two (2) minutes; and (d) automatic silencing of the alarm when a voice communication is transmitted over the public address system. <p>10.3.4 Dual action rate-of-rise and fixed temperature detectors for engine space</p> <p>10.3.4.1 Dual action rate-of-rise and fixed temperature detectors shall be used in engine spaces.</p> <p>10.3.4.2 The detectors must be of a resettable type.</p> <p>10.3.4.3 The coverage area and the installation shall be as per the detector manufacturer's instructions.</p> <p>10.3.4.4 Where gasoline is used for fuel, the detector shall be either ignition protected or designed to operate in a location suitable for a gasoline/air mixture Class I Div 2 Group D or Zone 2 Group II A, (53.2) (8.4).</p> <p>10.3.4.5 The detectors shall be:</p> <ul style="list-style-type: none"> (a) certified for marine use by a product certification body; or 	<p>purpose;</p> <ul style="list-style-type: none"> (f) the smoke and heat detectors for the system are grouped into sections and the activation of any detector initiates a visual and audible fire signal at the control panel; (g) if the vessel is fitted with a public address system, the audio signal to indicate the presence of a fire is automatically interrupted during communication from the system; and (h) the control panel is located at the main control position. <p>(4) The system must be installed so that</p> <ul style="list-style-type: none"> (a) at least one smoke detector is installed in each cabin, corridor, escape route or stairway, and in each service space not containing cooking appliances; (b) at least one heat detector is installed in each public room or machinery space, and in each service space containing cooking appliances; (c) the smoke and heat detectors are located for optimum performance and the surface coverage of each detector does not exceed its manufacturer's specifications; and (d) the wiring that forms part of the system does not enter any galley or machinery space, or any other enclosed space of high fire risk, except insofar as the wiring is necessary to provide for fire detection or alarm in the space or to connect to the appropriate power supply in the space. <p>(5) The smoke and heat detectors must be certified by a product certification body or be of a type approved by a classification society.</p> <p>(6) The heat detectors must be</p> <ul style="list-style-type: none"> (a) dual-action fixed-temperature and rate of rise; and (b) set at a temperature appropriate for the protected space but in no case more than 78°C. 	

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<p>(b) type approved by a classification society.</p> <p>10.3.5 Fire detectors for accommodation spaces</p> <p>10.3.5.1 Smoke detectors shall be used in accommodation spaces.</p> <p>10.3.5.2 Heat detectors shall be used in the vicinity of any cooking appliances.</p> <p>10.3.5.3 The coverage area and the installation shall be as per the detector manufacturer’s instructions.</p> <p>10.3.5.4 The detectors shall be:</p> <p>(a) certified for marine use by a product certification body; or</p> <p>(b) Type approved by a classification society.</p> <p>10.3.5.5 Except as stated in 10.3.5.7 the detectors’ power supply shall be:</p> <p>(a) an integral battery; or</p> <p>(b) connected to the vessel power distribution system.</p> <p>10.3.5.6 On all vessels of not more than 12 metres and on workboats of not more than 15 metres that are not provided with overnight accommodations, detectors with integral alarm may be installed. The alarm level shall not be less than 84 dB.</p> <p>10.3.5.7 The detectors are to be connected to the fire alarm panel on the following vessels:</p> <p>(a) all passenger-carrying vessels of more than 12 metres;</p> <p>(b) workboats of more than 12 metres with overnight accommodations;</p> <p>(c) all workboats of more than 15 metres.</p>		

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<p>Information Note: An automatic fire detection and fire alarm system complying with the requirements of the <i>Ship Electrical Standards</i> (TP127), section 21.6, that is certified for marine use by a product certification body or that is type approved by a classification society, should meet the requirements of section 10.3.3. A fire alarm panel meeting the requirements of 10.3.3 will meet the requirements of 10.3.2 and 10.3.1. A fire alarm panel meeting the requirements of 10.3.2 will meet the requirements of 10.3.1. The alternate source of power for a fire alarm panel may consist of a rechargeable internal battery.</p>	<p style="text-align: center;"><i>Public Address System</i></p> <p>4515. (1) A public address system must be fitted on a vessel whose layout restricts the use of direct oral communication from the control station or wheelhouse to any accommodation space, service space, machinery space, open deck or muster or embarkation station.</p> <p>(2) The public address system must provide effective means of communication throughout the accommodation spaces, service spaces, open decks and muster and embarkation stations.</p> <p>(3) The public address system must be designed and installed so that</p> <ul style="list-style-type: none"> (a) the controls are located in the wheelhouse or at the main fire control station; (b) the wiring that forms part of the system does not enter any galley or machinery space, or any other enclosed space of high fire risk, except insofar as the wiring is necessary to provide for fire detection or alarm in the space or to connect to the appropriate power supply in the space; (c) a means is provided at the public address system station to interrupt all other audio systems; and (d) the overall performance of the system is not affected by the failure of a single call station. 	

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WATER FIRE-FIGHTING SYSTEMS		WATER FIRE-FIGHTING SYSTEMS																											
<i>General</i>		<i>General</i>																											
<p>3511. Every vessel must be fitted with a water fire-fighting system that meets the requirements set out below.</p>		<p>4516. Every vessel must be fitted with a water fire-fighting system that meets the requirements of sections 4517 to 4521.</p>																											
<i>Fire Pump</i>		<i>Fire Pumps</i>																											
<p>3512 (1) Every vessel must be fitted with one manual or power-driven fire pump with a capacity of 1.14 Litres per second.</p> <p>(2) The diameter of the fire main shall be not less than 25 mm.</p> <p>(2.1) Every fire pump shall be provided with a fire hose and nozzle from which a jet of water can be directed into any part of the vessel.</p> <p>(3) If a bilge, sanitary or general service pump is used as a fire pump, a non-return valve or a swing check valve must be fitted between the sea connection and the bilge suction to positively prevent the discharge of water into the bilge compartments. The bilge pumping system and the fire pumping system must be capable of simultaneous operation.</p> <p>3513 (1) Every fire pump shall</p> <p>(a) be self-priming; and</p> <p>(b) have a minimum capacity of 1.14 L/second; and</p> <p>(2) Every fire pump shall, unless it is on the open deck, be made of non-combustible materials.</p> <p>(3) Every pump impeller that is part of a fire pump shall be of a type that will not be damaged by heat or when running dry.</p> <p>(4) Every sea suction inlet of a fire pump shall have arrangements to prevent blockage of the inlet by ice or debris.</p>		<p>4517. (1) Every vessel of a length set out in column 1 of the table to this subsection must be fitted with the number and type of fixed fire pumps set out in column 2 that have the water capacity set out in column 3 and the fire main diameter set out in column 4.</p>																											
		TABLE																											
		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;"></th> <th style="width: 25%;">Column 1</th> <th style="width: 30%;">Column 2</th> <th style="width: 15%;">Column 3</th> <th style="width: 25%;">Column 4</th> </tr> <tr> <th>Item</th> <th>Length</th> <th>Fixed Fire Pumps</th> <th>Water Capacity (L/s)</th> <th>Fire Main Diameter (mm)</th> </tr> </thead> <tbody> <tr> <td rowspan="2" style="text-align: center;">1.</td> <td rowspan="2" style="text-align: center;">More than 15 m but not more than 20 m</td> <td>(a) One manual or power-driven fire pump; and</td> <td style="text-align: center;">1.14</td> <td style="text-align: center;">38</td> </tr> <tr> <td>(b) one power-driven fire pump</td> <td style="text-align: center;">1.14</td> <td style="text-align: center;">38</td> </tr> <tr> <td rowspan="2" style="text-align: center;">2.</td> <td rowspan="2" style="text-align: center;">Over 20 m</td> <td>(a) One manual or power-driven fire pump; and</td> <td style="text-align: center;">1.80</td> <td style="text-align: center;">38</td> </tr> <tr> <td>(b) one power-driven fire pump</td> <td style="text-align: center;">2.28</td> <td style="text-align: center;">38</td> </tr> </tbody> </table>			Column 1	Column 2	Column 3	Column 4	Item	Length	Fixed Fire Pumps	Water Capacity (L/s)	Fire Main Diameter (mm)	1.	More than 15 m but not more than 20 m	(a) One manual or power-driven fire pump; and	1.14	38	(b) one power-driven fire pump	1.14	38	2.	Over 20 m	(a) One manual or power-driven fire pump; and	1.80	38	(b) one power-driven fire pump	2.28	38
	Column 1	Column 2	Column 3	Column 4																									
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<p>(5) The fire main shall have a minimum diameter of 25 mm.</p> <p>(6) The nozzle on a fire hose shall:</p> <ul style="list-style-type: none"> (a) have an internal diameter of at least 12 mm; (b) be capable of spray action and jet action; and (c) have a means to shut it off. 	<p>(3) A power-driven fire pump must not be powered by a main engine unless the engine can be operated independently of the propeller shafting.</p> <p>(4) Relief valves must be provided in conjunction with every fire pump that is capable of developing a pressure exceeding the design pressure of the fire piping, the fire hydrants or the fire hoses. The valves must be placed and adjusted to prevent excessive pressure in any part of the fire fighting system.</p> <p>(5) If one fire pump is required, it must be located outside the machinery space and be provided with a sea connection outside of the space. If the pump is power-driven, it must be provided with a source of power outside of the space.</p> <p>(6) If two fire pumps are required, they must be located in separate compartments and be provided with sea connections independent of one another. If both of those pumps are power-driven, they must be provided with sources of power independent of one another.</p> <p>(7) On a vessel fitted with two or more fire pumps connected to a common piping system, a non-return valve must be fitted to the discharge line of each fire pump to prevent water from backing through the pump when it is not operating.</p> <p>(8) Every fire pump must</p> <ul style="list-style-type: none"> (a) be self-priming; and (b) be capable of delivering a jet of water of at least 12 m through the hose and nozzle. <p>(9) Every fire pump must, unless it is on the open deck, be made of non-combustible materials.</p> <p>(10) Every pump impeller that is part of a fire pump must be of a type that will not be damaged by heat or when running dry.</p> <p>(11) Every sea suction inlet of a fire pump must have arrangements to prevent blockage of the inlet by ice or debris.</p>	

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	<p><i>Fire Piping and Fire Hydrants</i></p> <p>4518. (1) The number and position of a vessel’s fire hydrants must be such that, when they are fitted with hoses of not more than 18 m in length, the jet of water required by paragraph 4517(8)(b) can reach any part of the vessel.</p> <p>(2) Every fire hydrant must be equipped with a hose and with a dual-purpose nozzle that</p> <p>(a) has an internal diameter of at least 12 mm;</p> <p>(b) is capable of spray action and jet action; and</p> <p>(c) has a means to shut it off.</p> <p>(3) A vessel’s branch fire piping and fire hydrants must be of a standard size that is not less than the minimum diameter required by subsection 4518(1) for fire mains on the vessel.</p> <p>(4) On a vessel that carries deck cargo, the fire piping and fire hydrants must be arranged to avoid risk of damage by deck cargo.</p> <p>(5) The maximum pressure at a fire hydrant must not exceed the pressure at which a fire hose can be effectively controlled by one crew member.</p> <p>(6) Every fire hydrant must be installed so that</p> <p>(a) a fire hose can be easily connected to it;</p> <p>(b) it is limited to any position from the horizontal to the vertical pointing downward, so that the fire hose will lead downward or horizontally in order to minimize the possibility of kinking; and</p> <p>(c) there is sufficient clearance below it to accommodate the radius of bend of the fire hose under pressure and to allow deployment of the hose in every direction.</p> <p>(7) The fire piping must be installed with a gradient that allows drainage under all normal operating conditions. Drain valves must be provided where necessary for effective drainage.</p> <p>(8) The fire piping and fire hydrants must be installed so as to avoid the possibility of freezing.</p>	

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	<p>4519 (1) The fire piping and the valves and fittings of the water fire-fighting system must be made of galvanized steel or another material of equivalent mechanical strength and corrosion and fire resistance.</p> <p style="padding-left: 40px;">(2) The joints in the fire piping must be connected in a manner that prevents leakage and must meet the pressure requirements of the fire piping system. Flanged or screwed connections, or other connections that are at least as dependable as flanged or screwed connections, must be used.</p> <p>4520 (1) Every fire hydrant must be fitted with a valve so that any fire hose attached to the hydrant can be detached while the fire pumps are in operation.</p> <p style="padding-left: 40px;">(2) Every valve fitted to fire piping must be designed to open with a counter-clockwise rotation of the valve's handle.</p> <p style="padding-left: 40px;">(3) The tools and accessories that are necessary to use a fire hydrant or fire hose must be located in close proximity to the hydrant or hose.</p> <p>4521 (1) A flexible hose must not be used as part of the fire piping unless the hose</p> <ul style="list-style-type: none"> (a) is necessary to reduce the effect of vibration; (b) has a maximum length of six times the diameter of the rigid pipe to which it is attached; (c) is clearly visible at all times; (d) is oil resistant; (e) is certified by a product certification body or a testing laboratory as meeting <ul style="list-style-type: none"> (i) the requirements of <i>Hose and Hose Assemblies for Marine Applications</i>, SAE J1942, for type VW, or (ii) the requirements of another standard that are equivalent to the requirements referred to in subparagraph (i); (f) can withstand collapsing due to suction; and (g) is secured at each end with a corrosion resistant and galvanically compatible fitting that 	

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	<p>consists of</p> <ul style="list-style-type: none"> (i) a swaged sleeve, (ii) a sleeve and threaded insert, or (iii) two metallic hose clamps of a type that is not dependent on spring tension for compressive force and that has a nominal bandwidth of at least 12 mm. <p>(2) A hose clamp may be used only with a hose that is designed for clamps. The hose clamp must be</p> <ul style="list-style-type: none"> (a) fastened over the hose and the spud, pipe or hose fitting; and (b) installed at least 12 mm from the end of the hose. 	
<p>FIXED FIRE-EXTINGUISHING SYSTEMS AND ALTERNATES</p> <p style="text-align: center;"><i>General</i></p> <p>3514 (1) Every fishing vessel that has an enclosed engine space shall</p> <ul style="list-style-type: none"> (a) be fitted with a fixed fire extinguishing system having a sufficient quantity of fire extinguishing agent for the protection of the space in accordance with sections 10.2.2.2, 10.2.2.3, or 10.2.2.4 of the <i>Construction Standards for Small Vessels</i> (TP1332); or (b) have provision for discharging a portable fire extinguisher that meets the requirements of SVR section 514 directly into the engine space without the need to open the primary access to that space. <p>(2) A gas, other than carbon dioxide, that is used as a fire extinguishing agent shall provide protection at least equivalent to that provided by carbon dioxide.</p> <p>(3) A fixed fire extinguishing system shall be certified for marine use by a product certification body or a classification society and installed in accordance with the manufacturer’s instructions.</p>	<p>FIXED FIRE-EXTINGUISHING SYSTEMS</p> <p style="text-align: center;"><i>General</i></p> <p>4522 (1) Except as provided in subsection (5), every machinery space must be served by</p> <ul style="list-style-type: none"> (a) a fixed gas fire-extinguishing system; or (b) a fixed aerosol fire-extinguishing system, if the space is on a vessel that is not a wooden or composite vessel. <p>(2) The fixed fire-extinguishing system must</p> <ul style="list-style-type: none"> (a) be an engineered system certified for marine use by a product certification body or be of a type approved by a classification society, and be installed and maintained by the manufacturer, or a person authorized by the manufacturer, in accordance with the certification or type approval; or (b) be a pre-engineered system certified for marine use by a product certification body or be of a 	

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<p><i>Fixed Fire-Extinguishing System</i></p> <p>3515. Engine spaces protected by a gas smothering system shall be gastight such that leakage of the system will not penetrate accommodation and service spaces.</p> <p>3516. Means shall be provided to close all engine space openings.</p> <p>3517. The system shall be fitted with a manual release device located outside of the engine space.</p> <p>3518. When a fixed fire extinguishing system is activated, the full charge of extinguishing agent shall be released simultaneously.</p> <p>3519. Means shall be provided outside of the engine space for: (a) stopping all ventilation fans serving the space; and (b) shutting off the source of power or fuel for any machinery or equipment in the space that could contribute to sustaining a fire or create any other unsafe condition in the case of fire.</p> <p>3520. A system with automatic release of the agent shall not be provided for normally occupied engine spaces.</p> <p>3521. A system with automatic release of the agent shall provide: (a) a means to indicate the release of the gas at the operating position; and (b) automatic operation of the means required in section 3519.</p> <p>3522. If the engine space has a gross volume of more than 57 m³ or is normally occupied, the fire extinguishing system must not have an automatic means to release the extinguishing agent.</p> <p>3523. An aerosol system shall not be used on a wooden vessel.</p>	<p>type approved by a classification society, and be installed and maintained in accordance with its design limitations and the manufacturer’s instructions.</p> <p>(3) Subsection (2) does not apply in respect of the design of pressure containers for a fixed fire-extinguishing system. Every pressure container for a fixed fire-extinguishing system must bear a mark indicating that it</p> <p>(a) meets the applicable requirements for transport by road or ship that are set out in section 5.10 of the <i>Transportation of Dangerous Goods Regulations</i>;</p> <p>(b) meets the applicable requirements for transport by road or ship that are set out in Title 49, subpart C of part 178 of the <i>Code of Federal Regulations</i> of the United States; or</p> <p>(c) meets the applicable requirements for transportable pressure equipment that are set out in the Council of the European Union Directive 1999/36/EC and has undergone a conformity assessment procedure in accordance with that Directive by a notified body designated by the United Kingdom.</p> <p>(4) When a fixed fire-extinguishing system is activated, a complete charge must be released simultaneously.</p> <p>(5) On a wooden or composite vessel, the fixed gas fire-extinguishing system must have two independent complete charges of gas. The quantity of gas for each charge must meet the requirements of subsection 4528(2) or 4529(2), as the case may be, respecting the quantity of gas for the system.</p> <p>(6) A machinery space is not required to be fitted with a fixed fire-extinguishing system if</p> <p>(a) in addition to the portable fire extinguishers required by subsection 1104(1), a portable gas fire-extinguisher is provided that</p> <p>(i) does not weigh more than 23 kg, and</p> <p>(ii) meets the requirements of subsections 4528(2) and (3) or subsections 4529(2) and (5), as the case may be;</p>	

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<i>Alternate to a Fixed Fire-Extinguishing System</i>		
<p>3524. The provision for direct discharge referred to in 3514 (b) shall be marked in accordance with the <i>Construction Standards for Small Vessels</i> (TP1332) to clearly indicate its firefighting purpose.</p> <p>3525.] The provision for direct discharge shall be capable of accommodating the discharge nozzle of the fire extinguisher referred to in 3514 (b) and shall be arranged so that the fire extinguisher may be discharged in accordance with the manufacturer’s instructions.</p> <p>3526. A fishing vessel that has provision for discharging a portable fire extinguisher directly into the engine space in accordance with the above, instead of being fitted with a fixed fire extinguishing system, shall carry on board a portable fire extinguisher that</p> <ul style="list-style-type: none"> (a) contains 1.2 kg of carbon dioxide per cubic metre of gross enclosed engine space volume or, if it does not contain carbon dioxide, contains a sufficient quantity of a clean agent to provide the same protection as carbon dioxide; (b) if it contains carbon dioxide, is able to be completely discharged in not more than 60 seconds, and if it contains a clean agent, in not more than 10 seconds; and (c) is in addition to the portable fire extinguishers required by section 1104 	<ul style="list-style-type: none"> (b) a readily accessible port is provided that permits the additional portable gas fire-extinguisher to be discharged directly into the space without opening the primary access to it, and the port is <ul style="list-style-type: none"> (i) labelled to clearly indicate its fire fighting purpose and how to use it, (ii) capable of accommodating the discharge nozzle of the extinguisher, and (iii) arranged so that the extinguisher may be discharged in accordance with the manufacturer’s instructions; and (c) the additional portable gas fire-extinguisher is located outside the space and close to the port. (7) The following definitions apply in this section. <p>“engineered system” means, in respect of a fixed fire-extinguishing system, a system that requires calculations and design that are specific to each vessel in which it is fitted in order to determine the flow rates, nozzle pressures, pipe size, area or volume protected by each nozzle, quantity of extinguishing agent, and number and types of nozzles and their placement. (<i>système sur mesure</i>)</p> <p>“pre-engineered system” means, in respect of a fixed fire-extinguishing system, a system that</p> <ul style="list-style-type: none"> (a) does not require calculations and design that are specific to the vessel in which it is fitted; and (b) is specifically limited as to the type and size of the space it can protect. (<i>système précalculé</i>) 	
<p><u>The following technical detail from TP1332 included here for reference. This material will not form part of the Regulations, but will be incorporated by Reference.</u></p> <p>10.4.2.2 Carbon Dioxide (CO2) Fixed Fire Extinguishing Systems</p> <p>10.4.2.2.1 The quantity of carbon dioxide for a fixed carbon dioxide fire-extinguishing system serving an engine space must be sufficient to achieve, at a specific volume of 0.56 m3 per kilogram (9 ft3 per pound), a volume of free gas equal to:</p> <ul style="list-style-type: none"> (a) 60% of the gross volume of the space, if the gross volume is not more than 14 m3; 	<i>Components</i>	
	<p>4523 (1) The piping, valves and fittings of a fixed fire-extinguishing system must be made of galvanized steel or another material of equivalent corrosion and fire resistance, and must be connected and securely supported.</p> <ul style="list-style-type: none"> (2) No component of the fixed fire-extinguishing system may be subject to mechanical, 	

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<p>(b) 40% of the gross volume of the space, if the gross volume is more than 136 m³; and (c) the percentage obtained by linear interpolation between the percentages set out in paragraphs (a) and (b), if the gross volume of the space is more than 14 m³ but not more than 136 m³.</p> <p>10.4.2.2.2 A minimum of 85% of the carbon dioxide shall be discharged into the space in two (2) minutes or less.</p> <p>10.4.2.3 Fixed Fire Extinguishing Systems with a Gas Other than Carbon Dioxide 10.4.2.3.1 The minimum design concentration of the gas is the greater of (a) the concentration that is 30% above the minimum extinguishing concentration when the minimum extinguishing concentration of the gas is determined by a cup burner test; and (b) the extinguishing concentration that is determined by full-scale testing.</p> <p>10.4.2.3.2 If the fire-extinguishing system uses halocarbon as the extinguishing agent, the system must discharge a sufficient quantity of the agent for 95% of the minimum design concentration to be reached in the space in 10 seconds or less. If the system uses an inert gas as the extinguishing agent, the system must discharge a sufficient quantity of the agent for 85% of the minimum design concentration to be reached in the space in 120 seconds or less.</p> <p>10.4.2.3.3 The quantity of gas for a fixed gas fire-extinguishing system that uses a gas other than carbon dioxide and is serving an engine space must be sufficient to protect the space. The required quantity of gas is calculated using the minimum expected ambient temperature, the minimum design concentration of the gas and the net volume of the space.</p> <p>10.4.2.3.4 The net volume of the space is its gross volume, including the volume of the bilge, the volume of the casing, and the volume of free air contained in air receivers that in the event of a fire is released into the space, minus the volume of objects in the space.</p> <p>10.4.2.4 Aerosol Fixed Fire Extinguishing Systems 10.4.2.4.1 The design application density must be at least 30% above the extinguishing application density when the extinguishing application density of the aerosol is determined by full-scale testing..</p>	<p>chemical or other damage that would render it inoperative.</p> <p>(3) The relief valves of the fixed fire-extinguishing system must be safely vented.</p> <p style="text-align: center;"><i>Controls and Alarm</i></p> <p>4524. (1) Every fixed gas fire-extinguishing system that serves a machinery space must have a means of control that</p> <p>(a) can be operated manually from a position outside of the space that is not likely to be cut off by a fire in the space;</p> <p>(b) requires at least two steps to activate the system; and</p> <p>(c) is readily accessible and simple to operate.</p> <p>(2) Means must be provided in the wheelhouse, or in a location readily accessible from the position where the means of control is located, to</p> <p>(a) stop the ventilation fans that serve the machinery space; and</p> <p>(b) shut off the source of power or fuel for any machinery or equipment in the machinery space that could contribute to sustaining a fire or create any other unsafe condition in the case of fire.</p> <p>(3) If the machinery space has a gross volume of more than 57 m³ or is normally occupied, the fire-extinguishing system must not have an automatic means to release the extinguishing agent.</p> <p>(4) Unless the machinery space is too small for a crew member to enter it, the fire-extinguishing system must have an alarm to warn of any impending release of the extinguishing agent. The alarm must</p> <p>(a) be separate from any other alarm;</p> <p>(b) have a sound that is distinctive from the sound of any other signal or alarm in the space;</p> <p>(c) have a sound level of more than 85 dB;</p> <p>(d) if the space has a high ambient noise level, have flashing red lights or beacons of sufficient</p>

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<p>10.4.2.4.2 The fire-extinguishing system must discharge a sufficient quantity of the aerosol for the design application density to be reached in the space in 120 seconds or less.</p> <p>10.4.2.4.3 The quantity of aerosol for a fixed aerosol fire-extinguishing system serving an engine space must be sufficient to protect the space. The required quantity of aerosol is calculated using the minimum expected ambient temperature, the design application density of the aerosol, the net volume of the space and, if the system is a condensed aerosol fire-extinguishing system, the efficiency of its generator</p> <p>10.4.2.4.4 The net volume of the space is its gross volume, including the volume of the bilge, the volume of the casing, and the volume of free air contained in air receivers that in the event of a fire is released into the space, minus the volume of objects in the space.</p>	<p>intensity and number to alert the occupants of the space; and</p> <p>(e) be set off automatically when the system is activated, and stay on for at least 20 seconds, or any longer period that is necessary to allow the occupants of the space to escape, before the agent is released.</p> <p>(5) If the fire-extinguishing system has an automatic means to release the extinguishing agent,</p> <p>(a) means must be provided in the wheelhouse to warn the occupants of the impending release of the extinguishing agent; and</p> <p>(b) the means required by subsection (2) must be automatic.</p>	
	<p><i>Escape of Extinguishing Agent</i></p> <p>4525 (1) Every machinery space must be capable of keeping the quantity of the extinguishing agent required by subsection 4528(2), 4529(2) or 4530(2), as the case may be, within the space for at least 15 minutes.</p> <p>(2) The openings that can admit air to, or allow the extinguishing agent to escape from, the machinery space must be capable of being closed from outside the space.</p> <p>(2.1) Means must be provided for closing the main inlets and outlets of every ventilation system from a position outside the space served by the system. The means of closing must</p> <p>(a) be readily accessible;</p> <p>(b) be prominently and permanently marked as being the main inlet or outlet to the space; and</p>	

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	<p>(c) indicate whether the inlets and outlets are open or closed.</p> <p>(2.2) Means must be provided for stopping the ventilation fans serving an accommodation space, service space, cargo space, control station or machinery space. The means must be in a readily accessible position outside the space but, in the case of a ventilation fan serving a machinery space, must be located as required by subsection 4525(2).</p> <p>(3) The openings that are used to vent the machinery space must be vented to outside the vessel and not to a location in the vicinity of a muster station.</p> <p>(4) If the discharge of the extinguishing agent into the machinery space could cause over- or under-pressurization that would affect the integrity of the space, measures must be provided to protect the integrity of the space.</p> <p style="text-align: center;"><i>Information and Procedures</i></p> <p>4526 (1) A placard containing the following warning must be posted near the means of control for a fixed gas fire-extinguishing system:</p> <hr style="border: 0.5px solid black;"/> <p style="text-align: center;">WARNING</p> <p style="text-align: center;">Harmful Gas — Do not release the gas until all crew members have evacuated the machinery space — Do not re-enter the machinery space until all gas has been removed and the space declared safe</p> <p style="text-align: center;">AVERTISSEMENT</p> <p style="text-align: center;">Gaz nocif — Ne pas libérer le gaz avant que tous les membres d'équipage aient évacué le local de machines — Ne pas retourner dans le local avant que tout le gaz ait été éliminé et que le local soit déclaré sécuritaire</p>

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	<p>(2) A placard containing the following warning must be posted near the means of control for a fixed aerosol fire-extinguishing system:</p> <hr/> <p style="text-align: center;">WARNING</p> <p style="text-align: center;">Harmful Aerosol — Do not release the aerosol until all crew members have evacuated the machinery space — Do not re-enter the machinery space until all aerosol has been removed and the space declared safe</p> <p style="text-align: center;">AVERTISSEMENT</p> <p style="text-align: center;">Aérosol nocif — Ne pas libérer l’aérosol avant que tous les membres d’équipage aient évacué le local de machines — Ne pas retourner dans le local avant que tout l’aérosol ait été éliminé et que le local soit déclaré sécuritaire</p> <hr/> <p>(3) A placard containing the following warning must be posted at the entrance to an occupied machinery space:</p> <hr/> <p style="text-align: center;">DANGER</p> <p style="text-align: center;">Space protected by fire-extinguishing system — Vacate space immediately when alarm sounds</p> <p style="text-align: center;">DANGER</p> <p style="text-align: center;">Local protégé par un système d’extinction d’incendie — Quitter le local immédiatement lorsque l’alarme retentit</p> <hr/> <p>(4) Clear instructions for the safe operation of a fixed fire-extinguishing system must be kept</p>	

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	<p>near the means of control for the system.</p> <p>(5) The operating procedure in case of a fire in a machinery space must be posted at each fire control station and must include procedures to</p> <ul style="list-style-type: none"> (a) stop the ventilation fans that serve the space; (b) shut off the source of power or fuel for any machinery or equipment in the space that could contribute to sustaining a fire or create any other unsafe condition in the case of fire; (c) close the openings to the space; (d) ensure that nobody is in the space; and (e) vent the space after the discharge of the extinguishing agent into it, using an opening vented to outside the vessel and not to a location in the vicinity of a muster station or to any location where passengers or crew are present. <p style="text-align: center;"><i>Containers</i></p> <p>4527. (1) Every container for a fixed fire-extinguishing system must be in a location that is not subject to severe weather conditions or to mechanical, chemical or other damage.</p> <ul style="list-style-type: none"> (2) Means must be provided to indicate whether the container has been discharged. (3) Means must be provided for the crew to safely check the quantity and pressure of extinguishing agent in the container. (4) If the fixed fire-extinguishing system serves a machinery space, the container must be in a location that is <ul style="list-style-type: none"> (a) readily accessible from outside the machinery space and, if feasible, from an open deck; (b) safely vented to outside the vessel; and (c) outside the accommodation spaces and the machinery space. (5) Despite paragraph (4)(c), unless the container contains carbon dioxide, the container may be 	

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	<p>a kept in the machinery space if the space has a gross volume of not more than 57 m³ and is not normally occupied.</p> <p>(6) If the container is connected to a common manifold, non-return valves must be fitted in the discharge system to allow the container to be disconnected</p> <p>(a) without affecting the use of the other containers connected to the common manifold; and</p> <p>(b) in a manner that prevents any discharge at the point of disconnection when the fixed fire-extinguishing system is activated.</p> <p style="text-align: center;"><i>Fixed Carbon Dioxide Fire-extinguishing Systems</i></p> <p>4528. (1) For the purposes of subsection 4523 4522(2), in the case of a fixed carbon dioxide fire-extinguishing system, “certified for marine use by a product certification body” is to be read as “certified for marine use by a product certification body based on the <i>Standard on Carbon Dioxide Extinguishing Systems</i>, NFPA 12,”.</p> <p>(2) The quantity of carbon dioxide for a fixed carbon dioxide fire-extinguishing system serving a machinery space must be sufficient to achieve, at a specific volume of 0.56 m³ per kilogram, a volume of free gas equal to</p> <p>(a) 60% of the gross volume of the space, if the gross volume is not more than 14 m³;</p> <p>(b) 40% of the gross volume of the space, if the gross volume is more than 136 m³; and</p> <p>(c) the percentage obtained by linear interpolation between the percentages set out in paragraphs (a) and (b), if the gross volume of the space is more than 14 m³ but not more than 136 m³.</p> <p>(3) The fire-extinguishing system must discharge a sufficient quantity of carbon dioxide for 85% of the quantity required by subsection (2) to be reached in the space in 120 seconds or less.</p> <p style="text-align: center;"><i>Other Fixed Gas Fire-extinguishing Systems</i></p> <p>4529. (1) For the purposes of subsection 4523 4522(2), in the case of a fixed gas fire-extinguishing system that uses a gas other than carbon dioxide, “certified for marine use by a product certification</p>	

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	<p>body” is to be read as “certified for marine use by a product certification body based on the <i>Standard on Clean Agent Fire Extinguishing Systems</i>, NFPA 2001.”.</p> <p>(2) The quantity of gas for a fixed gas fire-extinguishing system that uses a gas other than carbon dioxide and is serving a machinery space must be sufficient to protect the space. The required quantity of gas is calculated using the minimum expected ambient temperature, the minimum design concentration of the gas and the net volume of the space.</p> <p>(3) The minimum design concentration of the gas is the greater of</p> <p>(a) the concentration that is 30% above the minimum extinguishing concentration when the minimum extinguishing concentration of the gas is determined by a cup burner test; and</p> <p>(b) the extinguishing concentration that is determined by full-scale testing.</p> <p>(4) The net volume of the space is its gross volume, including the volume of the bilge, the volume of the casing, and the volume of free air contained in air receivers that in the event of a fire is released into the space, minus the volume of objects in the space.</p> <p>(5) If the fire-extinguishing system uses halocarbon as the extinguishing agent, the system must discharge a sufficient quantity of the agent for 95% of the minimum design concentration to be reached in the space in 10 seconds or less. If the system uses an inert gas as the extinguishing agent, the system must discharge a sufficient quantity of the agent for 85% of the minimum design concentration to be reached in the space in 120 seconds or less.</p> <p style="text-align: center;"><i>Fixed Aerosol Fire-Extinguishing Systems</i></p> <p>4530. (1) For the purposes of subsection 4523 4522(2), in the case of a fixed aerosol fire-extinguishing system,</p> <p>(a) “certified for marine use by a product certification body” is to be read as “certified for marine use by a product certification body based on the <i>Standard on Aerosol Fire-Extinguishing Systems</i>, NFPA 2010,”; and</p> <p>(b) for the purpose of maintenance of the generator, the machinery space is to be considered a</p>	

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	<p>severe environment.</p> <p>(2) The quantity of aerosol for a fixed aerosol fire-extinguishing system serving a machinery space must be sufficient to protect the space. The required quantity of aerosol is calculated using the minimum expected ambient temperature, the design application density of the aerosol, the net volume of the space and, if the system is a condensed aerosol fire-extinguishing system, the efficiency of its generator.</p> <p>(3) The design application density must be at least 30% above the extinguishing application density when the extinguishing application density of the aerosol is determined by full-scale testing.</p> <p>(4) The net volume of the space is its gross volume, including the volume of the bilge, the volume of the casing, and the volume of free air contained in air receivers that in the event of a fire is released into the space, minus the volume of objects in the space.</p> <p>(5) The fire-extinguishing system must discharge a sufficient quantity of the aerosol for the design application density to be reached in the space in 120 seconds or less.</p>	
<p>DIVISION 6- PROTECTION OF THE CREW</p> <p>Objective</p> <p>3600. The objective of this Division is to provide for basic protection of the crew.</p> <p>Risk Management</p> <p>3601. Where it is necessary to identify and manage risk for the purposes of risk-based decision making, the identification of hazards and the consequent measures to assess and manage risk shall be taken in the following order of priority:</p> <p style="padding-left: 40px;">(a) elimination of the risk;</p>	<p>DIVISION 6- PROTECTION OF THE CREW</p> <p>Objective</p> <p>4600 Same as 3600</p> <p>Risk Management</p> <p>4601 Same as 3601</p>	

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<p>Deck openings and doors</p> <p>3606. Hinged and sliding covers of hatchways, manholes, doors and other openings shall be prevented from swinging or accidental closing.</p> <p>3607. Dimensions of access hatches shall be of an adequate size for the intended purpose.</p> <p>3608. Having regard to the operation of the vessel, suitable protection shall be provided, where practicable, in positions where there is a danger of personnel falling through deck openings.</p> <p>3609. Handholds shall be provided above the level of the deck over escape openings.</p> <p>3610. In general external hatches and doors shall be closed when the vessel is at sea. All openings occasionally required to be kept open during fishing and which may lead to flooding should be closed immediately if such danger of filling occurs with subsequent loss of buoyancy and stability</p> <p>3611. Moving parts of machinery, winches, line and net haulers shall be adequately guarded.</p>	<p>Deck openings and doors</p> <p>4606 Same as 3606</p> <p>4607 Same as 3607</p> <p>4608 Same as 3608</p> <p>4609 Same as 3609</p> <p>4610 Same as 3610</p> <p>4611 Same as 3611</p>	
<p>Bulwarks, rails and guards</p> <p>3612. (1) On decked vessels, efficient bulwarks or guardrails, stanchions, wire rope guards, chains and netting, or any combination thereof shall be fitted on the perimeter of the working deck and on superstructure decks, shelter decks and other deck erections.</p> <p>(2) The bulwarks, guardrails, stanchions, wire rope guards, chains and netting or any combination thereof, shall be at least 915 mm above the weatherdeck.</p> <p>(3) The height of bulwarks, guardrails, stanchions etc. may be reduced or omitted entirely in</p>	<p>Bulwarks, rails and guards</p> <p>4612. (1) Efficient bulwarks or guard rails shall be fitted on the perimeter of the working deck and on superstructure decks, shelter decks and other deck erections.</p> <p>(2) The height above deck of any fixed bulwark or guardrail, shall be at least 600 mm for vessels of 15 m LOA and at least 1.0 m for vessels of 24 m LOA. For vessels of intermediate length the minimum height shall be determined by linear interpolation. In every such vessel where the fixed bulwark or guardrail is less than 1.0 m, stanchions, wire rope guards, chains and netting, or any combination thereof shall be fitted up to the prescribed height of 1.0 m,</p>	

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<p>3617. Where equipment is normally incorporated in the structure of a bulwark or rail within the minimum height prescribed for the bulwark, or mounted between stanchions of a guard rail, provision should be made to protect the area when the equipment is not in place.</p> <p>3618. Where part of a bulwark or guard rail has to be removed for the purpose of the fishing operation, protection for the crew should be provided at the opening.</p> <p>3619. A wheelhouse tops need not be fitted with bulwarks, rails, chains or wire rope guards if fitted all around, with a toe rail or guard of a minimum height of 75mm.</p>	<p>4616. Where the height of a bulwark or guard rail is less than 1.0 m for the purpose of the fishing operation as provided for in 4612, or where the effective height has been reduced through the fitting of a net or gear platform at deck level, additional provisions shall be made for the safety of the crew working in the area.</p> <p>4617. same as 3618</p> <p>4618.same as 3619</p>	
<p>Stairways and ladders</p> <p>3620. For the safety of the crew, stairways and ladders shall be of adequate size and strength with handrails and anti-slip treads.</p>	<p>Stairways and ladders.</p> <p>4619. Stairways and ladders shall be provided for safe working at sea and in port. They shall be of adequate size and strength with anti-slip treads. Means of access to holds, 'tweendecks, bunkers and similar parts of a vessel shall consist of fixed ladders or stairs. Treads of stairways shall be flat and specially prepared to minimize slipping.</p> <p>4620. Fixed vertical ladders shall be so situated as to be protected from damage and shall be so fitted as to provide clearance of 150 mm behind. The rungs of steel vertical ladders shall be made of square section steel bars with the sharp edge upwards. Where ladders are constructed with stringers, the rungs shall pass through the stringers. Handholds shall be provided where rungs or stringers are not suitable for this purpose.</p> <p>4621.Stairways of more than 1.0 m in height shall have handrails or hand grips on both sides.</p> <p>4622.Emergency escape ladders shall normally be fixed, but if they are portable, they shall be stowed adjacent to the escape area and when required, they shall be capable of being secured in place without the use of tools or mechanical aids.</p> <p>4623.Ladders in machinery spaces shall be at least 450 mm wide.</p>	

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<p>Safe Access</p> <p>3621. Means shall be provided, wherever necessary and to the extent practicable, to ensure sufficiently safe and convenient access to the vessel where facilities are not provided in the port. Such means should be of safe construction and adequate strength, be well illuminated and where practicable have anti-skid surfaces.</p>	<p>Accommodation ladders and gangways</p> <p>4624. Means shall be provided, where practicable, to ensure sufficiently safe and convenient access to the vessel where facilities are not provided in the port. Such means shall be of reliable material, safe construction and adequate strength.</p> <p>4625. Accommodation ladders shall be provided with hooks or other suitable fastenings for adequate support and securing against displacement or slipping and be able to be adjusted to the height of the landing place.</p>	
<p>Cooking facilities</p> <p>3622. Cooking facilities shall be provided with guard rails and hand rails.</p> <p>3623. Cooking stoves shall be fitted with guards to retain cooking utensils.</p>	<p>Galleys</p> <p>4626. Galleys shall be provided with guard rails and hand rails.</p> <p>4627. Cooking stoves shall be fitted with guards to retain cooking utensils.</p> <p>4628. Where food processing equipment is installed, dangerous parts shall be fitted with permanent safety guards.</p>	

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<p>Deck machinery, tackle and lifting gear</p> <p>General</p> <p>3624 Ropes, wires and guys, eyeplates, shackles, blocks and associated hardware shall be (a) suitable for the intended service, and (b) designed to meet the maximum anticipated loads and certified as such by the manufacturer or by a testing laboratory.</p> <p>3625. (1) All <i>power operated</i> winches and hauling equipment for fishing gear shall be fitted with self-activated emergency stop safety devices. The arrangement is to ensure automatic_stop if a person is pulled towards a winch or other hauling equipment.</p> <p>(2) Where the provision of an automatic stop is not practicable, a means of stopping the equipment in the event of an emergency shall be provided from an easily accessible location on the working deck. Does not apply to single handed vessels.</p> <p>3626 (1) All rigging, connecting hardware, chains, slings, hoists, turnbuckles, shackles, derricks, blocks, anchor gear and the mast shall be examined at sufficient intervals to ensure that it is maintained at all times in safe operating condition. Equipment shall be repaired or replaced where there is a risk to the safety of the crew.</p> <p>(2) A record of the rigging examination shall be maintained on board.</p>	<p>Deck machinery, tackle and lifting gear</p> <p>General</p> <p>4629 A competent person is (a) any person authorized to conduct inspections under s. 11 or 12 of the Act, (b) a person engaged in the manufacture or repair of the gear; or (c) a person who has the knowledge, training and experience to perform the function safely and properly</p> <p>4630 same as 3624</p> <p>4631 (1) same as 3625 (1)</p> <p>(2) Where the provision of an automatic stop is not practicable, a means of stopping the equipment in the event of an emergency shall be provided from an easily accessible location on the working deck.</p> <p>(3) The means of stopping the equipment may be a clearly marked master switch or similar device.</p> <p>(4) An emergency stop arrangement shall be provided at the helm position for all power operated deck equipment. Where a winch or hauler is controlled from the helm position, a local emergency stop device is to be fitted at the winch or hauler</p> <p>4632. Same as 3626</p>	

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Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
<p>3627. All elements of a fishing gear system, including warping heads, winches, tackle, nets, etc., shall be designed, arranged and installed to provide safe and convenient operation. In so far as is possible, such components shall be provided with guards and of a suitable strength so that in the event of an overload strain the failure will occur on the designated weak link in the system. All crew members shall be made aware of the designated weak link in the system.</p> <p>3628. Controls of winches, line and net hauling equipment, shall be so placed that winch operators have ample room for their unimpeded operation and have as unobstructed a view as possible of the working area. Where possible, control handles shall be arranged to return to the stop position when released and provided where necessary, with a suitable locking device in the stop/neutral position, to prevent accidental movements or displacement or unauthorized use.</p>	<p>4633. Same as 3627</p> <p>4634. Warp guards shall be fitted where practicable between warp lead rollers.</p> <p>4635. Sheaves and rollers shall be guarded where practicable.</p> <p>4636. Chains or other suitable devices shall be provided for “stoppering off”.</p> <p>4637. Wires and warps provided shall be of adequate strength for the anticipated loads.</p> <p>4638. Where practicable, provision shall be made to stop trawl boards swinging inboard, such as the fitting of a portable prevention bar at the gallows aperture or other equally effective means.</p> <p>4639. Lifting and running parts of the fishing gear shall be of adequate strength for the anticipated loads.</p> <p>4640. Provision shall be made for the stowage of bulky netting to allow for drainage and to prevent lateral movement. The stowage area should be of adequate dimensions to keep the centre of gravity of the stowed net to a minimum and to allow for the crew to work in safety when flaking down nets.</p> <p>4641. Moving parts of winches line and net hauling equipment and of warp and chain leads which may present a hazard shall be as far as practicable adequately guarded and fenced.</p> <p>4642. Same as 3628</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
<p>3629. Emergency procedures shall be established for the quick release of loads in the case of beam trawling and purse seining operations that can be activated in an emergency.</p> <p>3630. Where a vessel changes fishing methods such that additional external forces are imposed on the vessel during fishing operations, the effects of these changes shall be taken into consideration with respect to the structural strength of the hull and the effect of the fishing operation on stability.</p> <p>3631. Arrangements shall be provided to prevent the fish catch from shifting or swinging which could cause dangerous trim or heel of the vessel.</p> <p>3632. Where fish is carried on deck in boxes the arrangement shall be such as to maintain the weight as low as possible on the vessel and prevent movement of the boxes.</p> <p>3633. Arrangements shall be provided to ensure that accumulated water from the catch is drained overboard or, in the case of undecked vessels, drained into the bilge after which it shall be pumped overboard.</p> <p>3634. Moveable davits shall be provided with a means to secure them in place when not in use.</p> <p>3635. Where practical, warp rollers and leads shall be fitted with guards and be positioned to enable safe passage by crew members.</p>	<p>4643. Winches and hauling equipment for fishing gear shall be fitted with safety devices designed to prevent accidents</p> <p>4644. Same as 3629</p> <p>4645. Same as 3630</p> <p>4646. The design and construction of winches, line and net hauling equipment, shall/should be such that the maximum effort necessary for operating handwheels, handles, crank handles, levers, etc. shall not exceed 16 kg and in the case of pedals not exceed 32 kg.</p> <p>4647. Same as 3631</p> <p>4648. same as 3632</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
<p>Winches</p> <p>3636. Winches on lifting devices shall be provided with means to prevent overhoisting and to prevent the accidental release of the load if the power supply fails.</p>	<p>Winches</p> <p>4649. The design of winch systems shall ensure that when power is supplied to the winch, the control valves and or levers, would always be in the stop/neutral position.</p> <p>4650. Winches shall be provided with means to prevent overhoisting and to prevent the accidental release of a load if power supply fails. Where practicable, winches with wire storage drums shall be fitted to avoid the need to use warping heads.</p> <p>4651. Winches shall be equipped with brakes capable of effectively arresting and holding the safe working load. Brakes shall be proof tested before installation with a static load suitably in excess of the maximum safe working load. The proof test shall be witnessed by a competent person.</p> <p>4652. Brakes shall be provided with simple and easily accessible means of adjustment. Every winch drum, which could be uncoupled from the drive, shall be furnished with a separate brake independent of the brake connected with the drive.</p> <p>4653. Where manually operated "guiding on" gear is installed the operating wheels shall be without open spokes or protrusions that could cause injury to the operator and shall be capable of being disengaged when the warps are paying out.</p> <p>4654. Where practicable, winches shall be reversible.</p> <p>4655. Winch barrels shall be provided with means for fastening wire ends, for instance clamps, shackles or other equally effective method which shall be so designed as to prevent kinking of the wires.</p> <p>4656. Where a fishing winch is provided with local and remote controls, these shall be so arranged as to prevent simultaneous operation. The operator shall have a clear view of the winch and adjacent area from either position. An emergency cut-off shall be provided at the winch and in the wheelhouse.</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
	<p>4657. Where a fishing winch is controlled from the wheelhouse, an emergency control switch at the winch shall be provided. Where a second control at the winch is required, the arrangement shall be such as to make simultaneous control from both control positions impossible, as well as to show which control position is in operation. Where necessary, emergency switches for winches shall be provided remote from the winch to protect fishermen working in places which are dangerous for operation of warps and trawl boards. Where a fishing winch is controlled from the bridge, the arrangements shall be such that the operator has a clear view of the winch and adjacent area.</p>	
	<p>Line and net hauling equipment</p> <p>4658. <i>Power operated</i> line and net hauling equipment shall be fitted with devices to ensure that the designated working load is not exceeded. Such devices shall be tested in operation. The test shall be witnessed by a competent person.</p> <p>4659. Where line and net hauling equipment is intended to be blocked or braked in the stop position, the arrangements shall be tested. The test shall be witnessed by a competent person.</p> <p>4660. Where line and net hauling equipment is controlled from the wheelhouse or from a position remote from the equipment, means shall be provided at the equipment to stop hauling and/or shooting in an emergency. In like manner, when the main controls are at the equipment, means shall be provided in the wheelhouse to stop it in an emergency.</p>	
<p>Lifting Gear</p> <p>3637. (1) Masts, A-frames, gantries, derricks and other similar lifting equipment shall be strongly constructed and securely fastened to the vessel’s structure such that it is capable of handling not less than the maximum anticipated loads. They shall be tested by a competent person prior to use for the first time and after replacement, modification or repair of any stress bearing part.</p> <p>(2) A record of the test shall be maintained on board.</p>	<p>Lifting gear</p> <p>4661. (1) Masts, A-frames, gantries, derricks and other similar lifting equipment shall be strongly constructed and securely fastened to the vessel’s structure such that it is capable of handling not less than the maximum anticipated loads.</p> <p>(2) They shall be tested by a competent person prior to use for the first time, and after replacement, modification or repair of any stress bearing part with a load suitably in excess of the maximum safe working load. (Generally 1.5 times the maximum anticipated load)</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
	<p>(3) A record of the test shall be maintained on board.</p> <p>(4) Booms or jibs shall be marked with the designated maximum safe working load. In the case of a crane fitted with an extendable jib, the safe working load at various radii shall be clearly marked as close as practical to the operating controls.</p> <p>(5) Parts of lifting gear that are mechanically detachable and have been tested separately from the appliance, need not comply with this section.</p> <p>(6) Repairs that involve the heating, fairing or welding of structural stress-bearing parts of lifting appliances and repairs to loose gear shall be performed by an expert person.</p> <p>"expert person", in respect of a specified function, means a person who has the knowledge, training and experience to perform the function safely and properly.</p> <p>4662. Cranes adapted to carry net hauling equipment shall be so designed that in the fail safe condition, the hanging point of the jib shall not be too high or extend so far beyond the bulwark that retrieval of fishing gear or equipment would endanger the crew.</p> <p>4663. The braking or blocking arrangements of a crane shall be tested to at least 1.5 times the designated safe working load. The test shall be witnessed by a competent person.</p> <p>4664. Lifting and hoisting appliances, as well as derricks and similar equipment including all parts of the working gear thereof, whether fixed or movable, and all plant shall be of good construction, reliable material, adequate strength and free from patent defect. They shall be adequately and suitably anchored, supported or suspended having regard to the purpose for which they are used and shall be marked with the safe working load. They shall have easy access for maintenance. Guards shall be provided to prevent any undesirable movement of lifted or hoisted parts, such as codend or fishing gear, which could present danger to the crew.</p> <p>4665. No such appliance of a kind referred to in 4654 nor any part or working gear thereof, shall be taken into use for the first time or after it has undergone any substantial repair unless it has been</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
	tested and the result entered in the record of the vessel.	
<p>Anchoring and Mooring Equipment</p> <p>3638 (1) Anchoring and mooring equipment and its mountings shall be strongly constructed. Appropriate reinforcements to structure shall be provided where equipment is fastened and where through bolts are used washers or backing plates should be fitted below the nuts.</p> <p>(2) The hull of the vessel should be suitably strengthened in way of hawse pipes, chain stoppers, windlass and other equipment associated with anchoring and mooring.</p>	<p>Anchoring and Mooring Equipment</p> <p>4666 Same as 3638</p>	
<p>Portable Fishhold Divisions</p> <p>3639. Provisions shall be made by means of longitudinal and transverse bulkheads or equivalent portable fish hold divisions to properly secure the catch, its containers, nets, loose gear or other cargoes against shifting and free surface effects The scantlings of portable fish hold divisions, if fitted, shall be in accordance with the recommended practices and standards.</p> <p>3640 (1) Every portable fishhold division shall be fishtight and extend from the bottom of the hold to the deckhead, with due regard to the loading and unloading of the vessel.</p> <p>(2) Provision shall be made to allow water to drain through divisions into bilges and bilge suctions shall be protected in accordance with the bilge pumping requirements of these Regulations</p> <p>(3) Every portable fishhold division shall be installed in such a manner as to prevent overloading or excessive trim.</p> <p>(4) To control the movement of fish carried in bulk, every fishing vessel engaged in the carriage</p>	<p>Portable Fishhold Divisions</p> <p>4667 same as 3639</p> <p>4668 Same as 3640</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
<p>of herring or capelin or similar cargo in bulk shall, unless otherwise allowed in accordance with an approved stability booklet, be provided with both longitudinal and transverse portable fish hold divisions.</p> <p>(5) Portable penboards shall be installed in such a manner as to prevent dislodgment when fish are being pumped into and out of the hold.</p> <p>(6) Where wooden uprights are installed, the horizontal wooden penboards shall be secured in such a manner as to withstand the load imposed. The scantlings of the wooden penboards shall be in accordance with recommended practices and standards.</p> <p>(7) The scantlings of vertical steel uprights and horizontal wooden penboards or horizontal steel beams and vertical wooden boards shall be in accordance with recommended practices and standards.</p>		
<p>Lighting in working spaces and areas</p> <p>3641. All passageways, working spaces and working areas on board the vessel shall be well lit. The quality and intensity of the lighting shall be sufficient to ensure that the work can be carried out with full regard to health and safety.</p> <p>3642. The amount of light shall be sufficient to distinguish details. The light shall create suitable contrast conditions and shall not glare.</p> <p>3643. Fish holds shall be provided with lighting ensuring adequate lighting in all conditions, both for orientation and during work in the hold.</p> <p>3644. The lighting shall not interfere with the keeping of a proper lookout.</p>	<p>Lighting in working spaces and areas</p> <p>4669. All companionways, doors or other means of access shall be illuminated on both sides of the opening to facilitate safe passage.</p> <p>4670. Same as 3641</p> <p>4671. Same as 3642</p> <p>4672 Glare, dazzle or sudden contrasts of illumination shall be eliminated to the extent possible taking into consideration the need for effective lighting for the safety of the crew on the working deck.</p> <p>4673 Same as 3644</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
	<p>4674. Portable watertight lights shall be provided as necessary and fitted with heavy-duty cables, bulb guards and lanyards. Such lights for use in spaces, which may contain explosive gases, shall be either explosive proof or otherwise intrinsically safe.</p> <p>4675. Where necessary to prevent danger, electric lamps shall be protected by guards.</p>	
<p>Emergency Lighting</p> <p>3645. A system of emergency lighting shall be provided, which is independent of the normal supply, to allow the persons on board to exit from any area of the vessel.</p> <p>(2) Despite Subsection (1) the lighting units may be</p> <ul style="list-style-type: none"> (a) of a self-contained type, rechargeable from the vessel's electrical distribution system, and fitted with a charge indicator, or (b) rechargeable or non-rechargeable portable hand lanterns of not less than the 6-V battery type may be provided. <p>(3) For those vessels with non-rechargeable lanterns, a spare battery shall be carried and batteries shall be replaced with new batteries as necessary to maintain the lantern in good working order and at least annually.</p>	<p>Emergency Lighting</p> <p>4676. (1) A system of emergency lighting shall be provided, which is independent of the normal supply, to allow the persons on board to exit from any area of the vessel.</p> <p>(2) Despite subsection 1, the lighting units may be of a self-contained type, rechargeable from the vessel's electrical distribution system, and fitted with a charge indicator.</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
<p>Emergency lighting for survival craft launching stations</p> <p>3646. (1) Every fishing vessel other than one certified to operate only between sunrise and sunset shall be fitted with permanent or portable lights that will illuminate the launching stations and stowage position of all survival craft for at least one hour.</p> <p>(2) Where non-rechargeable battery operated hand lanterns are provided pursuant to subsection (1), the batteries shall be changed as necessary to maintain the lantern in good working order and at least annually.</p>	<p>Emergency lighting for survival craft launching stations</p> <p>4677. Same as 3646</p>	
<p>Ventilation in working spaces</p> <p>3647. (1) Enclosed working spaces shall be adequately ventilated.</p> <p>(2) Vessels operating in warmer climates shall, where practicable, be fitted with mechanical ventilation. The ventilation of galleys and sanitary spaces shall be to the open air and, unless fitted with a mechanical ventilation system, be independent from that for other crew accommodation.</p>	<p>Ventilation in working and storage spaces</p> <p>4678. (1) Working and storage spaces shall be adequately ventilated.</p> <p>(2) Same as 3647 (2)</p> <p>(3) The means of ventilation of the space shall be additional to the ventilation that may be provided by any portlight, skylight, companionway, doorway or other aperture not intended solely for ventilation.</p> <p>4679. Where necessary to safeguard personnel, work places and storage spaces shall be provided with an adequate system of heating and/or cooling.</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
	<p>Dangerous areas</p> <p>4680. Dangerous spaces or entrances thereto shall be properly illuminated and marked and have warning signs prominently posted. Retro-reflective and fluorescent materials may be used to increase the conspicuousness. A notice shall also be posted if a first aid procedure is appropriate.</p> <p>4681. (1) A notice shall be posted below radar and radio aerials warning that no work should be undertaken in the vicinity without authorization from the master. A notice shall also be posted at the operating controls of radar and radio equipment warning the operator that the equipment should not be started unless it is clear that no one is working near the aerials.</p> <p>(2) Subsection (1) does not apply if the antenna broadcasts at an amplitude that is harmless to personnel in the immediate vicinity.</p> <p>4682. A working area, designated by the master as dangerous or requiring extra care, shall be brought to the attention of the crew at regular briefing sessions on safety and to each new crew member on joining a vessel.</p>	
	<p>Fish processing equipment</p> <p>4683. Where fish processing equipment is installed, the following provisions shall, as far as practicable, be applied:</p> <p>(1) Arrangement of fish processing equipment shall ensure free access for examination, operation and sanitary treatment of the equipment. Working areas in way of processing equipment shall be not less than 750 mm wide.</p> <p>(2) Materials used to insulate fish processing equipment, including piping, shall be non-combustible, durable and stable under conditions of vibration and shall not have an external surface temperature harmful to personnel on contact. The insulation shall be securely fastened.</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
	<p>(3) Machinery and installations operating under pressure shall comply with requirements of Division 4 of this Part.</p> <p>(4) Machinery and other installations from which vapour, gas, dust or other harmful substance may readily escape or be emitted during operation shall be fitted with exhaust devices. Suction ends of these devices shall be located as near as possible to the sources of vapour, gas, dust or other harmful substance and the piping shall be so arranged that discharged products will not constitute a hazard to personnel.</p> <p>(5) Where several conveyors are working in one line, emergency switches shall be provided at intervals of not more than 10 m for stopping all conveyors working in the line. Sound or light signals shall be provided for giving warning when the conveyor starts.</p> <p>(6) Dampers, cocks, valves and other stopping devices shall be positioned so that they are readily accessible and safe for operation.</p> <p>(7) Machinery and equipment in working spaces shall be fitted on strong and rigid foundations securely connected to the vessel's structure.</p> <p>(8) Moving parts of machinery and other installations as well as gears which may present a hazard, shall be adequately guarded.</p> <p>(9) Machinery and installations which require routine servicing at a height of more than 2 m shall be equipped with platforms of 600 mm in width and guarded with rails not less than 1 m in height.</p> <p>(10) In vessels where fish handling or processing may cause quantities of water to accumulate in enclosed spaces, adequate drainage should be provided.</p> <p>(11) Loading and unloading devices for the machinery and other installations shall be arranged at a safe and convenient height for operation.</p> <p>(12) Steam or vapour outlets of equipment, e.g. liver boilers, shall be arranged as high as possible.</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
	<p>Outlet pipes shall be at least 50 mm in diameter and lead into open air. Vapour from outlets shall not obscure visibility.</p> <p>(13) Filling openings of machinery and other installations (e.g. liver or fish oil boilers) shall be within easy reach of personnel. Lids of filling openings shall have suitable means of closing so as to prevent steam, hot water or vapour emerging into the space and shall be counterbalanced or provided with other safe means of securing in the open position when required.</p>	
<p>Miscellaneous</p> <p>3648. To the extent possible, protective clothing and safety working equipment, as appropriate to the operation, shall be provided to the crew, in order to prevent injury or illness.</p> <p>3649. All reasonable steps should be taken to minimize harmful noise and vibration.</p> <p>3650. If applicable to the fishing operations on a vessel, the owner shall ensure that the crew are made aware of the health hazards in connection with the carriage of fish in bulk, the depletion of oxygen in the hold, and shall advise the crew concerning safe working practices in this regard.</p> <p>3651. The owner of the vessel shall ensure that crew members joining a vessel are made aware by the master of the particular hazards of the working of the vessel.</p> <p>3652. Arrangement of fish processing equipment shall ensure free access for examination, operation and cleaning of the equipment and where applicable, be suitably guarded.</p>	<p>Miscellaneous</p> <p>4684. Protective clothing and safety working equipment such as gloves, goggles, ear protectors, respirators, safety helmets, special footwear and/or other apparel, oilskins, explosive gas and oxygen sufficiency indicators, etc. shall be provided as appropriate to prevent injury or work-related illness to personnel.</p> <p>4685. Same as 3649.</p> <p>4686 A portable gas detector shall be carried on board all fishing vessels which carry fish in bulk in their holds to enable the crew to ascertain whether it is safe to enter the fish-holds.</p> <p>4687 A portable gas detector to test for leakage of refrigerant, should also be carried in a fishing vessel fitted with refrigeration machinery.</p> <p>4688. The master shall ensure that the crew are made aware of the health hazards in connection with the working of the vessel and the carriage of fish in bulk and shall advise the crew concerning safe working practices in this regard.</p> <p>4689. The owner of the vessel shall ensure that fishing vessels that carry cargo and or fishing equipment on deck and or atop deckhouses, carry on board clear instructions in relation to:</p> <ul style="list-style-type: none"> (a) (Reserved) (b) permitted loading conditions relative to weather conditions; 	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
<p>3653. Where practicable all work stations on deck shall be visible from the wheelhouse.</p> <p>3654. Where practicable, enclosed working spaces shall be provided with an adequate system of heating when operating in cold climates.</p> <p>3655. Where practicable any deck obstructions and head height obstructions that are a hazard shall be painted with a bright, conspicuous colour.</p> <p>3656. In vessels without an enclosed working space, and where practicable, a shelter which does not affect the stability of the vessel, made of tarpaulin or a similar material shall be provided to protect crew from excessive exposure to sun and weather.</p>	<p>(c) ensuring that cargo/fishing gear is not stowed in a manner that would obscure view from the bridge or obscure navigation lights and signals; and (d) ensuring that access to and the operation of essential equipment and machinery is not impeded.</p> <p>4690 Same as 3653.</p> <p>4691 Same as 3654</p> <p>4692 Same as 3655.</p> <p>4693 Same as 3656.</p>	
<p>DIVISION 7- CREW ACCOMMODATION</p> <p>3700. The objective of this Division is to provide measures respecting basic amenities for the safety, hygiene, well-being and comfort of the crew where accommodation is provided.</p> <p>3700.1 Unless expressly provided otherwise this Division does not apply to a vessel that has no accommodation spaces.</p>	<p>DIVISION 7- CREW ACCOMMODATION</p> <p>4700. The objective of this Division is to provide measures respecting basic amenities for the safety, hygiene, well-being and comfort of the crew where accommodation is provided.</p>	
<p>SUB-DIVISION 1 VESSELS THAT ARE AT SEA FOR MORE THAN 36 HOURS.</p> <p>Application</p> <p>3700.2 (1) Unless expressly provided otherwise this subdivision applies to vessels that are at sea for more than 36 hours</p>	<p>SUB-DIVISION 1 VESSELS THAT ARE AT SEA FOR MORE THAN 36 HOURS.</p> <p>Application</p> <p>4700.1 Same as 3700.2</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
<p>General</p> <p>3701. Accommodation of appropriate size and quality shall be provided on vessels of all design categories and voyage classifications, bearing in mind the length of the voyage, the weather conditions and size of vessel.</p> <p>3702. Location, structure and arrangement of crew accommodation spaces and means of access thereto should be such as to ensure adequate security, protection against weather, sea, heat, cold, condensation, undue noise, vibration, fumes, odours and effluvia from other spaces. Sleeping rooms should be placed aft of the collision bulkhead, if fitted.</p> <p>3703. In the choice of materials used for construction of accommodation spaces, account shall be taken of properties potentially harmful to the health of personnel or likely to harbour vermin and mould.</p> <p>3704 (1) Interior deck surfaces shall</p> <ul style="list-style-type: none"> (a) provide a durable non-skid surface that is easy to clean; (b) be so laid as to adhere to the deck under all conditions of service to which it may be subjected; (c) not contain any substance that may cause corrosion of the deck on which it is laid unless the deck is effectively protected from that substance; and (d) be sufficiently durable to withstand the normal conditions of service and shall be sufficiently flexible to prevent cracking under those conditions; and (e) be of a type that will not readily ignite. <p>(2) The decks of toilet spaces, galleys, laundries and drying spaces shall be covered with material that is impervious to liquids.</p> <p>(3) The joining of the deck coverings with the side walls of toilet spaces, galleys, laundries and drying spaces shall be rounded in a manner that will avoid crevices.</p> <p>3705. Measures shall be taken to protect crew accommodation and furnishings against the</p>	<p>General</p> <p>4701. Same as 3701</p> <p>4702. Same as 3702</p> <p>4703. Same as 3703</p> <p>4704 Same as 3704</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
admission of insects and other pests.	4705. All practical measures shall be taken to protect crew accommodation and furnishings against the admission of insects and other pests.	
<p>Lighting, heating and ventilation</p> <p>3706. All crew accommodation spaces shall be adequately lit, as far as possible, by natural light. Such spaces shall also be equipped with adequate artificial light.</p> <p>3707. Methods of lighting shall not endanger the health or safety of the crew or the safety of the vessel.</p> <p>3708. Adequate heating facilities in crew accommodation spaces shall be provided as required by climatic conditions.</p> <p>3709. Facilities for heating shall be designed so as not to endanger health or safety of the crew or safety of the vessel. Heating by means of open fires is prohibited.</p> <p>3710. (1) Accommodation spaces shall be adequately ventilated. Vessels operating in warmer climates shall, where practicable, be fitted with mechanical ventilation. The ventilation of galleys and sanitary spaces should be to the open air and, unless fitted with a mechanical ventilation system, be independent from that for other crew accommodation.</p> <p>(2) Where there is a risk of carbon monoxide accumulation, a carbon monoxide detection system shall be fitted.</p>	<p>Lighting, heating and ventilation</p> <p>4706. Same as 3706</p> <p>4707. Same as 3707</p> <p>4708. Same as 3708</p> <p>4709. Same as 3709</p> <p>4710. (1) Accommodation spaces shall be adequately ventilated. Vessels operating in warmer climates shall be fitted with mechanical ventilation. The ventilation of galleys and sanitary spaces should be to the open air and, unless fitted with a mechanical ventilation system, be independent from that for other crew accommodation.</p> <p>(2) Means of ventilation shall be additional to the ventilation that may be provided by any portlight, skylight, companionway, doorway or other aperture not intended solely for ventilation. Where it is not practicable to fit a ducted ventilation system, a cowl type vent leading to the open air may be used.</p> <p>(3) Where there is a risk of carbon monoxide accumulation, a carbon monoxide detection system shall be fitted.</p> <p>(4) Ventilation openings for the inlet and outlet of air shall be so located as to obtain best possible</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
<p>(3) Where a fuel burning cooking or heating appliance is fitted, additional ventilation shall be provided in way of the appliance in accordance with the appliance manufacturer's recommendations.</p> <p>(4) The heat emitted by the heating arrangements fitted in any space shall be capable of being regulated at any setting from full on to off.</p> <p>3711. Accommodation spaces shall be protected from the effects of condensation by insulation on</p> <ul style="list-style-type: none"> (a) the parts of the ship's side, bulkheads and overhead decks that are exposed to the weather; and (b) every other bulkhead, casing and deck in the crew accommodation that may be affected by condensation. <p>3712. The material used for insulation shall</p> <ul style="list-style-type: none"> (a) have fire resistant properties (non-combustible) (b) not contain any substance that may cause corrosion of the surface to which it is applied unless the surface is effectively protected from the corroding substance; (c) be so fitted as to resist as far as possible the absorption of water and condensation and the harbouring of dirt and vermin; and (d) be so applied as to adhere to or be efficiently retained by the surface under all normal conditions of service. <p>3713. Gastight bulkheads shall be fitted so as to separate every part of the crew accommodation from a space used as</p> <ul style="list-style-type: none"> (a) a machinery space; (b) a lamp room or paint room; or (c) a store room not forming part of the crew accommodation. 	<p>ventilation and such that risk of inlet of noxious fumes or exhaust products is minimized.</p> <p>(5) Same as 3710 (3)</p> <p>(6) Same as 3710 (4)</p> <p>4711. Same as 3711</p> <p>4712. Same as 3712</p> <p>4713. Same as 3713</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
<p>Sleeping spaces</p> <p>3714. Sleeping spaces shall be so planned and equipped as to ensure reasonable comfort for the occupants and to facilitate tidiness.</p> <p>3715. The minimum number of berths shall not be less than half the number of crew onboard.</p> <p>3716. Suitable bedding shall be provided for the crew. Mattresses shall not be of a type that is liable to develop toxic fumes in cases of fire nor of a type that will attract pests or insects. Mattresses should be provided with a cover of fire retardant material.</p>	<p>Sleeping spaces</p> <p>4714. Same as 3714</p> <p>4715. Same as 3715</p> <p>4716. Same as 3716</p>	
<p>Eating spaces and cooking facilities</p> <p>3717. Wherever reasonable and practicable, eating spaces and cooking facilities shall be provided separate from sleeping spaces.</p> <p>3718. Cooking facilities shall be of adequate dimensions for the purpose and have sufficient storage space and satisfactory drainage. Where possible, refrigerators or other low-temperature storage should be provided.</p> <p>3719. The cooking facility shall be provided with cooking utensils, the necessary number of cupboards, shelves, sinks and dish racks of rustproof material and with satisfactory drainage.</p> <p>3720. The cooking facility shall be fitted with suitable facilities for the preparation of hot drinks for the crew at all times.</p> <p>3721. Cooking appliances shall be fitted with fail-safe devices in the event of failure of the power source or fuel. Supplies of fuel in the form of gas or oil shall not be stored in the cooking facility.</p>	<p>Eating spaces and cooking facilities</p> <p>4717. Same as 3717</p> <p>4718. Same as 3718</p> <p>4719. Same as 3719</p> <p>4720. Same as 3720</p> <p>4721. Same as 3721</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
<p>Sanitary facilities</p> <p>3722. (1) Every vessel that is fitted with sleeping accommodations shall be provided with a toilet and a wash basin or sink for the use of persons on board.</p> <p>(2) A portable chemical toilet that has been listed by a product certification body may be used in lieu of a toilet, provided it is properly secured in place.</p> <p>(3) Waste discharge pipes shall be fitted with anti-siphon closures and shall not</p> <p style="margin-left: 20px;">(a) pass through fresh water or drinking water tanks or</p> <p style="margin-left: 20px;">(b) pass overhead in eating spaces or sleeping spaces.</p> <p>(4) Every toilet shall have</p> <p style="margin-left: 20px;">(a) a bowl of vitreous china or other suitable material;</p> <p style="margin-left: 20px;">(b) a hinged seat; and</p> <p style="margin-left: 20px;">(c) a trap constructed in such manner as to facilitate cleaning.</p> <p>3723. Every toilet other than a portable chemical toilet shall be provided with</p> <p style="margin-left: 20px;">(a) an adequate flush of water; and</p> <p style="margin-left: 20px;">(b) a soil pipe of adequate size that is so constructed as to</p> <p style="margin-left: 40px;">(i) facilitate cleaning, and</p> <p style="margin-left: 40px;">(ii) minimize the risk of obstruction, and</p> <p style="margin-left: 20px;">(c) comply with the requirements of the <i>Regulations for the Prevention of Pollution from Vessels and for Dangerous Chemicals</i>.</p> <p>3724. There shall be fitted adjacent to each toilet, a toilet paper holder and a suitable handrail or grip.</p>	<p>Sanitary facilities</p> <p>4722 (1) Same as 3722 (1)</p> <p>(2) Same as 3722 (3)</p> <p>(3) Same as 3722 (4)</p> <p>4723. Same as 3723</p> <p>4724. Same as 3724</p>	
<p>Water facilities</p> <p>3725. Filling, storage and distribution arrangements for drinking water should be designed to</p>	<p>Water facilities</p> <p>4725. Same as 3725</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
preclude any possibility of water contamination. Tanks should be designed to allow internal cleaning.		
3726. In every vessel, a dedicated supply of at least 2.5 litres of drinking water per person per day should be provided for drinking and cooking purposes.	4726. Same as 3726.	
3727. Where the washing facilities use salt water additional fresh water should be carried to allow the crew to rinse themselves.	4727. Same as 3727	
3728. There shall be fitted to every wash-basin or sink, taps for cold fresh water and, where hot water is supplied, taps for hot fresh water.	4728. Same as 3728	
3729. Every tap shall be clearly marked to indicate whether the water supply is hot or cold and whether or not the water is potable.	4729. Same as 3729	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
<p>Drainage</p> <p>3730. Every galley and drying space and every toilet space, other than a private toilet space, shall be provided with scuppers.</p> <p>3731. There shall be no drainage into a toilet space from any other space.</p> <p>3732. Scuppers from toilet spaces shall not drain into any other crew accommodation space.</p> <p>3733. The scuppers shall be at least 38 mm in diameter and shall be situated wherever water is likely to collect on the floor of every galley and drying space and every toilet space other than a private toilet space.</p> <p>3734. Every wash-basin and sink shall be fitted with an efficient and hygienic waste pipe that is</p> <ul style="list-style-type: none"> (a) connected to an overboard discharge or to an enclosed drainage tank; and (b) fitted in a manner that will minimize the risk of obstruction and that will facilitate cleaning. 	<p>Drainage</p> <p>4730. Same as 3730</p> <p>4731. Same as 3731</p> <p>4732. Same as 3732</p> <p>4733. Same as 3733</p> <p>4734. Same as 3734</p>	
<p>Sewage Holding Tanks</p> <p>3735. Where a sewage holding tank is fitted, the tank shall be of sufficient size to accommodate the needs of the crew, taking into account flow rates and pump out interval.</p> <p>3736. The holding tank shall be separate from the hull structure but secured to it by means of a platform fitted to the shell using a bracket structure or other suitable means, and located below the toilet and outside the accommodation space. e.g. machinery space</p> <p>3737. The holding tank shall be of a material resistant to corrosion or coated internally, fitted with a vent pipe, clean out access and a means for pump out.</p>	<p>Sewage Holding Tanks</p> <p>4735. Same as 3735</p> <p>4736. Same as 3736.</p> <p>4737. Same as 3737</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
<p>3738. The tank vent pipe shall be of sufficient size to prevent the accumulation of back pressure during pump out operations and shall terminate in a location that is well above the working deck and be fitted with a flame arrestor screen. Plastic pipe may be acceptable.</p> <p>3739. The pump out arrangement shall be arranged so as to minimize the risk of spillage. The discharge pipe shall terminate above the bottom of the tank such that it will not become blocked.</p> <p>3740. Where a connection is provided for overboard discharge, such connection shall be capable of being secured in the closed position except when used in specified waters and in conjunction with equipment in accordance with the Pollution Prevention Regulations.</p> <p>3741. All waste drainage piping shall be arranged so as to facilitate drainage and prevent blockage and a p-trap should be installed upstream of the tank to prevent objectionable odours backing up into the accommodation. Plastic pipe may be acceptable.</p>	<p>4738. Same as 3738</p> <p>4739. Same as 3739</p> <p>4740. Same as 3740</p> <p>4741. Same as 3741</p> <p>4742. A means of determining the liquid level shall be provided.</p>	
<p>SUB-DIVISION 2- VESSELS SPENDING LESS THAN 36 HOURS AT SEA</p> <p>Application</p> <p>3742 Unless expressly provided otherwise this subdivision applies to vessels that are at sea for less than 36 hours</p>	<p>SUB-DIVISION 2-VESSELS SPENDING LESS THAN 36 HOURS AT SEA</p> <p>Application</p> <p>4743. Same as 3742</p>	
<p>General</p> <p>3743. Vessels shall have adequate facilities relating to:</p>	<p>General</p> <p>4744. Same as 3743</p>	

CONSULTATION DRAFT — PARTS 3 & 4		SIDE-BY SIDE TREATMENT
Part 3 — Fishing Vessels 9 m LOA to 15 m LOA	Part 4 — Fishing Vessels 15 m LOA to 24 m	
<ul style="list-style-type: none"> (a) Lighting, heating and ventilation; (b) Sleeping spaces; (c) Eating spaces and cooking facilities; (d) Sanitary facilities; (e) Water facilities; and (f) Protection from the elements <p>3744. A toilet and a means of washing shall be provided on any vessel fitted with sleeping accommodations. The toilet may be a portable chemical toilet that meets the requirements set out in section 3722.</p> <p>3745. Every vessel shall have on board a supply of potable water that is sufficient to meet the needs of the crew until that supply is likely to be replenished.</p> <p>3746. Where a means of washing is fitted a supply of fresh water for washing shall be provided sufficient for each member of the crew for each day until that supply is likely to be replenished.</p>	<p>4745 Same as 3744</p> <p>4746 Same as 3745</p> <p>4747 Same as 3746</p>	

SCHEDULE 1

STANDARDS FOR LIFE SAVING APPLIANCES THAT ARE NOT SET OUT IN THE *LIFE SAVING APPLIANCES REGULATIONS*

Personal Flotation Devices

1. The standards and tests for a personal flotation device are those set out in

- (a) Canadian General Standards Board Standard CAN/CGSB-65.11-M88, *Personal Flotation Devices*; or
- (b) Underwriters Laboratories, Inc. Standard UL 1180, *Fully Inflatable Recreational Personal Flotation Devices*, and in the Canadian modifications set out in TP 14475.

2. The standards and tests for a personal flotation device intended for use by children are those set out in Canadian General Standards Board Standard CAN/CGSB-65.15-M88, *Personal Flotation Devices for Children*.

Hand Smoke Signals

3. The standards and tests for a hand smoke signal are those for a hand orange smoke distress signal that are set out in subpart 160.037 (except paragraphs 160.037–5 and 160.037–7) of Title 46, chapter I of the *Code of Federal Regulations* of the United States, and in the Canadian modifications set out in TP 14475.

Multi-Star Flares

4. The standards and tests for a multi-star flare are those set out in TP 14475.

**SCHEDULE 2
DIMENSIONS OF FREEING PORTS**

Where bulwarks on weather parts of the working deck form wells, the minimum freeing port area (A) in m², on each side of the vessel for each well on the working deck are to be determined in relation to the length (l) and height (h) of bulwark in the well, in accordance with the following table:

Freeing port area (A) in m² for vessels of design categories A and B.
(for intermediate lengths (l) and heights (h) the value of A should be obtained by linear interpolation)

height of bulwark (h) in metres	length of well (l) in metres (l need not be taken as greater than 70% of the length of the vessel)								
	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
0.2	0.05	0.05	0.06	0.06	0.07	0.07	0.08	0.08	0.09
0.3	0.07	0.08	0.08	0.09	0.10	0.11	0.11	0.12	0.13
0.4	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16	0.17
0.5	0.11	0.13	0.14	0.15	0.16	0.18	0.19	0.20	0.21
0.6	0.14	0.15	0.17	0.18	0.20	0.21	0.23	0.24	0.26
0.7	0.16	0.18	0.19	0.21	0.23	0.25	0.26	0.28	0.30
0.8	0.18	0.20	0.22	0.24	0.26	0.28	0.30	0.32	0.34
0.9	0.20	0.23	0.25	0.27	0.29	0.32	0.34	0.36	0.38
1.0	0.23	0.25	0.28	0.30	0.33	0.35	0.38	0.40	0.43
1.1	0.25	0.28	0.30	0.33	0.36	0.39	0.41	0.44	0.47
1.2	0.27	0.30	0.33	0.36	0.39	0.42	0.45	0.48	0.51

Freeing port area (A) in m² for vessels of design categories C1, C2 and D
(for intermediate lengths (l) and heights (h) the value of A should be obtained by linear interpolation)

height of bulwark (h) in metres	length of well (l) in metres (l need not be taken as greater than 70% of the length of the vessel)								
	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
0.2	0.03	0.03	0.03	0.04	0.04	0.04	0.05	0.05	0.05
0.3	0.04	0.05	0.05	0.05	0.06	0.06	0.07	0.07	0.08
0.4	0.05	0.06	0.07	0.07	0.08	0.08	0.09	0.10	0.10
0.5	0.07	0.08	0.08	0.09	0.10	0.11	0.11	0.12	0.13
0.6	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.14	0.15
0.7	0.09	0.11	0.12	0.13	0.14	0.15	0.16	0.17	0.18
0.8	0.11	0.12	0.13	0.14	0.16	0.17	0.18	0.19	0.20
0.9	0.12	0.14	0.15	0.16	0.18	0.19	0.20	0.22	0.23
1.0	0.14	0.15	0.17	0.18	0.20	0.21	0.23	0.24	0.26
1.1	0.15	0.17	0.18	0.20	0.21	0.23	0.25	0.26	0.28
1.2	0.16	0.18	0.20	0.22	0.23	0.25	0.27	0.29	0.31

SCHEDULE 3

Safety Labels and Warnings for LPG Installations

The gas fuel cylinder storage location shall prominently display the following warning and operating instructions:

**WARNING
LIQUEFIED PETROLEUM GAS FUEL
NO OPEN FLAME
NO SMOKING
BEFORE TURNING ON GAS FUEL READ OPERATING
INSTRUCTIONS BELOW
KEEP CYLINDER VALVES CLOSED WHEN CYLINDER EMPTY OR
SHIP IS UNATTENDED
BE SURE ALL APPLIANCE VALVES ARE CLOSED BEFORE
OPENING THE CYLINDER VALVES
CLOSE APPLIANCE VALVES WHEN APPLIANCE IS NOT IN USE
TEST SYSTEM FOR LEAKAGE AT LEAST TWICE A MONTH**

**AVERTISSEMENT
GAZ DE PÉTROLE LIQUÉFIÉ
FLAMME NUE INTERDITE
DÉFENSE DE FUMER
AVANT D'OUVRIR L'ALIMENTATION EN COMBUSTIBLE GAZEUX,
LIRE LES CONSIGNES D'UTILISATION CI-DESSOUS.
GARDER FERMÉS LES ROBINETS DES BONBONNES LORSQU'ELLES SONT
VIDES OU QUE LE BATEAU EST LAISSÉ SANS SURVEILLANCE.
S'ASSURER QUE TOUS LES ROBINETS DES APPAREILS SONT FERMÉS AVANT
D'OUVRIR LES ROBINETS DES BONBONNES.
FERMER LES ROBINETS DES APPAREILS LORSQU'ILS NE SONT PAS UTILISÉS.
TESTER LE CIRCUIT POUR Y DÉCELER LES FUITES AU MOINS DEUX FOIS PAR MOIS.**