Reprints of 46 CFR

Portable Fire Extinguishers

Pre-2016 Vessel Regulations

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46 CFR 25.30 — Fire Extinguishing Equipment Uninspected Vessel

(1) A manually activated Category 2 406 MHz EPIRB; or

(2) A float-free, automatically activated Category 1 406 MHz EPIRB.

[CGD 87–016a, 58 FR 13367, Mar. 10, 1993; 58 FR 27658, May 11, 1993, as amended by CGD 95–028, 62 FR 51196, Sept. 30, 1997; USCG-1998–4442, 63 FR 52189, Sept. 30, 1998]

§ 25.26–50 Servicing of EPIRBs.

(a) The master of each vessel required to have an EPIRB under this subpart shall ensure that each EPIRB on board is tested and serviced as required by this section.

(b) The EPIRB must be tested immediately after installation and at least once each month thereafter, unless it is an EPIRB installed in a Coast Guard approved inflatable liferaft that is tested annually during the servicing of the liferaft by an approved servicing facility. The test shall be conducted in accordance with the manufacturer's instructions, using the visual or audio indicator on the EPIRB. If the EPIRB is not operating, it must be repaired or replaced with an operating EPIRB.

(c) The battery of the EPIRB must be replaced—

(1) Immediately after the EPIRB is used for any purpose other than being tested; and

(2) Before the expiration date that is marked on the battery.

[CGD 87–016a, 58 FR 13367, Mar. 10, 1993; 58 FR 27658, May 11, 1993]

§ 25.26–60 Exemptions.

(a) A skiff or work boat is not required to carry an EPIRB if—

(1) Its ''mother ship'' is required to carry an EPIRB under this subpart; and

(2) When not in use, the skiff or work boat is carried on board the mother ship.

(b) Each Coast Guard District Commander may, on a case-by-case basis, grant exemptions from the carriage requirements of EPIRBs in this subpart for certain geographic areas within the boundaries of his or her own district if the District Commander determines that an EPIRB will not significantly enhance the overall safety of the vessel and crew. Exemptions may be limited to specific time periods. Exemptions granted under this paragraph must be:

(1) Issued in writing by the cognizant Coast Guard District Commander for each individual application; and

(2) For geographic locations and may be limited to specific time periods.

Subpart 25.30—Fire Extinguishing Equipment

§ 25.30–1 Applicability; preemptive effect.

This subpart applies to all vessels contracted for on or after November 19, 1952, except that § 25.30–90 of this subpart applies to vessels contracted for before that date, and the regulations in this subpart have preemptive effect over State or local regulations in the same field.

[USCG–2006–24797, 77 FR 33871, June 7, 2012]

§ 25.30–5 General provisions.

(a) Where equipment in this subpart is required to be of an approved type, such equipment requires the specific approval of the Commandant. Such approvals are published in the FEDERAL REGISTER, and in addition, are contained in Coast Guard publication COMDTINST M16714.3 (Series), Equipment Lists.

(b) All hand portable fire extinguishers, semiportable fire extinguishing systems, and fixed fire extinguishing systems shall be of an approved type.

[CGFR 65–50, 30 FR 16653, Dec. 30, 1965, as amended by CGD 96–041, 61 FR 50726, Sept. 27, 1996]

§ 25.30–10 Hand-portable fire extinguishers and semi-portable fire-extinguishing systems.

(a) Hand portable fire extinguishers and semiportable fire extinguishing systems are classified by a combination letter and number symbol. The letter indicating the type of fire which the unit could be expected to extinguish, and the number indicating the relative size of the unit.

(b) For the purpose of this subchapter, all required hand portable fire extinguishers and semiportable fire extinguishing systems are of the ''B'' type; i.e., suitable for extinguishing fires involving flammable liquids, greases, etc.

(c) The number designations for size run from ''I'' for the smallest to ''V'' for the largest. Sizes I and II are hand-portable fire extinguishers; sizes III, IV, and V are semi-portable fire-extinguishing systems, which must be fitted with hose and nozzle or other practical means to cover all portions of the space involved. Examples of the sizes for some of the typical hand-portable fire extinguishers and semi-portable fire-extinguishing systems appear in table 25.30–10(C):

TABLE 25.30–10(c)

Classification	Foam, liters (gallons)	Carbon dioxide, kilograms (pounds)	Dry chemical, kilograms (pounds)
B-I	6.5 (1¾)	2 (4)	1 (2)
B-II	9.5 (2½)	7 (15)	4.5 (10)
B-III	45 (12)	16 (35)	9 (20)
B-IV	75 (20)	23 (50)	13.5 (30)
B-V	150 (40)	45 (100)	23 (50)

(d) All hand portable fire extinguishers and semiportable fire extinguishing systems shall have permanently attached thereto a metallic name plate giving the name of the item, the rated capacity in gallons, quarts, or pounds, the name and address of the person or firm for whom approved, and the identifying mark of the actual manufacturer.

(e) Vaporizing-liquid type fire extinguishers containing carbon tetrachloride or chlorobromomethane or other toxic vaporizing liquids are not acceptable as equipment required by this subchapter.

(f) Hand portable or semiportable extinguishers which are required on their name plates to be protected from freezing shall not be located where freezing temperatures may be expected.

(g) The use of dry chemical, stored pressure, fire extinguishers not fitted with pressure gauges or indicating devices, manufactured prior to January 1, 1965, may be permitted on motorboats and other vessels so long as such extinguishers are maintained in good and serviceable condition. The following maintenance and inspections are required for such extinguishers:

(1) When the date on the inspection record tag on the extinguishers shows that 6 months have elapsed since last weight check ashore, then such extinguisher is no longer accepted as meeting required maintenance conditions until reweighed ashore and found to be in a serviceable condition and within required weight conditions.

(2) If the weight of the container is ¼ ounce less than that stamped on container, it shall be serviced.

(3) If the outer seal or seals (which indicate tampering or use when broken) are not intact, the boarding officer or marine inspector will inspect such extinguisher to see that the frangible disc in neck of the container is intact; and if such disc is not intact, the container shall be serviced.

(4) If there is evidence of damage, use, or leakage, such as dry chemical powder observed in the nozzle or elsewhere on the extinguisher, the container shall be replaced with a new one and the extinguisher properly serviced or the extinguisher replaced with another approved extinguisher.

(h) The dry chemical, stored pressure, fire extinguishers without pressure gauges or indicating devices manufactured after January 1, 1965, shall not be labeled with the marine type label bed in § 162.028–4 of this title nor shall such extinguishers manufactured after January 1, 1965, be carried on board motorboats or other vessels as required equipment.

[CGFR 65–50, 30 FR 16653, Dec. 30, 1965, as amended by CGFR 68–32, 33 FR 5711, Apr. 12, 1968; CGFR 69–18, 34 FR 5723, Mar. 27, 1969; USCG–2000–6931, 68 FR 22611, Apr. 29, 2003; 69 FR 34068, June 18, 2004]

§ 25.30–15 Fixed fire-extinguishing systems.

When a fixed fire-extinguishing system is installed, it must be a type approved or accepted by the Commandant (CG–ENG–4) or the Commanding Officer, U.S. Coast Guard Marine Safety Center.

[USCG–2006–24797, 77 FR 33871, June 7, 2012]

§ 25.30–20 Fire extinguishing equipment required.

(a) *Motorboats.* (1) All motorboats shall carry at least the minimum number of hand portable fire extinguishers set forth in table 25.30–20(a)(1), except that motorboats less than 26 feet in length, propelled by outboard motors and not carrying passengers for hire,

need not carry such portable fire extinguishers if the construction of such motorboats will not permit the entrapment of explosive or flammable gases or vapors.

TABLE 25.30–20(a)(1)

Length, feet	Minimum number of B-1 hand portable fire extinguishers required [1]	
	No fixed fire extinguishing system in machinery space	Fixed fire extinguishing system in machinery space
Under 16	1	0
16 and over, but under 26	1	0
26 and over, but under 40	2	1
40 and over, but not over 65	3	2

[1] One B-11 hand portable fire extinguisher may be substituted for two B-I hand portable fire extinguishers.

(2) The intent of this regulation is illustrated in Figure 25.30–20(a1) where fire extinguishers are required if any one or more of the specified conditions exist, and in Figure 25.30–20(a2) where specified conditions do not, in themselves, require that fire extinguishers be carried.

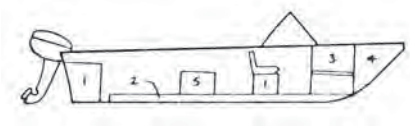

FIGURE 25.30–20(a1)

Fire extinguishers are required if any one or more of the following conditions exist (numbers identifying conditions are the same as those placed in Figure 25.30–20 (a1)):

1. Closed compartment under thwarts and seats wherein portable fuel tanks may be stored.
2. Double bottoms not sealed to the hull or which are not completely filled with flotation material.
3. Close living spaces.
4. Closed stowage compartments in which combustible or flammable materials are stowed.
5. Permanently installed fuel tanks.

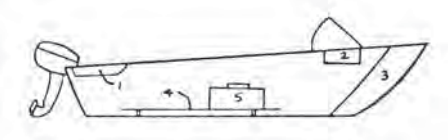

FIGURE 25.30–20(a2)

The following conditions do not, in themselves, require that fire extinguishers be carried (numbers identifying conditions are the same as those placed in Figure 25.30–20(a2)):

1. Bait wells.
2. Glove compartments.
3. Buoyant flotation material.
4. Open slatted flooring.
5. Ice chests.

(b) *Uninspected passenger vessels of at least 100 gross tons.* All uninspected passenger vessels of at least 100 gross tons must carry onboard hand-portable and semi-portable fire extinguishers per table 76.50–10(a) in § 76.50–10 of this chapter.

(c) *Motor vessels.* (1) All motor vessels shall carry at least the minimum number of hand portable fire extinguishers set forth in table 25.30–20(b) (1).

TABLE 25.30–20(b)(1)

Gross tonnage—		Minimum number of B-II hand portable fire extinguishers
Over	Not over	
.....	50	1
50	100	2
100	500	3
500	1,000	6
1,000	.....	8

(2) In addition to the hand portable fire extinguishers required by paragraph (b)(1) of this section, the following fire-extinguishing equipment shall be fitted in the machinery space:

(i) One Type B-II hand portable fire extinguisher shall be carried for each 1,000 B. H. P. of the main engines or fraction thereof. However, not more than 6 such extinguishers need be carried.

(ii) On motor vessels of over 300 gross tons, either one Type B-III semiportable fire-extinguishing system shall be fitted, or alternatively, a fixed fire-extinguishing system shall be fitted in the machinery space.

(3) The frame or support of each Type B-III fire extinguisher required by paragraph (b)(2)(ii) of this section must be welded or otherwise permanently attached to a bulkhead or deck.

(4) If an approved semiportable fire extinguisher has wheels and is not required by this section, it must be securely stowed when not in use to prevent it from rolling out of control under heavy sea conditions.

(d) *Barges carrying passengers.* (1) Every barge of 65 feet in length or less

while carrying passengers when towed or pushed by a motorboat, motor vessel, or steam vessel shall be fitted with hand portable fire extinguishers as required by table 25.30–20(a)(1), depending upon the length of the barge.

(2) Every barge of over 65 feet in length while carrying passengers when towed or pushed by a motorboat, motor vessel, or steam vessel shall be fitted with hand portable fire extinguishers as required by table 25.30–20(b)(1), depending upon the gross tonnage of the barge.

[CGFR 65–50, 30 FR 16653, Dec. 30, 1965, as amended by CGD 77–039, 44 FR 34132, June 14, 1979; CGD 97–057, 62 FR 51042, Sept. 30, 1997; USCG–1999–5040, 67 FR 34776, May 15, 2002]

§ 25.30–90 Vessels contracted for prior to November 19, 1952.

(a) Vessels contracted for prior to November 19, 1952, shall meet the applicable provisions of §§ 25.30–5 through 25.30–20 insofar as the number and general type of equipment is concerned. Existing items of equipment and installations previously approved but not meeting the applicable requirements for type approval may be continued in service so long as they are in good condition. All new installations and replacements shall meet the requirements of §§ 25.30–5 through 25.30–20.

(b) [Reserved]

Subpart 25.35—Backfire Flame Control

§ 25.35–1 Requirements.

(a) Every gasoline engine installed in a motorboat or motor vessel after April 25, 1940, except outboard motors, shall be equipped with an acceptable means of backfire flame control.

(b) Installations made before November 19, 1952, need not meet the detailed requirements of this subpart and may be continued in use as long as they are serviceable and in good condition. Replacements shall meet the applicable conditions in this section.

(c) Installations consisting of backfire flame arresters bearing basic Approval Nos. 162.015 or 162.041 or engine air and fuel induction systems bearing basic Approval Nos. 162.015 or 162.042 may be continued in use as long as they are serviceable and in good condition. New installations or replacements must meet applicable requirements of subpart 58.10 of this chapter.

[CGFR 65–50, 30 FR 16653, Dec. 30, 1965, as amended by CGD 88–032, 56 FR 35820, July 29, 1991]

Subpart 25.40—Ventilation

§ 25.40–1 Tanks and engine spaces.

(a) All motorboats or motor vessels, except open boats and as provided in paragraphs (d) and (e) of this section, the construction or decking over of which is commenced after April 25, 1940, and which use fuel having a flashpoint of 110 °F., or less, shall have at least two ventilator ducts, fitted with cowls or their equivalent, for the efficient removal of explosive or flammable gases from the bilges of every engine and fuel tank compartment. There shall be at least one exhaust duct installed so as to extend from the open atmosphere to the lower portion of the bilge and at least one intake duct installed so as to extend to a point at least midway to the bilge or at least below the level of the carburetor air intake. The cowls shall be located and trimmed for maximum effectiveness and in such a manner so as to prevent displaced fumes from being recirculated.

(b) As used in this section, the term *open boats* means those motorboats or motor vessels with all engine and fuel tank compartments, and other spaces to which explosive or flammable gases and vapors from these compartments may flow, open to the atmosphere and so arranged as to prevent the entrapment of such gases and vapors within the vessel.

(c) Boats built after July 31, 1980, which are manufactured or used primarily for noncommercial use; which are leased, rented, or chartered to another for the latter's noncommercial use; which are engaged in the carriage of six or fewer passengers; or which are in compliance with the requirements of 33 CFR part 183 are exempted from these requirements.

(d) Boats built after July 31, 1978, which are manufactured or used primarily for noncommercial use; which are rented, leased, or chartered to another for the latter's noncommercial

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or hose fitting. Hose complying with SAE J1475 is also acceptable.

(3) Nonmetallic flexible hose complying with SAE J1942 (incorporated by reference in § 27.102) is also acceptable.

(f) A towing vessel of less than 24 meters (79 feet) in length may comply with any of the following standards for fuel systems rather than with those of paragraph (e) of this section:

(1) ABYC H–33 (incorporated by reference in § 27.102).

(2) Chapter 5 of NFPA 302 (incorporated by reference in § 27.102).

(3) 33 CFR chapter I, subchapter S (Boating Safety).

[USCG-2000–6931, 69 FR 34069, June 18, 2004, as amended by USCG–2009–0702, 74 FR 49226, Sept. 25, 2009]

Subpart C—Fire-Suppression Equipment for Towing Vessels

§ 27.301 What are the requirements for fire pumps, fire mains, and fire hoses on towing vessels?

By April 29, 2005, you must provide for your towing vessel either a self-priming, power-driven, fixed fire-pump, a fire main, and hoses and nozzles in accordance with paragraphs (a) through (c) of this section; or a portable pump, and hoses and nozzles, in accordance with paragraphs (d) and (e) of this section.

(a) The fixed fire-pump must be capable of—

(1) Delivering water simultaneously from the two highest hydrants, or from both branches of the fitting if the highest hydrant has a Siamese fitting, at a pitot-tube pressure of at least 344 kPa (50 psi) and a flow rate of at least 300 lpm (80 gpm); and

(2) Being energized remotely from a safe place outside the engine room and from the pump.

(b) All valves necessary for the operation of the fire main must be kept in the open position or must be capable of operation from the same place where the remote fire pump contol is located.

(c) The fire main must have a sufficient number of fire hydrants with attached hose to reach any part of the machinery space using a single length of fire hose.

(d) The hose must be lined commercial fire-hose, at least 40mm (1.5 inches) in diameter, 15 meters (50 feet) in length, and fitted with a nozzle made of corrosion-resistant material capable of providing a solid stream and a spray pattern.

(e) The portable fire pump must be self-priming and power-driven, with—

(1) A minimum capacity of at least 300 lpm (80 gpm) at a discharge gauge pressure of not less than 414 kPa (60 psi), measured at the pump discharge;

(2) A sufficient amount of lined commercial fire hose at least 40mm (1.5 inches) in diameter and 15 meters (50 feet) in length, immediately available to attach to it so that a stream of water will reach any part of the vessel; and

(3) A nozzle made of corrosion-resistant material capable of providing a solid stream and a spray pattern.

(f) You must stow the pump with its hose and nozzle outside of the machinery space.

§ 27.303 What are the requirements for fire-extinguishing equipment on towing vessels in inland service, and on towing vessels in ocean or coastal service whose construction was contracted for before August 27, 2003?

You must carry on your towing vessel both—

(a) The minimum number of hand-portable fire extinguishers required by subpart 25.30 of this part; and

(b) By April 29, 2005, either—

(1) An approved B-V semi-portable fire-extinguishing system to protect the engine room; or

(2) A fixed fire-extinguishing system installed to protect the engine room of the vessel.

§ 27.305 What are the requirements for fire-extinguishing equipment on towing vessels in ocean or coastal service whose construction was contracted for on or after August 27, 2003?

(a) You must carry on your towing vessel both—

(1) The minimum number of hand-portable fire extinguishers required by subpart 25.30 of this part; and

(2) An approved B-V semi-portable fire-extinguishing system to protect the engine room.

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or an accommodation space must not be obstructed.

TABLE 28.140—SCHEDULED MAINTENANCE AND INSPECTION OF LIFESAVING EQUIPMENT

Item	Interval		Regulation
	Monthly	Annually	
(1) Inflatable wearable personal flotation device (Type V commercial hybrid).	.....	Servicing	28.140
(2) Personal flotation devices, exposure suits and immersion suits.	.....	Inspect, clean and repair as necessary.	28.140
(3) Buoyant apparatus and life floats	.....	Inspect, clean and repair as necessary.	28.140
(4) Inflatable liferaft	.....	Servicing [1]	28.140
(5) Inflatable buoyant apparatus	.....	Servicing [1]	28.140
(6) Hydrostatic release	.....	Servicing [1]	28.140
(7) Disposable hydrostatic release	.....	Replace on or before expiration date.	28.140
(8) Undated batteries	.....	Replace	28.140
(9) Dated batteries [2] and other items	.....	Replace on or before expiration date.	25.26–50, 28.140
(10) EPIRB	Test	.....	25.26–50

[1] For a new liferaft or inflatable buoyant apparatus, the first annual servicing may be deferred to two years from the date of first packing if so indicated on the servicing sticker.
[2] Water activated batteries must be replaced whenever they are used.

[CGD 88–079, 56 FR 40393, Aug. 14, 1991; 56 FR 49822, Oct. 1, 1991, as amended at USCG-2001–11118, 67 FR 58540, Sept. 17, 2002; USCG-2004–18884, 69 FR 58344, Sept. 30, 2004]

§ 28.145 Distress signals.

Except as provided by 28.305, each vessel must be equipped with the distress signals specified in table 28.145.

TABLE 28.145—DISTRESS SIGNALS

Area	Devices required
Ocean, more than 50 miles from coastline.	3 parachute flares, approval series 160.136; plus 6 hand flares, approval series 160.121; plus 3 smoke signals, approval series 160.122.
Ocean, 3–50 miles from the coastline; or more than 3 miles from the coastline on the Great Lakes.	3 parachute flares, approval series 160.136, or 160.036; plus 6 hand flares, approval series 160.121 or 160.021; plus 3 smoke signals, approval series 160.122, 160.022, or 160.037.
Coastal waters, excluding the Great Lakes; or within 3 miles of the coastline on the Great Lakes.	Night visual distress signals consisting of one electric distress light, approval series 161.013 or 3 approved flares; plus Day visual distress signals consisting of one distress flag, approval series 160.072, or 3 approved flares, or 3 approved smoke signals.[1]

[1] If flares are carried, the same 3 flares may be counted toward meeting both the day and night requirement.

[CGD 88–079, 56 FR 40393, Aug. 14, 1991, as amended at 60 FR 48048, Sept. 18, 1995; USCG-2000–7790, 65 FR 58458, Sept. 29, 2000]

§ 28.150 Emergency Position Indicating Radio Beacons (EPIRBs).

Each vessel must be equipped with an emergency position indicating radio beacon (EPIRB) as required by 46 CFR part 25, subpart 25.26.

NOTE: Each vessel which uses radio communication equipment must have a Ship Radio Station License issued by the Federal Communications Commission, as set forth in 47 CFR part 80.

§ 28.155 Excess fire detection and protection equipment.

Installation of fire detection and protection equipment in excess of that required by the regulations in this subchapter is permitted provided that the excess equipment does not endanger the vessel or individuals on board in any way. The excess equipment must, at a minimum, be listed and labeled by an independent, nationally recognized testing laboratory and be in accordance with an appropriate industry standard for design, installation, testing, and maintenance.

§ 28.160 Portable fire extinguishers.

(a) Each vessel must meet the requirements of part 25, subpart 25.30 of this chapter.

(b) Each vessel 65 feet (19.8 meters) or more in length must be equipped with the minimum number, location, and type of portable fire extinguishers specified in table 28.160.

TABLE 28.160—PORTABLE FIRE EXTINGUISHERS FOR VESSELS 65 FEET (19.8 METERS) OR MORE IN LENGTH

Space	Classification	Quantity and location
Safety areas, communicating corridors	A-II	1 in each main corridor not more than 150 feet (49.2 meters) apart. (May be located in stairways.)
Pilothouse	C-I	2 in vicinity of exit.
Service spaces, galleys	B-II or C-II	1 for each 2,500 square feet (269.1 sq. meters) or fraction thereof suitable for hazards involved.
Paint lockers	B-II	1 outside space in vicinity of exit.
Accessible baggage and storerooms	A-II	1 for each 2,500 square feet (269.1 sq. meters) or fraction thereof located in the vicinity of exits, either inside or outside the spaces.
Work shops and similar spaces	A-II	1 outside the space in vicinity of exit.
Machinery spaces; Internal combustion propelling machinery.	B-II	1 for each 1,000 brake horsepower or fraction thereof but not less than 2 nor more than 6.
Electric propulsion motors or generator unit of open type.	C-II	1 for each propulsion motor generator unit.
Auxiliary spaces	B-II	1 outside the space in the vicinity of exit.
Internal combustion machinery	B-II	1 outside the space in the vicinity of exit.
Electric emergency motors or generators	C-II	1 outside the space in the vicinity of exit.

[CGD 88–079, 56 FR 40393, Aug. 14, 1991; 56 FR 47679, Sept. 20, 1991]

§ 28.165 Injury placard.

Each vessel must have posted in a highly visible location accessible to the crew a placard measuring at least 5 inches by 7 inches (127 millimeters by 178 millimeters) which reads:

Notice

Report All Injuries

United States law, 46 United States Code 10603, requires each seaman on a fishing vessel, fish processing vessel, or fish tender vessel to notify the master or individual in charge of the vessel or other agent of the employer regarding any illness, disability, or injury suffered by the seaman when in service to the vessel not later than seven days after the date on which the illness, disability, or injury arose.

Subpart C—Requirements for Documented Vessels That Operate Beyond the Boundary Lines or With More Than 16 Individuals On Board, or for Fish Tender Vessels Engaged in the Aleutian Trade

§ 28.200 Applicability.

Each documented commercial fishing industry vessel must meet the requirements of this subpart in addition to the requirements of subparts A and B of this part if it:

(a) Operates beyond the Boundary Lines;

(b) Operates with more than 16 individuals on board; or

(c) Is a fish tender vessel engaged in the Aleutian trade.

[CGD 94–025, 60 FR 54444, Oct. 24, 1995]

§ 28.205 Fireman's outfits and self-contained breathing apparatus.

(a) Each vessel that operates with more than 49 individuals on board must be equipped with at least two fireman's outfits stowed in widely separated locations.

(b) Each vessel that uses ammonia as a refrigerant must be equipped with at least two self-contained breathing apparatuses.

(c) A fireman's outfit must consist of one self-contained breathing apparatus with lifeline attached, one flashlight, a rigid helmet, boots, gloves, protective clothing, and one fire axe.

(d) At least one spare air bottle must be provided for each self-contained breathing apparatus.

(e) Each self-contained breathing apparatus must be approved by the Mine Safety and Health Administration (MSHA) and by the National Institute

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(f) Distribution piping shall be used for no other purpose.

(g) All piping shall be thoroughly cleaned and flushed before installation of the water spray nozzles.

§ 34.25–20 Spray nozzles—T/ALL.

(a) Spray nozzles shall be of an approved type.

§ 34.25–90 Installations contracted for prior to January 1, 1964—T/ALL.

(a) Installations contracted for prior to January 1, 1964, shall meet the following requirements:

(1) Existing arrangements, materials, and facilities previously approved shall be considered satisfactory so long as they meet the minimum requirements of this paragraph and they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standards as the original installation.

(2) The details of the systems shall be in general agreement with §§ 34.25–5 through 34.25–20 insofar as is reasonable and practicable.

Subpart 34.30—Automatic Sprinkler Systems, Details

§ 34.30–1 Application—TB/ALL.

Automatic sprinkler systems shall comply with NFPA 13–1996.

[CGD 95–028, 62 FR 51199, Sept. 30, 1997]

Subpart 34.50—Portable and Semiportable Extinguishers

§ 34.50–1 Application—TB/ALL.

(a) The provisions of this subpart, with the exception of § 34.50–90, shall apply to all vessels contracted for on or after January 1, 1962.

(b) All vessels contracted for prior to January 1, 1962, shall meet the requirements of § 34.50–90.

§ 34.50–5 Classification—TB/ALL.

(a) Portable and semiportable extinguishers shall be classified by a combination letter and number symbol. The letter indicating the type of fire which the unit could be expected to extinguish, and the number indicating the relative size of the unit.

(b) The types of fire will be designated as follows:

(1) ''A'' for fires in ordinary combustible materials such as mattresses, piles of wood, shavings, canvas, etc., where the quenching and cooling effects of quantities of water, or solutions containing large percentages of water, are of first importance.

(2) ''B'' for fires in combustible or flammable liquids such as gasoline, lubricating oil, diesel oil, greases, etc., where a blanketing or smothering effect is essential.

(3) ''C'' for fires in electrical equipment where the use of non-conducting extinguishing agent is of first importance so that electrical shock is not experienced by the firefighter.

(c) The number designations for size will start with ''I'' for the smallest to ''V'' for the largest. Extinguishers which have a gross weight of 55 pounds or less when fully charged are considered portable. Extinguishers which have a gross weight of more than 55 pounds when fully charged are considered semiportable and shall be fitted with suitable hose and nozzle or other practicable means so that all portions of the space concerned may be reached. Examples of size graduations for some of the typical portable and semiportable extinguishers are set forth in table 34.50–5(c).

TABLE 34.50–5(c)

Classification type (Size)	Soda-acid and water (Gallons)	Foam (Gallons)	Carbon dioxide (Pounds)	Dry chemical (Pounds)
A-II	2½	2½	.....	.....
B-I	.....	1¼	4	2
B-II	.....	2½	15	10
B-III	.....	12	35	20
B-IV	.....	20	50	30
B-V	.....	40	[1] 100	[1] 50
C-I	.....	.....	4	2
CC-II	.....	.....	15	10

[1] For outside use, double the amount shall be carried.

§ 34.50–10 Location—TB/ALL.

(a) Approved portable and semiportable extinguishers shall be installed in accordance with table 34.50–10(a). The location of the equipment shall be such as in the opinion of the Officer in Charge, Marine Inspection, will be most convenient in case of emergency. Where special circumstances exist, not covered by table

34.50–10(a), the Officer in Charge, Marine Inspection, may require such additional equipment as he deems necessary for the proper protection of the vessel.

(b) For additional portable extinguishers as a substitute for sand, see § 34.55–10.

(c) Semiportable extinguishers shall be located in the open so as to be readily seen.

(d) If portable extinguishers are not located in the open or behind glass so that they may be readily seen they may be placed in enclosures together with the fire hose, provided such enclosures are marked as required by § 35.40–25 of this subchapter.

(e) Portable extinguishers and their stations shall be numbered in accordance with § 35.40–25 of this subchapter.

(f) Hand portable or semiportable extinguishers which are required on their nameplates to be protected from freezing shall not be located where freezing temperatures may be expected.

TABLE 34.50–10(a)—PORTABLE AND SEMIPORTABLE EXTINGUISHERS

Tank ships		Area	Tank barges	
Quantity and location	Classification (see § 34.50–5)		Classification (see § 34.50–5)	Quantity and location
		Safety Areas		
1 required	C-II	Wheelhouse and chartroom area.		None required.
1 required in vicinity of exit	C-II[1]	Radio room		None required.
		Accommodation Areas		
1 required in each main passageway on each deck, conveniently located, and so that no room is more than 75 feet from an extinguisher.	A-II or B-II	Staterooms, toilet spaces, public spaces, offices, etc., and associated lockers, storerooms, and pantries..	A-II or B-II	1 required in vicinity of exit
		Service Areas		
1 required for each 2,500 square feet or fraction thereof, suitable for hazard involved.	B-II or C-II	Galleys	B-II or C-II	1 required, suitable for hazard involved.
1 required for each 2,500 square feet or fraction thereof, suitable for hazard involved.	A-II or B-II	Stores areas, including paint and lamp rooms.		None required.
		Machinery Area[2]		
2 required[3]	B-II	Spaces containing oil fired boilers, either main or auxiliary, or any fuel oil units subject to the discharge pressure of the fuel oil service pump.	B-II	1 required.[12]
	and			
1 required	B-V[4].			
1 required for each 1,000 B.H.P., but not less than 2 nor more than 6[5].	B-II	Spaces containing internal combustion or gas turbine propulsion machinery.		None required.
	and			
1 required[6 7]	B-III.			
1 required in vicinity of exit[7].	B-II	Auxiliary spaces containing internal combustion or gas turbine units.	B-II	1 required in vicinity of exit.[7 9,12]
1 required in vicinity of exit[8].	C-II	Auxiliary spaces containing emergency generators.		None required.
		Cargo Areas		
1 required in lower pumproom.	B.II	Pumprooms	B-II	1 required in vicinity of exit.[9 12]
None required		Cargo tank area	B-II	2 required.[10 12]
			B-V	1 required.[9 11]

[1] Vessels not on an international voyage may substitute 2 C-I.

[2] A C-II shall be immediately available to the service generator and main switchboard areas, and further, a C-II shall be conveniently located not more than 50 feet walking distance from any point in all main machinery operating spaces. These extinguishers need *not* be in addition to other required extinguishers.
[3] Vessels of less than 1,000 gross tons require 1.
[4] Vessels of less than 1,000 gross tons may substitute 1 B-IV.
[5] Only 1 required for vessels under 65 feet in length.
[6] If oil burning donkey boiler fitted in space, the B-V previously required for the protection of the boiler may be substituted. Not required where a fixed carbon dioxide system is installed.
[7] Not required on vessels of less than 300 gross tons if fuel has a flashpoint higher than 110 °F.
[8] Not required on vessels of less than 300 gross tons.
[9] Not required if fixed system installed.
[10] If no cargo pump on barge, only one B-II required.
[11] Manned barges of 100 gross tons and over only.
[12] Not required on unmanned barges except during transfer of cargo, or operation of barge machinery, or boilers. (See § 35.35–1(c) of this chapter.)

[CGFR 65–50, 30 FR 16694, Dec. 30, 1965, as amended by CGFR 70–143, 35 FR 19905, Dec. 30, 1970]

§ 34.50–15 Spare charges—TB/ALL.

(a) Spare charges shall be carried on all vessels for at least 50 percent of each size and each variety, i.e. foam, soda-acid, carbon dioxide, etc., of portable extinguisher required by § 34.50–10(a). However, if the unit is of such variety that it cannot be readily recharged by the vessel's personnel, one spare unit of the same classification shall be carried in lieu of spare charges for all such units of the same size and variety. This section does not apply to unmanned barges.

(b) Spare charges shall be so packaged as to minimize the hazards to personnel while recharging the units.

§ 34.50–20 Semiportable fire extinguishers—TB/ALL

(a) The frame or support of each size III, IV, and V fire extinguisher required by table 34.50–10(a) must be welded or otherwise permanently attached to a bulkhead or deck.

(b) If a size III, IV, or V fire extinguisher has wheels and is not required by table 34.50–10(a), it must be securely stowed when not in use to prevent it from rolling out of control under heavy sea conditions.

[CGD 77–039, 44 FR 34132, June 14, 1979]

§ 34.50–90 Vessels contracted for prior to January 1, 1962—TB/ALL.

(a) Vessels contracted for prior to January 1, 1962, shall meet the following requirements:

(1) The provisions of §§ 34.50–5 through 34.50–15 shall be met with the exception that existing installations may be maintained if in the opinion of the Officer in Charge, Marine Inspection, they are in general agreement with the degree of safety prescribed by table 34.50–10(a). In such cases, minor modifications may be made to the same standard as the original installation: *Provided*, That in no case will a greater departure from the standards of table 34.50–10(a) be permitted than presently exists.

(2) [Reserved]

(b) [Reserved]

Subpart 34.60—Fire Axes

§ 34.60–1 Application—T/ALL.

(a) The provisions of this subpart shall apply to all tankships.

(b) [Reserved]

§ 34.60–5 Number required—T/ALL.

(a) All tankships shall carry at least the minimum number of fire axes as set forth in table 34.60–5(a). Nothing in this paragraph shall be construed as limiting the Officer in Charge, Marine Inspection, from requiring such additional fire axes as he deems necessary for the proper protection of the tankship.

TABLE 34.60–5(a)

Gross tons		Number of axes
Over	Not over	
	50	1
50	200	2
200	500	3
500	1,000	4
1,000	.....	5

(b) [Reserved]

§ 34.60–10 Location—T/ALL.

(a) Fire axes shall be distributed throughout the spaces so as to be most readily available in the event of emergency.

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Cargo & Miscellaneous Vessels

§ 95.17–90 Installations contracted for prior to November 19, 1952.

(a) Installations contracted for prior to November 19, 1952, shall meet the following requirements:

(1) Existing arrangements, materials, and facilities previously approved shall be considered satisfactory so long as they meet the minimum requirements of this paragraph and they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standards as the original installation.

(2) The details of the systems shall be in general agreement with §§ 95.17–5 through 95.17–20, with the exception of § 95.17–5(a)(2), insofar as is reasonable and practicable. A 6-inch blanket of foam in 5 minutes for tanks and 3 minutes for other spaces will be considered as meeting the requirements of § 95.17–5.

Subpart 95.30—Automatic Sprinkler Systems, Details

§ 95.30–1 Application.

Automatic sprinkler systems shall comply with NFPA 13–1996.

[CGD 95–028, 62 FR 51207, Sept. 30, 1997]

Subpart 95.50—Hand Portable Fire Extinguishers and Semiportable Fire Extinguishing Systems, Arrangements and Details

§ 95.50–1 Application.

(a) The provisions of this subpart, with the exception of § 95.50–90, shall apply to all vessels, other than unmanned barges and fishing vessels, contracted for on or after November 19, 1952. Such vessels contracted for prior to November 19, 1952, shall meet the requirements of § 95.50–90.

§ 95.50–5 Classification.

(a) Hand portable fire extinguishers and semiportable fire extinguishing systems shall be classified by a combination letter and number symbol. The letter indicating the type of fire which the unit could be expected to extinguish, and the number indicating the relative size of the unit.

(b) The types of fire will be designated as follows:

(1) ''A'' for fires in ordinary combustible materials where the quenching and cooling effects of quantities of water, or solutions containing large percentages of water, are of first importance.

(2) ''B'' for fires in flammable liquids, greases, etc., where a blanketing effect is essential.

(3) ''C'' for fires in electrical equipment where the use of nonconducting extinguishing agent is of first importance.

(c) The number designations for size will start with ''I'' for the smallest to ''V'' for the largest. Sizes I and II are considered hand portable fire extinguishers and sizes III, IV, and V are considered semiportable fire extinguishing systems which shall be fitted with suitable hose and nozzle or otherpracticable means so that all portions of the space concerned may be covered. Examples of size graduations for some of the typical hand portable and semiportable fire extinguishing systems are set forth in Table 95.50–5(c).

TABLE 95.50–5(c)

Classification		Soda-acid and water, gallons	Foam, gallons	Carbon dioxide, pounds	Dry chemical, pounds
Type	Size				
A	II	2½	2½		
B	I		1¼	4	2
B	II		2½	15	10
B	III		12	35	20
B	IV		20	50	30
B	V		40	100	50
C	I			4	2
C	II			15	10

(d) All hand portable fire extinguishers and semiportable fire extinguishing systems shall have permanently attached thereto a metallic name plate giving the name of the item, the rated capacity in gallons, quarts, or pounds, the name and address of the person or firm for whom approved, and the identifying mark of the actual manufacturer.

(e) Vaporizing-liquid type fire extinguishers containing carbon tetrachloride or chlorobromomethane or

other toxic vaporizing liquids shall be removed from all vessels.

§ 95.50–10 Location.

(a) Approved hand portable fire extinguishers and semiportable fire extinguishing systems shall be installed in accordance with Table 95.50–10(a). The location of the equipment shall be to the satisfaction of the Officer in Charge, Marine Inspection. Nothing in this paragraph shall be construed as limiting the Officer in Charge, Marine Inspection, from requiring such additional equipment as he deems necessary for the proper protection of the vessel.

TABLE 95.50–10(a)—HAND PORTABLE FIRE EXTINGUISHER AND SEMIPORTABLE FIRE-EXTINGUISHING SYSTEMS

Space	Classification (see § 95.50–5)	Quantity and location
Safety areas[1]		
Wheelhouse or fire control room	.....	None required.
Stairway and elevator enclosures	.....	Do.
Communicating corridors	A-II	1 in each main corridor not more than 150 feet apart. (May be located in stairways.)
Lifeboat embarkation and lowering stations	.....	None required.
Radio room.		
C-I[2]	2 in vicinity of exit.[2].	
Accommodations[1]		
Staterooms, toilet spaces, public spaces, offices, lockers, isolated storerooms, and pantries, open decks, etc.	.....	None required.
Service spaces[1]		
Galleys	B-II or C-II	1 for each 2,500 square feet or fraction thereof suitable for hazards involved.
Paint and lamp rooms	B-II	1 outside space in vicinity of exit.
Accessible baggage, mail, and specie rooms, and storerooms	A-II	1 for each 2,500 square feet or fraction thereof located in vicinity of exits, either inside or outside the spaces.
Carpenter shop and similar spaces	A-II	1 outside the space in vicinity of exit.
Machinery spaces		
Coal-fired boilers: Bunker and boiler space	.....	None required.
Oil-fired boilers: Spaces containing oil-fired boilers, either main or auxiliary, or their fuel-oil units.	B-II; B-V	2 required[3]; 1 required.[4]
Internal combustion or gas turbine propelling machinery spaces	B-II	1 for each 1,000 brake horsepower, but not less than 2 nor more than 6.[5]
	B-III	1 required.[6][7]
Electric propulsive motors or generators of open type	C-II	1 for each propulsion motor or generator unit.
Enclosed ventilating systems for motors and generators of electric propelling machinery.	.....	None required.
Auxiliary spaces:		
Internal combustion or gas turbine	B-II	1 outside the space in vicinity of exit.[7]
Electric emergency motors or generators	C-II	1 outside the space in vicinity of exit.[8]
Steam	.....	None required.
Trunks to machinery spaces	.....	Do.
Fuel tanks	.....	Do.
Cargo spaces		
Inaccessible during voyage, including trunks and cargo tanks	.....	Do.
Accessible during voyage	.....	Do.

[1] For motorboats, the total number of hand portable fire extinguishers required for safety areas, accommodation spaces, and service spaces shall be 1 B-II for motorboats of less than 50 gross tons and 2 B-II for motor boats of 50 gross tons and over. Two B-I hand portable fire extinguishers may be substituted for 1 B-II.

[2] For vessels on an international voyage, substitute 1 C-II in vicinity of exit.

[3] Vessels of less than 1,000 gross tons require 1.

[4] Vessels of less than 1,000 gross tons may substitute 1 B-IV.

[5] Only 1 required for motorboats.

[6] If oil burning donkey boiler fitted in space, the B-V previously required for the protection of the boiler may be substituted. Not required where a fixed carbon dioxide system is installed.

[7] Not required on vessels of less than 300 gross tons if fuel has a flashpoint higher than 110 °F.

[8] Not required on vessels of less than 300 gross tons.

(b) Semiportable fire extinguishing systems shall be located in the open so as to be readily seen.

(c) If hand portable fire extinguishers are not located in the open or behind glass so that they may be readily seen, they may be placed in enclosures together with the fire hose, provided such enclosures are marked as required by § 97.37–15 of this subchapter.

(d) Hand portable fire extinguishers and their stations shall be numbered in accordance with § 97.37–23 of this subchapter.

(e) Hand portable or semiportable extinguishers, which are required on their nameplates to be protected from freezing, shall not be located where freezing temperatures may be expected.

§ 95.50–15 Spare charges.

(a) For all vessels other than motorboats spare charges shall be carried for at least 50 percent of each size and each variety, i.e. foam, soda-acid, carbon dioxide, etc., of hand portable fire extinguisher required by § 95.50–10(a). However, if the unit is of such variety that it cannot be readily recharged by the vessel's personnel, one spare unit of the same classification shall be carried in lieu of spare charges for all such units of the same size and variety.

(b) Spare charges shall be so packaged as to minimize the hazards to personnel while recharging the units. Acid shall be contained in a Crown stopper type of bottle.

§ 95.50–20 Semiportable fire extinguishers.

(a) The frame or support of each size III, IV, and V fire extinguisher required by Table 95.50–10(a) must be welded or otherwise permanently attached to a bulkhead or deck.

(b) If an approved size III, IV, or V fire extinguisher has wheels and is not required by Table 95.50–10(a), it must be securely stowed when not in use to prevent it from rolling out of control under heavy sea conditions.

[CGD 77–039, 44 FR 34133, June 14, 1979]

§ 95.50–90 Vessels contracted for prior to November 19, 1952.

(a) Vessels contracted for prior to November 19, 1952, shall meet the following requirements:

(1) The provisions of §§ 95.50–5 through 95.50–15 shall be met with the exception that existing installations in safety areas and service spaces may be maintained if in the opinion of the Officer in Charge, Marine Inspection, they are in general agreement with the degree of safety prescribed by Table 95.50–10(a). In such cases, minor modifications may be made to the same standard as the original installation: *Provided*, That in no case will a greater departure from the standards of Table 95.50–10(a) be permitted than presently exists.

Subpart 95.60—Fire Axes

§ 95.60–1 Application.

(a) The provisions of this subpart shall apply to all vessels other than motorboats.

§ 95.60–5 Number required.

(a) All vessels except barges shall carry at least the minimum number of fire axes as set forth in Table 95.60–5(a). Nothing in this paragraph shall be construed as limiting the Officer in Charge, Marine Inspection, from requiring such additional fire axes as he deems necessary for the proper protection of the vessel.

TABLE 95.60–5(a)

Gross tons		Number of axes
Over	Not over	
	50	1
50	200	2
200	500	4
500	1,000	6
1,000		8

(b) Manned barges shall carry at least two fire axes.

§ 95.60–10 Location.

(a) Fire axes shall be distributed throughout the spaces available to persons on board so as to be most readily available in the event of emergency.

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be protected from icing and freezing, and be capable of operation within 10 seconds after activation of its controls.

(d) Each system must have at least one hose at each of the two access routes required by §108.235(f) of this part. Each hose must be reel mounted and long enough to cover any point on the helicopter deck. Each hose that discharges foam must have a nozzle that has foam stream, foam spray, and off positions.

§ 108.489 Helicopter fueling facilities.

(a) Each helicopter fueling facility must have a fire protection system that discharges one of the following agents in the amounts prescribed for the agents over the area of the fuel containment systems around marine portable tanks, fuel transfer pumps and fuel hose reels:

(1) Protein foam at the rate of 6.52 liters per minute for each square meter (.16 gallons per minute for each square foot) of area covered for five minutes.

(2) Aqueous film forming foam at the rate of 4.07 liters per minute for each square meter (.1 gallon per minute for each square foot) of area covered for five minutes.

(3) 22.5 kilograms (50 pounds) of dry chemical (B-V semi-portable) for each fueling facility of up to 27.87 square meters (300 square feet).

(b) If the fire protection system required by §108.487 of this subpart is arranged so that it covers both a helicopter fueling facility and a landing deck, the system must have the quantity of agents required by this section in addition to the quantity required by §108.487.

HAND PORTABLE AND SEMIPORTABLE FIRE EXTINGUISHING SYSTEMS

§ 108.491 General.

Each hand portable and semiportable fire extinguisher on a unit must be approved under Subpart 162.028 or 162.039 of this chapter.

§ 108.493 Location.

(a) Each unit must have the hand portable and semiportable fire extinguishers prescribed in Table 108.495(a) of this subpart and installed in the locations prescribed in the table.

(b) Each portable and semi-portable fire extinguisher must be visible and readily accessible.

(c) The location, size, and number of each portable and semiportable fire extinguisher on a unit must be acceptable to the appropriate OCMI. The OCMI may require extinguishers in addition to those prescribed in Table 108.495(a) if he considers them necessary for fire protection on the unit.

(d) Each hand portable and semiportable fire extinguisher that has a nameplate which states that it is to be protected from freezing, must be located where freezing temperatures do not occur.

§ 108.495 Spare charges.

(a) Each unit must have enough spare charges for 50 percent of the hand portable fire extinguishers required under Table 108.495(a) of this subpart that are rechargeable by personnel on the unit.

(b) If a unit has extinguishers that cannot be recharged by personnel on unit, it must also have at least one spare extinguisher for each classification and variety of those extinguishers.

TABLE 108.495(a)—HAND PORTABLE FIRE EXTINGUISHERS AND SEMIPORTABLE FIRE-EXTINGUISHING SYSTEMS

Space	Classification (see table 108.495(b))	Quantity and location
SAFETY AREAS		
Wheelhouse and control room	C-I	2 in vicinity of exit.
Stairway and elevator enclosure		None required.
Corridors	A-II	1 in each corridor not more than 150 ft (45 m) apart. (May be located in stairways.)
Lifeboat embarkation and lowering stations		None required.
Radio room	C-I	2 in vicinity of exit.

TABLE 108.495(a)—HAND PORTABLE FIRE EXTINGUISHERS AND SEMIPORTABLE FIRE-EXTINGUISHING SYSTEMS—Continued

Space	Classification (see table 108.495(b))	Quantity and location
ACCOMMODATIONS		
Staterooms, toilet spaces, public spaces, offices, lockers, small storerooms, and pantries, open decks, and similar spaces.	.....	None required.
SERVICE SPACES		
Galleys	B-II or C-II	1 for each 2,500 ft^2 (232 m^2) or fraction thereof suitable for hazards involved.
Paint and lamp rooms	B-II	1 outside each room in vicinity of exit.
Storerooms	A-II	1 for each 2,500 ft^2 (232 m^2) or fraction thereof located in vicinity of exits, either inside or outside the spaces.
Work shop and similar spaces	C-II	1 outside each space in vicinity of an exit.
MACHINERY SPACES		
Oil-fired boilers: Spaces containing oil-fired boilers, either main or auxiliary, or their fuel oil units.	B-II	2 required in each space.
	B-V	1 required in each space.
Internal combustion or gas turbine propelling machinery spaces.	B-II	1 for each 1,000 brake horsepower but not less than 2 nor more than 6 in each space.
	B-III	1 required in each space. See note 1.
Motors or generators of electric propelling machinery that do not have an enclosed ventilating system.	C-II	1 for each motor or generator.
Motors and generators of electric propelling machinery that have enclosed ventilating systems.	.....	None required.
AUXILIARY SPACES		
Internal combustion engines or gas turbine	B-II	Outside the space containing engines or turbines in vicinity of exit.
Electric emergency motors or generators	C-II	1 outside the space containing motors or generators in vicinity of exit.
Steam driven auxiliary machinery	.....	None required.
Trunks to machinery spaces	.....	Do.
Fuel tanks	.....	Do.
MISCELLANEOUS AREAS		
Helicopter landing decks	B-V	1 at each access route.
Helicopter fueling facilities	B-IV	1 at each fuel transfer facility. See note 2.
Drill floor	C-II	2 required.
Cranes with internal combustion engines	B-II	1 required.

Notes: 1. Not required where a fixed gas extinguishing system is installed.
2. Not required where a fixed foam system is installed in accordance with § 108.489 of this subpart.

TABLE 108.495(b)

	Classification: Type and size	Water liters (gallons)	Foam liters (gallons)	Carbon dioxide kilograms (pounds)	Dry chemical kilograms (pounds)	Halon 1211 kilograms (pounds)
A	II	9.5 (2½)	9.5 (2½)	.....	2.25 (5)[3].	
B	I	.....	4.7 (1¼)	1.8 (4)	0.9 (2)	1.1 (2½)
B	II	.....	9.5 (2½)	6.7 (15)	4.5 (10)	4.5 (10)[5]
B	III	.....	45.5 (12)	15.8 (35)	9.0 (20).	
B	IV	.....	7.6 (20)	22.5 (50)	13.5 (30).	
B	V	.....	152 (40)	45 (100)[4]	22.5 (50)[4].	
C	I	.....	.....	1.8 (4)	0.9 (2).	
C	II	.....	.....	6.7 (15)	4.5 (10).	
C	III	.....	.....	15.8 (35)	9.0 (20).	
C	IV	.....	.....	22.5 (50)	13.5 (30).	

NOTE: 1. Fire extinguishers are designed by type as follows: (a) "A" for fires in combustible materials such as wood. (b) "B" for fires in flammable liquids and greases. (c) "C" for fires in electrical equipment.
2. Fire extinguishers are designated by size where size "I" is the smallest and size "V" is the largest. Sizes "I" and "II" are hand-portable extinguishers and sizes "III", "IV", and "V" are semiportable extinguishers.
3. Must be specifically approved as a type A, B, or C extinguisher.
4. For outside use, double the quantity of agent that must be carried.
5. For outside use only.

§ 108.496 Semiportable fire extinguishers.

(a) The frame or support of each size III, IV, and V fire extinguisher required by Table 108.495(a), except a wheeled size V extinguisher provided for a helicopter landing deck, must be welded or otherwise permanently attached to a bulkhead or deck.

(b) If the following semiportable fire extinguishers have wheels, they must be securely stowed when not in use to prevent them from rolling out of control under heavy sea conditions:

(1) Each size V extinguisher required for a helicopter landing deck.

(2) Each size III, IV, and V extinguisher that is not required by Table 108.495(a).

[CGD 77–039, 44 FR 34133, June 14, 1979]

MISCELLANEOUS FIREFIGHTING EQUIPMENT

§ 108.497 Fireman's outfits.

Each unit must have at least 2 fireman's outfits. Each fireman's outfit on a unit must consist of—

(a) A pressure-demand, open-circuit, self-contained breathing apparatus, approved by the Mine Safety and Health Administration (MSHA) and by the National Institute for Occupational Safety and Health (NIOSH) and having at a minimum a 30-minute air supply, a full facepiece, and a spare charge; but a self-contained compressed-air breathing apparatus previously approved by MSHA and NIOSH under part 160, subpart 160.011, of this chapter may continue in use as required equipment if it was part of the vessel's equipment on November 23, 1992, and as long as it is maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection;

(b) A Type II or Type III flashlight constructed and marked in accordance with ASTM F 1014 (incorporated by reference, see § 108.101).

(c) An oxygen and explosive meter with the Underwriter's Laboratories, Inc. label or the Factory Mutual label;

(d) A lifeline that—

(1) Is attached to a belt or a suitable harness;

(2) Is made of bronze wire rope, inherently corrosion resistant steel wire rope, or galvanized or tinned steel wire rope;

(3) Is made up of enough 15.2 meters (50 foot) or greater lengths of wire rope to permit use of the outfit in any location on the unit;

(4) Has each end fitted with a hook with a 16 millimeters (5⁄8 inch) throat opening for the keeper; and

(5) Has a minimum breaking strength of 680 kilograms (1,500 pounds).

(e) Boots and gloves that are made of rubber or other electrically non-conductive material;

(f) A helmet that meets the requirements in ANSI standard Z–89.1–1969; and

(g) Clothing that protects the skin from scalding steam and the heat of fire and that has a water resistant outer surface.

[CGD 73–251, 43 FR 56808, Dec. 4, 1978, as amended by CGD 82–042, 53 FR 17705, May 18, 1988; CGD 86–036, 57 FR 48326, Oct. 23, 1992; USCG 1999–5151, 64 FR 67182, Dec. 1, 1999]

§ 108.499 Fire axes.

Each unit must have at least two fire axes.

Subpart E—Lifesaving Equipment

SOURCE: CGD 84–069, 61 FR 25291, May 20, 1996, unless otherwise noted.

§ 108.500 General.

(a) Each unit, other than a drillship, must meet the requirements in this subpart.

(b) Each drillship must meet the lifesaving system requirements in subchapter W of this chapter for a tank vessel certificated to carry cargoes that have a flash point less than 60 °C as determined under ASTM D 93 (incorporated by reference, see § 108.101).

(c) The OCMI may require a unit to carry specialized or additional lifesaving equipment other than as required by this part, if the OCMI determines the conditions of the unit's service present uniquely hazardous circumstances which are not adequately addressed by existing requirements.

[CGD 84–069, 61 FR 25291, May 20, 1996, as amended at 63 FR 52814, Oct. 1, 1998; USCG 1999–5151, 64 FR 67182, Dec. 1, 1999]

§ 108.503 Relationship to international standards.

For the purposes of this part, any unit carrying a valid IMO MODU Safety Certificate, including a listing of lifesaving equipment as required by the 1989 IMO MODU Code, is considered to have met the requirements of this subpart if, in addition to the requirements of the 1989 IMO MODU Code, it meets the following requirements:

(a) Each new lifeboat and launching appliance may be of aluminum construction only if its stowage location is protected with a water spray system in accordance with §108.550(d) of this chapter.

(b) Each lifejacket, immersion suit, and emergency position indicating radiobeacon (EPIRB) must be marked with the unit's name in accordance with §§108.649 and 108.650.

(c) Inflatable lifejackets, if carried, must be of the same or similar design as required by §108.580(b).

(d) Containers for lifejackets, immersions suits, and anti-exposure suits must be marked as specified in §108.649(g).

(e) Each liferaft must be arranged to permit it to drop into the water from the deck on which it is stowed as required in §108.530(c)(3).

(f) Survival craft must be arranged to allow safe disembarkation onto the unit after a drill in accordance with §108.540(f).

(g) The requirements for guarding of falls in §§108.553 (d) and (f) must be met.

(h) The winch drum requirements described in §108.553(e) must be met for all survival craft winches, not just multiple drum winches.

(i) The maximum lowering speed requirements from §§108.553 (h) and (i) must be met.

(j) An auxiliary line must be kept with each line-throwing appliance in accordance with §108.597(c)(2).

(k) Immersion suits are required on all units, except those operating between the 32 degrees north and 32 degrees south latitude in accordance with §108.580(c).

(l) All abandonment drills conducted on units carrying immersion suits must include immersion suits.

§ 108.510 Application.

(a) For the purposes of this subpart—

(1) *Similar stage of construction* means the stage at which—

(i) Construction identifiable with a specific unit begins; and

(ii) Assembly of that unit comprising at least 50 metric tons (55.1 U.S. tons) or 1 percent of the estimated mass of all structural material, whichever is less, has been achieved.

(2) *Unit constructed* means a unit, the keel of which is laid or which is at a similar stage of construction.

(b) Subject to §108.515, each unit constructed before October 1, 1996, must meet the requirements of this subpart, except for the number, type, and arrangement of lifeboats (including survival capsules), lifeboat davits, winches, inflatable liferafts, liferaft launching equipment, and rescue boats.

(c)(1) If a District Commander determines that the overall safety of the persons on board a unit will not be significantly reduced, the District Commander may grant an exemption from compliance with a provision of this part to a specific unit for a specified geographic area within the boundaries of the Coast Guard District. This exemption may be limited to certain periods of the year.

(2) Requests for exemption under this paragraph must be in writing to the OCMI for transmission to the District Commander in the area in which the unit is in service or will be in service.

(3) If the exemption is granted by the District Commander, the OCMI will endorse the unit's Certificate of Inspection with a statement describing the exemption.

§ 108.515 Requirements for units built before October 1, 1996.

(a) Units which were constructed prior to October 1, 1996, must—

(1) By October 1, 1997, have either—

(i) Lifeboats and liferafts that meet §108.525; or

(ii) Totally enclosed fire-protected lifeboats of sufficient capacity to accommodate 100 percent of the persons permitted on board, plus additional totally enclosed lifeboats or davit-launched liferafts of sufficient capacity

to accommodate 100 percent of the persons permitted on board the unit. The following exceptions apply:

(A) An open lifeboat may be used instead of davit-launched liferafts as long as it is in good working order. An open lifeboat requiring extensive repairs must be replaced with either a totally enclosed fire-protected lifeboat, or davit-launched liferafts.

(B) A submersible unit constructed before January 3, 1979, may continue to use the lifesaving arrangements described on the units Certificate of Inspection in effect on October 1, 1996.

(2) By October 1, 1997, fit retro-reflective material on all floating appliances, lifejackets, and immersion suits.

(3) Except for the requirements in paragraphs (a)(1) and (a)(2) of this section, units may retain the arrangement of lifesaving appliances previously required and approved for the unit, as long as the arrangement or appliance is maintained in good condition to the satisfaction of the OCMI.

(b) When any lifesaving appliance or arrangement on a unit subject to this part is replaced, or when the unit undergoes repairs, alterations or modifications of a major character involving replacement of, or any addition to, the existing lifesaving appliances or arrangements, each new lifesaving appliance and arrangement must meet the requirements of this part, unless the OCMI determines that the unit cannot accommodate the new appliance or arrangement, except that—

(1) A survival craft is not required to meet the requirements of this part if it is replaced without replacing its davit and winch; and

(2) A davit and its winch are not required to meet the requirements of this part if one or both are replaced without replacing the survival craft.

§ 108.520 Type of survival craft.

(a) Each lifeboat must be a fire-protected lifeboat approved under approval series 160.035. A lifeboat of aluminum construction in the hull or canopy must be protected in its stowage position by a water spray system meeting the requirements of part 34, subpart 34.25 of this chapter.

(b) Each inflatable liferaft must be approved under approval series 160.151. Each rigid liferaft must be approved under approval series 160.118. Each liferaft must have a capacity of six persons or more.

[CGD 84–069, 61 FR 25291, May 20, 1996, as amended by USCG–2006–25697, 71 FR 55746, Sept. 25, 2006]

§ 108.525 Survival craft number and arrangement.

(a) Each unit must carry the following:

(1) Lifeboats installed in at least two widely separated locations on different sides or ends of the unit. The arrangement of the lifeboats must provide sufficient capacity to accommodate the total number of persons permitted on board if—

(i) All the lifeboats in any one location are lost or rendered unusable; or

(ii) All the lifeboats on any one side or end of the unit are lost or rendered unusable.

(2) Liferafts arranged for float-free launching and having an aggregate capacity that will accommodate the total number of persons permitted on board.

(b) In the case of a self-elevating unit where, due to its size or configuration, lifeboats can not be located in the widely separated locations required under paragraph (a)(1) of this section, the OCMI may accept the following number and arrangement of survival craft:

(1) Lifeboats with an aggregate capacity to accommodate the total number of persons permitted on board.

(2) Liferafts served by launching appliances or marine evacuation systems of an aggregate capacity to accommodate the total number of persons permitted on board. These liferafts may be the float-free liferafts under paragraph (a)(2) of this section, or liferafts in addition to the float-free liferafts.

§ 108.530 Stowage of survival craft.

(a) *General.* Each survival craft required to be served by a launching appliance or marine evacuation system must be stowed as follows:

(1) Each survival craft must be stowed as close to the accommodation and service spaces as possible.

(2) Each survival craft must be stowed in a way that neither the survival craft nor its stowage arrangements will interfere with the embarkation and operation of any other survival craft or rescue boat at any other launching station.

(3) Each survival craft must be stowed as near the water surface as is safe and practicable.

(4) Each survival craft must be stowed where the survival craft, in the embarkation position, is above the waterline with the unit—

(i) In the fully loaded condition; and

(ii) Listed up to 20 degrees either way, or to the angle where the unit's weatherdeck edge becomes submerged, whichever is less.

(5) Each survival craft must be sufficiently ready for use so that two crew members can complete preparations for embarkation and launching in less than 5 minutes.

(6) Each survival craft must be fully equipped as required under this subpart.

(7) Each survival craft must be in a secure and sheltered position and protected from damage by fire and explosion, as far as practicable.

(8) Each survival craft must not require lifting from its stowed position in order to launch, except that a davit-launched liferaft may be lifted by a manually powered winch from its stowed position to its embarkation position.

(b) *Additional lifeboat-specific stowage requirements.* In addition to meeting the requirements of paragraph (a) of this section, each lifeboat must be stowed as follows:

(1) The unit must be arranged so each lifeboat, in its stowed position, is protected from damage by heavy seas.

(2) Each lifeboat must be stowed attached to its launching appliance.

(3) Each lifeboat must be provided a means for recharging the lifeboat batteries from the unit's power supply at a supply voltage not exceeding 50 volts.

(c) *Additional liferaft-specific stowage requirements.* In addition to meeting the requirements of paragraph (a) of this section, each liferaft must be stowed as follows:

(1) Each liferaft must be stowed to permit manual release from its securing arrangements.

(2) Each liferaft must be stowed at a height above the waterline in the lightest seagoing condition, not greater than the maximum stowage height indicated on the liferaft. Each liferaft without an indicated maximum stowage height must be stowed not more than 18 meters (59 feet) above the waterline in the unit's lightest seagoing condition.

(3) Each liferaft must be arranged to permit it to drop into the water from the deck on which it is stowed. A liferaft stowage arrangement meets this requirement if it—

(i) Is outboard of the rail or bulwark;

(ii) Is on stanchions or on a platform adjacent to the rail or bulwark; or

(iii) Has a gate or other suitable opening to allow the liferaft to be pushed directly overboard.

(4) Each davit-launched liferaft must be stowed within reach of its lifting hook, unless some means of transfer is provided that is not rendered inoperable—

(i) Within the list limits specified in paragraph (a)(4)(ii) of this section;

(ii) By unit motion; or

(iii) By power failure.

(5) Each rigid container for an inflatable liferaft to be launched by a launching appliance must be secured in a way that the container or parts of it are prevented from falling into the water during and after inflation and launching of the contained liferaft.

(6) Each liferaft must have a painter system providing a connection between the unit and the liferaft.

(7) Each liferaft or group of liferafts must be arranged for float-free launching. The arrangement must ensure that the liferaft or liferafts when released and inflated, are not dragged under by the sinking unit. A hydrostatic release unit used in a float-free arrangement must be approved under approval series 160.162.

§ 108.540 Survival craft muster and embarkation arrangements.

(a) Each muster station must have sufficient space to accommodate all persons assigned to muster at that station. One or more muster stations

must be close to each embarkation station.

(b) Each muster station and embarkation station must be readily accessible from accommodation and work areas.

(c) Each lifeboat must be arranged to be boarded and launched directly from the stowed position.

(d) Each lifeboat must be arranged to be boarded by its full complement of persons within 3 minutes from the time the instruction to board is given.

(e) Each davit-launched and free-fall survival craft muster station and embarkation station for a survival craft which is boarded before it is launched must be arranged to enable stretcher cases to be placed in the survival craft.

(f) Means must be provided for bringing each davit-launched survival craft against the side of the unit and holding it alongside to allow persons to be—

(1) Safely embarked in the case of a survival craft intended to be boarded over the edge of the deck; and

(2) Safely disembarked after a drill in the case of a survival craft not intended to be moved to the stowed position with a full complement of persons on board.

(g) Each davit-launched liferaft launching arrangement must have a means to hold the liferaft in the embarkation position that—

(1) Will hold the liferaft securely in high winds;

(2) Can be rapidly engaged in the proper position for boarding; and

(3) Can be rapidly released for launching by one person from within the loaded liferaft.

(h) Each launching station or each two adjacent launching stations must have an embarkation ladder as follows:

(1) Each embarkation ladder must be approved under approval series 160.117 or be a rope ladder approved under approval series 160.017, and must be installed in a way that—

(i) Each embarkation ladder must extend in a single length, from the deck to the waterline in the lightest seagoing condition with the unit listed not less than up to 15 degrees either way; or

(ii) Each embarkation ladder may be replaced by a device approved to provide safe and rapid access to survival craft in the water, if the OCMI permits the device, provided that there is at least one embarkation ladder on each side of the unit.

(2) An embarkation ladder is not required if—

(i) The distance from the embarkation deck to the unit's lightest operating waterline is less than 3 meters (10 feet); and

(ii) The unit is not in international service.

(3) If the embarkation ladders cannot be supported against a vertical flat surface, the unit must instead be provided with at least two widely-separated fixed metal ladders or stairways extending from the deck to the surface of the water and meet the following:

(i) Each inclined fixed ladder must meet the requirements under §108.159.

(ii) Each vertical fixed ladder must meet the requirements under §108.160 for fixed ladders, except that the vertical bars in cages must be open at least 500 millimeters (20 inches) on one side throughout the length of the ladder, and cages are not required in the area subject to wave action or on ladders inside the legs of a self-elevating unit.

(iii) If a fixed ladder cannot be installed, the OCMI may accept an alternate means of embarkation with sufficient capacity for all persons permitted on board to safely descend to the waterline.

(4) Alternate means of embarkation under paragraphs (h)(1)(ii) and (h)(3) of this section, such as portable slides, safety booms, moveable ladders, elevators, and controlled descent devices, must be acceptable to the OCMI. An alternate means of embarkation must have sufficient capacity to permit persons to safely descend to the waterline at a rate comparable to the device which the alternate means of embarkation replaces.

[CGD 84–069, 61 FR 25291, May 20, 1996, as amended at 63 FR 52814, Oct. 1, 1998]

§108.545 Marine evacuation system launching arrangements.

(a) *Arrangements.* Each marine evacuation system must have the following arrangements:

(1) Each marine evacuation system must be capable of being deployed by one person.

(2) Each marine evacuation system must enable the total number of persons for which it is designed, to be transferred from the unit into the inflated liferafts within a period of 10 minutes from the time the signal to abandon the unit is given.

(3) Each marine evacuation system must be arranged so that liferafts may be securely attached to the platform and released from the platform by a person either in the liferaft or on the platform.

(4) Each marine evacuation system must be capable of being deployed from the unit under unfavorable conditions of list of up to 20 degrees.

(5) If the marine evacuation system has an inclined slide, the angle of the slide from horizontal must be within a range of 30 to 35 degrees when the unit is upright and in the lightest seagoing condition.

(6) Each marine evacuation system platform must be capable of being restrained by a bowsing line or other positioning system that is designed to deploy automatically, and if necessary, be capable of being adjusted to the position required for evacuation.

(b) *Stowage.* Each marine evacuation system must be stowed as follows:

(1) There must not be any openings between the marine evacuation system's embarkation station and the unit's side at the unit's waterline in the lightest seagoing condition.

(2) The marine evacuation system must be protected from any projections of the unit's structure or equipment.

(3) The marine evacuation system's passage and platform, when deployed, its stowage container, and its operational arrangement must not interfere with the operation of any other lifesaving appliance at any other launching station.

(4) Where appropriate, the marine evacuation system's stowage area must be protected from damage by heavy seas.

(c) *Stowage of associated liferafts.* Inflatable liferafts used in conjunction with the marine evacuation system must be stowed as follows:

(1) Each inflatable liferaft used in conjunction with the marine evacuation system must be close to the system container, but capable of dropping clear of the deployed chute and boarding platform.

(2) Each inflatable liferaft used in conjunction with the marine evacuation system must be capable of individual release from its stowage rack.

(3) Each inflatable liferaft used in conjunction with the marine evacuation system must be stowed in accordance with § 108.530.

(4) Each inflatable liferaft used in conjunction with the marine evacuation system must be provided with pre-connected or easily connected retrieving lines to the platform.

§ 108.550 Survival craft launching and recovery arrangements: General.

(a)(1) Each launching appliance must be a davit approved under 46 CFR part 160, subpart 160.132 for use with the intended craft, with a winch approved under 46 CFR part 160, subpart 160.115 for use with the intended craft.

(2) Each launching appliance for a davit-launched liferaft must include an automatic disengaging apparatus approved under 46 CFR part 160, subpart 160.170 and be either—

(i) A launching appliance described in paragraph (a)(1) of this section; or

(ii) A launching appliance approved on or before November 10, 2011 under approval series 160.163.

(b) All lifeboats required for abandonment by the total number of persons permitted on board must be capable of being launched with their full complement of persons and equipment within 10 minutes from the time the signal to abandon the unit is given.

(c) Each survival craft must be arranged to clear each leg, column, footing, brace, mat, and each similar structure below the hull of a self-elevating unit and clear the upper hull, the columns, and the pontoons of a column stabilized unit, with the unit in an intact condition.

(1) The survival craft must be arranged to be launched down the straight side of the unit or be mounted on a structure intended to provide clearance from lower structures of the unit.

(2) The OCMI may allow a reduction in the total number of survival craft meeting this requirement when the unit is in the transit mode and the number of personnel on board is reduced. In such cases, sufficient survival craft must be available for use by the total number of personnel remaining on board.

(d) Each lifeboat of aluminum construction in the hull or canopy, and each aluminum launching appliance must be protected in its stowage position by a water spray system meeting the requirements of part 34, subpart 34.25 of this chapter.

(e) With the exception of the secondary means of launching for free-fall lifeboats, each launching appliance together with all its lowering and recovery gear must be arranged in a way that the fully equipped survival craft it serves can be safely lowered when loaded with its full complement of persons, and also without persons, against—

(1) A list of up to 20 degrees on the high side; and

(2) A list of up to 20 degrees or the degree of list where the survival craft becomes waterborne, whichever, is the greater, on the low side.

(f) When the unit is under any unfavorable condition such as maximum airgap, lightest transit or operational condition, or any damaged condition under part 174, subpart C of this chapter,—

(1) Notwithstanding the requirements under §108.550(e), survival craft launching appliances and marine evacuation systems must be capable of operation;

(2) Falls, where used, must be long enough for survival craft to reach the water; and

(3) Lifeboats with an aggregate capacity that will accommodate the total number of persons permitted on board must be capable of being launched safely, and clear of any obstruction. The location and orientation of each lifeboat must be such that the lifeboat is either headed away from the unit upon launching, or can be turned to a heading away from the unit immediately upon launching.

(g) A launching appliance must not depend on any means other than gravity or stored mechanical power independent of the unit's power supplies to launch the survival craft it serves, in the fully loaded and equipped conditions, and also in the light condition.

(h) Each launching appliance's structural attachment to the vessel must be designed, based on the ultimate strength of the construction material, to be at least 4.5 times the load imparted on the attachment by the launching appliance and its fully loaded survival craft under the most adverse combination of list and trim under paragraph (b) of this section.

(i) Each launching appliance must be arranged so that—

(1) All parts requiring regular maintenance by the crew are readily accessible and easily maintained;

(2) The launching appliance remains effective under conditions of icing;

(3) The same type of release mechanism is used for each similar survival craft carried on board the unit; and

(4) The preparation and handling of survival craft at any one launching station does not interfere with the prompt preparation and handling of any other survival craft at any other station.

(j) Each launching mechanism must be arranged so it may be actuated by one person from a position on the unit's deck, and also from a position within the survival craft. Each launching and recovery arrangement must allow the operator on the deck to observe the survival craft at all times during launching.

(k) Means must be provided outside the machinery space to prevent any discharge of water onto survival craft during abandonment.

[CGD 84–069, 61 FR 25291, May 20, 1996, as amended by USCG–2010–0048, 76 FR 62973, Oct. 11, 2011]

§108.553 Survival craft launching and recovery arrangements using falls and a winch.

Survival craft launching and recovery arrangements, in addition to meeting the requirements in §108.550, must meet the following requirements:

(a) Each fall wire must be of rotation-resistant and corrosion-resistant steel wire rope.

(b) The breaking strength of each fall wire and each attachment used on the fall must be at least six times the load

imparted on the fall by the fully-loaded survival craft.

(c) Each fall must be long enough for the survival craft to reach the water with the unit in its lightest seagoing condition, under unfavorable conditions of trim and with the unit listed not less than 20 degrees either way.

(d) Each unguarded fall must not pass near any operating position of the winch, such as hand cranks, payout wheels, and brake levers.

(e) Each winch drum must be arranged so the fall wire winds onto the drum in a level wrap, and a multiple drum winch must be arranged so that the falls wind off at the same rate when lowering, and onto the drums at the same rate when hoisting.

(f) Each fall, where exposed to damage or fouling, must have guards or equivalent protection. Each fall that leads along a deck must be covered with a guard that is not more than 300 millimeters (1 foot) above the deck.

(g) The lowering speed for a fully loaded survival craft must be not less than that obtained from the following formula:

(1) $S=0.4+(0.02\ H)$, where S is the speed of lowering in meters per second, and H is the height in meters from the davit head to the waterline at the lightest seagoing condition, with H not greater than 30, regardless of the lowering height.

(2) $S=79+(1.2\ H)$, where S is the speed of lowering in feet per minute, and H is the height in feet, with H not greater than 99.

(h) The lowering speed for a survival craft loaded with all of its equipment must be not less than 70 percent of the speed required under paragraph (g) of this section.

(i) The lowering speed for a fully loaded survival craft must be not more than 1.3 meters per second (256 feet per minute).

(j) If a survival craft is recovered by electric power, the electrical installation, including the electric power-operated boat winch, must meet the requirements in subchapter J of this chapter. If a survival craft is recovered by any means of power, including a portable power source, safety devices must be provided which automatically cut off the power before the davit arms or falls reach the stops in order to avoid overstressing the falls or davits, unless the motor is designed to prevent such overstressing.

(k) Each launching appliance must be fitted with brakes that meet the following requirements:

(1) The brakes must be capable of stopping the descent of the survival craft or rescue boat and holding it securely when loaded with it full complement of persons and equipment.

(2) The brake pads must, where necessary, be protected from water and oil.

(3) Manual brakes must be arranged so that the brake is always applied unless the operator, or a mechanism activated by the operator, holds the brake control in the off position.

§ 108.555 Lifeboat launching and recovery arrangements.

Lifeboat launching and recovery arrangements, in addition to meeting the requirements in §§ 108.550 and 108.553, must meet the following requirements:

(a) Each lifeboat must be capable of being launched with the unit making headway of 5 knots in calm water, or with the unit anchored or bearing on the bottom in a current of up to 5 knots. A painter may be used to meet this requirement.

(b) Each lifeboat must be provided with a launching appliance. The launching appliance must be capable of launching and recovering the lifeboat with its crew.

(c) Each launching appliance arrangement must allow the operator on the unit to observe the lifeboat at all times during recovery.

(d) Each launching appliance arrangement must be designed to ensure persons can safely disembark from the survival craft prior its stowage.

[CGD 84–069, 61 FR 25291, May 20, 1996; 61 FR 40281, Aug. 1, 1996]

§ 108.557 Free-fall lifeboat launching and recovery arrangements.

(a) The launching appliance for a free-fall lifeboat must be designed and installed so that the launching appliance and the lifeboat it serves operate as a system to protect the occupants from harmful acceleration forces and to effectively clear the unit.

(b) The launching appliance must be designed and arranged so that in its ready to launch position, the distance from the lowest point on the lifeboat it serves to the water surface with the unit in its lightest seagoing condition does not exceed the lifeboat's certificated free-fall height.

(c) The launching appliance must be arranged so as to preclude accidental release of the lifeboat in its unattended stowed position. If the means provided to secure the lifeboat cannot be released from inside the lifeboat, the means to secure the lifeboat must be arranged as to preclude boarding the lifeboat without first releasing it.

(d) Each free-fall launching arrangement must be provided with a secondary means to launch the lifeboat by falls. Such means must comply with the requirements of §§ 108.550, 108.553, and 108.555. Notwithstanding § 108.550(e), the launching appliance must be capable of launching the lifeboat against unfavorable conditions of list of 5 degrees in any direction and it need not comply with the speed requirements of §§ 108.553 (g), (h), and (i).

If the secondary launching appliance is not dependent on gravity, stored mechanical power or other manual means, the launching arrangement must be connected both to the unit's main and emergency power supplies.

§ 108.560 Rescue boats.

Each unit must carry at least one rescue boat. Each rescue boat must be approved under approval series 160.156. A lifeboat is accepted as a rescue boat if it also meets the requirements for a rescue boat.

§ 108.565 Stowage of rescue boats.

(a) Rescue boats must be stowed as follows:

(1) Each rescue boat must be ready for launching in not more than 5 minutes.

(2) Each rescue boat must be in a position suitable for launching and recovery.

(3) Each rescue boat must be stowed in a way that neither the rescue boat nor its stowage arrangements will interfere with the operation of any survival craft at any other launching station.

(4) Each rescue boat that is also a lifeboat, must be in compliance with § 108.530.

(b) Each rescue boat must be provided a means for recharging the rescue boat batteries from the unit's power supply at a supply voltage not exceeding 50 volts.

(c) Each inflated rescue boat must be kept fully inflated at all times.

[CGD 84–069, 61 FR 25291, May 20, 1996, as amended at 63 FR 52814, Oct. 1, 1998]

§ 108.570 Rescue boat embarkation, launching and recovery arrangements.

(a) Each rescue boat must be capable of being launched with the unit making headway of 5 knots in calm water, or with the unit anchored or bearing on the bottom in a current of up to 5 knots. A painter may be used to meet this requirement.

(b) Each rescue boat embarkation and launching arrangement must permit the rescue boat to be boarded and launched in the shortest possible time.

(c) If the rescue boat is one of the unit's survival craft, the rescue boat must also be as follows:

(1) The rescue boat must meet the embarkation arrangement and launching station requirements of § 108.540.

(2) The rescue boat must meet the launching arrangement requirements of §§ 108.550 and 108.557, and if the launching arrangement uses falls and a winch, § 108.553.

(3) If the launching arrangement uses a single fall, the rescue boat must have an automatic disengaging apparatus approved under approval series 160.170, instead of a lifeboat release mechanism.

(d) Rapid recovery of the rescue boat must be possible when loaded with its full complement of persons and equipment. If the rescue boat is also a lifeboat, rapid recovery must be possible when loaded with its lifeboat equipment and an approved rescue boat complement of at least six persons.

(e) Each rescue boat launching appliance must be fitted with a powered winch motor.

(f) Each rescue boat launching appliance must be capable of hoisting the rescue boat when loaded with its full rescue boat complement of persons and

equipment at a rate of not less than 0.3 meters per second (59 feet per minute).

[CGD 84–069, 61 FR 25291, May 20, 1996, as amended at 63 FR 52814, Oct. 1, 1998]

§ 108.575 Survival craft and rescue boat equipment.

(a) All lifeboat and rescue boat equipment must be as follows:

(1) The equipment must be secured within the boat by lashings, storage in lockers, or compartments, storage in brackets or similar mounting arrangements or other suitable means.

(2) The equipment must be secured in such a manner as not to interfere with any abandonment procedures or reduce seating capacity.

(3) The equipment must be as small and of as little mass as possible.

(4) The equipment must be packed in a suitable and compact form.

(5) The equipment should be stowed so the items do not—

(i) Reduce the seating capacity;

(ii) Adversely affect the seaworthiness of the survival craft or rescue boat; or

(iii) Overload the launching appliance.

(b) Each lifeboat, rigid liferaft, and rescue boat, unless otherwise stated in this paragraph, must carry the equipment specified for it in table § 108.575(b) of this section. A lifeboat that is also a rescue boat must carry the equipment in the table column marked for a lifeboat. Each item in the table has the same description as in § 199.175 of this chapter.

TABLE 108.575(b)—SURVIVAL CRAFT EQUIPMENT

Item No.	Item	International service			Other than international service		
		Lifeboat	Rigid liferaft	Rescue boat	Lifeboat	Rigid liferaft	Rescue boat
1	Bailer [1]	1	1	1	1	1	1
2	Bilge pump [2]	1			1		
3	Boathook	2		1	2		1
4	Bucket [3]	2		1	2		1
5	Can opener	3	3				
6	Compass	1		1	1		1
7	Dipper	1			1		
8	Drinking cup	1	1				
9	Fire extinguisher	1		1	1		1
10	First-aid kit	1	1	1	1	1	1
11	Fishing kit	1	1				
12	Flashlight	1	1	1	1	1	1
13	Hatchet	2			2		
14	Heaving line	2	1	2	2	1	2
15	Instruction card		1			1	
16	Jackknife	1			1		
17	Knife [1 4]		1	1		1	1
18	Ladder	1		1	1		1
19	Mirror, signaling	1	1		1	1	
20	Oars (units) [5 6]	1		1			
	Paddles		2			2	
21	Painter	2	1	1	2	1	1
22	Provisions (units per person)	1	1				
23	Pump [7]			1			
24	Radar reflector	1	1	1			
25	Rainwater collection device	1					
26	Repair kit [7]			1			1
27	Sea anchor	1	2	1	1	2	1
28	Searchlight	1		1	1		1
29	Seasickness kit (kits/person)	1	1		1	1	
30	Signal, smoke	2	2		2	1	
31	Signal, hand flare	6	6		6	6	
32	Signal, parachute flare	4	4		4	4	
33	Skates and fenders [8]	1			1		
34	Sponge [7]		2	2		2	2
35	Survival instructions	1	1		1	1	
36	Table of lifesaving signals	1	1		1	1	
37	Thermal protective aid (percent of persons) [9]	10%	10%	10%	10%	10%	10%
38	Tool kit	1			1		
39	Towline [10]	1		1	1		1
40	Water (liters per person)	3	1.5		3	1	
41	Whistle	1	1	1	1	1	1

Notes:

[1] Each liferaft approved for 13 persons or more must carry two of these items.
[2] Bilge pumps are not required for boats of self-bailing design.
[3] Not required for inflated or rigid/inflated rescue boats.
[4] A hatchet counts toward this requirement in rigid rescue boats.
[5] Oars not required on a free-fall lifeboat; a unit of oars means the number of oars specified by the manufacturer.
[6] Rescue boats may substitute buoyant oars for paddles, as specified by the manufacturer.
[7] Not required for a rigid rescue boat.
[8] Required if specified by the boat manufacturer.
[9] Sufficient thermal protective aids are required for at least 10% of the persons the survival craft is equipped to carry, but not less than two.
[10] Required only if the lifeboat is also the rescue boat.

[CGD 84–069, 61 FR 25291, May 20, 1996, as amended at 63 FR 52814, Oct. 1, 1998]

§ 108.580 Personal lifesaving appliances.

(a) *Lifebuoys.* Each unit must carry at least eight lifebuoys approved under approval series 160.150 as follows:

(1) *Stowage.* Lifebuoys must be stowed as follows:

(i) Each lifebuoy must be capable of being rapidly cast loose.

(ii) Each lifebuoy must not be permanently secured to the unit in anyway.

(iii) Lifebuoys must be so distributed as to be readily available on each side of the unit and, as far as practicable, on each open deck extending to the side of the unit. The lifebuoys with attached self-igniting lights must be evenly distributed on all sides of the unit.

(iv) At least two lifebuoys, each with attached self-activating smoke signals, must be stowed where they can be quickly released from the navigating bridge or main control station, or a location readily available to personnel on board. These lifebuoys should, when released, fall directly into the water without striking any part of the unit.

(2) *Attachments and fittings.* Lifebuoys must have the following attachments and fittings:

(i) At least one lifebuoy on each side of the unit fitted with a buoyant lifeline that is—

(A) At least as long as twice the height where it is stowed above the waterline in the lightest seagoing condition, or 30 meters (100 feet), whichever is the greater;

(B) Non-kinking;

(C) Not less than 8 millimeters (5/16 inch) in diameter;

(D) Of a breaking strength which is not less than 5 kiloNewtons (1,124 pounds-force); and

(E) Is, if synthetic, a dark color or certified by the manufacturer to be resistant to deterioration from ultraviolet light.

(ii) At least one-half the total number of lifebuoys on the unit must each be fitted with a self-igniting light approved under approval series 161.010. A self-igniting light must not be attached to the lifebuoys required by this section to be fitted with lifelines.

(iii) At least two lifebuoys on the unit each must be fitted with a self-activating smoke signal approved under approval series 160.157. Lifebuoys fitted with smoke signals must also be fitted with lights.

(b) *Lifejackets.* Each unit must carry lifejackets approved under approval series 160.155, 160.176, or 160.177. If the unit carries inflatable lifejackets, they must be of the same or similar design and have the same method of operation.

(1) *General.* Each unit must carry a lifejacket for each person on board and in addition, a sufficient number of lifejackets must be carried for persons at each work station and industrial work site.

(2) *Stowage.* Lifejackets must be stowed as follows:

(i) The lifejackets must be readily accessible.

(ii) The additional lifejackets required by paragraph (b)(1) of this section must be stowed in places readily accessible to the work stations and industrial work sites.

(iii) Where, due to the particular arrangements of the unit, the lifejackets under paragraph (b)(1) of this section could become inaccessible, the OCMI may require an increase in the number of lifejackets to be carried, or suitable alternative arrangements.

(3) *Attachments and fittings.* Lifejackets must have the following attachments and fittings:

(i) Each lifejacket must have a lifejacket light approved under approval series 161.112 securely attached to the front shoulder area of the lifejacket. On a unit not in international service, a light approved under approval series 161.012 may be used. However, lifejacket lights bearing Coast Guard approval number 161.012/2/1 are not permitted unless the unit is certificated to operate only on waters between 32° N and 32° S latitude.

(ii) Each lifejacket must have a whistle firmly secured by a cord to the lifejacket.

(c) *Immersion suits or anti-exposure suits.* Each unit must carry immersion suits approved under approval series 160.171 or anti-exposure suits approved under approval series 160.153.

(1) *General.* Each unit, except units operating between 32 degrees north latitude and 32 degrees south latitude, must carry—

(i) Immersion suits or anti-exposure suits of suitable size for each person assigned to the rescue boat crew;

(ii) Immersion suits approved under approval series 160.171 of the appropriate size for each person on board, which count toward meeting the requirements of paragraph (c)(1)(i) of this section; and

(iii) In addition to the immersion suits required under paragraph (c)(1)(ii) of this section, each watch station, work station, and industrial work site must have enough immersion suits to equal the number of persons normally on watch in, or assigned to, the station or site at one time. However, an immersion suit is not required at a station or site for a person whose cabin or berthing area (and the immersion suits stowed in that location) is readily accessible to the station or site.

(2) *Attachments and fittings.* Immersion suits or anti-exposure suits must have the following attachments and fittings:

(i) Each immersion suit or anti-exposure suit must have a lifejacket light approved under approval series 161.112 securely attached to the front shoulder area of the immersion suit or anti-exposure suit. On a unit not in international service, a light approved under approval series 161.012 may be used. However, lifejacket lights bearing Coast Guard approval number 161.012/2/1 are not permitted on units certificated to operate on waters where water temperature may drop below 10 °C (50 °F).

(ii) Each immersion suit or anti-exposure suit must have a whistle firmly secured by a cord to the immersion suit or anti-exposure suit.

[CGD 84–069, 61 FR 25291, May 20, 1996, as amended at 63 FR 52814, Oct. 1, 1998]

§ 108.595 Communications.

(a) *Radio lifesaving appliances.* Radio lifesaving appliance installations and arrangements must meet the requirements of 47 CFR part 80.

(b) *Distress flares.* Each unit must—

(1) Carry not less than 12 rocket parachute flares approved under approval series 160.136; and

(2) Stow the flares in a portable watertight container carried on the navigating bridge, or if the unit does not have a bridge, in the control room.

§ 108.597 Line-throwing appliance.

(a) *General.* Each unit in international service must have a line-throwing appliance that is approved under approval series 160.040. Each unit not in international service must carry a line-throwing appliance approved under either approval series 160.040 or 160.031.

(b) *Stowage.* The line-throwing appliance and its equipment must be readily accessible for use.

(c) *Additional equipment.* Each unit must carry the following equipment for the line-throwing appliance:

(1) The equipment on the list provided by the manufacturer with the approved appliance; and

(2) An auxiliary line that—

(i) Has a breaking strength of at least 40 kiloNewtons (9,000 pounds-force);

(ii) Is, if synthetic, a dark color or certified by the manufacturer to be resistant to deterioration from ultraviolet light; and

(iii) Is—

(A) At least 450 meters (1,500 feet) long, if the line-throwing appliance is approved under approval series 160.040; or

(B) At least 150 meters (500 feet) long, if the line-throwing appliance is approved under approval series 160.031.

Subpart F—Cranes

CRANES

§ 108.601 Crane design.

(a) Each crane and crane foundation on a unit must be designed in accordance with the American Petroleum Institute Specification for Offshore Cranes, API Spec. 2C, Second Edition, February, 1972 (with supplement 2).

(b) In addition to the design requirements of paragraph (a), each crane must have the following:

(1) Each control marked to show its function.

(2) Instruments with built-in lighting.

(3) Fuel tank fills and overflows that do not run onto the engine exhaust.

(4) No gasoline engines.

(5) Spark arrestors fitted on engine exhaust pipes.

Subpart G—Equipment Markings and Instructions

§ 108.621 Equipment markings: General.

Unless otherwise provided, each marking required in this subpart must be—

(a) Printed in English;

(b) In red letters with a contrasting background;

(c) Permanent;

(d) Easy to be seen;

(e) At least 1.3 centimeters (½ inch) in height.

§ 108.623 General alarm bell switch.

Each general alarm bell switch must be marked ''GENERAL ALARM'' on a plate or other firm noncorrosive backing.

§ 108.625 General alarm bell.

Each general alarm bell must be identified by marking ''GENERAL ALARM—WHEN BELL RINGS GO TO YOUR STATION'' next to the bell.

§ 108.626 Carbon dioxide warning signs.

Each entrance to a space storing carbon dioxide cylinders, a space protected by carbon dioxide systems, or any space into which carbon dioxide might migrate must be conspicuously marked as follows:

(a) Spaces storing carbon dioxide—''CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. VENTILATE THE AREA BEFORE ENTERING. A HIGH CONCENTRATION CAN OCCUR IN THIS AREA AND CAN CAUSE SUFFOCATION.''.

(b) Spaces protected by carbon dioxide—''CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. WHEN ALARM OPERATES OR WINTERGREEN SCENT IS DETECTED, DO NOT ENTER UNTIL VENTILATED. LOCK OUT SYSTEM WHEN SERVICING.'' The reference to wintergreen scent may be omitted for carbon dioxide systems not required to have odorizing units and not equipped with such units.

(c) Spaces into which carbon dioxide might migrate—''CARBON DIOXIDE GAS CAN CAUSE INJURY OR DEATH. DISCHARGE INTO NEARBY SPACE CAN COLLECT HERE. WHEN ALARM OPERATES OR WINTERGREEN SCENT IS DETECTED VACATE IMMEDIATELY.'' The reference to wintergreen scent may be omitted for carbon dioxide systems not required to have odorizing units and not equipped with such units.

[USCG–2006–24797, 77 FR 33882, June 7, 2012]

§ 108.627 Carbon dioxide and clean agent alarms.

Each carbon dioxide alarm must be identified by marking: ''WHEN ALARM SOUNDS VACATE AT ONCE. CARBON DIOXIDE BEING RELEASED'' next to the alarm.

§ 108.629 Fire extinguishing system branch line valve.

Each branch line valve of each fire extinguishing system must be marked with the name of the space or spaces it serves.

§ 108.631 Fixed fire extinguishing system controls.

(a) Each cabinet or space that contains a valve, control, or manifold of a fixed fire extinguishing system must be marked in conspicuous red letters at least 2 inches high: ''[CARBON DIOXIDE/CLEAN AGENT/FOAM/WATER

SPRAY—as appropriate] FIRE APPARATUS.''.

(b) Instructions for the operation of a fixed fire extinguishing system must be posted next to a fire apparatus described in paragraph (a) of this section.

[CGD 73–251, 43 FR 56808, Dec. 4, 1978, as amended by USCG–2006–24797, 77 FR 33882, June 7, 2012]

§ 108.633 Fire stations.

Each fire station must be identified by marking: ''FIRE STATION NO. ____;'' next to the station in letters and numbers at least 5 centimeters (2 inches) high.

§ 108.635 Self-contained breathing apparatus.

Each locker or space containing self-contained breathing apparatus must be marked: ''SELF CONTAINED BREATHING APPARATUS''.

§ 108.636 Work vests.

Each space containing a work vest must be marked: ''WORK VEST''.

§ 108.637 Hand portable fire extinguishers.

(a) Each hand portable fire extinguisher must be marked with a number that identifies it in relation to all other hand portable fire extinguishers.

(b) The location of each hand portable fire extinguisher must be marked with the same number that is marked on the extinguisher.

§ 108.639 Emergency lights.

Each emergency light must be marked: ''E''.

§ 108.641 Instructions for changing steering gear.

Instructions stating, in order, the different steps to be taken for changing to emergency and secondary steering gear must be posted in the steering gear room and at each secondary steering station in 1.3 centimeters (½ inch) letters and numerals of contrasting color to the background.

§ 108.643 Rudder orders.

At each steering station, the direction which the wheel or steering device must be moved for right rudder or left rudder must be marked in letters of contrasting color to the background on the wheel or steering device or in a place that is directly in the helmsman's line of vision to indicate ''RIGHT RUDDER'' and ''LEFT RUDDER''.

§ 108.645 Markings on lifesaving appliances.

(a) *Lifeboats and rescue boats.* Each lifeboat and rescue boat must be plainly marked as follows:

(1) Each side of each lifeboat and rescue boat bow must be marked in block capital letters and numbers with—

(i) The name of the unit; and

(ii) The name of the port required to be marked on the unit to meet the requirements of subpart 67.123 of this chapter.

(2) The number of persons the boat is equipped for, which may not exceed the number shown on its nameplate, must be clearly marked in permanent characters.

(3) The number of the boat and the unit's name, must be plainly marked or painted so that the markings are visible from above the boat.

(4) Type II retro-reflective material approved under approval series 164.018 must be placed on the boat and meet the arrangement requirements in IMO Resolution A.658(16).

(b) *Rigid liferafts.* Each rigid liferaft must be marked as follows:

(1) The name of the unit must be marked on each rigid liferaft.

(2) The name of the port required to be marked on the unit to meet the requirements of subpart 67.123 of this chapter.

(3) The length of the painter must be marked on each rigid liferaft.

(4) At each entrance of each rigid liferaft, the number of persons the rigid liferaft is equipped for, not exceeding the number shown on its nameplate, must be marked in letters and numbers at least 100 millimeters (4 inches) high, in a color contrasting to that of the liferaft.

[CGD 84–069, 61 FR 25298, May 20, 1996, as amended at 63 FR 52815, Oct. 1, 1998]

§ 108.646 Marking of stowage locations.

(a) Containers, brackets, racks, and other similar stowage locations for

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satisfied that a sufficient level of safety exists.

§ 117.208 Survival craft—vessels operating on rivers routes.

(a) Except as allowed by paragraph (c), (d), or (e) of this section, each vessel certificated to operate on a rivers route in cold water must be provided with life floats of an aggregate capacity that will accommodate at least 50% of the total number of persons permitted on board.

(b) Each vessel certificated to operate on a rivers route in warm water is not required to carry survival craft.

(c) Each vessel certificated to operate on a rivers route within one mile of land is not required to carry survival craft.

(d) For a vessel certificated to operate on a rivers route in shallow water where the vessel can not sink deep enough to submerge the topmost passenger deck or where survivors can wade ashore, the cognizant OCMI may waive a requirement for life floats, if the OCMI determines that it is safe to do so, taking into consideration the vessel's scope of operation, hazards of the route, and availability of assistance.

(e) Each vessel operating with a set schedule on a specific route that maintains a 15 minute radio communications schedule with an operations base, or participates in a Vessel Traffic Service (VTS), may be granted a reduction in the survival craft requirements of this section if the cognizant OCMI is satisfied that a sufficient level of safety exists.

§ 117.210 Rescue boats.

(a) Each vessel must carry at least one rescue boat unless the cognizant OCMI determines that:

(1) The vessel is sufficiently maneuverable, arranged, and equipped to allow the crew to recover a helpless person from the water;

(2) Recovery of a helpless person can be observed from the operating station; and

(3) The vessel does not regularly engage in operations that restrict its maneuverability.

(b) In general, a rescue boat must be a small, light-weight boat with built-in buoyancy and be capable of being readily launched and easily maneuvered. In addition, it must be of adequate proportion to permit taking an unconscious person on board without capsizing.

(c) On a vessel of more than 19.8 meters (65 feet) in length operating on protected waters, a rescue boat approved under approval series 160.056 is acceptable in meeting the intent of this section. On a vessel of more than 19.8 meters operating on exposed or partially protected waters, a rescue boat approved under approval series 160.156 is acceptable in meeting the intent of this section. On a vessel of not more than 19.8 meters (65 feet) in length, a required rescue boat must be acceptable to the cognizant OCMI.

[CGD 85–080, 61 FR 911, Jan. 10, 1996, as amended at 62 FR 51351, Sept. 30, 1997; 62 FR 64305, Dec. 5, 1997]

PART 118—FIRE PROTECTION EQUIPMENT

Subpart A—General Provisions

Sec.

Subpart B [Reserved]

Subpart C—Fire Main System

Subpart D—Fixed Fire Extinguishing and Detecting Systems

Subpart E—Portable Fire Extinguishers

Subpart F—Additional Equipment

AUTHORITY: 46 U.S.C. 2103, 3306; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

SOURCE: CGD 85–080, 61 FR 917, Jan. 10, 1996, unless otherwise noted.

Subpart A—General Provisions

§ 118.115 Applicability; preemptive effect.

(a) Except as otherwise required by paragraphs (b) and (c) of this section, an existing vessel must comply with the fire protection equipment regulations applicable to the vessel on March 10, 1996, or, as an alternative, the vessel may comply with the regulation in this part.

(b) An existing vessel with a hull, or a machinery space boundary bulkhead or deck, composed of wood or fiber reinforced plastic, or sheathed on the interior in fiber reinforced plastic, must comply with the requirements of §118.400 of this part on or before March 11, 1999.

(c) New installations of fire protection equipment on an existing vessel, which are completed to the satisfaction of the cognizant Officer in Charge, Marine Inspection (OCMI) on or after March 11, 1996, must comply with the regulations of this part. Replacement of existing equipment installed on the vessel prior to March 11, 1996, need not comply with the regulations in this part.

(d) The regulations in this part have preemptive effect over State or local regulations in the same field.

[CGD 85–080, 61 FR 917, Jan. 10, 1996, as amended by USCG–2006–24797, 77 FR 33883, June 7, 2012]

§ 118.120 Equipment installed but not required.

Fire extinguishing and detecting equipment installed on a vessel in excess of the requirements of §§118.400 and 118.500 of this part must be designed, constructed, installed and maintained in a manner acceptable to the Commandant.

Subpart B [Reserved]

Subpart C—Fire Main System

§ 118.300 Fire pumps.

(a) A self priming, power driven fire pump must be installed on each vessel.

(b) On a vessel without overnight accommodations, or with overnight accommodations for not more than 49 passengers, the fire pump must be capable of delivering a single hose stream from the highest hydrant, through the hose and nozzle required by §118.320 of this part, at a pitot tube pressure of 345 kPa (50 psi).

(c) On a vessel carrying more than 600 passengers or with overnight accommodations for more than 49 passengers, the fire pump must meet §76.10–5 of this chapter.

(d) A fire pump may be driven by a propulsion engine. A fire pump must be permanently connected to the fire main and may be connected to the bilge system to meet the requirements of §119.520 of this subchapter.

(e) A fire pump must be capable of both remote operation from the operating station and local operation at the pump.

[CGD 85–080, 61 FR 917, Jan. 10, 1996; 61 FR 20556, May 7, 1996, as amended at 62 FR 51351, Sept. 30, 1997]

§ 118.310 Fire main and hydrants.

(a) Except as required by paragraph (d) of this section, a vessel must have a sufficient number of fire hydrants to reach any part of the vessel using a single length of fire hose.

(b) Piping, valves, and fittings in a fire main system must comply with part 119, subpart G of this subchapter.

(c) Each fire hydrant must have a valve installed to allow the fire hose to be removed while the fire main is under pressure.

(d) On a vessel carrying more than 600 passengers or with overnight accommodations for more than 49 passengers, the fire main and hydrants must meet §76.10–10 of this chapter.

[CGD 85–080, 61 FR 917, Jan. 10, 1996, as amended at 62 FR 51351, Sept. 30, 1997]

§ 118.320 Fire hoses and nozzles.

(a) A fire hose with a nozzle must be attached to each fire hydrant at all times. For fire hydrants located on

open decks or cargo decks, where no protection is provided, hoses may be temporarily removed during heavy weather or cargo handling operations, respectively. Hoses so removed must be stored in nearby accessible locations.

(b) Each hose must:

(1) Be lined commercial fire hose that conforms to Underwriters Laboratory (UL) 19 ''Lined Fire Hose and Hose Assemblies,'' or hose that is listed and labeled by an independent laboratory recognized by the Commandant as being equivalent in performance;

(2) Be 15.25 meters (50 feet) in length and 40 millimeters (1.5 inches) in diameter; and

(3) Have fittings of brass or other suitable corrosion-resistant material that comply with National Fire Protection Association (NFPA) 1963 ''Fire Hose Connections,'' or other standard specified by the Commandant.

(c) Each nozzle must either:

(1) Be of a type approved in accordance with approval series 162.027; or

(2) Be of type recognized by the Commandant as being equivalent in performance.

[CGD 85–080, 61 FR 917, Jan. 10, 1996; 61 FR 24464, May 15, 1996, as amended at 62 FR 51351, Sept. 30, 1997; 62 FR 64305, Dec. 5, 1997]

Subpart D—Fixed Fire Extinguishing and Detecting Systems

§ 118.400 Where required.

(a) The following spaces must be equipped with a fixed gas fire extinguishing system, in compliance with § 118.410 of this part, or other fixed fire extinguishing system specifically approved by the Commandant, except as otherwise allowed by paragraph (b) of this section:

(1) A space containing propulsion machinery;

(2) A space containing an internal combustion engine of more than 50 hp;

(3) A space containing an oil fired boiler;

(4) A space containing combustible cargo or ship's stores inaccessible during the voyage (a carbon dioxide system must be installed in such a space, and Halon systems are not allowed);

(5) A paint locker; and

(6) A storeroom containing flammable liquids (including liquors of 80 proof or higher where liquor is packaged in individual containers of 9.5 liters (2.5 gallons) capacity or greater).

(b) Alternative system types and exceptions to the requirements of paragraph (a) of this section are:

(1) A fixed gas fire extinguishing system, which is capable of automatic discharge upon heat detection, may only be installed in a normally unoccupied space with a gross volume of not more than 170 cubic meters (6,000 cubic feet);

(2) A pre-engineered fixed gas extinguishing system must be in compliance with § 118.420 of this part and may only be installed in a normally unoccupied machinery space, a paint locker, or a storeroom containing flammable liquids (including liquors of 80 proof or higher where liquor is packaged in individual containers of 9.5 liters (2.5 gallons) capacity or greater), with a gross volume of not more than 57 cubic meters (2,000 cubic feet);

(3) A B-II portable fire extinguisher installed outside the space may be substituted for a fixed gas fire extinguishing system in a storeroom containing flammable liquids (including liquors of 80 proof or higher where liquor is packaged in individual containers of 9.5 liters (2.5 gallons) capacity or greater) or a paint locker, with a volume of not more that 5.7 cubic meters (200 cubic feet);

(4) A space that is so open to the atmosphere that a fixed gas fire extinguishing system would be ineffective, as determined by the cognizant OCMI, is not required to have a fixed gas fire extinguishing system; and

(5) Where the amount of carbon dioxide gas required in a fixed fire extinguishing system can be supplied by one portable extinguisher or a semi-portable extinguisher, such an extinguisher may be used subject to the following:

(i) Cylinders shall be installed in a fixed position outside the space protected;

(ii) The applicator shall be installed in a fixed position so as to discharge into the space protected; and

(iii) Controls shall be installed in an accessible location outside the space protected.

(c) The following spaces must be equipped with a fire detecting system of an approved type that is installed in accordance with §76.27 in subchapter H of this chapter, except when a fixed gas fire extinguishing system that is capable of automatic discharge upon heat detection is installed or when the space is manned:

(1) A space containing propulsion machinery;

(2) A space containing an internal combustion engine of more than 37.3 kW (50 hp); and

(3) A space containing an oil fired boiler.

(d) All griddles, broilers, and deep fat fryers must be fitted with a grease extraction hood that complies with §118.425 of this part.

(e) Except for continuously manned operating stations as allowed by paragraph (f), each accommodation space, control space, and service space must be fitted with the following systems:

(1) A smoke actuated fire detecting system of a type approved by the Commandant that is installed in accordance with §76.27 in subchapter H of this chapter; and

(2) A manual alarm system that meets the requirements in §76.35 in subchapter H of this chapter.

(f) On vessels with no overnight accommodation; public spaces that may be assumed to be occupied by a large number of persons when passengers are on board need only be served by a manual alarm system that meets the requirements in §76.35 in subchapter H of this chapter. The alarm boxes must be located in the vicinity of each required exit, and easily seen in case of need.

(g) An enclosed vehicle space must be fitted with an automatic sprinkler system that meets the requirements of §76.25 in subchapter H of this chapter; and

(1) A fire detecting system of a type approved by the Commandant that is installed in accordance with §76.27 in subchapter H of this chapter; or

(2) A smoke detecting system of a type approved by the Commandant that is installed in accordance with §76.33 in subchapter H of this chapter.

(h) A partially enclosed vehicle space must be fitted with a manual sprinkler system that meets the requirements of §76.23 in subchapter H of this chapter.

[CGD 85–080, 61 FR 917, Jan. 10, 1996, as amended at 62 FR 51351, Sept. 30, 1997; USCG–1999–6216, 64 FR 53227, Oct. 1, 1999]

§118.410 Fixed gas fire extinguishing systems.

(a) *General.* (1) A fixed gas fire extinguishing system aboard a vessel must be approved by the Commandant, and be custom engineered to meet the requirements of this section unless the system meets the requirements of §118.420 of this part.

(2) System components must be listed and labeled by an independent laboratory. A component from a different system, even if from the same manufacturer, must not be used unless included in the approval of the installed system.

(3) System design and installation must be in accordance with the Marine Design, Installation, Operation, and Maintenance Manual approved for the system by the Commandant.

(4) A fixed gas fire extinguishing system may protect more than one space. The quantity of extinguishing agent must be at least sufficient for the space requiring the greatest quantity as determined by the requirements of paragraphs (f)(4) or (g)(2) of this section.

(b) *Controls.* (1) Controls and valves for operation of a fixed gas fire extinguishing system must be:

(i) Located outside the space protected by the system; and

(ii) Not located in a space that might be inaccessible in the event of fire in the space protected by the system.

(2) Except for a normally unoccupied space of less than 170 cubic meters (6000 cubic feet), release of an extinguishing agent into a space must require two distinct operations.

(3) A system must have local manual controls at the storage cylinders capable of releasing the extinguishing agent. In addition, a normally manned space must have remote controls for releasing the extinguishing agent immediately outside the primary exit from the space.

(4) Remote controls must be located in a breakglass enclosure to preclude accidental discharge.

(5) Valves and controls must be of a type approved by the Commandant and protected from damage or accidental activation. A pull cable used to activate the system controls must be enclosed in conduit.

(6) A system protecting more than one space must have a manifold with a normally closed stop valve for each space protected.

(7) A gas actuated valve or device must be capable of manual override at the valve or device.

(8) A system, which has more than one storage cylinder for the extinguishing agent and that relies on pilot cylinders to activate the primary storage cylinders, must have at least two pilot cylinders. Local manual controls in compliance with paragraph (b)(3) of this section must be provided to operate the pilot cylinders but are not required for the primary storage cylinders.

(9) A system protecting a manned space must be fitted with a time delay and alarm of a type approved by the Commandant, arranged to require the alarm to sound for at least 20 seconds or the time necessary to escape from the space, whichever is greater, before the agent is released into the space. Alarms must be conspicuously and centrally located. The alarm must be powered by the extinguishing agent.

(10) A device must be provided to automatically shut down power ventilation serving the protected space and engines that draw intake air from the protected space prior to release of the extinguishing agent into the space.

(11) Controls and storage cylinders must not be in a locked space unless the key is in a breakglass type box conspicuously located adjacent to the space.

(c) *Storage space.* (1) Except as provided in paragraph (c)(2) of this section, a storage cylinder for a fixed gas extinguishing system must be:

(i) Located outside the space protected by the system; and

(ii) Not located in a space that might be inaccessible in the event of a fire in the space protected by the system.

(2) A normally unoccupied space of less than 170 cubic meters (6,000 cubic feet) may have the storage cylinders located within the space protected. When the storage cylinders are located in the space:

(i) The system must be capable of automatic operation by a heat actuator within the space; and

(ii) Have manual controls in compliance with paragraph (b) of this section except for paragraph (b)(3) of this section.

(3) A space containing a storage cylinder must be maintained at a temperature within the range from −30 °C (−20 °F) to 55 °C (130 °F) or at another temperature as listed by the independent laboratory and stated in the manufacturer's approval manual.

(4) A storage cylinder must be securely fastened, supported, and protected against damage.

(5) A storage cylinder must be accessible and capable of easy removal for recharging and inspection. Provisions must be available for weighing each storage cylinder in place.

(6) Where subject to moisture, a storage cylinder must be installed to provide a space of at least 51 millimeters (2 inches) between the deck and the bottom of the storage cylinder.

(7) A Halon 1301 storage cylinder must be stowed in an upright position unless otherwise listed by the independent laboratory. A carbon dioxide cylinder may be inclined not more than 30° from the vertical, unless fitted with flexible or bent siphon tubes, in which case they may be inclined not more than 80° from the vertical.

(8) Where a check valve is not fitted on an independent storage cylinder discharge outlet, a plug or cap must be provided for closing the outlet resulting from storage cylinder removal.

(9) Each storage cylinder must meet the requirements of §147.60 in subchapter N of this chapter, or other standard specified by the Commandant.

(10) A storage cylinder space must have doors that open outwards or be fitted with kickout panels installed in each door.

(d) *Piping.* (1) A pipe, valve, or fitting of ferrous material must be protected inside and outside against corrosion unless otherwise approved by the Commandant. Aluminum or other low melting material must not be used for a

component of a fixed gas fire extinguishing system except as specifically approved by the Commandant.

(2) A distribution line must extend at least 51 millimeters (2 inches) beyond the last orifice and be closed with a cap or plug.

(3) Piping, valves, and fittings must be securely supported, and where necessary, protected against damage.

(4) Drains and dirt traps must be fitted where necessary to prevent the accumulation of dirt or moisture and located in accessible locations.

(5) Piping must be used for no other purpose except that it may be incorporated with the fire detecting system.

(6) Piping passing through accommodation spaces must not be fitted with drains or other openings within such spaces.

(7) The distribution piping of a carbon dioxide fixed gas extinguishing system must be tested as required by this paragraph, upon completion of the piping installation, using only carbon dioxide, compressed air, or nitrogen gas.

(i) Piping between a storage cylinder and a stop valve in the manifold must be subjected to a pressure of 6,894 kPa (1,000 psi), except as permitted in paragraph (d)(7)(iii) of this section. Without additional gas being introduced to the system, the pressure drop must not exceed 2,068 kPa (300 psi) after two minutes.

(ii) A distribution line to a space protected by the system must be subjected to a test similar to that described in paragraph (d)(7)(i) of this section, except that the pressure used must be 4,136 kPa (600 psi). For the purpose of this test, the distribution piping must be capped within the space protected at the first joint between the nozzles and the storage cylinders.

(iii) A small independent system protecting a space such as a paint locker may be tested by blowing out the piping with air at a pressure of not less than 689 kPa (100 psi).

(8) The distribution piping of a Halon 1301 fixed gas extinguishing system must be tested, as required by this paragraph, upon completion of the piping installation, using only carbon dioxide, compressed air, or nitrogen.

(i) When pressurizing the piping, pressure must be increased in small increments. Each joint must be subjected to a soap bubble leak test, and all joints must be leak free.

(ii) Piping between the storage cylinders and the manifold stop valve must be subjected to a leak test conducted as a pressure of 4,136 kPa (600 psi). Without additional gas being added to the system, there must be no loss of pressure over a two minute period after thermal equilibrium is reached.

(iii) Distribution piping between the manifold stop valve and the first nozzle in the system must be capped and pneumatically tested for a period of 10 minutes at 1,034 kPa (150 psi). At the end of 10 minutes, the pressure drop must not exceed 10% of the test pressure.

(e) *Pressure relief.* When required by the cognizant OCMI, spaces that are protected by a fixed gas fire extinguishing system and that are relatively airtight, such as refrigeration spaces, paint lockers, etc., must be provided with suitable means for relieving excessive pressure within the space when the agent is released.

(f) *Specific requirements for carbon dioxide systems.* A custom engineered fixed gas fire extinguishing system, which uses carbon dioxide as the extinguishing agent, must meet the requirements of this paragraph.

(1) Piping, valves, and fittings must have a bursting pressure of not less than 41,360 kPa (6,000 psi). Piping, in nominal sizes of not more than 19 millimeters (0.75 inches), must be at least Schedule 40 (standard weight), and in nominal sizes of over 19 millimeter (0.75 inches), must be at least Schedule 80 (extra heavy).

(2) A pressure relief valve or equivalent set to relieve at between 16,550 and 19,300 kPa (2,400 and 2,800 psi) must be installed in the distribution manifold to protect the piping from overpressurization.

(3) Nozzles must be approved by the Commandant.

(4) When installed in a machinery space, paint locker, a space containing flammable liquid stores, or a space with a fuel tank, a fixed carbon dioxide system must meet the following requirements.

(i) The quantity of carbon dioxide in kilograms (pounds) that the system must be capable of providing to a space must not be less than the gross volume of the space divided by the appropriate factor given in Table 118.410(f)(4)(i). If fuel can drain from a space being protected to an adjacent space or if the spaces are not entirely separate, the volume of both spaces must be used to determine the quantity of carbon dioxide required. The carbon dioxide must be arranged to discharge into both such spaces simultaneously.

TABLE 118.410(f)(4)(i)

Factor	Gross volume of space in cubic meters (feet)	
	over	Not Over
0.94 (15)		14 (500)
1.0 (16)	14 (500)	45 (1,600)
1.1 (18)	45 (1,600)	125 (4,500)
1.2 (20)	125 (4,500)	1,400 (50,000)
1.4 (22)	1,400 (50,000)	.....

(ii) The minimum size of a branch line to a space must be as noted in Table 118.410(f)(4)(ii).

TABLE 118.410(f)(4)(ii)

Maximum quantity of carbon dioxide required kg (lbs)	Minimum nominal pipe size mm (inches)	Maximum quantity of carbon dioxide required kg (lbs)	Minimum nominal pipe size mm (inches)
45.4 (100)	12.7 (0.5)	1,134 (2,500)	65 (2.5)
102 (225)	19 (0.75)	2,018 (4,450)	75 (3.0)
136 (300)	25 (1.0)	3,220 (7,100)	90 (3.5)
272 (600)	30 (1.25)	4,739 (10,450)	100 (4.0)
454 (1,000)	40 (1.5)	6,802 (15,000)	113 (4.5)
1,111 (2,450)	50 (2.0)	.....	

(iii) Distribution piping within a space must be proportioned from the distribution line to give proper supply to the outlets without throttling.

(iv) The number, type, and location of discharge outlets must provide uniform distribution of carbon dioxide throughout a space.

(v) The total area of all discharge outlets must not exceed 85 percent nor be less than 35 percent of the nominal cylinder outlet area or the area of the supply pipe, whichever is smaller. The nominal cylinder outlet area in square millimeters (inches) is determined by multiplying the factor 0.015 (0.0022 if using square inches) by the total capacity in kilograms (pounds) of all carbon dioxide cylinders in the system, except in no case must the outlet area be of less than 71 square millimeters (0.110 square inches).

(vi) The discharge of at least 85 percent of the required amount of carbon dioxide must be completed within two minutes.

(5) When installed in an enclosed ventilation system for rotating electrical propulsion equipment a fixed carbon dioxide system must meet the following requirements.

(i) The quantity of carbon dioxide in kilograms (pounds) must be sufficient for initial and delayed discharges as required by this paragraph. The initial discharge must be equal to the gross volume of the system divided by 160 (10 if using pounds) for ventilation systems having a volume of less than 57 cubic meters (2,000 cubic feet), or divided by 192 (12 if using pounds) for ventilation systems having a volume of at least 57 cubic meters (2,000 cubic feet). In addition, there must be sufficient carbon dioxide available to permit delayed discharges to maintain at least a 25 percent concentration until the equipment can be stopped. If the initial discharge achieves this concentration, a delayed discharge is not required.

(ii) The piping sizes for the initial discharge must be in accordance with Table 118.410(f)(4)(ii) and the discharge of the required amount must be completed within two minutes.

(iii) Piping for the delayed discharge must not be less than 12.7 millimeters (0.5 inches) nominal pipe size, and need not meet specific requirement for discharge rate.

(iv) Piping for the delayed discharge may be incorporated with the initial discharge piping.

(6) When installed in a cargo space a fixed carbon dioxide system must meet the following requirements.

(i) The number of kilograms (pounds) of carbon dioxide required for each space in cubic meters (feet) must be equal to the gross volume of the space in cubic meters (feet) divided by 480 (30 if using pounds).

(ii) System piping must be of at least 19 millimeters (0.75 inches).

(iii) No specific discharge rate is required.

(7) A lockout valve must be provided on any carbon dioxide extinguishing system protecting a space over 6,000 cubic feet in volume and installed or altered after [July 9, 2013. ''Altered'' means modified or refurbished beyond the maintenance required by the manufacturer's design, installation, operation and maintenance manual.

(8) The lockout valve must be a manually operated valve located in the discharge manifold prior to the stop valve or selector valves. When in the closed position, the lockout valve must provide complete isolation of the system from the protected space or spaces, making it impossible for carbon dioxide to discharge in the event of equipment failure during maintenance.

(9) The lockout valve design or locking mechanism must make it obvious whether the valve is open or closed.

(10) A valve is considered a lockout valve if it has a hasp or other means of attachment to which, or through which, a lock can be affixed, or it has a locking mechanism built into it.

(11) The master or person-in-charge must ensure that the valve is locked open at all times, except while maintenance is being performed on the extinguishing system, when the valve must be locked in the closed position.

(12) Lockout valves added to existing systems must be approved by the Commandant as part of the installed system.

(g) *Specific requirements for Halon 1301 systems.* (1) A custom engineered fixed gas fire extinguishing system that uses Halon 1301, must comply with the applicable sections of UL 1058 ''Halogenated Agent Extinguishing System Units,'' and the requirements of this paragraph.

(2) The Halon 1301 quantity and discharge requirements of UL 1058 apply, with the exception that the Halon 1301 design concentration must be 6 percent at the lowest ambient temperature expected in the space. If the lowest temperature is not known, a temperature of −18 °C (0 °F) must be assumed.

(3) Each storage cylinder in a system must have the same pressure and volume.

(4) Computer programs used in designing systems must be approved by an independent laboratory recognized by the Commandant.

NOTE TO §118.410(g): As of Jan. 1, 1994, the United States banned the production of Halon. The Environmental Protection Agency placed significant restrictions on the servicing and maintenance of systems containing Halon. Vessels operating on an international voyage, subject to SOLAS requirements, are prohibited from installing fixed gas fire extinguishing systems containing Halon.

(h) Each carbon dioxide extinguishing system installed or altered after July 9, 2013, must have an approved odorizing unit to produce the scent of wintergreen, the detection of which will serve as an indication that carbon dioxide gas is present in a protected area and any other area into which the carbon dioxide may migrate. ''Altered'' means modified or refurbished beyond the maintenance required by the manufacturer's design, installation, operation and maintenance manual.

[CGD 85–080, 61 FR 917, Jan. 10, 1996; 61 FR 20556, May 7, 1996, as amended at 62 FR 51351, Sept. 30, 1997; USCG–2000–7790, 65 FR 58462, Sept. 29, 2000; USCG–2006–24797, 77 FR 33883, June 7, 2012]

§118.420 Pre-engineered fixed gas fire extinguishing systems.

(a) A pre-engineered fixed gas fire extinguishing system must:

(1) Be approved by the Commandant;

(2) Be capable of manual actuation from outside the space in addition to automatic actuation by a heat detector;

(3) Automatically shut down all power ventilation systems and all engines that draw intake air from within the protection space; and

(4) Be installed in accordance with manufacturer's instructions.

(b) A vessel on which a pre-engineered fixed gas fire extinguishing system is installed must have the following equipment at the operating station:

(1) A light to indicate discharge;

(2) An audible alarm that sounds upon discharge; and

(3) A means to reset devices used to automatically shut down ventilation systems and engines as required by paragraph (a)(3) of this section.

(c) Only one pre-engineered fixed gas fire extinguishing system is allowed to be installed in each space protected by such a system.

§ 118.425 Galley hood fire extinguishing systems.

(a) A grease extraction hood required by § 118.400 of this part must meet UL 710 ''Exhaust Hoods for Commercial Cooking Equipment,'' or other standard specified by the Commandant.

(b) A grease extraction hood must be equipped with a dry or wet chemical fire extinguishing system meeting the applicable sections of NFPA 17 ''Dry Chemical Extinguishing Systems,'' 17A ''Wet Chemical Extinguishing Systems,'' or other standard specified by the Commandant, and must be listed by an independent laboratory recognized by the Commandant.

Subpart E—Portable Fire Extinguishers

§ 118.500 Required number, type, and location.

(a) Each portable fire extinguisher on a vessel must be of a type approved by the Commandant. The minimum number of portable fire extinguishers required on a vessel must be acceptable to the cognizant OCMI, but must be not less than the minimum number required by Table 118.500(a) and other provisions of this section.

TABLE 118.500(a)

Space protected	Minimum number required	Type extinguisher permitted		
		CG class	Medium	Min. size
Operating station	1	B-I, C-I	Halon	1.1 kg (2.5 lb)
			CO_2	1.8 kg (4 lb)
			Dry chemical	0.9 kg (2 lb)
Machinery space	1	B-II, C-II located just outside exit.	Halon	4.5 kg (10 lb)
			CO_2	6.8 kg (15 lb)
			Dry chemical	4.5 kg (10 lb)
Open vehicle deck	1 for every 10 vehicles	B-II	Foam	9.5 L (2.5 gal)
			Halon	4.5 kg (10 lb)
			CO_2	6.8 kg (15 lb)
			Dry chemical	4.5 kg (10 lb)
Accommodation space.	1 for each 232.3 square meters (2,500 square feet) or fraction thereof.	A-II	Foam	9.5 L (2.5 gal)
			Dry chemical	4.5 kg (10 lb)
Galley, pantry, concession stand.	1	A-II	Foam	9.5 L (2.5 gal)
		B-II	Dry chemical	4.5 kg (10 lb)

(b) A vehicle deck without a fixed sprinkler system and exposed to weather must have one B-II portable fire extinguisher for every five vehicles, located near an entrance to the space.

(c) The cognizant OCMI may permit the use of a larger portable fire extinguisher, or a semiportable fire extinguisher, in lieu of those required by this section.

(d) The frame or support of each B-V fire extinguisher permitted by paragraph (c) of this section must be welded or otherwise permanently attached to a bulkhead or deck.

[CGD 85–080, 61 FR 917, Jan. 10, 1996, as amended at 62 FR 51351, Sept. 30, 1997]

§ 118.520 Installation and location.

Portable fire extinguishers must be located so that they are clearly visible and readily accessible from the space being protected. The installation and

location must be to the satisfaction of the cognizant OCMI.

Subpart F—Additional Equipment

§ 118.600 Fire axe.

A vessel of more than 19.8 meters (65 feet) in length must have at least one fire axe located in or adjacent to the primary operating station.

PART 119—MACHINERY INSTALLATION

Subpart A—General Provisions

Sec.

Subpart B—Propulsion Machinery

Subpart C—Auxiliary Machinery

Subpart D—Specific Machinery Requirements

Subpart E—Bilge and Ballast Systems

Subpart F—Steering Systems

Subpart G—Piping Systems

AUTHORITY: 46 U.S.C. 2103, 3306; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

SOURCE: CGD 85–080, 61 FR 922, Jan. 10, 1996, unless otherwise noted.

Subpart A—General Provisions

§ 119.100 Intent; preemptive effect.

This part contains requirements for the design, construction, installation, and operation of propulsion and auxiliary machinery, piping and pressure systems steering apparatus, and associated safety systems. Machinery and equipment installed on each vessel must be suitable for the vessel and its operation and for the purpose intended. The regulations in this part have preemptive effect over State or local regulations in the same field.

[CGD 85–080, 61 FR 922, Jan. 10, 1996, as amended by USCG–2006–24797, 77 FR 33883, June 7, 2012]

§ 119.115 Applicability to existing vessels.

(a) Except as otherwise required by paragraphs (b) and (c) of this section, an existing vessel must comply with the regulations on machinery, bilge and ballast system equipment, steering apparatus, and piping systems or components that were applicable to the vessel on March 10, 1996, or, as an alternative, the vessel may comply with the regulations in this part.

(b) New installations of machinery, bilge and ballast system equipment, steering equipment, and piping systems or components on an existing vessel, which are completed to the satisfaction of the cognizant Office in Charge, Marine Inspection (OCMI) on or after March 11, 1996, must comply with the regulations of this part. Replacement of existing equipment installed on the vessel prior to March 11, 1996, need not comply with the regulations in this part.

46 CFR 181.300-610 — Hand Portable Fire Extinguishers Small Passenger Vessels Under 100 Gross Tons

§ 181.120 Equipment installed but not required.

Fire extinguishing and detecting equipment installed on a vessel in excess of the requirements of §§ 181.400 and 181.500 must be designed, constructed, installed and maintained in accordance with a recognized industry standard acceptable to the Commandant.

Subpart B [Reserved]

Subpart C—Fire Main System

§ 181.300 Fire pumps.

(a) A self priming, power driven fire pump must be installed on each vessel:

(i) Of not more than 19.8 meters (65 feet) in length which is a ferry vessel;

(ii) Of not more than 19.8 meters (65 feet) in length that carries more than 49 passengers; or

(iii) Of more than 19.8 meters (65 feet) in length.

(b) On a vessel of not more than 19.8 meters (65 feet) in length carrying more than 49 passengers, and on a vessel of more than 19.8 meters (65 feet) in length, the minimum capacity of the fire pump must be 189 liters (50 gallons) per minute at a pressure of not less than 414 kPa (60 psi) at the pump outlet. The pump outlet must be fitted with a pressure gauge.

(c) On a ferry vessel of not more than 19.8 meters (65 feet) in length carrying not more than 49 passengers, the minimum capacity of the fire pump must be 38 liters (10 gallons) per minute. The fire pump must be capable of projecting a hose stream from the highest hydrant, through the hose and nozzle required by § 181.320 of this part, a distance of 7.6 meters (25 feet).

(d) A fire pump may be driven by a propulsion engine. A fire pump must be permanently connected to the fire main and may be connected to the bilge system to meet the requirements of § 182.520 of this chapter.

(e) A fire pump must be capable of both remote operation from the operating station and local operations at the pump.

[CGD 85–080, 61 FR 982, Jan. 10, 1996, as amended at 62 FR 51358, Sept. 30, 1997]

§ 181.310 Fire main and hydrants.

(a) A vessel that has a power driven fire pump must have a sufficient number of fire hydrants to reach any part of the vessel using a single length of fire hose.

(b) Piping, valves, and fittings in a fire main system must comply with subpart G, part 182, of this chapter.

(c) Each fire hydrant must have a valve installed to allow the fire hose to be removed while the fire main is under pressure.

[CGD 85–080, 61 FR 982, Jan. 10, 1996, as amended at 62 FR 51358, Sept. 30, 1997]

§ 181.320 Fire hoses and nozzles.

(a) A fire hose with a nozzle must be attached to each fire hydrant at all times. For fire hydrants located on open decks or cargo decks, where no protection is provided, hoses may be temporarily removed during heavy weather or cargo handling operations, respectively. Hoses so removed must be stored in nearby accessible locations.

(b) On a vessel of not more than 19.8 meters (65 feet) in length carrying more than 49 passengers, and on a vessel of more than 19.8 meters (65 feet) in length, each hose must:

(1) Be lined commercial fire hose that conforms to UL 19 (incorporated by reference, see 46 CFR 175.600) or hose that is listed and labeled by an independent laboratory recognized by the Commandant as being equivalent in performance;

(2) Be 15.25 meters (50 feet) in length and 40 millimeters (1.5 inches) in diameter; and

(3) Have fittings of brass or other suitable corrosion-resistant material that comply with NFPA 1963 (incorporated by reference, see 46 CFR 175.600) or other standard specified by the Commandant.

(c) Each fire hose on a vessel of not more than 19.8 meters (65 feet) in length carrying not more than 49 passengers must:

(1) Comply with paragraphs (b)(1) and (b)(3) of this section or be garden type hose of not less than 16 millimeters (0.625 inches) nominal inside diameter;

(2) Be of one piece not less than 7.6 meters (25 feet) and not more than 15.25 meters (50 feet) in length; and

(3) If of the garden type, be of a good commercial grade constructed of an inner rubber tube, plies of braided fabric reinforcement, and an outer cover of rubber or equivalent material, and of sufficient strength to withstand the maximum pressure that can be produced by the fire pump. All fittings on the hose must be of suitable corrosion-resistant material.

(d) Each nozzle must be of corrosion-resistant material and be capable of being changed between a solid stream and a spray pattern. A nozzle on a vessel of not more than 19.8 meters (65 feet) in length carrying more than 49 passengers, and on a vessel of more than 19.8 meters (65 feet) in length, must:

(1) Be of a type approved in accordance with approval series 162.027; or

(2) Be of a type recognized by the Commandant as being equivalent in performance.

[CGD 85–080, 61 FR 982, Jan. 10, 1996; 61 FR 20557, May 7, 1996; 61 FR 24464, May 15, 1996, as amended at 62 FR 51358, Sept. 30, 1997; USCG–2003–16630, 73 FR 65206, Oct. 31, 2008]

Subpart D—Fixed Fire Extinguishing and Detecting Systems

§ 181.400 Where required.

(a) The following spaces must be equipped with a fixed gas fire extinguishing system, in compliance with § 181.410, or other fixed fire extinguishing system specifically approved by the Commandant, except as otherwise allowed by paragraph (b) of this section:

(1) A space containing propulsion machinery;

(2) A space containing an internal combustion engine of more than 37.3 kW (50 hp);

(3) A space containing an oil fired boiler;

(4) A space containing machinery powered by gasoline or other fuels having a flash point of 43.3 °C (110 °F) or lower;

(5) A space containing a fuel tank for gasoline or any other fuel having a flash point of 43.3 °C (110 °F) or lower;

(6) A space containing combustible cargo or ship's stores inaccessible during the voyage (in these types of spaces only carbon dioxide, and not Halon, systems will be allowed);

(7) A paint locker; and

(8) A storeroom containing flammable liquids (including liquors of 80 proof or higher where liquor is packaged in individual containers of 9.5 liters (2.5 gallons) capacity or greater).

(b) Alternative system types and exceptions to the requirements of paragraph (a) of this section are:

(1) A fixed gas fire extinguishing system, which is capable of automatic discharge upon heat detection, may only be installed in a normally unoccupied space with a gross volume of not more than 170 cubic meters (6,000 cubic feet);

(2) A pre-engineered fixed gas fire extinguishing system must be in compliance with § 181.420 of this part and may only be installed in a normally unoccupied machinery space, a paint locker, or a storeroom containing flammable liquids (including liquors of 80 proof or higher where liquor is packaged in individual containers of 9.5 liters (2.5 gallons) capacity or greater), with a gross volume of not more than 57 cubic meters (2,000 cubic feet);

(3) A B-II portable fire extinguisher installed outside the space may be substituted for a fixed gas fire extinguishing system in a storeroom containing flammable liquids (including liquors of 80 proof or higher where liquor is packaged in individual containers of 9.5 liters (2.5 gallons) capacity or greater) or a paint locker, with a volume of not more that 5.7 cubic meters (200 cubic feet);

(4) A space which is so open to the atmosphere that a fixed gas fire extinguishing system would be ineffective, as determined by the cognizant OCMI, is not required to have a fixed gas fire extinguishing system; and

(5) Where the amount of carbon dioxide gas required in a fixed fire extinguishing system can be supplied by one portable extinguisher or a semiportable extinguisher, such an extinguisher may be used subject to the following:

(i) The cylinder shall be installed in a fixed position outside the space protected;

(ii) The applicator shall be installed in a fixed position so as to discharge into the space protected; and

(iii) Controls shall be installed in an accessible location outside the space protected.

(c) The following spaces must be equipped with a fire detecting system of an approved type that is installed in accordance with § 76.27 in subchapter H of this chapter, except when a fixed gas fire extinguishing system that is capable of automatic discharge upon heat detection is installed or when the space is manned:

(1) A space containing propulsion machinery;

(2) A space containing an internal combustion engine of more than 50 hp;

(3) A space containing an oil fired boiler;

(4) A space containing machinery powered by gasoline or any other fuels having a flash point of 43.3 °C (110 °F) or lower; and

(5) A space containing a fuel tank for gasoline or any other fuel having a flash point of 43.3 °C (110 °F) or lower.

(d) All griddles, broilers, and deep fat fryers must be fitted with a grease extraction hood in compliance with § 181.425.

(e) Each overnight accommodation space on a vessel with overnight accommodations for passengers must be fitted with an independent modular smoke detecting and alarm unit in compliance with § 181.450.

(f) An enclosed vehicle space must be fitted with an automatic sprinkler system that meets the requirements of § 76.25 in subchapter H of this chapter; and

(1) A fire detecting system of an approved type that is installed in accordance with § 76.27 in subchapter H of this chapter; or

(2) A smoke detecting system of an approved type that is installed in accordance with § 76.33 in subchapter H of this chapter.

(g) A partially enclosed vehicle space must be fitted with a manual sprinkler system that meets the requirements of § 76.23 in subchapter H of this chapter.

[CGD 85–080, 61 FR 982, Jan. 10, 1996, as amended at 62 FR 51358, Sept. 30, 1997; USCG–1999–6216, 64 FR 53228, Oct. 1, 1999]

§ 181.410 Fixed gas fire extinguishing systems.

(a) *General.* (1) A fixed gas fire extinguishing system aboard a vessel must be approved by the Commandant, and be custom engineered to meet the requirements of this section unless the system meets the requirements of § 181.420.

(2) System components must be listed and labeled by an independent laboratory. A component from a different system, even if from the same manufacturer, must not be used unless included in the approval of the installed system.

(3) System design and installation must be in accordance with the Marine Design, Installation, Operation, and Maintenance Manual approved for the system by the Commandant.

(4) A fixed gas fire extinguishing system may protect more than one space. The quantity of extinguishing agent must be at least sufficient for the space requiring the greatest quantity as determined by the requirements of paragraphs (f)(4) and (g)(2) of this section.

(b) *Controls.* (1) Controls and valves for operation of fixed gas fire extinguishing system must be:

(i) Located outside the space protected by the system; and

(ii) Not located in a space that might be inaccessible in the event of fire in the space protected by the system.

(2) Except for a normally unoccupied space of less than 170 cubic meters (6000 cubic feet), release of an extinguishing agent into a space must require two distinct operations.

(3) A system must have local manual controls at the storage cylinders capable of releasing the extinguishing agent. In addition, a normally manned space must have remote controls for releasing the extinguishing agent at the primary exit from the space.

(4) Remote controls must be located in a breakglass enclosure to preclude accidental discharge.

(5) Valves and controls must be of an approved type and protected from damage or accidental activation. A pull cable used to activate the system controls must be enclosed in conduit.

(6) A system protecting more than one space must have a manifold with a

normally closed stop valve for each space protected.

(7) A gas actuated valve or device must be capable of manual override at the valve or device.

(8) A system, that has more than one storage cylinder for the extinguishing agent and that relies on pilot cylinders to activate the primary storage cylinders, must have at least two pilot cylinders. Local manual controls, in compliance with paragraph (b)(3) of this section, must be provided to operate the pilot cylinders but are not required for the primary storage cylinders.

(9) A system protecting a manned space must be fitted with an approved time delay and alarm arranged to require the alarm to sound for at least 20 seconds or the time necessary to escape from the space, whichever is greater, before the agent is released into the space. Alarms must be conspicuously and centrally located. The alarm must be powered by the extinguishing agent.

(10) A device must be provided to automatically shut down power ventilation serving the protected space and engines that draw intake air from the protected space prior to release of the extinguishing agent into the space.

(11) Controls and storage cylinders must not be in a locked space unless the key is in a breakglass type box conspicuously located adjacent to the space.

(c) *Storage space.* (1) Except as provided in paragraph (c)(2) of this section, a storage cylinder for a fixed gas extinguishing system must be:

(i) Located outside the space protected by the system; and

(ii) Not located in a space that might be inaccessible in the event of a fire in the space protected by the system.

(2) A normally unoccupied space of less than 170 cubic meters (6,000 cubic feet) may have the storage cylinders located within the space protected. When the storage cylinders are located in the space:

(i) The system must be capable of automatic operation by a heat actuator within the space; and

(ii) Have manual controls in compliance with paragraph (b) of this section except for paragraph (b)(3).

(3) A space containing a storage cylinder must be maintained at a temperature within the range from −30 °C (−20 °F) to 55 °C (130 °F) or at another temperature as listed by the independent laboratory and stated in the manufacturer's approved manual.

(4) A storage cylinder must be securely fastened, supported, and protected against damage.

(5) A storage cylinder must be accessible and capable of easy removal for recharging and inspection. Provisions must be available for weighing each storage cylinder in place.

(6) Where subject to moisture, a storage cylinder must be installed to provide a space of at least 51 millimeters (2 inches) between the deck and the bottom of the storage cylinder.

(7) A Halon 1301 storage cylinder must be stowed in an upright position unless otherwise listed by the independent laboratory. A carbon dioxide cylinder may not be inclined more than 30° from the vertical unless fitted with flexible or bent siphon tubes, in which case it may be inclined not more than 80° from the vertical. Cylinders for clean agent systems must be installed in an upright position unless otherwise specified in the system's instruction manual.

(8) Where a check valve is not fitted on an independent storage cylinder discharge, a plug or cap must be provided for closing the outlet resulting from storage cylinder removal.

(9) Each storage cylinder must meet the requirements of §147.60 in subchapter N of this chapter, or other standard specified by the Commandant.

(10) A storage cylinder space must have doors that open outwards or be fitted with kickout panels installed in each door.

(d) *Piping.* (1) A pipe, valve, or fitting of ferrous material must be protected inside and outside against corrosion unless otherwise approved by the Commandant. Aluminum or other low melting material must not be used for a component of a fixed gas fire extinguishing system except as specifically approved by the Commandant.

(2) A distribution line must extend at least 51 millimeters (2 inches) beyond the last orifice and be closed with a cap or plug.

(3) Piping, valves, and fittings must be securely supported, and where necessary, protected against damage.

(4) Drains and dirt traps must be fitted where necessary to prevent the accumulation of dirt or moisture and located in accessible locations.

(5) Piping must be used for no other purpose except that it may be incorporated with the fire detecting system.

(6) Piping passing through accommodation spaces must not be fitted with drains or other openings within such spaces.

(7) Installation test requirements for carbon dioxide systems. The distribution piping of a carbon dioxide fixed gas extinguishing system must be tested as required by this paragraph, upon completion of the piping installation, using only carbon dioxide, compressed air, or nitrogen gas.

(i) Piping between a storage cylinder and a stop valve in the manifold must be subjected to a pressure of 6,894 kPa (1,000 psi), except as permitted in paragraph (d)(7)(iii) of this section. Without additional gas being introduced to the system, the pressure drop must not exceed 2,068 kPa (300 psi) after two minutes.

(ii) A distribution line to a space protected by the system must be subjected to a test similar to that described in paragraph (d)(7)(i) of this section except the pressure used must be 4,136 kPa (600 psi). For the purpose of this test, the distribution piping must be capped within the space protected at the first joint between the nozzles and the storage cylinders.

(iii) A small independent system protecting a space such as a paint locker may be tested by blowing out the piping with air at a pressure of not less than 689 kPa (100 psi) instead of the tests prescribed in the paragraphs (d)(7)(i) and (d)(7)(ii) of this section.

(8) Installation test requirements for Halon 1301 systems. The distribution piping of a Halon 1301 fixed gas extinguishing system must be tested, as required by this paragraph, upon completion of the piping installation, using only carbon dioxide, compressed air, or nitrogen.

(i) When pressurizing the piping, pressure must be increased in small increments. Each joint must be subjected to a soap bubble leak test, and all joints must be leak free.

(ii) Piping between the storage cylinders and the manifold stop valve must be subjected to a leak test conducted at a pressure of 4,136 kPa (600 psi). Without additional gas being added to the system, there must be no loss of pressure over a two minute period after thermal equilibrium is reached.

(iii) Distribution piping between the manifold stop valve and the first nozzle in the system must be capped and pneumatically tested for a period of 10 minutes at 1,034 kPa (150 psi). At the end of 10 minutes, the pressure drop must not exceed 10% of the test pressure.

(e) *Pressure relief.* When required by the cognizant OCMI, spaces that are protected by a fixed gas fire extinguishing system and that are relatively air tight, such as refrigeration spaces, paint lockers, etc., must be provided with suitable means for relieving excessive pressure within the space when the agent is released.

(f) *Specific requirements for carbon dioxide systems.* A custom engineered fixed gas fire extinguishing system, which uses carbon dioxide as the extinguishing agent, must meet the requirements of this paragraph.

(1) Piping, valves, and fittings must have a bursting pressure of not less than 41,360 kPa (6,000 psi). Piping, in nominal sizes of not more than 19 millimeters (0.75 inches), must be at least Schedule 40 (standard weight), and in nominal sizes of over 19 millimeters (0.75 inches), must be at least Schedule 80 (extra heavy).

(2) A pressure relief valve or equivalent set to relieve at between 16,550 and 19,300 kPa (2,400 and 2,800 psi) must be installed in the distribution manifold to protect the piping from over-pressurization.

(3) Nozzles must be approved by the Commandant.

(4) When installed in a machinery space, paint locker, a space containing flammable liquid stores, or a space with a fuel tank, a fixed carbon dioxide system must meet the following requirements.

(i) The quantity of carbon dioxide in kilograms (pounds) that the system

must be capable of providing to a space must not be less than the gross volume of the space divided by the appropriate factor given in Table 181.410(f)(4)(i). If fuel can drain from a space being protected to an adjacent space or if the spaces are not entirely separate, the volume of both spaces must be used to determine the quantity of carbon dioxide to be provided. The carbon dioxide must be arranged to discharge into both such spaces simultaneously.

TABLE 181.410(f)(4)(i)

Factor	Gross volume of space in cubic meters (feet)	
	Over	Not Over
0.94 (15)	.....	14 (500)
1.0 (16)	14 (500)	45 (1,600)
1.1 (18)	45 (1,600)	125 (4,500)
1.2 (20)	125 (4,500)	1400 (50,000)
1.4 (22)	1400 (50,000)	.....

(ii) The minimum size of a branch line to a space must be as noted in Table 181.410(f)(4)(ii).

TABLE 181.410(f)(4)(ii)

Maximum quantity of carbon dioxide required kg (lbs)	Minimum nominal pipe size mm (inches)
45.4 (100)	12.7 (0.5)
102 (225)	19 (0.75)
136 (300)	25 (1.0)
272 (600)	30 (1.25)
454 (1000)	40 (1.5)
1111 (2450)	50 (2.0)
1134 (2,500)	65 (2.5)
2018 (4,450)	75 (3.0)
3220 (7,100)	90 (3.5)
4739 (10,450)	100 (4.0)
6802 (15,000)	113 (4.5)

(iii) Distribution piping within a space must be proportioned from the distribution line to give proper supply to the outlets without throttling.

(iv) The number, type, and location of discharge outlets must provide uniform distribution of carbon dioxide throughout a space.

(v) The total area of all discharge outlets must not exceed 85 percent nor be less than 35 percent of the nominal cylinder outlet area or the area of the supply pipe, whichever is smaller. The nominal cylinder outlet area in square millimeters (inches) is determined by multiplying the factor 0.015 (0.0022 if using square inches) by the total capacity in kilograms (pounds) of all carbon dioxide cylinders in the system, except in no case must the outlet area be of less than 71 square millimeters (0.110 square inches if using pounds).

(vi) The discharge of at least 85 percent of the required amount of carbon dioxide must be completed within two minutes.

(5) When installed in an enclosed ventilation system for rotating electrical propulsion equipment a fixed carbon dioxide extinguishing system must meet the following requirements.

(i) The quantity of carbon dioxide in kilograms (pounds) must be sufficient for initial and delayed discharges as required by this paragraph. The initial discharge must be equal to the gross volume of the system divided by 160 (10 if using pounds) for ventilation systems having a volume of less than 57 cubic meters (2,000 cubic feet), or divided by 192 (12 if using pounds) for ventilation systems having a volume of at least 57 cubic meters (2,000 cubic feet). In addition, there must be sufficient carbon dioxide available to permit delayed discharges to maintain at least a 25 percent concentration until the equipment can be stopped. If the initial discharge achieves this concentration, a delayed discharge is not required.

(ii) The piping sizes for the initial discharge must be in accordance with Table 181.410(f)(4)(ii) and the discharge of the required amount must be completed within two minutes.

(iii) Piping for the delayed discharge must not be less than 12.7 millimeters (0.5 inches) nominal pipe size, and need not meet specific requirement for discharge rate.

(iv) Piping for the delayed discharge may be incorporated with the initial discharge piping.

(6) When installed in a cargo space a fixed carbon dioxide extinguishing system must meet the following requirements.

(i) The number of kilograms (pounds) of carbon dioxide required for each space in cubic meters (feet) must be equal to the gross volume of the space in cubic meters (feet) divided by 480 (30 if using pounds).

(ii) System piping must be of at least 19 millimeters (0.75 inches).

(iii) No specific discharge rate is required.

(7) A lockout valve must be provided on any carbon dioxide extinguishing system protecting a space over 6,000 cubic feet in volume and installed or altered after [July 9, 2013. ''Altered'' means modified or refurbished beyond the maintenance required by the manufacturer's design, installation, operation and maintenance manual.

(i) The lockout valve must be a manually operated valve located in the discharge manifold prior to the stop valve or selector valves. When in the closed position, the lockout valve must provide complete isolation of the system from the protected space or spaces, making it impossible for carbon dioxide to discharge in the event of equipment failure during maintenance.

(ii) The lockout valve design or locking mechanism must make it obvious whether the valve is open or closed.

(iii) A valve is considered a lockout valve if it has a hasp or other means of attachment to which, or through which, a lock can be affixed, or it has a locking mechanism built into it.

(iv) The master or person-in-charge must ensure that the valve is locked open at all times, except while maintenance is being performed on the extinguishing system, when the valve must be locked in the closed position.

(v) Lockout valves added to existing systems must be approved by the Commandant as part of the installed system.

(8) Each carbon dioxide extinguishing system installed or altered after July 9, 2013, must have an approved odorizing unit to produce the scent of wintergreen, the detection of which will serve as an indication that carbon dioxide gas is present in a protected area and any other area into which the carbon dioxide may migrate. ''Altered'' means modified or refurbished beyond the maintenance required by the manufacturer's design, installation, operation and maintenance manual.

(g) *Specific requirements for Halon 1301 systems.* (1) A custom engineering fixed gas fire extinguishing system, which uses Halon 1301, must comply with the applicable sections of UL 1058 (incorporated by reference, see 46 CFR 175.600) and the requirements of this paragraph (g).

(2) The Halon 1301 quantity and discharge requirements of UL 1058 apply, with the exception that the Halon 1301 design concentration must be 6 percent at the lowest ambient temperature expected in the space. If the lowest temperature is not known, a temperature of −18 °C (0 °F) must be assumed.

(3) Each storage cylinder in a system must have the same pressure and volume.

(4) Computer programs used in designing systems must have been approved by an independent laboratory.

NOTE TO §181.410(g): As of Jan. 1, 1994, the United States banned the production of Halon. The Environmental Protection Agency placed significant restrictions on the servicing and maintenance of systems containing Halon. Vessels operating on an international voyage, subject to SOLAS requirements, are prohibited from installing fixed gas fire extinguishing systems containing Halon.

[CGD 85–080, 61 FR 982, Jan. 10, 1996; 61 FR 20557, May 7, 1996, as amended at 62 FR 51358, Sept. 30, 1997; USCG–2000–7790, 65 FR 58465, Sept. 29, 2000; USCG–2003–16630, 73 FR 65206, Oct. 31, 2008; USCG–2006–24797, 77 FR 33891, June 7, 2012]

§ 181.420 Pre-engineered fixed gas fire extinguishing systems.

(a) A pre-engineered fixed gas fire extinguishing system must:

(1) Be approved by the Commandant;

(2) Be capable of manual actuation from outside the space in addition to automatic actuation by a heat detector;

(3) Automatically shut down all power ventilation systems and all engines that draw intake air from within the protected space; and

(4) Be installed in accordance with the manufacturer's instructions.

(b) A vessel on which a pre-engineered fixed gas fire extinguishing system is installed must have the following equipment at the operating station:

(1) A light to indicate discharge;

(2) An audible alarm that sounds upon discharge; and

(3) A means to reset devices used to automatically shut down ventilation systems and engines as required by paragraph (a)(3) of this section.

(c) Only one pre-engineered fixed gas fire extinguishing system is allowed to

be installed in each space protected by such a system.

§ 181.425 Galley hood fire extinguishing systems.

(a) A grease extraction hood required by 46 CFR 181.400 must meet UL 710 (incorporated by reference, see 46 CFR 175.600) or other standard specified by the Commandant.

(b) A grease extraction hood must be equipped with a dry or wet chemical fire extinguishing system meeting the applicable sections of NFPA 17 or NFPA 17A (both incorporated by reference, see 46 CFR 175.600), or other standard specified by the Commandant, and must be listed by an independent laboratory recognized by the Commandant.

[USCG–2003–16630, 73 FR 65206, Oct. 31, 2008]

§ 181.450 Independent modular smoke detecting units.

(a) An independent modular smoke detecting unit must:

(1) Meet UL 217 (incorporated by reference, see 46 CFR 175.600) and be listed as a ''Single Station Smoke detector—Also suitable for use in Recreational Vehicles,'' or other standard specified by the Commandant;

(2) Contain an independent power source; and

(3) Alarm on low power.

(b) [Reserved]

[CGD 85–080, 61 FR 982, Jan. 10, 1996, as amended by USCG–2003–16630, 73 FR 65207, Oct. 31, 2008]

Subpart E—Portable Fire Extinguishers

§ 181.500 Required number, type, and location.

(a) Each portable fire extinguisher on a vessel must be of an approved type. The minimum number of portable fire extinguishers required on a vessel must be acceptable to the cognizant OCMI, but must be not less than the minimum number required by Table 181.500(a) and other provisions of this section.

TABLE 181.500(a)

Space protected	Minimum No. required	Type extinguisher permitted		
		CG class	Medium	Min size
Operating Station	1	B-I, C-I	Halon	1.1 kg (2.5 lb).
			CO_2	1.8kg (4 lb).
			Dry Chemical	0.9 kg (2 lb).
Machinery Space	1	B-II, C-II located just outside exit.	CO_2	6.8 kg (15 lb).
			Dry chemical	4.5 kg (10 lb).
Open Vehicle Deck	1 for every 10 vehicles.	B-II	Foam	9.5 L (2.5 gal).
			Halon	4.5 kg (10 lb).
			CO_2	6.8 kg (15 lb).
			Dry Chemical	4.5 kg (10 lb).
Accomodation Space	1 for each 232.3 square meters (2,500 square feet) or fraction thereof.	A-II	Foam	9.5 L (2.5 gal).
			Dry Chemical	4.5 kg (10 lb).
Galley, Pantry, Concession Stand.	1	A-II, B-II	Foam	9.5 L (2.5 gal).
			Dry Chemical	4.5 kg (10 lb).

(b) A vehicle deck without a fixed sprinkler system and exposed to weather must have one B-II portable fire extinguisher for every five vehicles, located near an entrance to the space.

(c) The cognizant OCMI may permit the use of a larger portable fire extinguisher, or a semiportable fire extinguisher, in lieu of those required by this section.

(d) The frame or support of each B-V fire extinguisher permitted by paragraph (c) of this section must be welded

or otherwise permanently attached to a bulkhead or deck.

[CGD 85–080, 61 FR 982, Jan. 10, 1996; 61 FR 24464, May 15, 1996, as amended at 62 FR 51358, Sept. 30, 1997]

§ 181.520 Installation and location.

Portable fire extinguishers must be located so that they are clearly visible and readily accessible from the space being protected. The installation and location must be to the satisfaction of the Officer in Charge, Marine Inspection.

Subpart F—Additional Equipment

§ 181.600 Fire axe.

A vessel of more than 19.8 meters (65 feet) in length must have at least one fire axe located in or adjacent to the primary operating station.

§ 181.610 Fire bucket.

A vessel not required to have a power driven fire pump by §181.300 must have at least three 9.5 liter (2½ gallon) buckets, with an attached lanyard satisfactory to the cognizant OCMI, placed so as to be easily available during an emergency. The words ''FIRE BUCKET'' must be stenciled in a contrasting color on each bucket.

[CGD 85–080, 61 FR 982, Jan. 10, 1996, as amended at 62 FR 51358, Sept. 30, 1997]

PART 182—MACHINERY INSTALLATION

Subpart A—General Provisions

Sec.

Subpart B—Propulsion Machinery

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Subpart G—Piping Systems

AUTHORITY: 46 U.S.C. 3306; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

SOURCE: CGD 85–080, 61 FR 986, Jan. 10, 1996, unless otherwise noted.

Subpart A—General Provisions

§ 182.100 Intent.

This part contains requirements for the design, construction, installation, and operation of propulsion and auxiliary machinery, piping and pressure systems, steering apparatus, and associated safety systems. Machinery and equipment installed on each vessel must be suitable for the vessel and its operation and for the purpose intended.