

(h) Fire hose shall be connected to the outlets at all times. However, at open decks where no protection is afforded to the hose in heavy weather, the hose may be temporarily removed from the hydrant and stowed in an accessible nearby location.

(i) Each fire hydrant must have at least 1 length of firehose. Each firehose must have a combination solid stream and water spray nozzle that is approved under subpart 162.027 of this subchapter, except 19 millimeters (3/4 inch) hose may have a garden hose nozzle that is bronze or metal with strength and corrosion resistance equivalent to bronze. Combination solid stream and water spray nozzles previously approved under subpart 162.027 of this chapter may be retained so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection.

(j) When the firehose nozzle in the below locations was previously approved under subpart 162.027 of this chapter, a low-velocity water spray applicator, also previously approved under subpart 162.027, of this chapter must be installed as follows:

(1) At least 1 length of firehose on each fire hydrant outside and in the immediate vicinity of each laboratory;

(2) Each firehose in each propulsion machinery space containing oil-fired boiler, internal combustion machinery, or oil fuel unit on a vessel of 1000 gross tons or more—the length of each applicator must be 1.2 meters (4 feet).

(k) Fixed brackets, hooks, or other means for stowing an applicator must be next to each fire hydrant that has an applicator under paragraph (j) of this section.

(l) Firehose shall not be used for any other purpose than fire extinguishing, drills, and testing.

(m) Fire hydrants, nozzles, and other fittings shall have threads to accommodate the hose connections noted in this paragraph. Firehose and couplings shall be as follows:

(1) Couplings shall be of brass, bronze, or other equivalent metal. National Standard firehose coupling threads shall be used for the 1½-inch and 2½-inch sizes, i.e., 9 threads per inch for 1½-inch hose and 7½ threads per inch for 2½-inch hose.

(2) Unlined hose shall not be used in the machinery spaces.

(3) Where ¾-inch hose is permitted by Table 193.10-5(a), the hose and couplings shall be of good commercial grade.

(4) Each section of fire hose used after January 1, 1980 must be lined commercial fire hose that conforms to Underwriters' Laboratories, Inc. Standard 19 or Federal Specification ZZ-H-451E. Hose that bears the label of Underwriters' Laboratories, Inc. as lined fire hose is accepted as conforming to this requirement. Each section of replacement fire hose or any section of new fire hose placed aboard a vessel after January 1, 1977 must also conform to the specification required by this paragraph.

[CGFR 67-83, 33 FR 1145, Jan. 27, 1968, as amended by CGD 74-60, 41 FR 43152, Sept. 30, 1976; CGD 76-086, 44 FR 2394, Jan. 11, 1979; CGD 88-032, 56 FR 35830, July 29, 1991; CGD 95-027, 61 FR 26012, May 23, 1996; USCG-2000-7790, 65 FR 58465, Sept. 29, 2000]

§ 193.10-15 Piping.

(a) All piping, valves, and fittings, shall meet the applicable requirements of Subchapter F (Marine Engineering) of this chapter.

(b) All distribution cut-off valves shall be marked as required by § 196.37-10 of this subchapter.

(c) For vessels on an international voyage, the diameter of the fire main shall be sufficient for the effective distribution of the maximum required discharge from two fire pumps operating simultaneously. This requirement is in addition to § 193.10-5(c). The discharge of this quantity of water through hoses and nozzles at a sufficient number of adjacent hydrants must be at a minimum Pitot tube pressure of 50 pounds per square inch.

[CGFR 67-83, 33 FR 1145, Jan. 27, 1968, as amended by CGD 75-031, 40 FR 48349, Oct. 15, 1975]

§ 193.10-90 Installations contracted for prior to March 1, 1968.

Installations contracted for prior to March 1, 1968, must meet the following requirements:

(a) Except as specifically modified by this paragraph, vessels must comply with the requirements of §§ 193.10-5

through 193.10-15 insofar as the number and general type of equipment is concerned.

(b) Existing equipment, except firehose nozzles and low-velocity water spray applicators, previously approved but not meeting the applicable requirements of §§193.10-5 through 193.10-15, may be continued in service so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs, alterations, and replacements may be permitted to the same standards as the original installations. However, all new installations or major replacements must meet the applicable requirements in this subpart for new installations.

(c) Vessels must comply with the general requirements of §193.10-5 (c) through (g), §193.10-10 (d) through (m), and §193.10-15 insofar as is reasonable and practicable.

(d) Each firehose nozzle must meet §193.10-10(i), and each low-velocity water spray applicator must meet §193.10-10(j).

[CGD 95-027, 61 FR 26013, May 23, 1996]

Subpart 193.15—Carbon Dioxide Extinguishing Systems, Details

§ 193.15-1 Application.

(a) The provisions of this subpart shall apply to all new installations contracted for on or after March 1, 1968.

(b) Installations contracted for prior to March 1, 1968, shall meet the requirements of §193.15-90.

(c) The requirements of this subpart are based on a "high pressure system," i.e., one in which the carbon dioxide is stored in liquid form at atmospheric temperature. Details for "low pressure systems," i.e., those in which the carbon dioxide is stored in liquid form at a continuously controlled low temperature, may be specifically approved by the Commandant where it is demonstrated that a comparable degree of safety and fire extinguishing ability is achieved.

§ 193.15-5 Quantity, pipe sizes, and discharge rates.

(a) *General.* The amount of carbon dioxide required for each space shall be as determined by paragraphs (b) through (d) of this section.

(b) *Total available supply.* A separate supply of carbon dioxide need not be provided for each space protected. The total available supply shall be at least sufficient for the space requiring the greatest amount.

(c) *Enclosed ventilation systems for rotating electrical propulsion equipment.* (1) The number of pounds of carbon dioxide required for the initial charge shall be equal to the gross volume of the system divided by 10 for systems having a volume of less than 2,000 cubic feet, and divided by 12 for systems having a volume of 2,000 cubic feet or more.

(2) In addition to the amount required by paragraph (c)(1) of this section there shall be sufficient carbon dioxide available to permit delayed discharges of such quantity as to maintain at least a 25-percent concentration until the equipment can be stopped. If the initial discharge is such as to achieve this concentration until the equipment is stopped, no delayed discharge need be provided.

(3) The piping for the delayed discharge shall not be less than ½-inch standard pipe, and no specific discharge rate need be applied to such systems. On small systems, this pipe may be incorporated with the initial discharge piping.

(4) The piping for the initial charge shall be in accordance with Table 193.15-5(d)(4), and the discharge of the required amount shall be completed within 2 minutes.

(d) *Machinery spaces, paint lockers, tanks, chemical storerooms, and similar spaces.* (1) Except as provided in paragraph (d)(3) of this section, the number of pounds of carbon dioxide required for each space shall be equal to the gross volume of the space divided by the appropriate factor noted in Table 193.15-5(d)(1). If fuel can drain from the compartment being protected to an adjacent compartment, or if the compartments are not entirely separate, the requirements for both compartments