

(1) Participation by all crewmembers;

(2) Breaking out and using, or simulating the use of, emergency equipment;

(3) Testing of all alarm and detection systems; and

(4) Putting on protective clothing (by at least one person), if the vessel is so equipped.

(d) *Safety orientation.* The master or person in charge of a vessel must ensure that each crewmember who has not (i) participated in the drills required by paragraph (a) of this section, and (ii) received the instruction required by that paragraph, receives a safety orientation within 24 hours of reporting for duty.

(e) The safety orientation must cover the particular contingencies listed in paragraph (a) of this section.

§ 27.211 What are the specifications for fuel systems on towing vessels whose construction was contracted for on or after January 18, 2000?

(a) You must ensure that, except for the components of an outboard engine or of a portable bilge pump or fire pump, each fuel system installed on board the vessel complies with this section.

(b) *Portable fuel systems.* The vessel must not incorporate or carry portable fuel systems, including portable tanks and related fuel lines and accessories, except when used for outboard engines or when permanently attached to portable equipment such as portable bilge pumps or fire pumps. The design, construction, and stowage of portable tanks and related fuel lines and accessories must comply with ABYC H-25 (incorporated by reference in § 27.102).

(c) *Fuel restrictions.* Neither you nor the master or person in charge may use fuel other than bunker C or diesel, except for outboard engines, or where otherwise accepted by the Commandant (G-MSE). An installation that uses bunker C, heavy fuel oil (HFO), or any fuel that requires preheating, must comply with subchapter F of this chapter.

(d) *Vent pipes for integral fuel tanks.* Each integral fuel tank must meet the requirements of this paragraph as follows:

(1) Each tank must have a vent that connects to the highest point of the tank, discharges on a weather deck through a bend of 180 degrees (3.14 radians), and is fitted with a 30-by-30-mesh corrosion-resistant flame screen. Vents from two or more tanks may combine in a system that discharges on a weather deck.

(2) The net cross-sectional area of the vent pipe for the tank must be—

(i) Not less than 312.3 square millimeters (0.484 square inches) for any tank filled by gravity; or

(ii) Not less than that of the fill pipe for any tank filled under pressure.

(e) *Fuel piping.* Except as permitted in paragraphs (e)(1), (2), and (3) of this section, each fuel line must be seamless and made of steel, annealed copper, nickel-copper, or copper-nickel. Each fuel line must have a wall thickness of not less than 0.9 millimeters (0.035 inch) except that—

(1) Aluminum piping is acceptable on an aluminum-hull vessel if it is installed outside the engine room and is at least Schedule 80 in thickness; and

(2) Nonmetallic flexible hose is acceptable if it—

(i) Is used in lengths of not more than 0.76 meters (30 inches);

(ii) Is visible and easily accessible;

(iii) Does not penetrate a watertight bulkhead;

(iv) Is fabricated with an inner tube and a cover of synthetic rubber or other suitable material reinforced with wire braid; and

(v) Either,—
(A) If it is designed for use with compression fittings, is fitted with suitable, corrosion-resistant, compression fittings, or fittings compliant with SAE J1475 (incorporated by reference in § 27.102); or,

(B) If it is designed for use with clamps, is installed with two clamps at each end of the hose. Clamps must not rely on spring tension and must be installed beyond the bead or flare or over the serrations of the mating spud, pipe, 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

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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).

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 control 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.

(b) You must have a fixed fire-extinguishing system installed to protect the engine room of the vessel.

(c) This section does not apply to any towing vessel pushing a barge ahead, or hauling a barge alongside, when the barge's coastwise or Great Lakes route is restricted (as indicated on its certificate of inspection), so that the barge may operate "in fair weather only,