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(5) *Joints.* All metallic tank joints shall be welded or brazed.

(6) *Fittings.* Nozzles, flanges, or other fittings for pipe connections shall be welded or brazed to the tank. The tank openings in way of pipe connections shall be properly reinforced where necessary. Where fuel level gages are used, the flange to which gage fittings are attached shall be welded or brazed to the tank. No tubular gage glasses or trycocks shall be fitted to the tanks.

(7) *Baffle plates.* All tanks exceeding 30 inches in any horizontal dimension shall be fitted with vertical baffle plates where necessary for strength or for control of excessive surge. In general, baffle plates installed at intervals not exceeding 30 inches will be considered as meeting this requirement.

(8) *Baffle plate details.* Baffle plates, where required, shall be of the same material and not less than the minimum thickness required in the tank walls and shall be connected to the tank walls by welding or brazing. Limber holes at the bottom and air holes at the top of all baffles shall be provided.

(b) *Installation.* (1) Gasoline fuel tanks used for propulsion shall be located in water-tight compartments separate from, but adjacent to the engineroom or machinery space. Fuel tanks for auxiliaries shall be located on or above the weather deck outside of the engine housing or compartment and as close to the engine as practicable. All tanks shall be so installed as to provide a free circulation of air around the tanks.

(2) Cylindrical tanks with longitudinal seams shall be arranged horizontally where practicable so that such seams are located as near the top as possible.

(3) Fuel tanks shall be so installed as to permit examination, testing, or removal for cleaning.

(4) Fuel tanks shall be adequately supported and braced to prevent movement. Portable fuel tanks are not permitted.

(5) All fuel tanks shall be electrically bonded to the common ground.

(c) *Testing.* (1) Prior to installation, tanks vented to atmosphere shall be tested to, and must withstand, a pressure of 5 pounds per square inch or 1½ times the maximum head to which they may be subjected in service, whichever is greater. A standpipe of 11½ feet in height attached to the tank may be filled with water to accomplish the 5 pounds per square inch test. Permanent deformation of the tank will not be cause for rejection unless accompanied by leakage.

(2) After installation of the fuel tank on a vessel the complete installation shall be tested in the presence of a marine inspector to a head not less than that to which the tank may be subjected in service. Fuel may be used as a testing medium.

(3) All tanks not vented to atmosphere shall be constructed and tested in accordance with part 54 of this subchapter.

[CGFR 68-82, 33 FR 18878, Dec. 18, 1968, as amended by CGFR 72-59R, 37 FR 6190, Mar. 25, 1972; USCG-1999-5151, 64 FR 67180, Dec. 1, 1999; USCG-2003-16630, 73 FR 65187, Oct. 31, 2008]

§ 58.50-10 Diesel fuel tanks.

(a) *Construction.* (1) Tanks may be of either cylindrical or rectangular form.

(2) The materials used and the minimum thickness allowed in the construction of independent fuel tanks shall be as indicated in Table 58.50-10(a), except that consideration will be given to other materials which provide equivalent safety as indicated in § 58.50-15.

(3) Tanks with flanged-up top edges, that may trap and hold moisture, shall not be used.

TABLE 58.50-10(a)

Material	ASTM specification (all incorporated by reference; see 46 CFR 58.03-1)	Thickness in inches and gage numbers ¹ vs. tank capacities for—		
		1- through 80-gallon tanks	More than 80- and not more than 150-gallon tanks	Over 150-gallon tanks ²
Aluminum ⁵	B 209, Alloy 5086 ⁶	0.250 (USSG 3)	0.250 (USSG 3)	0.250 (USSG 3).
Nickel-copper	B 127, Hot rolled sheet or plate	0.037 (USSG 20). ³	0.050 (USSG 18)	0.107 (USSG 12).

TABLE 58.50-10(a)—Continued

Material	ASTM specification (all incorporated by reference; see 46 CFR 58.03-1)	Thickness in inches and gage numbers ¹ vs. tank capacities for—		
		1- through 80-gallon tanks	More than 80- and not more than 150-gallon tanks	Over 150-gallon tanks ²
Steel or iron ⁴	0.0747 (MfgStd 14)	0.1046 (MfgStd 12) ..	0.179 (MfgStd 7)..	

¹ Gauges used are U.S. standard "USSG" for aluminum and nickel-copper and "MfgStd" for steel or iron.
² Tanks over 400 gallons shall be designed with a factor of safety of four on the ultimate strength of the material used with design head of not less than 4 feet of liquid above the top of the tank.
³ Nickel-copper not less than 0.031 inch (USSG 22) may be used for tanks up to 30-gallon capacity.
⁴ For diesel tanks the steel or iron shall not be galvanized on the interior.
⁵ Anodic to most common metals. Avoid dissimilar metal contact with tank body.
⁶ And other alloys acceptable to the Commandant.

(4) Openings for fill and vent pipes must be on the topmost surface of a tank. There must be no openings in the bottom, sides, or ends of a tank except as follows:

(i) The opening for the fuel supply piping is not restricted to the top of the tank.

(ii) An opening fitted with threaded plug or cap may be used on the bottom of the tank for tank cleaning purposes.

(iii) Liquid level gages must penetrate at a point that is more than 2 inches from the bottom of the tank.

(5) All tank joints shall be welded.

(6) Nozzles, flanges, or other fittings for pipe connections shall be welded or brazed to the tank. The tank opening in way of pipe connections shall be properly reinforced where necessary. Where liquid level indicating devices are attached to the tank, they shall be of heat resistant materials adequately protected from mechanical damage and provided at the tank connections with devices which will automatically close in the event of rupture of the gage or gage lines.

(7) All tanks exceeding 30 inches in any horizontal dimension shall be fitted with vertical baffle plates where necessary for strength or for control of excessive surge. In general, baffle plates installed at intervals not exceeding 30 inches will be considered as meeting this requirement.

(8) Baffle plates, where required, shall be of the same material and not less than the minimum thickness required in the tank walls and shall be connected to the tank walls by welding or brazing. Limber holes at the bottom and air holes at the top of all baffle plates shall be provided.

(9) Iron or steel tanks shall not be galvanized on the interior. Galvanizing paint or other suitable coating shall be used to protect the outside of iron and steel tanks.

(b) *Installation.* (1) Tanks containing fuel for emergency lighting units shall be located on an open deck or in an adequately ventilated metal compartment. No tank shall be located in a compartment where the temperature may exceed 150 °F.

(2) When cylindrical tanks are installed, longitudinal seams shall be located as near the top of the tank as possible. Fuel tanks shall be located in, or as close as practicable, to the machinery space which is served.

(3) Fuel tanks shall be so installed as to permit examination, testing, or removal for cleaning.

(4) Fuel tanks shall be adequately supported and braced to prevent movement. Portable tanks are not permitted.

(5) All fuel tanks shall be electrically bonded to the common ground.

(c) *Tests.* (1) Prior to installation, tanks vented to the atmosphere shall be tested to and must withstand a pressure of 5 pounds per square inch or 1½ times the maximum head to which they may be subjected in service, whichever is greater. A standpipe of 11½ feet in height attached to the tank may be filled with water to accomplish the 5 pounds per square inch test. Permanent deformation of the tank will not be cause for rejection unless accompanied by leakage.

(2) After installation of the fuel tank on a vessel the complete installation shall be tested in the presence of a marine inspector to a head not less than

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that to which the tank may be subjected in service. Fuel may be used as a testing medium.

(3) All tanks not vented to atmosphere shall be constructed and tested in accordance with part 54 of this subchapter.

[CGFR 68-82, 33 FR 18878, Dec. 18, 1968, as amended by CGFR 69-127, 35 FR 9980, June 17, 1970; CGFR 72-59R, 37 FR 6190, Mar. 25, 1972; USCG-1999-5151, 64 FR 67180, Dec. 1, 1999; USCG-2003-16630, 73 FR 65188, Oct. 31, 2008]

§ 58.50-15 Alternate material for construction of independent fuel tanks.

(a) Materials other than those specifically listed in 46 CFR 58.50-5, Table 58.50-5(a) and in 46 CFR 58.50-10, Table 58.50-10(a) may be used for fuel tank construction only if the tank as constructed meets material and testing requirements approved by the Commandant (CG-521). Approved testing may be accomplished by any acceptable laboratory, such as the Marine Department, Underwriters' Laboratories, Inc., or may be done by the fabricator if witnessed by a marine inspector.

(b) [Reserved]

[USCG-2003-16630, 73 FR 65188, Oct. 31, 2008]

Subpart 58.60—Industrial Systems and Components on Mobile Offshore Drilling Units (MODU)

SOURCE: CGD 73-251, 43 FR 56801, Dec. 4, 1978, unless otherwise noted.

§ 58.60-1 Applicability.

This subpart applies to the following industrial systems on board a mobile offshore drilling unit (MODU):

- (a) Cementing systems.
- (b) Circulation systems, including—
 - (1) Pipes and pumps for mud;
 - (2) Shale shakers;
 - (3) Desanders; and
 - (4) Degassers.
- (c) Blow out preventor control systems.
- (d) Riser and guideline tensioning systems.
- (e) Motion compensation systems.
- (f) Bulk material storage and handling systems.

(g) Other pressurized systems designed for the MODU's industrial operations.

§ 58.60-2 Alternatives and substitutions.

(a) The Coast Guard may accept substitutes for fittings, material, apparatus, equipment, arrangements, calculations, and tests required in this subpart if the substitute provides an equivalent level of safety.

(b) In any case where it is shown to the satisfaction of the Commandant that the use of any particular equipment, apparatus, arrangement, or test is unreasonable or impracticable, the Commandant may permit the use of alternate equipment, apparatus, arrangement, or test to such an extent and upon such condition as will insure, to his satisfaction, a degree of safety consistent with the minimum standards set forth in this subpart.

§ 58.60-3 Pressure vessel.

A pressure vessel that is a component in an industrial system under this subpart must meet the applicable requirements in § 54.01-5 of this chapter.

[CGD 73-251, 43 FR 58601, Dec. 4, 1978, as amended by CGD 77-147, 47 FR 21811, May 20, 1982]

§ 58.60-5 Industrial systems: Locations.

An industrial system under this subpart must not be in a space that is—

- (a) Concealed; or
- (b) Inaccessible to industrial personnel.

§ 58.60-7 Industrial systems: Piping.

The piping for industrial systems under this subpart must meet ANSI B31.3 (incorporated by reference, see 46 CFR 58.03-1), except that blow out preventor control systems must also meet API RP 53 (incorporated by reference, see 46 CFR 58.03-1).

[USCG-2003-16630, 73 FR 65188, Oct. 31, 2008]

§ 58.60-9 Industrial systems: Design.

Each system under this subpart must be designed and analyzed in accordance with the principles of API RP 14C (incorporated by reference, see 46 CFR 58.03-1).

[USCG-2003-16630, 73 FR 65188, Oct. 31, 2008]