

part, the cognizant OCMI will determine, and record on the vessel's Certificate of Inspection, the number of offshore workers that the vessel may carry.

Subpart C—Rails and Guards

§ 127.310 Where rails required.

(a) Each vessel must have permanently installed efficient guard rails or bulwarks on decks and bridges. Each rail or bulwark must stand at least 1 meter (39½ inches) from the deck except that, where this height would interfere with the normal operation of the vessel, the cognizant OCMI may approve a lesser height.

(b) At exposed peripheries of the freeboard and superstructure decks, each rail must consist of at least three courses, including the top. The opening below the lowest course must be no more than 230 millimeters (9 inches) with courses no more than 380 millimeters (15 inches) apart. On other decks and bridges each rail must consist of at least two courses, including the top, approximately evenly spaced.

(c) If satisfied that the installation of any rail of the required height would be impracticable, the cognizant OCMI may accept hand grabs or a rail of a lesser height in its place.

§ 127.320 Storm rails.

Suitable storm rails must be installed in each passageway and at the deckhouse sides, including in way of inclined ladders, where persons aboard have normal access. They must be installed on both sides of passageways which are more than 1.8 meters (6 feet) wide.

§ 127.330 Guards in dangerous places.

Suitable hand covers, guards, or rails must be installed on each exposed and dangerous place, such as gears of rotating machinery, and hot surfaces.

Subpart D—Construction of Windows, Visibility, and Operability of Coverings

§ 127.410 Safety-glazing materials.

Glass and other glazing material used in windows must be material that will

not break into dangerous fragments if fractured.

§ 127.420 Strength.

Each window or porthole, and its means of attachment to the hull or the deckhouse, must be capable of withstanding the maximum expected load from wind and waves, due to its location on the vessel's and the authorized route of the vessel.

§ 127.430 Visibility from pilothouse.

(a) Windows and other openings at the pilothouse must be of sufficient size and properly located to provide adequate view for safe operation in any condition.

(b) Glass or other glazing material used in windows at the pilothouse must have a light transmission of at least 70 percent according to Test 2 of ANSI Z26.1, "Code for Safety Glazing Materials for Glazing Motor Vehicles Operating on Land Highways," and must comply with Test 15 of ANSI Z26.1 for Class I Optical Deviation.

§ 127.440 Operability of window coverings.

Any covering or protection placed over a window or porthole that could be used as a means of escape must be able to be readily removed or opened. It must be possible to open or remove the covering or protection without anyone's having to go onto a weather deck. It may be necessary to break the glass of a window or porthole before removing or opening the covering or protection.

PART 128—MARINE ENGINEERING: EQUIPMENT AND SYSTEMS

Subpart A—General

Sec.

128.110 Equipment and systems.

128.120 Plan approval.

128.130 Vital systems.

Subpart B—Materials and Pressure Design

128.210 Class II vital systems—materials.

128.220 Class II non-vital systems—materials and pressure design.

128.230 Penetrations of hulls and watertight bulkheads—materials and pressure design.

§ 128.110

128.240 Hydraulic or pneumatic power and control—materials and pressure design.

Subpart C—Main and Auxiliary Machinery

128.310 Fuel.
128.320 Exhaust systems.

Subpart D—Design Requirements for Specific Systems

128.410 Ship's service refrigeration systems.
128.420 Keel cooler installations.
128.430 Non-integral keel cooler installations.
128.440 Bilge systems.
128.450 Liquid-mud systems.

AUTHORITY: 46 U.S.C. 3306; Department of Homeland Security Delegation No. 0170.1.

SOURCE: CGD 82-004 and CGD 86-074, 62 FR 49331, Sept. 19, 1997, unless otherwise noted.

Subpart A—General

§ 128.110 Equipment and systems.

(a) Except as provided by this part, the design, installation, testing, and inspection of materials, machinery, pressure vessels, and piping must comply with subchapter F of this chapter.

(b) This part contains requirements for equipment and systems commonly found on an OSV. If additional or unique systems, such as for low-temperature cargoes, are to be installed, they too must comply with subchapter F of this chapter.

§ 128.120 Plan approval.

The plans required by subchapter F of this chapter need not be submitted if the plans required by § 127.110(d) of this subchapter have been.

§ 128.130 Vital systems.

(a) Vital systems are those systems that are vital to a vessel's survivability and safety. For the purpose of this subchapter, the following are vital systems:

- (1) Systems for fill, transfer, and service of fuel oil.
- (2) Fire-main systems.
- (3) Fixed gaseous fire-extinguishing systems.
- (4) Bilge systems.
- (5) Ballast systems.
- (6) Steering systems and steering-control systems.
- (7) Propulsion systems and their necessary auxiliaries and control systems.

46 CFR Ch. I (10-1-06 Edition)

(8) Systems for transfer and control of cargo, for integral tanks or fixed independent tanks, in compliance with § 125.110 of this subchapter.

(9) Ship's service and emergency electrical-generation systems and their auxiliaries vital to the vessel's survivability and safety.

(10) Any other marine-engineering system identified by the cognizant OCMI as crucial to the survival of the vessel or to the protection of the personnel aboard.

(b) For the purpose of this subchapter, a system not identified by paragraph (a) of this section is a non-vital system.

Subpart B—Materials and Pressure Design

§ 128.210 Class II vital systems—materials.

Except as provided by §§ 128.230 and 128.240 of this subpart, instead of complying with part 56 of this chapter, materials used in Class II vital piping-systems may be accepted by the cognizant OCMI or the Commanding Officer, Marine Safety Center, if shown to provide a level of safety equivalent to materials in subpart 56.60 of this chapter.

§ 128.220 Class II non-vital systems—materials and pressure design.

(a) Except as provided by §§ 128.230, 128.240, and 128.320 of this subpart, a Class II non-vital piping-system need not meet the requirements for materials and pressure design of subchapter F of this chapter.

(b) Piping for salt-water service must be of a corrosion-resistant material and, if ferrous, be hot-dip galvanized or be at least of extra-heavy schedule in wall thickness.

(c) Each Class II non-vital piping-system must be certified by the builder as suitable for its intended service. A written certificate to this effect must be submitted with the plans required by § 127.110(d) of this subchapter.

(d) The cognizant OCMI will review the particular installation of each system for the safety hazards identified in paragraphs (a), (b)(1), and (c) through (k) of § 56.50-1 of this chapter, and will add requirements as appropriate.

§ 128.230 Penetrations of hulls and watertight bulkheads—materials and pressure design.

(a) Each piping penetration, in each bulkhead required by this subchapter to be watertight, must meet the requirements for materials and pressure design of subchapter F of this chapter.

(b) Each overboard discharge and shell connection, up to and including required shut-off valves, must meet the requirements for materials and pressure design of subchapter F of this chapter.

§ 128.240 Hydraulic or pneumatic power and control—materials and pressure design.

(a) Each standard piping component (such as pipe runs, fittings, flanges, and standard valves) for hydraulic or pneumatic power and control systems must meet the requirements for materials and pressure design of §128.110, 128.210, or 128.220 of this part, as appropriate.

(b) Any non-standard hydraulic or pneumatic component (such as control valves, check valves, relief valves, and regulators) may be accepted by the cognizant OCMI or the Commanding Officer, Marine Safety Center, if the component is certified by the manufacturer as suitable for marine service and if—

(1) The component meets each of the requirements for materials and pressure design of subparts 56.60 and 58.30 of this chapter and if its service is limited to the manufacturer's rated pressure; or

(2) The service of the component is limited to $\frac{1}{2}$ the manufacturer's recommended maximum allowable working pressure (MAWP) or $\frac{1}{10}$ the component's burst pressure. Burst-pressure testing is described in ANSI B 31.1, Paragraph 104.7.A, and must be conducted to comply with Paragraph A-22, Section I, ASME Boiler and Pressure Vessel Code. Written certification of results of burst-pressure testing must be submitted with the plans required by §127.110(d) of this subchapter.

Subpart C—Main and Auxiliary Machinery

§ 128.310 Fuel.

(a) Except as provided by paragraph (b) of this section, each internal-combustion engine installed on an OSV, whether for main propulsion or for auxiliaries, must be driven by a fuel having a flashpoint of not lower than 43 °C (110 °F) as determined by ASTM D 93 (incorporated by reference, see §125.180).

(b) The use of a fuel with a flashpoint of lower than 43 °C (110 °F) must be specifically approved by the Commandant (G-MSE), except in an engine for a gasoline-powered rescue boat.

[CGD 82-004 and CGD 86-074, 62 FR 49331, Sept. 19, 1997, as amended by USCG-2000-7790, 65 FR 58463, Sept. 29, 2000]

§ 128.320 Exhaust systems.

No diesel-engine exhaust system need meet the material requirements in §58.10-5(d)(1)(i) of this chapter if the installation is certified as required by §128.220(c) of this part.

Subpart D—Design Requirements for Specific Systems

§ 128.410 Ship's service refrigeration systems.

No self-contained unit either for air-conditioning or for refrigerated spaces for ship's stores need comply with §58.20-5, 58.20-10, 58.20-15, 58.20-20(a), or 58.20-20(b) of this chapter if—

(a) The unit uses a fluorocarbon refrigerant allowed by part 147 of this chapter;

(b) The manufacturer certifies that the unit is suitable for its intended purpose; and

(c) Electrical wiring meets the applicable requirements in subchapter J of this chapter.

§ 128.420 Keel cooler installations.

(a) Except as provided by this section, each keel cooler installation must comply with §56.50-96 of this chapter.

(b) Approved metallic flexible connections may be located below the deepest-load waterline if the system is

§ 128.430

a closed loop below the waterline and if its vent is located above the waterline.

(c) Fillet welds may be used in the attachment of channels and half-round pipe sections to the bottom of the vessel.

(d) Short lengths of approved non-metallic flexible hose fixed by metallic or non-metallic hose-clamps may be used at machinery connections if—

(1) The clamps are of a corrosion-resistant material;

(2) The clamps do not depend on spring tension for their holding power; and

(3) Two of the clamps are used on each end of the hose, except that one clamp may be used on an end expanded or beaded to provide a positive stop against hose slippage.

(4) The clamps are resistant to vibration, high temperature, and brittleness.

[CGD 82-004 and CGD 86-074, 62 FR 49331, Sept. 19, 1997, as amended by USCG-2000-7790, 65 FR 58463, Sept. 29, 2000]

§ 128.430 Non-integral keel cooler installations.

(a) Each hull penetration for a non-integral keel cooler installation must be made through a cofferdam or at a seachest and must be provided with isolation valves fitted as close to the sea inlet as possible.

(b) Each non-integral keel cooler must be protected against damage from debris and grounding by protective guards or by recessing the cooler into the hull.

[CGD 82-004 and CGD 86-074, 62 FR 49331, Sept. 19, 1997, as amended by USCG-2000-7790, 65 FR 58463, Sept. 29, 2000]

§ 128.440 Bilge systems.

(a) Except as provided by this section, each bilge system must comply with §§ 56.50-50 and 56.50-55 of this chapter.

(b) If the steering room, engine room, centerline passageway, forward machinery space, and compartment containing the dry-mud tanks are the only below-deck spaces that must be fitted with bilge suction, the vessel may be equipped to the standards of §§ 56.50-50 and 56.50-57 of this chapter applicable to a dry-cargo vessel of less than 55 meters (180 feet) in length.

46 CFR Ch. I (10-1-06 Edition)

§ 128.450 Liquid-mud systems.

(a) Liquid-mud piping systems may use resiliently seated valves of Category A to comply with §§ 56.20-15 and 56.50-60 of this chapter.

(b) Tanks for oil-based liquid mud must be fitted with tank vents equipped with flame screens. Vents must not discharge to the interior of the vessel.

PART 129—ELECTRICAL INSTALLATIONS

Subpart A—General Provisions

Sec.

129.100 General.

129.110 Applicability.

129.120 Alternative standards.

Subpart B—General Requirements

129.200 Design, installation, and maintenance.

129.210 Protection from wet and corrosive environments.

129.220 Basic safety.

Subpart C—Power Sources and Distribution Systems

129.310 Power sources.

129.315 Power sources for OSVs of 100 or more gross tons.

129.320 Generators and motors.

129.323 Multiple generators.

129.326 Dual-voltage generators.

129.330 Distribution panels and switchboards.

129.340 Cable and wiring.

129.350 Batteries—general.

129.353 Battery categories.

129.356 Battery installations.

129.360 Semiconductor-rectifier systems.

129.370 Equipment grounding.

129.375 System grounding.

129.380 Overcurrent protection.

129.390 Shore power.

129.395 Radio installations.

Subpart D—Lighting Systems

129.410 Lighting fixtures.

129.420 Branch circuits for lighting on OSVs of 100 or more gross tons.

129.430 Navigational lighting.

129.440 Emergency lighting.

129.450 Portable lighting.

Subpart E—Miscellaneous Electrical Systems

129.510 Lifeboat winches.

129.520 Hazardous areas.