

working level, the calculated maximum stress during test shall not exceed 90 percent of the yield strength of the material at test temperature. The supporting structure shall be analyzed to verify its adequacy.

(b) In all cases where the tanks are mechanically stress relieved in place in the ship or barge and the tanks are designed to carry cargoes with a specific gravity less than 1.05, the ship or barge shall be shown to have adequate stability and buoyancy, as well as strength to carry the excess weight of the tank during the stress relief procedure.

PART 56—PIPING SYSTEMS AND APPURTENANCES

Subpart 56.01—General

Sec.

- 56.01-1 Scope (replaces 100.1).
- 56.01-2 Incorporation by reference.
- 56.01-3 Power boiler external piping (Replaces 100.1.1, 100.1.2, 111.6, 122.1, 132 and 133).
- 56.01-5 Adoption of ANSI (American National Standards Institute) Code B31.1 for pressure and power piping, and other standards.
- 56.01-10 Plan approval.

Subpart 56.04—Piping Classification

- 56.04-1 Scope.
- 56.04-2 Piping classification according to service.
- 56.04-10 Other systems.

Subpart 56.07—Design

- 56.07-5 Definitions (modifies 100.2).
- 56.07-10 Design conditions and criteria (modifies 101-104.7).

Subpart 56.10—Components

- 56.10-1 Selection and limitations of piping components (replaces 105 through 108).
- 56.10-5 Pipe.

Subpart 56.15—Fittings

- 56.15-1 Pipe joining fittings.
- 56.15-5 Fluid-conditioner fittings.
- 56.15-10 Special purpose fittings.

Subpart 56.20—Valves

- 56.20-1 General.
- 56.20-5 Marking (reproduces 107.2).
- 56.20-7 Ends.
- 56.20-9 Valve construction.

- 56.20-15 Valves employing resilient material.
- 56.20-20 Valve bypasses.

Subpart 56.25—Pipe Flanges, Blanks, Flange Facings, Gaskets, and Bolting

- 56.25-5 Flanges.
- 56.25-7 Blanks.
- 56.25-10 Flange facings.
- 56.25-15 Gaskets (reproduces 108.4).
- 56.25-20 Bolting.

Subpart 56.30—Selection and Limitations of Piping Joints

- 56.30-1 Scope (replaces 110 through 118).
- 56.30-3 Piping joints (reproduces 110).
- 56.30-5 Welded joints.
- 56.30-10 Flanged joints (modifies 104.5.1 (a)).
- 56.30-15 Expanded or rolled joints.
- 56.30-20 Threaded joints.
- 56.30-25 Flared, flareless, and compression fittings.
- 56.30-27 Caulked joints.
- 56.30-30 Brazed joints.
- 56.30-35 Gasketed mechanical couplings.
- 56.30-40 Flexible pipe couplings of the compression or slip-on type.

Subpart 56.35—Expansion, Flexibility and Supports

- 56.35-1 Pipe stress calculations (replaces 119.7).
- 56.35-10 Nonmetallic expansion joints (replaces 119.5.1).
- 56.35-15 Metallic expansion joints (replaces 119.5.1).

Subpart 56.50—Design Requirements Pertaining to Specific Systems

- 56.50-1 General (replaces 122.6 through 122.10).
- 56.50-10 Special gaging requirements.
- 56.50-15 Steam and exhaust piping.
- 56.50-20 Pressure relief piping.
- 56.50-25 Safety and relief valve escape piping.
- 56.50-30 Boiler feed piping.
- 56.50-35 Condensate pumps.
- 56.50-40 Blowoff piping (replaces 102.2.5 (d)).
- 56.50-45 Circulating pumps.
- 56.50-50 Bilge and ballast piping.
- 56.50-55 Bilge pumps.
- 56.50-57 Bilge piping and pumps, alternative requirements.
- 56.50-60 Systems containing oil.
- 56.50-65 Burner fuel-oil service systems.
- 56.50-70 Gasoline fuel systems.
- 56.50-75 Diesel fuel systems.
- 56.50-80 Lubricating-oil systems.
- 56.50-85 Tank-vent piping.
- 56.50-90 Sounding devices.
- 56.50-95 Overboard discharges and shell connections.

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- 56.50-96 Keel cooler installations.
- 56.50-97 Instrument, control and sampling piping (modifies 122.3).
- 56.50-103 Fixed oxygen-acetylene distribution piping.
- 56.50-105 Low-temperature piping.
- 56.50-110 Diving support systems.

Subpart 56.60—Materials

- 56.60-1 Acceptable materials and specifications (replaces 123 and Table 126.1 in ANSI-B31.1).
- 56.60-2 Limitations on materials.
- 56.60-3 Ferrous materials.
- 56.60-5 Steel (High temperature applications).
- 56.60-10 Cast iron and malleable iron.
- 56.60-15 Ductile iron.
- 56.60-20 Nonferrous materials.
- 56.60-25 Nonmetallic materials.

Subpart 56.65—Fabrication, Assembly and Erection

- 56.65-1 General (replaces 127 through 135.4).

Subpart 56.70—Welding

- 56.70-1 General.
- 56.70-3 Limitations.
- 56.70-5 Material.
- 56.70-10 Preparation (modifies 127.3).
- 56.70-15 Procedure.
- 56.70-20 Qualification, general.

Subpart 56.75—Brazing

- 56.75-5 Filler metal.
- 56.75-10 Joint clearance (reproduces 128.2.2).
- 56.75-15 Heating (reproduces 128.2.3).
- 56.75-20 Brazing qualification.
- 56.75-25 Detail requirements.
- 56.75-30 Pipe joining details.

Subpart 56.80—Bending and Forming

- 56.80-5 Bending.
- 56.80-10 Forming (reproduces 129.2).
- 56.80-15 Heat treatment of bends and formed components.

Subpart 56.85—Heat Treatment of Welds

- 56.85-5 Heating and cooling method (reproduces 131.1).
- 56.85-10 Preheating.
- 56.85-15 Postheat treatment.

Subpart 56.90—Assembly

- 56.90-1 General.
- 56.90-5 Bolting procedure.
- 56.90-10 Threaded piping (reproduces 135.4).

Subpart 56.95—Inspection

- 56.95-1 General (replaces 136).

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- 56.95-5 Rights of access of marine inspectors.
- 56.95-10 Type and extent of examination required.

Subpart 56.97—Pressure Tests

- 56.97-1 General (replaces 137).
- 56.97-5 Pressure testing of nonstandard piping system components.
- 56.97-25 Preparation for testing (reproduces 137.3).
- 56.97-30 Hydrostatic tests (reproduces 137.4).
- 56.97-35 Pneumatic tests (replaces 137.5).
- 56.97-38 Initial service leak test (reproduces 137.7).
- 56.97-40 Installation tests.

AUTHORITY: 33 U.S.C. 1321(j), 1509; 43 U.S.C. 1333; 46 U.S.C. 3306, 3703; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; E.O. 12777, 56 FR 54757, 3 CFR, 1991 Comp., p. 351; Department of Homeland Security Delegation No. 0170.1.

SOURCE: CGFR 68-82, 33 FR 18843, Dec. 18, 1968, unless otherwise noted.

Subpart 56.01—General

NOTE: See § 50.15-10 for general adoption of standards of the ANSI (American National Standards Institute). The printing of portions of the “American National Standard Code for Pressure Piping, Power Piping,” ANSI-B31.1, is with the permission of the publisher, The American Society of Mechanical Engineers (ASME) International, Three Park Avenue, New York, N.Y. 10016-5990. The adoption of this standard ANSI-B31.1 for pressure piping and power piping is subject to specific limitations or modifications as described in this part. Those requirements in ANSI-B31.1 which are not referred to in this part are adopted without change. Table 56.01-5(a) sets forth a general reference to various paragraphs in ANSI-B31.1 which are limited, modified, or replaced by regulations in this part.

§ 56.01-1 Scope (replaces 100.1).

(a) This part contains requirements for the various ships' and barges' piping systems and appurtenances.

(b) The respective piping systems installed on ships and barges shall have the necessary pumps, valves, regulation valves, safety valves, relief valves, flanges, fittings, pressure gages, liquid level indicators, thermometers, etc., for safe and efficient operation of the vessel.

(c) Piping for industrial systems on mobile offshore drilling units need not fully comply with the requirements of

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this part but must meet Subpart 58.60 of this subchapter.

[CGFR 68-82, 33 FR 18843, Dec. 18, 1968, as amended by CGD 73-251, 43 FR 56799, Dec. 4, 1978]

§ 56.01-2 Incorporation by reference.

(a) Certain standards and specifications are incorporated by reference into this part with the approval of the Director of the Federal Register in accordance with 5 U.S.C. 552(a). To enforce any edition other than the one listed in paragraph (b) of this section, notice of the change must be published in the FEDERAL REGISTER and the material made available to the public. All approved material is available from the sources indicated in paragraph (b) or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

(b) The standards and specifications approved for incorporation by reference in this part, and the sections affected are:

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
11 West 42nd Street, New York, NY 10036
ANSI B1.1-82 Unified Inch Screw Threads (UN and UNR Thread Form)
ANSI B1.20.1-83 Pipe Threads, General Purpose (Inch)
ANSI B1.20.3-76 (reaffirmed 1982) Dryseal Pipe Threads (Inch)
ANSI B16.1-75 Cast Iron Flanges and Flanged Fittings, Class 25, 125, 250 and 800
ANSI B16.3-85 Malleable Iron Threaded Fittings, Classes 150 and 300
ANSI B16.4-85 Cast Iron Threaded Fittings, Classes 125 and 250
ANSI B16.5-81 Pipe Flanges and Flanged Fittings
ANSI B16.9-86 Factory-Made Wrought Steel Butt Welding Fittings
ANSI B16.10-86 Face-to-Face and End-to-End Dimensions of Ferrous Valves
ANSI B16.11-80 Forged Steel Fittings, Socket-Welding and Threaded
ANSI B16.14-83 Ferrous Pipe Plugs, Bushings, and Locknuts with Pipe Threads

ANSI B16.15-85 Cast Bronze Threaded Fittings, Classes 125 and 250
ANSI B16.18-84 Cast Copper Alloy Solder Joint Pressure Fittings
ANSI B16.20-73 Ring-Joint Gaskets and Grooves for Steel Pipe Flanges VIII, Division 1, Pressure Vessels, 1986 with addenda
Section IX, Welding and Brazing Qualifications, 1986 with addenda
ANSI B16.24-79 Bronze Pipe Flanges and Flanged Fittings, Class 150 and 300
ANSI B16.25-86 Butt Welding Ends
ANSI B16.28-86 Wrought Steel Butt Welding Short Radius Elbows and Returns
ANSI B16.29-86 Wrought Copper and Wrought Copper Alloy Solder Joint Drainage Fittings—DWV
ANSI B16.34-88 Valves—Flanged, Threaded and Welding End
ANSI B16.42-87 Ductile Iron Pipe Flanges and Flanged Fittings, Classes 150 and 300
ANSI B18.2.1-81 Square and Hex Bolts and Screws, Inch Series
ANSI B18.2.2-87 Square and Hex Nuts
ANSI B31.1-86 Power Piping
ANSI B36.10M-85 Welded and Seamless Wrought Steel Pipe
ANSI B36.19M-85 Stainless Steel Pipe
AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME) INTERNATIONAL
Three Park Avenue, New York, NY 10016-5990
Boiler and Pressure Vessel Code:
Section I, Power Boilers, 1986 with addenda
Section VIII, Division 1, Pressure Vessels, 1986 with addenda
Section IX, Welding and Brazing Qualifications, 1986 with addenda
AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
100 Barr Harbor Drive, West Conshohocken, PA 19428-2959
ASTM A 36/A 36M-97a, Standard Specification for Carbon Structural Steel