

## § 56.80–15

### § 56.80–15 Heat treatment of bends and formed components.

(a) Carbon-steel piping that has been heated to at least 1,650 °F (898 °C) for bending or other forming requires no subsequent heat treatment.

(b) Ferritic alloy steel piping which has been heated for bending or other forming operations must receive a stress relieving treatment, a full anneal, or a normalize and temper treatment, as specified by the design specification before welding.

(c) Cold bending and forming of carbon steel having a wall thickness of three-fourths of an inch and heavier, and all ferritic-alloy pipe in nominal pipe sizes of 4 inches and larger, or one-half-inch wall thickness or heavier, will require a stress-relieving treatment.

(d) Cold bending of carbon-steel and ferritic-alloy steel pipe in sizes and wall thicknesses less than specified in 129.3.3 of ASME B31.1 (incorporated by reference; see § 56.01–2) may be used without a postheat treatment.

(e) For other materials the heat treatment of bends and formed components must be such as to ensure pipe properties that are consistent with the original pipe specification.

(f) All scale must be removed from heat treated pipe prior to installation.

(g) Austenitic stainless-steel pipe that has been heated for bending or other forming may be used in the “as-bent” condition unless the design specification requires post-bending heat treatment.

[CGFR 68–62, 33 FR 18843, Dec. 18, 1968, as amended by CGFR 69–127, 35 FR 9979, June 17, 1970; CGD 73–254, 40 FR 40166, Sept. 2, 1975; USCG–2003–16630, 73 FR 65185, Oct. 31, 2008]

### Subpart 56.85—Heat Treatment of Welds

SOURCE: CGFR 68–82, 33 FR 18843, Dec. 18, 1968, as amended by USCG–2020–0634, 89 FR 50158, June 12, 2024, unless otherwise noted.

#### § 56.85–5 Heating and cooling method.

Heat treatment may be accomplished by a suitable heating method that will provide the desired heating and cooling rates, the required metal temperature,

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metal temperature uniformity, and temperature control.

[USCG–2003–16630, 73 FR 65185, Oct. 31, 2008]

#### § 56.85–10 Preheating.

The minimum welding preheat procedures and temperatures must be as stated in section 131 and Table 131.4.1 of ASME B31.1 (incorporated by reference; see § 56.01–2).

[CGFR 68–82, 33 FR 18843, Dec. 18, 1968, as amended by CGFR 69–127, 35 FR 9980, June 17, 1970; CGD 72–104R, 37 FR 14234, July 18, 1972; CGD 72–206R, 38 FR 17229, June 29, 1973; CGD 73–254, 40 FR 40166, Sept. 2, 1975; CGD 77–140, 54 FR 40615, Oct. 2, 1989; USCG–2003–16630, 73 FR 65185, Oct. 31, 2008]

#### § 56.85–15 Postweld heat treatment.

Postweld heat treatment procedures and temperatures must be as stated in Section 132 and Table 132 of ASME B31.1 (incorporated by reference; see § 56.01–2).

[CGFR 68–82, 33 FR 18843, Dec. 18, 1968, as amended by CGD 72–206R, 38 FR 17229, June 29, 1973; CGD 73–254, 40 FR 40167, Sept. 2, 1975; USCG–2003–16630, 73 FR 65185, Oct. 31, 2008]

### Subpart 56.90—Assembly

SOURCE: CGFR 68–82, 33 FR 18843, Dec. 18, 1968, as amended by USCG–2020–0634, 89 FR 50158, June 12, 2024, unless otherwise noted.

#### § 56.90–1 General.

The assembly of the various piping components, whether done in a shop or as field erection, must be done so that the completely erected piping conforms with the requirements of the regulations in this subchapter.

#### § 56.90–5 Bolting procedure.

(a) All flanged joints must be fitted up so that the gasket contact faces bear uniformly on the gasket and then must be made up with relatively uniform bolt stress.

(b) When bolting gasketed flanged joints, the gasket must be properly compressed in accordance with the design principles applicable to the type of gasket used.

(c) Steel to cast iron flanged joints shall be assembled with care to prevent damage to the cast iron flange in accordance with § 56.25–10.

(d) All bolts must be engaged so that there is visible evidence of complete threading through the nut or threaded attachment.

[CGFR 68–82, 33 FR 18843, Dec. 18, 1968, as amended by USCG–2003–16630, 73 FR 65185, Oct. 31, 2008]

**§ 56.90–10 Threaded piping (modifies 135.5).**

(a) Any compound used in threaded joints must be suitable for the service conditions and must not react unfavorably with either the service fluid or the piping materials.

(b) Threaded joints that are to be seal welded must be made up without any thread compound.

[CGFR 68–82, 33 FR 18843, Dec. 18, 1968, as amended by USCG–2003–16630, 73 FR 65185, Oct. 31, 2008]

**Subpart 56.95—Inspection**

SOURCE: CGFR 68–82, 33 FR 18843, Dec. 18, 1968, as amended by USCG–2020–0634, 89 FR 50158, June 12, 2024, unless otherwise noted.

**§ 56.95–1 General (replaces 136).**

(a) The provisions in this subpart apply to inspection in lieu of 136 of ASME B31.1 (incorporated by reference; see § 56.01–2).

(b) Prior to initial operation, a piping installation must be inspected to assure compliance with the engineering design, and with the material, fabrication, assembly, and test requirements of ASME B31.1, as modified by this subchapter. This inspection is the responsibility of the owner or operator and may be performed with an engineering organization employed by the owner, together with the marine inspector.

[CGFR 68–82, 33 FR 18843, Dec. 18, 1968, as amended by CGFR 69–127, 35 FR 9979, June 17, 1970; USCG–2003–16630, 73 FR 65185, Oct. 31, 2008]

**§ 56.95–5 Rights of access of marine inspectors.**

Marine inspectors must have rights of access to any place where work concerned with the piping is being performed. This includes manufacture, fabrication, assembly, erection, and testing of the piping or system components. Marine inspectors must have ac-

cess to review all certifications or records pertaining to the inspection requirements of § 56.95–1, including certified qualifications for welders, welding operators, and welding procedures.

**§ 56.95–10 Type and extent of examination required.**

(a) *General.* The types and extent of nondestructive examinations required for piping must be in accordance with this section and Table 136.4 of ASME B31.1 (incorporated by reference; see § 56.01–2). In addition, a visual examination must be made.

(1) 100 percent radiography is required for all Class I, I–L, and II–L piping with wall thickness equal to or greater than 10 mm (0.393 in.).

NOTE 1 TO PARAGRAPH (a)(1): Throughout this this section, where for some reason, such as joint configuration, radiography is not applicable, another approved examination may be utilized.

(2) Nondestructive examination is required for all Class II piping equal to or greater than 18 inches nominal diameter regardless of wall thickness. Any test method acceptable to the Officer in Charge, Marine Inspection may be used.

(3) Nondestructive examinations of other piping systems are required only when deemed necessary by the Officer in Charge, Marine Inspection (OCMI).

(b) *Visual examination.* Visual examination consists of observation by the marine inspector either before, during, or after manufacture, fabrication, assembly, or test. All welds, pipe and piping components must comply with the limitations on imperfections specified in the product specification or with the limitations on imperfections specified in § 56.70–15(b)(7) and (8), and (c), as applicable.

(c) *Nondestructive types of examinations—(1) 100 Percent radiography.* Where 100 percent radiography is required, each weld in the piping must be completely radiographed. If a butt weld is examined by radiography, for either random or 100 percent radiography, the method used must be as follows:

(i) X-ray or gamma ray method of radiography may be used. The selection of the method must be dependent upon its adaptability to the work being radiographed. The procedure to be followed must be as indicated in PW–51 of