

Notes Applicable to Table 56.85-10:

(1) Not applicable to dissimilar metal welds.

(2) When postheat treatment by annealing or normalizing is used, the postheat treatment temperatures must be in accordance with the qualified welding procedure.

(3) Wall thickness of a butt weld is defined as the thicker of the two abutting ends after end preparation including I.D. machining.

(4) The thickness of socket, fillet, and seal welds is defined as the throat thicknesses for pressure and nonpressure retaining welds.

(5) Preheat temperatures must be checked by use of temperature indicating crayons, thermocouple pyrometers, or other suitable method.

(6) For inert gas tungsten arc root pass welding lower preheat in accordance with the qualified procedure may be used.

(7) The maximum postheat treatment temperature listed for each P number is a recommended maximum temperature.

(8) Postheat treatment temperatures must be checked by use of thermocouple pyrometers or other suitable means.

(9) Heating rate for furnace, gas, electric resistance, and other surface heating methods must not exceed: (i) 600 °F per hour for thicknesses 2 inches and under.

(ii) 600 °F per hour divided by ½ the thickness in inches for thickness over 2 inches.

(10) Heating route for induction heating must not exceed:

(i) 600 °F per hour for thickness less than 1½ inches (60 and 400 cycles).

(ii) 500 °F per hour when using 60 cycles and 400 °F per hour when using 400 cycles for thicknesses 1½ inches and over.

(11) When local heating is used, the weld must be allowed to cool slowly from the postheat treatment temperature. A suggested method of retarding cooling is to wrap the weld with asbestos and allow to cool in still air. When furnace cooling is used, the pipe sections must be cooled in the furnace to 1000 °F and may then be cooled further in still air.

(12) Local postheat treatment of butt welded joints must be performed on a circumferential band of the pipe. The minimum width of this band, centered on the weld, must be the width of the weld plus 2 inches.

Local postheat treatment of welded branch connections must be performed by heating a circumferential band of the pipe to which the branch is welded. The width of the heated band must extend at least 1 inch beyond the weld joining the branch.

(13) 0.30 C. max applies to specified ladle analysis.

(14) 600 °F maximum interpass temperature.

(15) Welding on P-3, P-4, and P-5 with 3 Cr max. may be interrupted only if—

(i) At least ⅜ inch thickness of weld is deposited or 25 percent of welding groove is filled, whichever is greater;

(ii) The weld is allowed to cool slowly to room temperature; and

(iii) The required preheat is resumed before welding is continued.

(16) When attaching welding carbon steel non-pressure parts to steel pressure parts and the throat thickness of the fillet or partial or full penetration weld is ½ in. or less, postheat treatment of the fillet weld is not required for Class I and II piping if preheat to a minimum temperature of 175 °F is applied when the thickness of the pressure part exceeds ¾ in.

(17) For Class I-L and II-L piping systems, relief from postweld heat treatment may not be dependent upon wall thickness. See also §§ 56.50-105(a)(3) and 56.50-105(b)(3) of this chapter.

[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 Postheat treatment.

(a) Where pressure retaining components having different thicknesses are welded together as is often the case when making branch connections, the preheat and postheat treatment requirements of Table 56.85-10 apply to the thicker of the components being joined. Postweld heat treatment is required for Classes I, I-L, II-L, and systems. It is not required for Class II piping. Refer to § 56.50-105(a)(3) for exceptions in Classes I-L and II-L systems and to paragraph (b) of this section for Class I systems.

(b) All butt welded joints in Class I piping shall be postweld heated as required by Table 56.85-10. The following exceptions are permitted:

(1) High pressure salt water piping systems used in tank cleaning operations; and,

(2) Gas supply piping of carbon or carbon molybdenum steel used in gas turbines.

(c) All complicated connections including manifolds shall be stress-relieved in a furnace as a whole as required by Table 56.85-10 before being taken aboard ship for installation.

(d) The postheating treatment selected for parts of an assembly must not adversely affect other components.

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Heating a fabricated assembly as a complete unit is usually desirable; however, the size or shape of the unit or the adverse effect of a desired treatment on one or more components where dissimilar materials are involved may dictate alternative procedures. For example, it may be heated as a section of the assembly before the attachment of others or local circumferential-band heating of welded joints in accordance with 46 CFR 56.85-10, Table 56.85-10 Note (12) and 46 CFR 56.85-15(j)(3).

(e) Postheating treatment of welded joints between dissimilar metals having different postheating requirements must be established in the qualified welding procedure.

(f)-(h) [Reserved]

(i) For those materials listed under P-1, when the wall thickness of the thicker of the two abutting ends, after their preparation, is less than three-fourths inch, the weld needs no postheating treatment. In all cases, where the nominal wall thickness is three-fourths inch or less, postheating treatment is not required.

(j) (1)-(2) [Reserved]

(3) In local postheat treatment the entire band must be brought up to uniform specified temperature over the complete circumference of the pipe section, with a gradual diminishing of the temperature outward from the edges of the band.

[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

#### § 56.90-1 General.

(a) The assembly of the various piping components, whether done in a shop or as field erection, shall be done so that the completely erected piping conforms with the requirements of the regulations in this subchapter and with the specified requirements of the engineering design.

#### § 56.90-5 Bolting procedure.

(a) All flanged joints shall be fitted up so that the gasket contact faces bear uniformly on the gasket and then shall be made up with relatively uni-

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form bolt stress. Bolt loading and gasket compression need only be verified by touch and visual observation.

(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 or lubricant used in threaded joints shall be suitable for the service conditions and shall not react unfavorably with either the service fluid or the piping materials.

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

(c) Backing off to permit alignment of pipe threaded joints shall not be permitted.

[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

#### § 56.95-1 General (replaces 136).

(a) The provisions in this subpart shall apply to inspection in lieu of 136 of ASME B31.1 (incorporated by reference; see 46 CFR 56.01-2).

(b) Prior to initial operation, a piping installation shall be inspected to the extent necessary 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 and may be performed by employees of the owner or of an engineering organization employed by the