

**§ 56.50–97 Instrument, control and sampling piping (modifies 122.3).**

(a) Instrument, control and sampling piping must comply with paragraph 122.3 of ANSI-B31.1 except that:

(1) Soldered type fittings may not be used.

(2) The outside diameter of takeoff connections may not be less than 0.840 inches for service conditions up to 900 psi or 800 °F., and 1.050 inches for conditions that exceed either of these limits.

[CGFR 68–82, 33 FR 18843, Dec. 18, 1968, as amended by CGFR 69–127, 35 FR 9978, June 17, 1970; CGD 73–254, 40 FR 40165, Sept. 2, 1975]

**§ 56.50–103 Fixed oxygen-acetylene distribution piping.**

(a) This section applies to fixed piping installed for the distribution of oxygen and acetylene carried in cylinders as vessels stores.

(b) The distribution piping shall be of at least standard wall thickness and shall include a means, located as close to the supply cylinders as possible, of regulating the pressure from the supply cylinders to the suitable pressure at the outlet stations.

(c) Acetylene distribution piping and pipe fittings must be seamless steel. Copper alloys containing less than 65 percent copper may be used in connection with valves, regulators, gages, and other equipment used with acetylene.

(d) Oxygen distribution piping and pipe fittings must be seamless steel or copper.

(e) When more than two cylinders are connected to a manifold, the supply pipe between each cylinder and manifold shall be fitted with a non-return valve.

(f) Except for the cylinder manifolds, acetylene is not to be piped at a pressure in excess of 100 kPa (14.7 psi).

(g) Pipe joints on the low pressure side of the regulators shall be welded.

(h) Branch lines shall not run through unventilated spaces or accommodation spaces.

(i) Relief valves or rupture discs shall be installed as relief devices in the piping system if the maximum design pressure of the piping system can be exceeded. The relief device set pressure shall not exceed the maximum design pressure of the piping system. Relief devices shall discharge to a location in

the weather at least 3 m (10 ft) from sources of ignition or openings to spaces or tanks.

(j) Outlet stations are to be provided with suitable protective devices which will prevent the back flow of gas into the supply lines and prevent the passage of flame into the supply lines.

(k) Shutoff valves shall be fitted at each outlet.

[CGD 95–028, 62 FR 51201, Sept. 30, 1997]

**§ 56.50–105 Low-temperature piping.**

(a) *Class I-L.* Piping systems designated to operate at temperatures below 0 °F. and pressures above 150 pounds per square inch gage shall be of Class I-L. Exceptions to this rule may be found in the individual requirements for specific commodities in subchapters D, I, and O of this chapter. The following requirements for Class I-L piping systems shall be satisfied:

(1) *Materials.* All materials used in low temperature piping systems shall be selected from among those specifications listed in Table 56.50–105 and shall satisfy all of the requirements of the specifications, except that:

(i) The minimum service temperature as defined in § 54.25–10(a)(2) of this subchapter shall not be colder than that shown in Table 56.50–105; and

(ii) The material shall be tested for low temperature toughness using the Charpy V-notch specimen of ASTM E 23 (incorporated by reference, see § 56.01–2), “Notched Bar Impact Testing of Metallic Materials”, Type A, Figure 4. The toughness testing requirements of subpart 54.05 of this subchapter shall be satisfied for each particular product form. Charpy V-notch tests shall be conducted at temperatures not warmer than 10 °F. below the minimum service temperature of the design, except that for service temperatures of –320 °F. and below, the impact test may be conducted at the service temperature. The minimum average energy shall not be less than that shown in Table 56.50–105. In the case of steels conforming to the specifications of Table 54.25–20(a) of this subchapter the minimum lateral expansion shall not be less than that required in § 54.25–20 of this subchapter. The minimum energy permitted for a single specimen and the minimum subsized energies shall be those obtained