

§ 179.100

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Subpart C—Specifications for Pressure Tank Car Tanks (Classes DOT–105, 109, 112, 114 and 120)

heater element may be reduced to one-half that required for the shell.

[29 FR 18995, Dec. 29, 1964. Redesignated at 32 FR 5606, Apr. 5, 1967, and amended by Amdt. 179–10, 36 FR 21344, Nov. 6, 1971; Amdt. 179–50, 60 FR 49077, Sept. 21, 1995]

§ 179.100 General specifications applicable to pressure tank car tanks.

§ 179.100–6 Thickness of plates.

§ 179.100–1 Tanks built under these specifications shall comply with the requirements of §§ 179.100, 179.101 and when applicable, §§ 179.102 and 179.103.

(a) The wall thickness after forming of the tank shell and heads must not be less than that specified in § 179.101, nor that calculated by the following formula:

$$t = Pd / 2SE$$

§ 179.100–3 Type.

Where:

(a) Tanks built under this specification shall be fusion-welded with heads designed convex outward. Except as provided in § 179.103 they shall be circular in cross section, shall be provided with a manway nozzle on top of the tank of sufficient size to permit access to the interior, a manway cover to provide for the mounting of all valves, measuring and sampling devices, and a protective housing. Other openings in the tank are prohibited, except as provided in part 173 of this chapter, §§ 179.100–14, 179.101–1, 179.102 or § 179.103.

(b) [Reserved]

d = Inside diameter in inches;

E = 1.0 welded joint efficiency; except for heads with seams=0.9;

P = Minimum required bursting pressure in p.s.i.;

S = Minimum tensile strength of plate material in p.s.i., as prescribed in § 179.100–7;

t = Minimum thickness of plate in inches after forming.

[29 FR 18995, Dec. 29, 1964. Redesignated at 32 FR 5606, Apr. 5, 1967, and amended by Amdt. 179–10, 36 FR 21344, Nov. 6, 1971; 65 FR 58632, Sept. 29, 2000]

(b) If plates are clad with material having tensile strength properties at least equal to the base plate, the cladding may be considered a part of the base plate when determining thickness. If cladding material does not have tensile strength at least equal to the base plate, the base plate alone shall meet the thickness requirement.

§ 179.100–4 Insulation.

(c) When aluminum plate is used, the minimum width of bottom sheet of tank shall be 60 inches, measured on the arc, but in all cases the width shall be sufficient to bring the entire width of the longitudinal welded joint, including welds, above the bolster.

(a) If insulation is applied, the tank shell and manway nozzle must be insulated with an approved material. The entire insulation must be covered with a metal jacket of a thickness not less than 11 gauge (0.1196 inch) nominal (Manufacturers' Standard Gauge) and flashed around all openings so as to be weather-tight. The exterior surface of a carbon steel tank, and the inside surface of a carbon steel jacket must be given a protective coating.

[29 FR 18995, Dec. 29, 1964. Redesignated at 32 FR 5606, Apr. 5, 1967, and amended by Amdt. 179–10, 36 FR 21344, Nov. 6, 1971]

(b) If insulation is a specification requirement, it shall be of sufficient thickness so that the thermal conductance at 60 °F is not more than 0.075 Btu per hour, per square foot, per degree F temperature differential. If exterior heaters are attached to tank, the thickness of the insulation over each

§ 179.100–7 Materials.

(a) *Steel plate:* Steel plate materials used to fabricate tank shell and manway nozzle must comply with one of the following specifications with the indicated minimum tensile strength and elongation in the welded condition. The maximum allowable carbon content must be 0.31 percent when the individual specification allows carbon greater than this amount. The plates may be clad with other approved materials.