

Research and Special Programs Admin., DOT

§ 179.220-7

Btu per hour, per square foot, per degree F. temperature differential.

(b) [Reserved]

§§ 179.202-179.202-22 [Reserved]

§ 179.220 General specifications applicable to nonpressure tank car tanks consisting of an inner container supported within an outer shell (class DOT-115).

§ 179.220-1 Tanks built under these specifications must meet the requirements of §§ 179.220 and 179.221.

§ 179.220-3 Type.

(a) Tanks built under these specifications must consist of an inner container, a support system for the inner container, and an outer shell.

(b) The inner container must be a fusion welded tank of circular cross section with formed heads designed convex outward and must have a manway on top of the tank as prescribed herein. When the inner container is divided into compartments, each compartment must be considered a separate container.

(c) The outer shell must be a fusion welded tank with formed heads designed convex outward.

[Amdt. 179-9, 36 FR 21340, Nov. 6, 1971]

§ 179.220-4 Insulation.

The annular space between the inner container and the outer shell must contain an approved insulation material.

[Amdt. 179-9, 36 FR 21340, Nov. 6, 1971]

§ 179.220-6 Thickness of plates.

(a) The wall thickness, after forming of the inner container shell and 2:1 ellipsoidal heads must be not less than specified in §179.221-1, or not less than that calculated by the following formula:

$$t = \frac{Pd}{2SE}$$

Where:

d = Inside diameter in inches;

E = 0.9 welded joint efficiency; except *E*=1.0 for seamless heads;

P = Minimum required bursting pressure in psig;

S = Minimum tensile strength of plate material in p.s.i. as prescribed in AAR Specifications for Tank Cars, appendix M, Table M1;

t = Minimum thickness of plate in inches after forming.

(b) The wall thickness after forming of the inner container heads, if flanged and dished, must be not less than specified in §179.221-1, or not less than that calculated by the following formula:

$$t = \frac{5PL}{6SE}$$

Where:

E = 0.9 welded joint efficiency; except *E*=1.0 for seamless heads;

L = Main inside radius to which head is dished, measured on concave side in inches;

P = Minimum required bursting pressure in psig;

S = Minimum tensile strength of plate material in p.s.i. as prescribed in AAR Specifications for Tank Cars, appendix M., Table M1;

t = Minimum thickness of plate in inches after forming.

(c) The wall thickness after forming of the cylindrical section and heads of the outer shell must be not less than seven-sixteenths of an inch.

(d) See §179.220-9 for plate thickness requirements for inner container when divided into compartments.

[Amdt. 179-9, 36 FR 21340, Nov. 6, 1971, as amended at 66 FR 45390, Aug. 28, 2001]

§ 179.220-7 Materials.

(a) The plate material used to fabricate the inner container and nozzles must meet one of the following specifications and with the indicated minimum tensile strength and elongation in the welded condition.

(b) Carbon steel plate: The maximum allowable carbon content must be 0.31 percent when the individual specification allows carbon content greater than this amount. The plates may be clad with other approved materials.