§ 179.201–9 Gauging device.

A gauging device of an approved design must be applied to permit determining the liquid level of the lading. The gauging device must be made of materials not subject to rapid deterioration by the lading. When the interior pipe of the gauging device provides a means for passage of the lading from the interior to the exterior of the tank, it must be equipped with an excess flow valve of an approved design. If the opening for passage of lading through the gauging device is not more than 0.060 inch diameter an excess flow valve is not required. The gauging device must be provided with a protective housing.

[Amdt. 179–10, 36 FR 21353, Nov. 6, 1971]

§ 179.201–10 Water capacity marking.

(a) Water capacity of the tank in pounds stamped plainly and permanently in letters and figures at least 3⁄8 inch high into the metal of the tank immediately below the stamped marks specified in §179.200–24(a). This mark shall also be stenciled on the jacket immediately below the dome platform and directly behind or within 3 feet of the right or left side of the ladder, if there is a ladder on each side of the tank, in letters and figures at least 1½ inches high as follows:

WATER CAPACITY

000000 Pounds

(b) After July 25, 2012, authorized DOT non-pressure tank cars that comply with this section and are equipped with stainless steel identification plates may have the water capacity of the tank in pounds prescribed in the first sentence of paragraph (a) of this section stenciled plainly and permanently on their identification plate in conformance with the applicable marking requirements prescribed in §179.24(a) instead of into the metal of the tank or immediately below the stamped marks specified in §179.200–24(a).

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\( E = 0.9 \) 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 psi 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 psi as prescribed in AAR Specifications for Tank Cars, appendix M, Table M1 (IBR, see §171.7 of this subchapter);

\( t = \) 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.

[Amtd. 179–9, 36 FR 21340, Nov. 6, 1971, as amended at 66 FR 75762, Dec. 31, 2003]

§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.

(c) Aluminum alloy plate: Aluminum alloy plate must be suitable for welding and comply with one of the following specifications (IBR, see §171.7 of this subchapter):

(d) High alloy steel plate: High alloy steel plate must comply with one of the following specifications (IBR, see §171.7 of this subchapter):

(e) Manganese-molybdenum steel plate: Manganese-molybdenum steel

\[ t = \frac{5PL}{6SE} \]

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 psi as prescribed in AAR Specifications for Tank Cars, appendix M, Table M1 (IBR, see §171.7 of this subchapter);

\( t = \) 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.

[Amtd. 179–9, 36 FR 21340, Nov. 6, 1971, as amended at 66 FR 75762, Dec. 31, 2003]