Pipeline and Hazardous Materials Safety Administration, DOT § 179.201–3

<table>
<thead>
<tr>
<th>DOT Specification</th>
<th>Insulation</th>
<th>Bursting pressure (psig)</th>
<th>Minimum plate thickness (inches)</th>
<th>Test pressure (psig)</th>
<th>Bottom outlet</th>
<th>Bottom washout</th>
<th>References (179.201 - ***)</th>
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</thead>
<tbody>
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<td>500</td>
<td>$\frac{7}{16}$</td>
<td>100</td>
<td>No</td>
<td>Optional</td>
<td>6(a), 8, 10</td>
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1 Tanks marked “ALW” are constructed from aluminum alloy plate; “AN” nickel plate; “CW,” “DW,” “EW,” “W6,” and “W7” high alloy steel or manganese-molybdenum steel plate; and those marked “BW” or “W5” must have an interior lining that conforms to § 179.201–3.


§ 179.201–2 [Reserved]

§ 179.201–3 Lined tanks.

(a) Rubber-lined tanks. (1) Each tank or each compartment thereof must be lined with acid-resistant rubber or other approved rubber compound Vulcanized or bonded directly to the metal tank, to provide a nonporous laminated lining, at least $\frac{5}{32}$-inch thick, except overall rivets and seams formed by riveted attachments in the lining must be double thickness. The rubber lining must overlap at least $\frac{1}{2}$ inches at all edges which must be straight and be beveled to an angle of approximately $45^\circ$, or butted edges of lining must be sealed with a 3-inch minimum strip of lining having $45^\circ$ beveled edges.

(2) As an alternate method, the lining may be joined with a skived butt seam then capped with a separate strip of lining 3 inches wide having $45^\circ$ beveled edges. An additional rubber reinforcing pad at least 4 feet square and at least $\frac{1}{2}$-inch thick must be applied by vulcanizing to the lining on bottom of tank directly under the manway opening. The edges of the rubber pad must be beveled to an angle of approximately $45^\circ$. An opening in this pad for sump is permitted. No lining must be under tension when applied except due to conformation over rivet heads. Interior of tank must be free from scale, oxidation, moisture, and all foreign matter during the lining operation.

(3) Other approved lining materials may be used provided the material is resistant to the corrosive or solvent action of the lading in the liquid or gas phase and is suitable for the service temperatures.

(b) Before a tank car tank is lined with rubber, or other rubber compound, a report certifying that the tank and its equipment have been brought into compliance with spec. DOT-111A60W5 or 111A100W5 must be furnished by car owner to the party who is to apply the lining. A copy of this report in approved form, certifying that tank has been lined in compliance with all requirements of one of the above specifications, must be furnished by party lining tank to car owner. Reports of the latest lining application must be retained by the car owner until the next relining has been accomplished and recorded.

(c) All rivet heads on inside of tank must be buttonhead, or similar shape, and of uniform size. The under surface of heads must be driven tight against the plate. All plates, castings and rivet heads on the inside of the tank must be caulked. All projecting edges of plates, castings and rivet heads on the inside of the tank must be rounded and free from fins and other irregular projections. Castings must be free from porosity.

(d) All surfaces of attachments or fittings and their closures exposed to the lading must be covered with at least $\frac{1}{8}$-inch acid resistant material. Attachments made of metal not affected by the lading need not be covered with rubber or other acid resistant material.

(e) Hard rubber or polyvinyl chloride may be used for pressure retaining parts of safety vents provided the material is resistant to the corrosive or...
solvent action of the lading in the liquid or gas phase and is suitable for the service temperatures.

(f) Polyvinyl chloride lined tanks. Tank car tanks or each compartment thereof may be lined with elastomeric polyvinyl chloride having a minimum lining thickness of three-thirty seconds inch.

(g) Polyurethane lined tanks. Tank car tanks or each compartment thereof may be lined with elastomeric polyurethane having a minimum lining thickness of one-sixteenth inch.

§ 179.201–4 Material.

All fittings, tubes, and castings and all projections and their closures, except for protective housing, must also meet the requirements specified in ASTM A 262 (IBR, see § 171.7 of this subchapter), except that when preparing the specimen for testing the carburized surface may be finished by grinding or machining.

§ 179.201–5 Postweld heat treatment and corrosion resistance.

(a) Tanks and attachments welded directly thereto must be postweld heat treated as a unit at the proper temperature except as indicated below. Tanks and attachments welded directly thereto fabricated from ASTM A 240/A 240M (IBR, see § 171.7 of this subchapter) Type 430A, Type 304 and Type 316 materials must be postweld heat treated as a unit and must be tested to demonstrate that they possess the corrosion resistance specified in § 179.200–7(d), Footnote 2. Tanks and attachments welded directly thereto, fabricated from ASTM A 240/A 240M Type 304L or Type 316L materials are not required to be postweld heat treated.

(b) Tanks and attachments welded directly thereto, fabricated from ASTM A 240/A 240M Type 304L and Type 316 materials must be tested to demonstrate that they possess the corrosion resistance specified in § 179.200–7(d), Footnote 2.

§ 179.201–8 Sampling device and thermometer well.

(a) Sampling valve and thermometer well are not specification requirements. When used, they must be of approved design, made of metal not subject to rapid deterioration by lading, and must withstand a pressure of 100 psig without leakage. Interior pipes of the sampling valve must be equipped with excess flow valves of an approved design. Interior pipe of thermometer well must be closed by an approved valve attached close to fitting where it passes through the tank and closed by a screw plug. Other approved arrangements that permit testing thermometer well for leaks without complete removal of the closure may be used.

(b) [Reserved]