

shell, a V-shaped breakage groove shall be cut (not cast) in the upper part of the outlet nozzle at a point immediately below the lowest part of the valve closest to the tank. In no case may the nozzle wall thickness at the root of the "V" be more than ¼-inch. The outlet nozzle or the valve body may be steam jacketed, in which case the breakage groove or its equivalent must be below the steam chamber but above the bottom of the center sill construction. If the outlet nozzle is not a single piece or its exterior valves are applied, provision shall be made for the equivalent of the breakage groove. On cars without continuous center sills, the breakage groove or its equivalent may not be more than 15 inches below the outer shell. On cars with continuous center sills, the breakage groove or its equivalent must be above the bottom of the center sill construction.

(7) The valve body must be of a thickness which will prevent distortion of the valve seat or valve by any change in contour of the shell resulting from expansion of lading, or other causes, and which will insure that accidental breakage of the outlet nozzle will occur at or below the "V" groove, or its equivalent.

(8) The valve must have no wings or stem projection below the "V" groove or its equivalent. The valve and seat must be readily accessible or removable for repairs, including grinding.

(b) Inner container may be equipped with bottom washout of approved design. If applied, bottom washout must comply with the following requirements:

(1) The extreme projection of the bottom washout equipment may not be more than that allowed by appendix E of the AAR Specifications for Tank Cars.

(2) Bottom washout must be of cast, forged or fabricated metals. If it is welded to the inner container, it must be of good weldable quality in conjunction with metal of tank.

(3) If washout nozzle extends below the bottom of the outer shell, a V-shaped breakage groove shall be cut (not cast) in the upper part of the nozzle at a point immediately below the lowest part of the inside closure seat or plug. In no case may the nozzle wall

thickness at the root of the "V" be more than ¼-inch. Where the nozzle is not a single piece, provisions shall be made for the equivalent of the breakage groove. The nozzle must be of a thickness to insure that accidental breakage will occur at or below the "V" groove or its equivalent. On cars without a continuous center sill, the breakage groove or its equivalent may not be more than 15 inches below the outer shell. On cars with continuous center sills, the breakage groove or its equivalent must be above the bottom of the center sill construction.

(4) The closure plug and seat must be readily accessible or removable for repairs.

(5) The closure of the washout nozzle must be equipped with a ¾-inch solid screw plug. Plug must be attached by at least a ¼-inch chain.

(6) Joints between closures and their seats may be gasketed with suitable material.

[Amdt. 179-9, 36 FR 21342, Nov. 6, 1971, as amended by Amdt. 179-40, 52 FR 13048, Apr. 20, 1987; 68 FR 75763, Dec. 31, 2003]

§ 179.220-20 Reinforcements, when used, and appurtenances not otherwise specified.

All attachments to inner container and outer shell must be applied by approved means.

[Amdt. 179-9, 36 FR 21342, Nov. 6, 1971]

§ 179.220-22 Closure for openings.

(a) All plugs must be solid, with NPT threads, and must be of a length which will screw at least six threads inside the face of fitting or tank. Plugs, when inserted from the outside of the outer shell tank heads, must have the letter "S" at least three-eighths inch in size stamped with steel stamp or cast on the outside surface to indicate the plug is solid.

(b) Openings in the outer shell used during construction for installation must be closed in an approved manner.

[Amdt. 179-9, 36 FR 21343, Nov. 6, 1971]

§ 179.220-23 Test of tanks.

(a) Each inner container or compartment must be tested hydrostatically to the pressure specified in § 179.221-1. The