castings, forgings, or fabrications used for fittings or attachments to tank and expansion dome, when used, in contact with lading must be made of material to an approved specification. See AAR Specifications for Tank Cars, appendix M, M4.05 (IBR, see §171.7 of this subchapter) for approved material specifications for castings for fittings.

§ 179.200–8 Tank heads.

(a) All external tank heads must be an ellipsoid of revolution in which the major axis must equal the diameter of the shell and the minor axis must be one-half the major axis.

(b) Internal compartment tank heads may be 2:1 ellipsoidal, 3:1 ellipsoidal, or flanged and dished to thicknesses as specified in §179.200–6. Flanged and dished heads must have main inside radius not exceeding 10 feet, and inside knuckle radius must not be less than 3/4 inches for steel, alloy steel, or nickel tanks, and not less than 5 inches for aluminum alloy tanks.

§ 179.200–9 Compartment tanks.

(a) When a tank is divided into compartments, by inserting interior heads, interior heads must be inserted in accordance with AAR Specifications for Tank Cars, appendix E, E7.00 (IBR, see §171.7 of this subchapter), and must comply with the requirements specified in §179.201–1. Voids between compartment heads must be provided with at least one tapped drain hole at their lowest point, and a tapped hole at the top of the tank. The top hole must be closed, and the bottom hole may be closed with solid pipe plugs not less than 3/4 inch nor more than 1 1/2 inches having NPT threads.

§ 179.200–10 Welding.

(a) All joints shall be fusion-welded in compliance with the requirements of AAR Specifications for Tank Cars, appendix W (IBR, see §171.7 of this subchapter). Welding procedures, welders and fabricators shall be approved.

(b) Welding is not permitted on or to ductile iron or malleable iron fittings.


When specified in §179.201–1, after welding is complete, postweld heat treatment must be in compliance with the requirements of AAR Specifications for Tank Cars, appendix W (IBR, see §171.7 of this subchapter).

§ 179.200–13 Manway ring or flange, pressure relief device flange, bottom outlet nozzle flange, bottom washout nozzle flange and other attachments and openings.

(a) These attachments shall be fusion welded to the tank and reinforced in an approved manner in compliance with the requirements of appendix E, figure 10, of the AAR Specifications for Tank