

§ 178.337-2 Material.

(a) *General.* (1) All material used for construction of the cargo tank and appurtenances must be suitable for use with the commodities to be transported therein and must conform to the requirements in Section II of the ASME Code (IBR, see §171.7 of this subchapter) and/or requirements of the American Society for Testing and Materials in all respects.

(2) Impact tests are required on steel used in the fabrication of each cargo tank constructed in accordance with part UHT in Section VIII of the ASME Code. The tests must be made on a lot basis. A lot is defined as 100 tons or less of the same heat treatment processing lot having a thickness variation no greater than plus or minus 25 percent. The minimum impact required for full size specimens must be 20 foot-pounds in the longitudinal direction at -30°F. , Charpy V-Notch and 15 foot-pounds in the transverse direction at -30°F. , Charpy V-Notch. The required values for subsize specimens must be reduced in direct proportion to the cross-sectional area of the specimen beneath the notch. If a lot does not meet this requirement, individual plates may be accepted if they individually meet this requirement.

(3) The fabricator shall record the heat, and slab numbers, and the certified Charpy impact values, where required, of each plate used in each cargo tank on a sketch showing the location of each plate in the shell and heads of the cargo tank. Copies of each sketch shall be provided to the owner and retained for at least five years by the fabricator and made available to duly identified representatives of the Department of Transportation.

(4) The direction of final rolling of the shell material shall be the circumferential orientation of the cargo tank shell.

(b) *For a chlorine cargo tank.* Plates, the manway nozzle, and anchorage shall be made of carbon steel which meets the following requirements:

(1) For a cargo tank manufactured on or before December 31, 1974—

(i) Material shall conform to ASTM A 300, "Steel Plates for Pressure Vessels for Service at Low Temperatures" (IBR, see §171.7 of this subchapter);

(ii) Material shall be Class 1, Grade A, flange or firebox quality;

(iii) Plate impact test specimens, as required under paragraph (a) of this section, shall be of the Charpy keyhole notch type; and

(iv) Plate impact test specimens shall meet the impact test requirements in paragraph (a) of this section in both the longitudinal and transverse directions of rolling at a temperature of minus 45.5 C. (-50°F.).

(2) For a cargo tank manufactured on or after January 1, 1975—

(i) Material shall conform to ASTM A 612 (IBR, see §171.7 of this subchapter), Grade B or A 516/A 516M (IBR, see §171.7 of this subchapter), Grade 65 or 70;

(ii) Material shall meet the Charpy V-notch test requirements of ASTM A 20/A 20M (IBR, see §171.7 of this subchapter); and

(iii) Plate impact test specimens shall meet the impact test requirements in paragraph (a) of this section in both the longitudinal and transverse directions of rolling at a temperature of minus 40 C. (-40°F.).

(c) A cargo tank in anhydrous ammonia service must be constructed of steel. The use of copper, silver, zinc or their alloys is prohibited. Baffles made from aluminum may be used only if joined to the cargo tank by a process not requiring postweld heat treatment of the cargo tank.

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Editorial Note: For Federal Register citations affecting §178.337-2, see the List of CFR Sections Affected which appears in the Finding Aids section of the printed volume and on GPO Access.