

permanently attached to the portable tank in a conspicuous place and readily accessible for inspection. When the plate cannot be permanently attached to the shell, the shell must be marked with at least the information required by Section VIII of the ASME Code. At a minimum, the following information must be marked on the plate by stamping or by any other equivalent method: * * *

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(j) * * *

(6) A UN portable tank that meets the definition of "container" in the CSC (see 49 CFR 450.3(a)(2)) must be subjected to an impact test using a prototype representing each design type. The prototype portable tank must be shown to be capable of absorbing the forces resulting from an impact not less than 4 times (4 g) the maximum permissible gross mass of the fully loaded portable tank at a duration typical of the mechanical shocks experienced in rail transportation. A listing of standards describing methods acceptable for performing the impact test are provided in the UN Recommendations. UN portable tanks used for the dedicated transportation of "Helium, refrigerated liquid," UN1963 and "Hydrogen, refrigerated liquid," UN1966 that are marked "NOT FOR RAIL TRANSPORT" in letters of a minimum height of 10 cm (4 inches) on at least two sides of the portable tank are excepted from the 4 g impact test.

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■ 100. In § 178.276, the last sentence in paragraph (f) is revised to read as follows:

§ 178.276 Requirements for the design, construction, inspection and testing of portable tanks intended for the transportation of non-refrigerated liquefied compressed gases.

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(f) * * * For gases that have critical temperatures near or below the temperature at the accumulating condition, the calculation of the pressure relief device delivery capacity must consider the additional thermodynamic properties of the gas, for example see CGA S-1.2 (IBR, see § 171.7 of this subchapter).

■ 101. In § 178.277, paragraphs (b)(2) and (b)(13) are revised to read as follows:

§ 178.277 Requirements for the design, construction, inspection and testing of portable tanks intended for the transportation of refrigerated liquefied gases.

(b) * * *

(2) Portable tanks must be postweld heat treated and radiographed as

prescribed in Sections V and VIII of the ASME Code except that each tank constructed in accordance with part UHT in Section VIII of the ASME Code must be postweld heat treated. Where postweld heat treatment is required, the tank must be treated as a unit after completion of all the welds to the shell and heads. The method must be as prescribed in the ASME Code. Welded attachments to pads may be made after postweld heat treatment is made. The postweld heat treatment must be as prescribed in Section VIII of the ASME Code, but in no event at less than 1,050 °F tank metal temperature.

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(13) The jacket of a vacuum-insulated double-wall tank must have either an external design pressure not less than 100 kPa (1 bar) gauge pressure calculated in accordance with Section VIII of the ASME Code or a calculated critical collapsing pressure of not less than 200 kPa (2 bar) gauge pressure. Internal and external reinforcements may be included in calculating the ability of the jacket to resist the external pressure.

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■ 102. In § 178.320, in paragraph (a) the definitions for "Constructed and certified in accordance with the ASME Code," "Constructed in accordance with the ASME Code," and "Maximum allowable working pressure or MAWP" are revised to read as follows:

§ 178.320 General requirements applicable to all DOT specification cargo tank motor vehicles.

(a) * * *

Constructed and certified in accordance with the ASME Code means a cargo tank is constructed and stamped in accordance with Section VIII of the ASME Code (IBR, see § 171.7 of this subchapter), and is inspected and certified by an Authorized Inspector.

Constructed in accordance with the ASME Code means a cargo tank is constructed in accordance with Section VIII of the ASME Code with authorized exceptions (see §§ 178.346 through 178.348) and is inspected and certified by a Registered Inspector.

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Maximum allowable working pressure or MAWP means the maximum pressure allowed at the top of the tank in its normal operating position. The MAWP must be calculated as prescribed in Section VIII of the ASME Code. In use, the MAWP must be greater than or equal to the maximum lading pressure conditions prescribed in § 173.33 of this

subchapter for each material transported.

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■ 103. In § 178.337-1, paragraphs (a)(2) and (f) are revised to read as follows:

§ 178.337-1 General requirements.

(a) * * *

(2) Designed, constructed, certified, and stamped in accordance with Section VIII of the ASME Code (IBR, see § 171.7 of this subchapter);

* * * * *

(f) *Postweld heat treatment.* Postweld heat treatment must be as prescribed in the ASME Code except that each cargo tank constructed in accordance with Part UHT of Section VIII of the ASME Code must be postweld heat treated. Each chlorine cargo tank must be fully radiographed and postweld heat treated in accordance with the provisions in Section VIII of the ASME Code under which it is constructed. Where postweld heat treatment is required, the cargo tank must be treated as a unit after completion of all the welds in and/or to the shells and heads. The method must be as prescribed in Section VIII of the ASME Code. Welded attachments to pads may be made after postweld heat treatment. A cargo tank used for anhydrous ammonia must be postweld heat treated. The postweld heat treatment must be as prescribed in Section VIII of the ASME Code, but in no event at less than 1,050 °F cargo tank metal temperature.

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■ 104. In § 178.337-2, paragraph (a)(1), the first sentence in paragraph (a)(2), and paragraphs (b)(1)(i), (b)(2)(i), and (b)(2)(ii) are revised to read as follows:

§ 178.337-2 Material.

(a) * * *

(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. * * *

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(b) * * *

(1) * * *

(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); * * *

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