

performed, and the repaired areas must be retested.

(e) Verification must be made of the interior cleanliness of a tank constructed for oxygen service by means that assure that all contaminants that are likely to react with the lading have been removed as required by §178.338-15.

[Amdt. 178-77, 48 FR 27706, June 16, 1983, as amended at 49 FR 24317, June 12, 1984; 49 FR 42736, Oct. 24, 1984; 68 FR 75755, Dec. 31, 2003]

§ 178.338-17 Pumps and compressors.

(a) *Liquid pumps and gas compressors*, if used, must be of suitable design, adequately protected against breakage by collision, and kept in good condition. They may be driven by motor vehicle power take-off or other mechanical, electrical, or hydraulic means. Unless they are of the centrifugal type, they shall be equipped with suitable pressure actuated by-pass valves permitting flow from discharge to suction to the tank.

(b) A valve or fitting made of aluminum with internal rubbing or abrading aluminum parts that may come in contact with oxygen (cryogenic liquid) may not be installed on any cargo tank used to transport oxygen (cryogenic liquid) unless the parts are anodized in accordance with ASTM B 580 (IBR, see §171.7 of this subchapter).

[Amdt. 178-89, 54 FR 25020, June 12, 1989, as amended at 55 FR 37058, Sept. 7, 1990; 67 FR 61016, Sept. 27, 2002; 68 FR 75755, Dec. 31, 2003]

§ 178.338-18 Marking.

(a) *General*. Each cargo tank certified after October 1, 2004 must have a corrosion-resistant metal name plate (ASME Plate) and specification plate permanently attached to the cargo tank by brazing, welding, or other suitable means on the left side near the front, in a place accessible for inspection. If the specification plate is attached directly to the cargo tank wall by welding, it must be welded to the tank before the cargo tank is postweld heat treated.

(1) The plates must be legibly marked by stamping, embossing, or other means of forming letters into the metal of the plate, with the information required in paragraphs (b) and (c) of this section, in addition to that re-

quired by Section VIII of the ASME Code (IBR, see §171.7 of this subchapter), in characters at least 3/16 inch high (parenthetical abbreviations may be used). All plates must be maintained in a legible condition.

(2) Each insulated cargo tank must have additional plates, as described, attached to the jacket in the location specified unless the specification plate is attached to the chassis and has the information required in paragraphs (b) and (c) of this section.

(3) The information required for both the name and specification plate may be displayed on a single plate. If the information required by this section is displayed on a plate required by Section VIII of the ASME Code, the information need not be repeated on the name and specification plates.

(4) The specification plate may be attached to the cargo tank motor vehicle chassis rail by brazing, welding, or other suitable means on the left side near the front head, in a place accessible for inspection. If the specification plate is attached to the chassis rail, then the cargo tank serial number assigned by the cargo tank manufacturer must be included on the plate.

(b) *Name plate*. The following information must be marked on the name plate in accordance with this section:

(1) DOT-specification number MC 338 (DOT MC 338).

(2) Original test date (Orig, Test Date).

(3) MAWP in psig.

(4) Cargo tank test pressure (Test P), in psig.

(5) Cargo tank design temperature (Design Temp. Range) ____ °F to ____ °F.

(6) Nominal capacity (Water Cap.), in pounds.

(7) Maximum design density of lading (Max. Lading density), in pounds per gallon.

(8) Material specification number—shell (Shell matl. yyy * * *), where “yyy” is replaced by the alloy designation and “* * *” is replaced by the alloy type.

(9) Material specification number—heads (Head matl. yyy * * *), where “yyy” is replaced by the alloy designation and “* * *” by the alloy type.

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NOTE: When the shell and heads materials are the same thickness, they may be combined, (Shell & head matl, yyy * * *).

(10) Weld material (Weld matl.).

(11) Minimum Thickness-shell (Min. Shell-thick), in inches. When minimum shell thicknesses are not the same for different areas, show (top ____, side ____, bottom ____, in inches).

(12) Minimum thickness-heads (Min heads thick.), in inches.

(13) Manufactured thickness-shell (Mfd. Shell thick.), top ____, side ____, bottom ____, in inches. (Required when additional thickness is provided for corrosion allowance.)

(14) Manufactured thickness-heads (Mfd. Heads thick.), in inches. (Required when additional thickness is provided for corrosion allowance.)

(15) Exposed surface area, in square feet.

(c) *Specification plate.* The following information must be marked on the specification plate in accordance with this section:

(1) Cargo tank motor vehicle manufacturer (CTMV mfr.).

(2) Cargo tank motor vehicle certification date (CTMV cert. date).

(3) Cargo tank manufacturer (CT mfr.).

(4) Cargo tank date of manufacture (CT date of mfr.), month and year.

(5) Maximum weight of lading (Max. Payload), in pounds.

(6) Maximum loading rate in gallons per minute (Max. Load rate, GPM).

(7) Maximum unloading rate in gallons per minute (Max Unload rate).

(8) Lining materials (Lining), if applicable.

(9) "Insulated for oxygen service" or "Not insulated for oxygen service" as appropriate.

(10) Marked rated holding time for at least one cryogenic liquid, in hours, and the name of that cryogenic liquid (MRHT ____ hrs, name of cryogenic liquid). Marked rated holding marking for additional cryogenic liquids may be displayed on or adjacent to the specification plate.

(11) Cargo tank serial number (CT serial), as assigned by cargo tank manufacturer, if applicable.

NOTE 1 TO PARAGRAPH (c): See § 173.315(a) of this chapter regarding water capacity.

NOTE 2 TO PARAGRAPH (c): When the shell and head materials are the same thickness, they may be combined (Shell & head matl, yyy***).

(d) The design weight of lading used in determining the loading in §§ 178.338-3 (b), 178.338-10 (b) and (c), and 178.338-13 (b), must be shown as the maximum weight of lading marking required by paragraph (c) of this section.

[68 FR 19283, Apr. 18, 2003, as amended at 68 FR 57634, Oct. 6, 2003; 68 FR 75755, Dec. 31, 2003]

§ 178.338-19 Certification.

(a) At or before the time of delivery, the manufacturer of a cargo tank motor vehicle shall furnish to the owner of the completed vehicle the following:

(1) The tank manufacturer's data report as required by the ASME Code (IBR, see § 171.7 of this subchapter), and a certificate bearing the manufacturer's vehicle serial number stating that the completed cargo tank motor vehicle conforms to all applicable requirements of Specification MC 338, including Section VIII of the ASME Code (IBR, see § 171.7 of this subchapter) in effect on the date (month, year) of certification. The registration numbers of the manufacturer, the Design Certifying Engineer, and the Registered Inspector, as appropriate, must appear on the certificates (see subpart F, part 107 in subchapter B of this chapter).

(2) A photograph, pencil rub, or other facsimile of the plates required by paragraphs (a) and (b) of § 178.338-18.

(b) In the case of a cargo tank vehicle manufactured in two or more stages, each manufacturer who performs a manufacturing operation on the incomplete vehicle or portion thereof shall furnish to the succeeding manufacturer, at or before the time of delivery, a certificate covering the particular operation performed by that manufacturer, and any certificates received from previous manufacturers, Registered Inspectors, and Design Certifying Engineers. The certificates must include sufficient sketches, drawings, and other information to indicate the location, make, model and size of each valve and the arrangement of all piping associated with the tank. Each certificate must be signed by an official of