

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

(14) Manufactured thicknessBheads (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, GPM).

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

(9) Heating system design pressure (Heating sys. press.), in psig, if applicable.

(10) Heating system design temperature (Heating sys. temp.), in °F, if applicable.

(11) Cargo tank serial number, assigned by cargo tank manufacturer (CT serial), 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 §§ 178.337(3)(b), 178.337–10(b) and (c), and 178.337–13(a) and (b) must be shown as the maximum weight of lading marking required by paragraph (c) of this section.

■ 27. In § 178.337–18, paragraphs (a)(3) and (a)(4) are redesignated as paragraphs (a)(5) and (a)(6) respectively, and new paragraphs (a)(3) and (a)(4) are added to read as follows:

§ 178.337–18 Certification.

(a) * * *

(3) When a cargo tank motor vehicle is manufactured in two or more stages, each manufacturer who performs a manufacturing function or portion thereof on the incomplete cargo tank motor vehicle must provide to the

succeeding manufacturer, at or before the time of delivery, a certificate that states the function performed by the manufacturer, including any certificates received from previous manufacturers, Registered Inspectors, and Design Certifying Engineers.

(4) *Specification shortages.* When a cargo tank motor vehicle is manufactured in two or more stages, the manufacturer of the cargo tank must attach the name plate and specification plate as required by § 178.337–17(a) and (b) without the original date of certification stamped on the specification plate. Prior manufacturers must list the specification requirements that are not completed on the Certificate of Compliance. When the cargo tank motor vehicle is brought into full compliance with the applicable specification, the cargo tank motor vehicle manufacturer must have a Registered Inspector stamp the date of certification on the specification plate and issue a Certificate of Compliance to the owner of the cargo tank motor vehicle. The Certificate of Compliance must list the actions taken to bring the cargo tank motor vehicle into full compliance. In addition, the certificate must include the date of certification and the person (manufacturer, carrier or repair organization) accomplishing compliance.

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■ 28. In § 178.338–2, paragraph (c) is revised to read as follows:

§ 178.338–2 Material.

* * * * *

(c) Impact tests are required on all tank materials, except materials that are excepted from impact testing by the ASME Code, and must be performed using the procedure prescribed in the ASME Code (incorporated by reference; see § 171.7 of this subchapter).

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■ 29. In § 178.338–3, paragraphs (b) and (g) are revised to read as follows:

§ 178.338–3 Structural integrity.

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(b) *Static design and construction.* (1) The static design and construction of each tank must be in accordance with Appendix G of Section VII, Division 1 of the ASME Code (incorporated by reference; see § 171.7 of this subchapter). The tank design must include calculation of stress due to the design pressure, the weight of lading, the weight of structures supported by the tank wall, and the effect of temperature gradients resulting from lading and ambient temperature extremes. When dissimilar materials are

used, their thermal coefficients must be used in calculation of the thermal stresses.

(2) Stress concentrations in tension, bending, and torsion which occur at pads, cradles, or other supports must be considered in accordance with Appendix G of Section VII, Division 1 of the ASME Code.

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(g) The design, construction and installation of an attachment, appurtenance to the cargo tank or structural support member between the cargo tank and the vehicle or suspension component or accident protection device must conform to the following requirements:

(1) Structural members, the suspension subframe, accident protection structures and external circumferential reinforcement devices must be used as sites for attachment of appurtenances and other accessories to the cargo tank, when practicable.

(2) A lightweight attachment to the cargo tank wall such as a conduit clip, brakeline clip, skirting structure, lamp mounting bracket, or placard holder must be of a construction having lesser strength than the cargo tank wall materials and may not be more than 72 percent of the thickness of the material to which it is attached. The lightweight attachment may be secured directly to the cargo tank wall if the device is designed and installed in such a manner that, if damaged, it will not affect the lading retention integrity of the tank. A lightweight attachment must be secured to the cargo tank shell or head by a continuous weld or in such a manner as to preclude formation of pockets that may become sites for corrosion. Attachments meeting the requirements of this paragraph are not authorized for cargo tanks constructed under part UHT, Section VIII, Division 1 of the ASME Code.

(3) Except as prescribed in paragraphs (g)(1) and (g)(2) of this section, the welding of any appurtenance the cargo tank wall must be made by attachment of a mounting pad so that there will be no adverse effect upon the lading retention integrity of the cargo tank if any force less than that prescribed in paragraph (b)(1) of this section is applied from any direction. The thickness of the mounting pad may not be less than that of the shell or head to which it is attached, and not more than 1.5 times the shell or head thickness. However, a pad with a minimum thickness of 0.187 inch may be used when the shell or head thickness is over 0.187 inch. If weep holes or tell-tale holes are used, the pad must be drilled