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(3) If washout nozzle extends below the bottom of the outer shell, a V-shaped breakage groove shall be cut (not cast) in the upper part of the nozzle at a point immediately below the lowest part of the inside closure seat or plug. In no case may the nozzle wall thickness at the root of the "V" be more than 1/4-inch. Where the nozzle is not a single piece, provisions shall be made for the equivalent of the breakage groove. The nozzle must be of a thickness to insure that accidental breakage will occur at or below the "V" groove or its equivalent. On cars without a continuous center sill, the breakage groove or its equivalent may not be more than 15 inches below the outer shell. On cars with continuous center sills, the breakage groove or its equivalent must be above the bottom of the center sill construction.

(4) The closure plug and seat must be readily accessible or removable for repairs.

(5) The closure of the washout nozzle must be equipped with a 3/4-inch solid screw plug. Plug must be attached by at least a 1/4-inch chain.

(6) Joints between closures and their seats may be gasketed with suitable material.

[Amdt. 179-9, 36 FR 21342, Nov. 6, 1971, as amended by Amdt. 179-40, 52 FR 13048, Apr. 20, 1987]

§ 179.220-20 Reinforcements, when used, and appurtenances not otherwise specified.

All attachments to inner container and outer shell must be applied by approved means.

[Amdt. 179-9, 36 FR 21342, Nov. 6, 1971]

§ 179.220-22 Closure for openings.

(a) All plugs must be solid, with NPT threads, and must be of a length which will screw at least six threads inside the face of fitting or tank. Plugs, when inserted from the outside of the outer shell tank heads, must have the letter "S" at least three-eighths inch in size stamped with steel stamp or cast on the outside surface to indicate the plug is solid.

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(b) Openings in the outer shell used during construction for installation must be closed in an approved manner.

[Amdt. 179-9, 36 FR 21343, Nov. 6, 1971]

§ 179.220-23 Test of tanks.

(a) Each inner container or compartment must be tested hydrostatically to the pressure specified in §179.221-1. The temperature of the pressurizing medium must not exceed 100 °F. during the test. The container must hold the prescribed pressure for at least 10 minutes without leakage or evidence of distress. Safety relief devices must not be in place when the test is made.

(b) The inner container must be pressure tested before installation within the outer shell. Items which, because of assembly sequence, must be welded to inner container after its installation within outer shell must have their attachment welds thoroughly inspected by a nondestructive dye penetrant method or its equivalent.

(c) Pressure testing of outer shell is not a specification requirement.

[Amdt. 179-9, 36 FR 21343, Nov. 6, 1971]

§ 179.220-24 Tests of pressure relief valves.

Each safety relief valve must be tested by air or gas for compliance with §179.15 before being put into service.

[Amdt. 179-9, 36 FR 21343, Nov. 6, 1971, as amended at 62 FR 51561, Oct. 1, 1997]

§ 179.220-25 Stamping.

To certify that the tank complies with all specification requirements, each outer shell must be plainly and permanently stamped in letters and figures at least 3/8-inch high into the metal near the center of both outside heads as follows:

	Examples of required stamping
Specifications	DOT-115A60W6.
Inner container:	
Material	ASTM A240-316L.
Shell thickness	Shell 0.167 in.
Head thickness	Head 0.150 in.
Tank builders initials	ABC.
Date of original test	00-0000.
Outer shell:	
Material	ASTM A285-C.
Tank builders initials	WYZ.

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	Examples of required stamping
Car assembler (if other than inner container or outer shell builders).	DEF.

least 1½ inches high to indicate the safe upper temperature limit, if applicable, for the inner tank, insulation, and the support system.

[Amdt. 179-9, 36 FR 21343, Nov. 6, 1971]

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§ 179.220-26 Stenciling.

(a) The outer shell, or the jacket if the outer shell is insulated, must be stenciled in compliance with AAR Specifications for Tank Cars, appendix C.

(b) Stenciling must be applied on both sides of the outer shell or jacket near the center in letters and figures at

§ 179.221 Individual specification requirements applicable to tank car tanks consisting of an inner container supported within an outer shell.

§ 179.221-1 Individual specification requirements.

In addition to § 179.220, the individual specification requirements are as follows:

DOT specification	Insulation	Bursting pressure (psig)	Minimum plate thickness (inches)	Test pressure (psig)	Bottom outlet	Bottom washout	Reference (179.221-****)
115A60ALW	Yes	240	3/16	60	Optional.	Optional	
115A60W1	Yes	240	1/8	60	Optional	Optional	1
115A60W6	Yes	240	1/8	60	Optional	Optional	1

[Amdt. 170-52, 61 FR 28681, June 5, 1996, as amended at 62 FR 51561, Oct. 1, 1997; 66 FR 45390, Aug. 28, 2001]

Subpart E—Specifications for Multi-Unit Tank Car Tanks (Classes DOT-106A and 110AW)

§ 179.300 General specifications applicable to multi-unit tank car tanks designed to be removed from car structure for filling and emptying (Classes DOT-106A and 110AW).

§ 179.300-1 Tanks built under these specifications shall meet the requirements of § 179.300, § 179.301 and when applicable, § 179.302.

§ 179.300-3 Type and general requirements.

(a) Tanks built under this specification shall be cylindrical, circular in cross section, and shall have heads of approved design. All openings shall be located in the heads.

(b) Each tank shall have a water capacity of at least 1500 pounds and not more than 2600 pounds.

(c) For tanks made in foreign countries, a chemical analysis of materials and all tests as specified shall be carried out within the limits of the United

States under the supervision of a competent and impartial inspector.

§ 179.300-4 Insulation.

- (a) Tanks shall not be insulated.
- (b) [Reserved]

§ 179.300-6 Thickness of plates.

(a) For class DOT-110A tanks, the wall thickness after forming of the cylindrical portion of the tank must not be less than that specified in § 179.301 nor that calculated by the following formula:

$$t = \frac{Pd}{2SE}$$

Where:

- d* = inside diameter in inches;
- E* = 1.0 welded joint efficiency;
- P* = minimum required bursting pressure in psig;
- S* = minimum tensile strength of plate material in p.s.i. as prescribed in § 179.300-7;
- t* = minimum thickness of plate material in inches after forming.

(b) For class DOT-106A tanks, the wall thickness of the cylindrical portion of the tank shall not be less than that specified in § 179.301 and shall be