

**§ 179.202-6**

**49 CFR Ch. I (10-1-23 Edition)**

**§ 179.202-6 Thermal protection system.**

The DOT Specification 117 tank car must have a thermal protection system. The thermal protection system must:

- (a) Conform to § 179.18 of this part;
- (b) Be equipped with a thermal protection blanket with at least ½-inch-thick material that meets § 179.18(c) of this part; and
- (c) Include a reclosing pressure relief device in accordance with § 173.31 of this subchapter.

[81 FR 53957, Aug. 15, 2016]

**§ 179.202-7 Jackets.**

The entire thermal protection system must be covered with a metal jacket of a thickness not less than 11 gauge A1011 steel or equivalent; and flashed around all openings so as to be weather tight. A protective coating must be applied to the exterior surface of a carbon steel tank and the inside surface of a carbon steel jacket.

[80 FR 26749, May 8, 2015]

**§ 179.202-8 Bottom outlets.**

If the tank car is equipped with a bottom outlet, the handle must be removed prior to train movement or be designed with protection safety system(s) to prevent unintended actuation during train accident scenarios.

[80 FR 26749, May 8, 2015]

**§ 179.202-9 Top fittings protection.**

The tank car tank must be equipped with top fittings protection conforming to AAR Specifications for Tank Cars, appendix E paragraph 10.2.1 (IBR, see § 171.7 of this subchapter).

[80 FR 26749, May 8, 2015]

**§ 179.202-11 Individual specification requirements.**

In addition to § 179.200, the individual specification requirements are as follows:

DOT specification	Insulation	Bursting pressure (psig)	Minimum plate thickness (Inches)	Test pressure (psig)	Bottom outlet
117A100W .....	Optional .....	500	9/16	100	Optional.

[80 FR 26749, May 8, 2015]

**§ 179.202-12 Performance standard requirements (DOT-117P).**

(a) *Approval.* Design, testing, and modeling results must be reviewed and approved by the Associate Administrator for Railroad Safety/Chief Safety Officer, Federal Railroad Administration (FRA), 1200 New Jersey Ave. SE., Washington, DC 20590.

(b) *Approval to operate at 286,000 gross rail load (GRL).* In addition to the requirements of paragraph (a) of this section, a tank car may be loaded to a gross weight on rail of up to 286,000 pounds (129,727 kg) upon approval by the Associate Administrator for Safety, Federal Railroad Administration (FRA). See § 179.13.

(c) *Puncture resistance.* (1) Minimum side impact speed: 12 mph when impacted at the longitudinal and vertical center of the shell by a rigid 12-inch by

12-inch indenter with a weight of 286,000 pounds.

(2) Minimum head impact speed: 18 mph when impacted at the center of the head by a rigid 12-inch by 12-inch indenter with a weight of 286,000 pounds.

(d) *Thermal protection systems.* The tank car must be equipped with a thermal protection system. The thermal protection system must be equivalent to the performance standard prescribed in § 179.18 and include a reclosing pressure relief device in accordance with § 173.31 of this subchapter.

(e) *Bottom outlet.* If the tank car is equipped with a bottom outlet, the handle must be removed prior to train movement or be designed with protection safety system(s) to prevent unintended actuation during train accident scenarios.

(f) *Top fittings protection.* The tank car tank must be equipped with top fittings protection conforming to AAR

Specifications for Tank Cars, appendix E paragraph 10.2.1 (IBR, see §171.7 of this subchapter).

[80 FR 26749, May 8, 2015, as amended at 81 FR 53957, Aug. 15, 2016; 83 FR 48401, Sept. 25, 2018]

**§ 179.202–13 Retrofit standard requirements (DOT–117R).**

(a) *Applicability.* Each tank retrofit under these specifications must conform to the general requirements of §179.200 and the prescriptive standards in §179.202–13, or the performance standard requirements of §179.202–12.

(b) *Approval to operate at 286,000 gross rail load (GRL).* A tank car may be loaded to a gross weight on rail of up to 286,000 pounds (129,727 kg) upon approval by the Associate Administrator for Safety, Federal Railroad Administration (FRA). See §179.13.

(c) *Thickness of plates.* The wall thickness after forming of the tank shell and heads must be, at a minimum, 7/16 of an inch, and constructed with steel authorized by the HMR at the time of construction.

(d) *Tank head puncture resistance system.* The DOT–117R specification tank car must have a tank head puncture resistance system in conformance with §179.16(c). The full height head shields must have a minimum thickness of ½ inch.

(e) *Thermal protection system.* (1) The DOT Specification 117R tank car must have a thermal protection system. The thermal protection system must conform to §179.18 of this part and include a reclosing pressure relief device in accordance with §173.31 of this subchapter.

(2) A non-jacketed tank car modified to the DOT Specification 117R must be equipped with a thermal protection blanket with at least ½-inch-thick material that meets §179.18(c) of this part.

(f) *Jackets.* The entire thermal protection system must be covered with a metal jacket of a thickness not less than 11 gauge A1011 steel or equivalent; and flashed around all openings so as to be weather tight. The exterior surface of a carbon steel tank and the inside surface of a carbon steel jacket must be given a protective coating.

(g) *Bottom outlets.* If the tank car is equipped with a bottom outlet, the

handle must be removed prior to train movement or be designed with protection safety system(s) to prevent unintended actuation during train accident scenarios.

(h) *Top fittings protection*—(1) *Protective housing.* Except as provided in §§179.202–13(h)(2) and (3) of this paragraph, top fittings on DOT Specification 117R tank cars must be located inside a protective housing not less than 1/2-inch in thickness and constructed of a material having a tensile strength not less than 65 kpsi and must conform to all of the following conditions:

(i) The protective housing must have a height exceeding the tallest valve or fitting which requires protection and the height of a valve or fitting within the protective housing must be kept to the minimum size compatible to allow for proper operation.

(ii) The protective housing or cover may not reduce the flow capacity of a pressure relief device below the minimum required.

(iii) The protective housing must provide a means of drainage with a minimum flow area equivalent to six (6) 1-inch diameter weep holes.

(iv) When connected to the nozzle or fitting cover plate, and subject to a horizontal force applied perpendicular to and uniformly over the projected plane of the protective housing, the tensile connection strength of the protective housing must be designed to be—

(A) no greater than 70 percent of the nozzle to tank tensile connection strength;

(B) no greater than 70 percent of the cover plate to nozzle connection strength; and

(C) no less than either 40 percent of the nozzle to tank tensile connection strength or the shear strength of twenty (20) 12-inch bolts.

(2) *Pressure relief devices.* (i) The pressure relief device(s) must be located inside the protective housing, unless space does not allow for placement within a housing. If multiple pressure relief devices are installed, no more than one (1) may be located outside of a protective housing.

(ii) The height of a pressure relief device located outside of a protective housing in accordance with paragraph