

| DOT specification | Insulation                  | Bursting pressure (psig) | Minimum plate thickness (inches) | Test pressure (psig) | Manway cover thickness | Bottom outlet  | Bottom washout | Reference (179.***) |
|-------------------|-----------------------------|--------------------------|----------------------------------|----------------------|------------------------|----------------|----------------|---------------------|
| 105A200ALW        | Yes .....                   | 500                      | 5/8                              | 200                  | <sup>2</sup> 2 1/2     | No .....       | No.            |                     |
| 105A300ALW        | Yes .....                   | 750                      | 5/8                              | 300                  | <sup>2</sup> 2 5/8     | No .....       | No.            |                     |
| 105A100W          | Yes .....                   | 500                      | <sup>3</sup> 9/16                | 100                  | 2 1/4                  | No .....       | No.            |                     |
| 105A200W          | Yes .....                   | 500                      | <sup>3</sup> 9/16                | 200                  | 2 1/4                  | No .....       | No.            |                     |
| 105A300W          | Yes .....                   | 750                      | <sup>1</sup> 11/16               | 300                  | <sup>7</sup> 2 1/4     | No .....       | No.            |                     |
| 105A400W          | Yes .....                   | 1,000                    | <sup>1</sup> 11/16               | 400                  | <sup>7</sup> 2 1/4     | No .....       | No.            |                     |
| 105A500W          | Yes .....                   | 1,250                    | <sup>1</sup> 11/16               | 500                  | 2 1/4                  | No .....       | No .....       | 102-1, 102-2        |
| 105A600W          | Yes .....                   | 1,500                    | <sup>1</sup> 11/16               | 600                  | 2 1/4                  | No .....       | No .....       | 102-4, 102-17       |
| 109A100ALW        | Optional .....              | 500                      | 5/8                              | 100                  | <sup>2</sup> 2 1/2     | No .....       | Optional.      |                     |
| 109A200ALW        | Optional .....              | 500                      | 5/8                              | 200                  | <sup>2</sup> 2 1/2     | No .....       | Optional.      |                     |
| 109A300ALW        | Optional .....              | 750                      | 5/8                              | 300                  | <sup>2</sup> 2 5/8     | No .....       | Optional.      |                     |
| 109A300W          | Optional .....              | 500                      | <sup>1</sup> 11/16               | 300                  | 2 1/4                  | No .....       | Optional.      |                     |
| 112A200W          | Optional <sup>4</sup> ..... | 500                      | <sup>3</sup> 5/16                | 200                  | 2 1/4                  | No .....       | No.            |                     |
| 112A340W          | Optional <sup>4</sup> ..... | 850                      | <sup>1</sup> 11/16               | 340                  | 2 1/4                  | No .....       | No.            |                     |
| 112A400W          | Optional <sup>4</sup> ..... | 1,000                    | <sup>1</sup> 11/16               | 400                  | 2 1/4                  | No .....       | No.            |                     |
| 112A500W          | Optional <sup>4</sup> ..... | 1,250                    | <sup>1</sup> 11/16               | 500                  | 2 1/4                  | No .....       | No.            |                     |
| 114A340W          | Optional <sup>4</sup> ..... | 850                      | <sup>1</sup> 11/16               | 340                  | <sup>6</sup>           | Optional ..... | Optional ...   | 103                 |
| 114A400W          | Optional <sup>4</sup> ..... | 1,000                    | <sup>1</sup> 11/16               | 400                  | <sup>6</sup>           | Optional ..... | Optional ...   | 103                 |
| 120A200ALW        | Yes .....                   | 500                      | 5/8                              | 200                  | <sup>2</sup> 2 1/2     | Optional ..... | Optional ...   | 103                 |
| 120A100W          | Yes .....                   | 500                      | <sup>3</sup> 9/16                | 100                  | 2 1/4                  | Optional ..... | Optional ...   | 103                 |
| 120A200W          | Yes .....                   | 500                      | <sup>3</sup> 9/16                | 200                  | 2 1/4                  | Optional ..... | Optional ...   | 103                 |
| 120A300W          | Yes .....                   | 750                      | <sup>1</sup> 11/16               | 300                  | 2 1/4                  | Optional ..... | Optional ...   | 103                 |
| 120A400W          | Yes .....                   | 1,000                    | <sup>1</sup> 11/16               | 400                  | 2 1/4                  | Optional ..... | Optional ...   | 103                 |
| 120A500W          | Yes .....                   | 1,250                    | <sup>1</sup> 11/16               | 500                  | 2 1/4                  | Optional ..... | Optional ...   | 103                 |

<sup>1</sup>When steel of 65,000 to 81,000 p.s.i. minimum tensile strength is used, the thickness of plates shall be not less than 5/8 inch, and when steel of 81,000 p.s.i. minimum tensile strength is used, the minimum thickness of plate shall be not less than 9/16 inch.

<sup>2</sup>When approved material other than aluminum alloys are used, the thickness shall be not less than 2 1/4 inches.

<sup>3</sup>When steel of 65,000 p.s.i. minimum tensile strength is used, minimum thickness of plates shall be not less than 1/2 inch.

<sup>4</sup>Tank cars not equipped with a thermal protection or an insulation system used for the transportation of a Class 2 (compressed gas) material must have at least the upper two-thirds of the exterior of the tank, including manway nozzle and all appurtenances in contact with this area, finished with a reflective coat of white paint.

<sup>5</sup>For inside diameter of 87 inches or less, the thickness of plates shall be not less than 1/2 inch.

<sup>6</sup>See AAR Specifications for Tank Cars, appendix E, E4.01 (IBR, see § 171.7 of this subchapter), and § 179.103-2.

<sup>7</sup>When the use of nickel is required by the lading, the thickness shall not be less than two inches.

[Amdt. 179-52, 61 FR 28679, June 5, 1996 as amended at 66 FR 45390, Aug. 28, 2001; 68 FR 75760, Dec. 31, 2003]

**§ 179.102 Special commodity requirements for pressure tank car tanks.**

(a) In addition to §§ 179.100 and 179.101 the following requirements are applicable:

(b) [Reserved]

**§ 179.102-1 Carbon dioxide, refrigerated liquid.**

(a) Tank cars used to transport carbon dioxide, refrigerated liquid must comply with the following special requirements:

(1) All plates for tank, manway nozzle and anchorage of tanks must be made of carbon steel conforming to ASTM A 516/A 516M (IBR, see § 171.7 of this subchapter), Grades 55, 60, 65, or 70, or AAR Specification TC 128-78, Grade B. The ASTM A 516/A 516M plate must also meet the Charpy V-Notch test requirements of ASTM A 20/A 20M (see table 16) (IBR, see § 171.7 of this subchapter) in the longitudinal direction

of rolling. The TC 128 plate must also meet the Charpy V-Notch energy absorption requirements of 15 ft.-lb. minimum average for 3 specimens, and 10 ft.-lb. minimum for one specimen, at minus 50 °F in the longitudinal direction of rolling in accord with ASTM A 370 (IBR, see § 171.7 of this subchapter). Production-welded test plates prepared as required by W4.00 of AAR Specifications for Tank Cars, appendix W (IBR, see § 171.7 of this subchapter), must include impact test specimens of weld metal and heat-affected zone. As an alternate, anchor legs may be fabricated of stainless steel, ASTM A 240/A 240M Types 304, 304L, 316 or 316L, for which impact tests are not required.

(2)-(6) [Reserved]