§ 179.22 Marking.

In addition to any other marking requirement in this subchapter, the following marking requirements apply:

(a) Each tank car must be marked according to the requirements in appendix C of the AAR Specifications for Tank Cars (IBR, see §171.7 of this subchapter).

(b) Each tank car that requires a tank-head puncture-resistance system must have the letter “S” substituted for the letter “A” in the specification marking.

(c) Each tank car that requires a tank-head puncture-resistance system, a thermal protection system, and a metal jacket must have the letter “J” substituted for the letter “A” or “S” in the specification marking.

(d) Each tank car that requires a tank-head puncture-resistance system, a thermal protection system, and no metal jacket must have the letter “T” substituted for the letter “A” or “S” in the specification marking.

(e) Each tank car manufactured after March 16, 2009 to meet the requirements of §173.244(a)(2) or (3) or §173.314(c) or (d) shall be marked with the letter “I” following the test pressure instead of the letter “W”. (Example: DOT 105J600I).


§ 179.24 Stamping.

(a)(1) After July 25, 2012, to certify compliance with federal requirements, the tank manufacturer must install two identical permanent identification plates, one located on both inboard surfaces of the body bolsters of the tank car. One identification plate must be installed on the right side (AR) of the tank car, and the other must be installed on the back end left side (BL) body bolster webs so that each plate is readily accessible for inspection. The plates must be at least 0.125 inch thick and manufactured from corrosion resistant metal. When the tank jacket (flashing) covers the body bolster web and identification plates, additional identical plates must be installed on the AR and BL corners of the tank in a visible location. Tank cars built before July 25, 2012, may have the plate instead of or in addition to the stamping.

(2) Each plate must be stamped, embossed, or otherwise marked by an equally durable method in letters 0.062 inch high with the following information (parenthetical abbreviations may be used, and the AAR form reference is to the applicable provisions of the AAR Specifications for Tank Cars, December 2000 edition (IBR, see §171.7 of this subchapter)):

(i) Tank Manufacturer (Tank MFG): Full name of the car builder as shown on the certificate of construction (AAR form 4–2).

(ii) Tank Manufacturer’s Serial Number (SERIAL NO): For the specific car.

(iii) AAR Number (AAR NO): The AAR number from line 3 of AAR Form 4–2.

(iv) Tank Specification (SPECIFICATION): The specification to which the tank was built from line 7 of AAR Form 4–2.

(v) Tank Shell Material/Head Material (SHELL MATL/HEAD MATL): ASTM or AAR specification of the material used in the construction of the tank shell and heads from lines 15 and 16 of AAR Form 4–2. For Class DOT–113W, DOT–115W, AAR–204W, and AAR–206W, the materials used in the construction of the outer tank shell and heads must be listed. Only list the alloy (e.g., 5154) for aluminum tanks and the type (e.g., 304L or 316L) for stainless steel tanks.

(vi) Insulation Material (INSULATION MATL): Generic names of the first and second layer of any thermal protection/insulation material applied.

(vii) Insulation Thickness (INSULATION THICKNESS): In inches.

(viii) Underframe/Stub Sill Type (UF/SS DESIGN): The design from Line 32 of AAR Form 4–2.

(ix) Date of Manufacture (DATE OF MFR): The month and year of tank manufacture. If the underframe has a different built date than the tank, show both dates.

(3) When a modification to the tank changes any of the information shown in paragraph (a)(2) of this section, the car owner or the tank car facility making the modification must install an additional variable identification plate
on the tank in accordance with para-
graph (a)(1) of this section showing the
following information:

(i) **AAR Number (AAR NO):** The AAR
number from line 3 of AAR Form 4–2
for the alteration or conversion.

(ii) All items of paragraph (a)(2) of
this section that were modified, fol-
lowed by the month and year of modi-

(b) **[Reserved].**

§ 179.100–6 **Thickness of plates.**

(a) If insulation is applied, the tank
shell and manway nozzle must be insu-
lated with an approved material. The
entire insulation must be covered with
a metal jacket of a thickness not less
than 11 gauge (0.1196 inch) nominal
(Manufacturers’ Standard Gauge) and
flashed around all openings so as to be
weather-tight. The exterior surface of a
carbon steel tank, and the inside sur-
face of a carbon steel jacket must be
given a protective coating.

(b) If insulation is a specification re-
quirement, it shall be of sufficient
thickness so that the thermal conduct-
ance at 60 °F is not more than 0.075 Btu
per hour, per square foot, per degree F
temperature differential. If exterior
heaters are attached to tank, the
thickness of the insulation over each
heater element may be reduced to one-
half that required for the shell.

§ 179.100–7 **Type.**

(a) Tanks built under this specifica-
tion shall be fusion-welded with heads
designed convex outward. Except as
provided in §179.103 they shall be cir-
cular in cross section, shall be provided
with a manway nozzle on top of the
tank of sufficient size to permit access
to the interior, a manway cover to pro-
vide for the mounting of all valves,
measuring and sampling devices, and a
protective housing. Other openings in
the tank are prohibited, except as pro-
vided in part 173 of this chapter,
§§179.100–14, 179.101–1, 179.102 or § 179.103.

(b) Head shields and shells of tanks
built under this specification must be
normalized. Tank car heads must be
normalized after forming unless spe-
cific approval is granted for a facility’s
equipment and controls.

§ 179.100–8 **Insulation.**

(a) If insulation is applied, the tank
shell and manway nozzle must be insu-
lated with an approved material. The
entire insulation must be covered with
a metal jacket of a thickness not less
than 11 gauge (0.1196 inch) nominal
(Manufacturers’ Standard Gauge) and
flashed around all openings so as to be
weather-tight. The exterior surface of a
carbon steel tank, and the inside sur-
face of a carbon steel jacket must be
given a protective coating.

(b) If insulation is a specification re-
quirement, it shall be of sufficient
thickness so that the thermal conduct-
ance at 60 °F is not more than 0.075 Btu
per hour, per square foot, per degree F
temperature differential. If exterior
heaters are attached to tank, the
thickness of the insulation over each
heater element may be reduced to one-
half that required for the shell.

[29 FR 18995, Dec. 29, 1964. Redesignated at 32
179–10, 36 FR 21344, Nov. 6, 1971; Amdt. 179–50,
60 FR 49077, Sept. 21, 1995]

§ 179.100–9 **Thickness of plates.**

(a) The wall thickness after forming
of the tank shell and heads must not be
less than that specified in §179.101, nor
that calculated by the following for-

\[ t = \frac{Pd}{2SE} \]

Where:

- \(d\) = Inside diameter in inches;
- \(E\) = 1.0 welded joint efficiency; except for
  heads with seams=0.9;
- \(P\) = Minimum required bursting pressure in
  p.s.i.;
- \(S\) = Minimum tensile strength of plate mate-
  rial in p.s.i., as prescribed in §179.100–7;
- \(t\) = Minimum thickness of plate in inches
  after forming.

(b) If plates are clad with material
having tensile strength properties at
least equal to the base plate, the clad-
ding may be considered a part of the
base plate when determining thickness.
If cladding material does not have ten-
sile strength at least equal to the base
plate, the base plate alone shall meet
the thickness requirement.

(c) When aluminum plate is used, the
minimum width of bottom sheet of
tank shall be 60 inches, measured on
the arc, but in all cases the width shall
be sufficient to bring the entire width
of the longitudinal welded joint, in-
cluding welds, above the bolster.

[29 FR 18995, Dec. 29, 1964. Redesignated at 32
179–10, 36 FR 21344, Nov. 6, 1971]