

§ 178.811

(3) The specific gravity and viscosity of a substituted non-hazardous material used in the drop test for liquids must be similar to the hazardous material intended for transportation. Water also may be used for the liquid drop test under the following conditions:

(i) Where the substances to be carried have a specific gravity not exceeding 1.2, the drop heights must be those specified in paragraph (d)(1) of this section for each IBC design type; and

(ii) Where the substances to be carried have a specific gravity exceeding 1.2, the drop heights must be as follows:

(A) Packing Group I: SG × 1.5 m (4.9 feet).

(B) Packing Group II: SG × 1.0 m (3.3 feet).

(C) Packing Group III: SG × 0.67 m (2.2 feet).

(e) *Criteria for passing the test.* For all IBC design types, there may be no damage which renders the IBC unsafe to be transported for salvage or for disposable, and no loss of contents. The IBC shall be capable of being lifted by an appropriate means until clear of the floor for five minutes. A slight discharge from a closure upon impact is not considered to be a failure of the IBC provided that no further leakage occurs. A slight discharge (*e.g.*, from closures or stitch holes) upon impact is not considered a failure of the flexible IBC provided that no further leakage occurs after the IBC has been raised clear of the ground.

[Amdt. 178-103, 59 FR 38074, July 26, 1994, as amended at 66 FR 45386, Aug. 28, 2001; 69 FR 76186, Dec. 20, 2004; 71 FR 78635, Dec. 29, 2006; 74 FR 2269, Jan. 14, 2009; 75 FR 5397, Feb. 2, 2010]

§ 178.811 Bottom lift test.

(a) *General.* The bottom lift test must be conducted for the qualification of all IBC design types designed to be lifted from the base.

(b) *Special preparation for the bottom lift test.* The IBC must be loaded to 1.25 times its maximum permissible gross mass, the load being evenly distributed.

(c) *Test method.* All IBC design types must be raised and lowered twice by a lift truck with the forks centrally positioned and spaced at three quarters of

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the dimension of the side of entry (unless the points of entry are fixed). The forks must penetrate to three quarters of the direction of entry. The test must be repeated from each possible direction of entry.

(d) *Criteria for passing the test.* For all IBC design types designed to be lifted from the base, there may be no permanent deformation which renders the IBC unsafe for transportation and no loss of contents.

[Amdt. 178-103, 59 FR 38074, July 26, 1994, as amended at 66 FR 45386, Aug. 28, 2001]

§ 178.812 Top lift test.

(a) *General.* The top lift test must be conducted for the qualification of all IBC design types designed to be lifted from the top or, for flexible IBCs, from the side.

(b) *Special preparation for the top lift test.* (1) Metal, rigid plastic, and composite IBC design types must be loaded to twice the maximum permissible gross mass with the load being evenly distributed.

(2) Flexible IBC design types must be filled to six times the maximum net mass, the load being evenly distributed.

(c) *Test method.* (1) A metal or flexible IBC must be lifted in the manner for which it is designed until clear of the floor and maintained in that position for a period of five minutes.

(2) Rigid plastic and composite IBC design types must be:

(i) Lifted by each pair of diagonally opposite lifting devices, so that the hoisting forces are applied vertically, for a period of five minutes; and

(ii) Lifted by each pair of diagonally opposite lifting devices, so that the hoisting forces are applied towards the center at 45° to the vertical, for a period of five minutes.

(3) If not tested as indicated in paragraph (c)(1) of this section, a flexible IBC design type must be tested as follows:

(i) Fill the flexible IBC to 95% full with a material representative of the product to be shipped.

(ii) Suspend the flexible IBC by its lifting devices.

(iii) Apply a constant downward force through a specially designed platen. The platen will be a minimum of 60%