

°C (0 °F) or lower are considered acceptable test liquids, and may be considered equivalent to water for test purposes. IBCs conditioned in this way are not required to be conditioned in accordance with § 178.802.

(c) *Test method.* Samples of all IBC design types must be dropped onto a rigid, non-resilient, smooth, flat and horizontal surface. The point of impact must be the most vulnerable part of the base of the IBC being tested. Following the drop, the IBC must be restored to the upright position for observation.

(d) *Drop height.* (1) For all IBCs, drop heights are specified as follows:

- (i) Packing Group I: 1.8 m (5.9 feet).
- (ii) Packing Group II: 1.2 m (3.9 feet).
- (iii) Packing Group III: 0.8 m (2.6 feet).

(2) Drop tests are to be performed with the solid or liquid to be transported or with a non-hazardous material having essentially the same physical characteristics.

(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: $SG \times 1.5$ m (4.9 feet).

(B) Packing Group II: $SG \times 1.0$ m (3.3 feet).

(C) Packing Group III: $SG \times 0.67$ m (2.2 feet).

(e) *Criteria for passing the test.* For all IBC design types there may be no loss of contents. 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]

§ 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 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: