§ 178.819 Vibration test.

(a) General. The vibration test must be conducted for the qualification of all rigid IBC design types. Flexible IBC design types must be capable of withstanding the vibration test.

(b) Test method. (1) A sample IBC, selected at random, must be filled and closed as for shipment. IBCs intended for liquids may be tested using water as the filling material for the vibration test.

(2) The sample IBC must be placed on a vibrating platform with a vertical or rotary double-amplitude (peak-to-peak displacement) of one inch. The IBC must be constrained horizontally to prevent it from falling off the platform, but must be left free to move vertically and bounce.

(3) The test must be performed for one hour at a frequency that causes the package to be raised from the vibrating platform to such a degree that a piece of material of approximately 1.6-mm (0.063-inch) thickness (such as steel strapping or paperboard) can be passed between the bottom of the IBC and the platform. Other methods at least equally effective may be used (see §178.801(i)).

(c) Criteria for passing the test. An IBC passes the vibration test if there is no rupture or leakage.


Subpart P—Large Packagings Standards

SOURCE: 75 FR 5397, Feb. 2, 2010, unless otherwise noted.

§ 178.900 Purpose and scope.

(a) This subpart prescribes requirements for Large Packaging intended for the transportation of hazardous materials. Standards for these packagings are based on the UN Recommendations.

(b) Terms used in this subpart are defined in §171.8 of this subchapter.

§ 178.905 Large Packaging identification codes.

Large packaging code designations consist of: two numerals specified in paragraph (a) of this section; followed by the capital letter(s) specified in paragraph (b) of this section.

(a) Large packaging code number designations are as follows: 50 for rigid Large Packagings; or 51 for flexible Large Packagings.

(b) Large Packagings code letter designations are as follows:

(1) “A” means steel (all types and surface treatments).

(2) “B” means aluminum.

(3) “C” means natural wood.

(4) “D” means plywood.

(5) “F” means reconstituted wood.

(6) “G” means fiberboard.

(7) “H” means plastic.

(8) “M” means paper, multiwall.

(9) “N” means metal (other than steel or aluminum).

§ 178.910 Marking of Large Packagings.

(a) The manufacturer must:

(1) Mark every Large Packaging in a durable and clearly visible manner. The marking may be applied in a single line or in multiple lines provided the correct sequence is followed with the information required by this section.
The following information is required in the sequence presented:

(i) Except as provided in §178.503(e)(1)(ii), the United Nations packaging symbol as illustrated in §178.503(e)(1)(i). For metal Large Packagings on which the marking is stamped or embossed, the capital letters "UN" may be applied instead of the symbol;

(ii) The code number designating the Large Packaging design type according to §178.905. The letter "W" must follow the Large Packaging design type identification code on a Large Packaging when the Large Packaging differs from the requirements in subpart P of this part, or is tested using methods other than those specified in this subpart, and is approved by the Associate Administrator in accordance with the provisions in §178.955;

(iii) A capital letter identifying the performance standard under which the design type has been successfully tested, as follows:
   (A) X—for Large Packagings meeting Packing Groups I, II and III tests;
   (B) Y—for Large Packagings meeting Packing Groups II and III tests; and
   (C) Z—for Large Packagings meeting Packing Group III test.

(iv) The month (designated numerically) and year (last two digits) of manufacture;

(v) The country authorizing the allocation of the mark. The letters "USA" indicate that the Large Packaging is manufactured and marked in the United States in compliance with the provisions of this subchapter.

(vi) The name and address or symbol of the manufacturer or the approval agency certifying compliance with subpart P and subpart Q of this part. Symbols, if used, must be registered with the Associate Administrator.

(vii) The stacking test load in kilograms (kg). For Large Packagings not designed for stacking the figure "0" must be shown.

(viii) The maximum permissible gross mass or for flexible Large Packagings, the maximum net mass, in kg.

(2) The following are examples of symbols and required markings:

(i) For a steel Large Packaging suitable for stacking; stacking load: 2,500 kg; maximum gross mass: 1,000 kg.

(ii) For a plastic Large Packaging not suitable for stacking; maximum gross mass: 800 kg.

(iii) For a Flexible Large Packaging not suitable for stacking; maximum gross mass: 500 kg.
§ 178.915 General Large Packaging standards.

(a) Each Large Packaging must be resistant to, or protected from, deterioration due to exposure to the external environment. Large Packagings intended for solid hazardous materials must be sift-proof and water-resistant.

(b) All service equipment must be positioned or protected to minimize potential loss of contents resulting from damage during Large Packaging handling and transportation.

(c) Each Large Packaging, including attachments and service and structural equipment, must be designed to withstand, without loss of hazardous materials, the internal pressure of the contents and the stresses of normal handling and transport. A Large Packaging intended for stacking must be designed for stacking. Any lifting or securing features of a Large Packaging must be sufficient strength to withstand the normal conditions of handling and transportation without gross distortion or failure and must be positioned so as to cause no undue stress in any part of the Large Packaging.

(d) A Large Packaging consisting of packagings within a framework must be so constructed that the packaging is not damaged by the framework and is retained within the framework at all times.

(e) Large Packaging design types must be constructed in such a way as to be bottom-lifted or top-lifted as specified in §§178.970 and 178.975.

§ 178.920 Standards for metal Large Packagings.

(a) The provisions in this section apply to metal Large Packagings intended to contain liquids and solids. Metal Large Packaging types are designated:

1. 50A steel
2. 50B aluminum
3. 50N metal (other than steel or aluminum)

(b) Each Large Packaging must be made of suitable ductile metal materials. Welds must be made so as to maintain design type integrity of the receptacle under conditions normally incident to transportation. Low-temperature performance must be taken into account when appropriate.

(c) The use of dissimilar metals must not result in deterioration that could affect the integrity of the Large Packaging.

(d) Metal Large Packagings may not have a volumetric capacity greater than 3,000 L (793 gallons) and not less than 450 L (119 gallons).

§ 178.925 Standards for rigid plastic Large Packagings.

(a) The provisions in this section apply to rigid plastic Large Packagings intended to contain liquids and solids. Rigid plastic Large Packaging types are designated:

1. 50H rigid plastics
2. [Reserved]

(b) A rigid plastic Large Packaging must be manufactured from plastic material of known specifications and be of a strength relative to its capacity and to the service it is required to perform. In addition to conformance to §173.24 of this subchapter, plastic materials must be resistant to aging and to degradation caused by ultraviolet radiation.

1. If protection against ultraviolet radiation is necessary, it must be provided by the addition of a pigment or inhibitor such as carbon black to plastic materials. These additives must be compatible with the contents and remain effective throughout the life of the plastic Large Packaging body.