



**Committee of Experts on the Transport of Dangerous Goods
and on the Globally Harmonized System of Classification
and Labelling of Chemicals****Sub-Committee of Experts on the Transport of Dangerous Goods****Thirty-seventh session**

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Item 5 of the provisional agenda

**Miscellaneous proposals of amendments to the Model Regulations
on the Transport of Dangerous Goods****Vibration test for large packagings****Transmitted by the expert from the United States of America¹****Background**

1. Currently, the Model Regulations require a vibration test be performed as a design-type test on all Intermediate Bulk Containers (IBCs) used for liquids. The vibration test is intended to ensure that a package is able to withstand vibrations incident to transport without breakage or leakage.
2. The existing requirements of the Model Regulations with respect to testing requirements for large packagings were modeled largely after those already in place for IBCs. Currently the testing requirements for both IBCs and large packagings intended to contain liquids are fairly identical. For example, bottom and top lift tests, a stacking test, and a drop test are all required for both IBCs and large packagings intended to contain liquids. Currently, however the testing requirements for large packagings do not require a vibration test. In fact, the only test not required for large packagings but required for IBCs intended to contain liquids is the vibration test. It is therefore proposed that a vibration test be added to Chapter 6.6 to help ensure the integrity of large packagings intended to contain liquids.

¹ In accordance with the programme of work of the Sub-Committee for 2009-2010 approved by the Committee at its fourth session (refer to ST/SG/AC.10/C.3/68, para. 118 (a) and ST/SG/AC.10/36, para. 14).

Proposal

3. Add the following as a new section 6.6.5.3.5:

"6.6.5.3.5 *Vibration test*

6.5.5.3.5.1 *Applicability*

For all large packagings containing inner packagings used for liquids, as a design type test.

Note: This test applies to design types for large packagings manufactured as from 1 January 2015.

6.5.5.3.5.2 *Preparation of the large packaging for test*

A sample large packaging shall be selected at random and shall be fitted and closed in accordance with the requirements of 6.6.5.2 applicable to liquids.

6.5.5.3.5.3 *Test method and duration*

6.5.5.3.5.3.1 The large packaging shall be placed in the center of the test machine platform with a vertical sinusoidal, double amplitude (peak-to peak displacement) of 25 mm $\pm$ 5%. If necessary, restraining devices shall be attached to the platform to prevent the specimen from moving horizontally off the platform without restricting vertical movement.

6.5.5.3.5.3.2 The test shall be conducted for one hour at a frequency that causes part of the base of the large packaging to be momentarily raised from the vibrating platform for part of each cycle to such a degree that a metal shim can be completely inserted intermittently at, at least, one point between the base of the large packaging and the test platform. The frequency may need to be adjusted after the initial set point to prevent the packaging from going into resonance. Nevertheless, the test frequency shall continue to allow placement of the metal shim under the large packaging as described in this paragraph. The continuing ability to insert the metal shim is essential to passing the test. The metal shim used for this test shall be at least 1.6 mm thick, 50 mm wide, and be of sufficient length to be inserted between the large packaging and the test platform a minimum of 100 mm to perform the test.

6.5.5.3.5.4 *Criteria for passing the test*

The large packaging shall not exhibit any damage liable to affect safety during transport. There shall be no leakage of the filling substance from inner packaging(s) or article(s)."
