

## 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

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### IBC Test

6. It is proposed that the existing text in 6.5.4.13 and 6.5.4.14 be numbered as 6.5.4.14 and 6.5.4.15 respectively and that a new 6.5.4.13 be inserted as follows:

#### **6.5.4.13 Repetitive shock test**

6.5.4.13.1 For all types of IBCs except FIBCs, as a design type test.

6.5.4.13.2 *Preparation of the IBC for testing:* A sample IBC shall be selected at random and shall be filled and closed as for transport. IBCs shall be filled to not less than 98% of their maximum capacity for liquids or 95% for solids. For IBCs intended for the transport of liquids, water may be used as the test medium. For solids the IBC shall be filled to its maximum gross mass.

6.5.4.13.3 *Test method:* The IBC shall be placed on the test machine platform in the normal transport orientation. The test shall be conducted with a machine that utilizes a vertical or rotary motion vibration resulting in a vertical displacement of the IBC of approximately 25mm  $\pm$  5%. Results obtained from either test method are acceptable. The IBC shall be restrained horizontally to prevent it from falling off the platform, but shall be left free to move vertically. The restraining devices used to prevent the IBC from moving horizontally off the platform may consist of fences, barricades and other restraints that are adequately secured and of sufficient strength to protect the safety of the operator. The restraining devices shall in no case restrict vertical movement. Free horizontal movement shall not be restricted to less than 10 mm  $\pm$  5% in any horizontal direction from the initial placement of the specimen on the platform.

The initial frequency should be approximately 2 Hz and shall be steadily increased until the IBC repeatedly leaves the test surface. To ensure that the specimen is subjected to constant repetitive shock a steel shim of approximately 50 mm wide and 1.6mm in thickness (e.g. a piece of steel strapping) shall be passed between the platform and the IBC and verified on each corner or side of the IBC. The IBC shall be vibrated at this frequency for a at least one hour duration. After the completion of the test the IBC shall be inspected for damage and any leakage of the test medium. The inspection shall include an examination of all of the IBC components including the body and the closures. Any damage, deterioration or leakage shall be recorded.

6.5.4.13.4 *Criteria for passing the test:* There shall be no rupture or leakage of the test medium from the receptacle, if applicable, or the body of the IBC. No IBC should show any deterioration or any distortion liable to reduce packaging strength that could adversely affect transport safety. Any leakage shall be considered a failure.

6.5.4.13.5 *Transitional period and grandfather provision:* IBC design types that were successfully tested and approved in accordance with procedures established by the competent authority prior to January 1, 2005 need not be subjected to the repetitive shock test.

7. Amend the table in 6.5.4.3.5 as follows:

6.5.4.3.5 *Design type tests required and sequential order*

Type of IBC	Repetitive shock	Bottom lift	Top lift <sup>a</sup>	Stacking <sup>b</sup>	Leak-proofness	Hydraulic pressure	Drop	Tear	Topple	Righting
Metal: 11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B, 31N	5 <sup>th</sup> 7 <sup>th</sup>	1 <sup>st</sup> <sup>a</sup> 2 <sup>nd</sup> <sup>a</sup>	2 <sup>nd</sup> 3 <sup>rd</sup>	3 <sup>rd</sup> 4 <sup>th</sup>	- 1 <sup>st</sup>	- 5 <sup>th</sup>	4 <sup>th</sup> <sup>e</sup> 6 <sup>th</sup> <sup>e</sup>	- -	- -	- -
Flexible <sup>d</sup>	-	-	X <sup>c</sup>	X	-	-	X	X	X	X
Rigid plastics: 11H1, 11H2, 21H1, 21H2, 31H1, 31H2	5 <sup>th</sup> 7 <sup>th</sup>	1 <sup>st</sup> <sup>a</sup> 2 <sup>nd</sup> <sup>a</sup>	2 <sup>nd</sup> 3 <sup>rd</sup>	3 <sup>rd</sup> 4 <sup>th</sup>	- 1 <sup>st</sup>	- 5 <sup>th</sup>	4 <sup>th</sup> 6 <sup>th</sup>	- -	- -	- -
Composite: 11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1, 31HZ2	5 <sup>th</sup> 7 <sup>th</sup>	1 <sup>st</sup> <sup>a</sup> 2 <sup>nd</sup> <sup>a</sup>	3 <sup>rd</sup> 3 <sup>rd</sup>	4 <sup>th</sup> 4 <sup>th</sup>	- 1 <sup>st</sup>	- 5 <sup>th</sup>	5 <sup>th</sup> <sup>e</sup> 6 <sup>th</sup> <sup>e</sup>	- -	- -	- -
Fibreboard	4 <sup>th</sup>	1 <sup>st</sup>	-	2 <sup>nd</sup>	-	-	3 <sup>rd</sup>	-	-	-
Wooden	4 <sup>th</sup>	1 <sup>st</sup>	-	2 <sup>nd</sup>	-	-	3 <sup>rd</sup>	-	-	-

The table has been reordered by placing the leakproofness test 1<sup>st</sup> and keeping the order as shown in the above table with vibration last. This would allow testing laboratories to take the empty IBC and conduct the leakproofness test first and then fill the IBC and conduct the remaining test in the order presented. Currently they have to empty the IBC in the middle of the sequence to conduct the leak test and then fill it back up for the hydro test. This takes a considerable amount of time. Conducting the leakproofness test first, will also serve to verify the sealing qualities of the fittings, valves and closures prior to performing the test on a filled IBC.

<sup>a</sup> When IBCs are designed for this method of handling.

<sup>b</sup> When IBCs are designed to be stacked.

<sup>c</sup> When IBCs are designated to be lifted from the top or the side.

<sup>d</sup> Required test indicated by x; an IBC which has passed one test may be used for other tests, in any order.

<sup>e</sup> Another IBC of the same design may be used for the drop test. “