

COMMITTEE OF EXPERTS ON THE TRANSPORT OF DANGEROUS GOODS AND ON THE GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS

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PACKAGINGS (INCLUDING IBCS AND LARGE PACKAGINGS)

Vibration test for design types of IBC intended for the transport of dangerous goods

Comments of the International Confederation of Plastics Packaging Manufacturers (ICPP)
to document ST/SG/AC.10/C.3/2006/32 from France and the United States of America

Background

1. ICPP supports the idea of the worldwide introduction of a vibration test as design type test for IBCs under clearly defined conditions. This position was already presented by ICPP on the meeting of the Paris Working Group (see informal document UN/SCETDG/28/INF.5, annex A from the last session). Clearly defined conditions should guarantee that the test is practicable as part of the design type test and suitable to be easily added to the test program. The test procedure and pass/fail criteria shall be defined clearly and unmistakably to achieve identical conditions for test performance and evaluation of the results world-wide.
2. ICPP welcomes the initiative from France and the United States of America to find a more precise description for the test procedure in ST/SG/AC.10/C.3/2006/32. Nevertheless ICPP suggests some modifications of this proposal.
3. ICPP proposes to consider the vibration test as a stand-alone type test using a separate IBC with the same design before starting the other tests according to 6.5.6.3.5. Failure during vibration testing makes further tests obsolete.

Justification:

Although vibration is part of the normal stress in transport, none of the existing incident data presented during the meeting of the working group in Paris (10-13 October 2005) could highlight such failures due to vibration problems. The statement in document ST/SC/AC.10/C.3/2006/32 that “many lightweight IBCs have shown failure during vibration testing” corresponds to tests in laboratories but not to real transport conditions. The conclusion is that the vibration test as described here has to be considered as a tool to achieve a defined test level, comparable to the hydraulic pressure test or drop test which do not reflect normal stress during transport either. As for the drop test and hydraulic pressure test no other tests should follow the vibration test with the same IBC.

4. ICPP suggests to incorporate provisions for selective testing of IBCs in case of design type changes. The vibration test as a design type has to be conducted when essential modifications of an existing design type are performed, i.e. modifications of the
- basic dimensions
 - capacity of the inner receptacle
 - material of the outer casing
 - pallet
 - reduced mass of the inner receptacle
 - change of plastics material of the inner receptacle
5. ICPP is of the opinion that the proposed test criterion in 6.5.6.13.4.1 should be modified in a way that interpretations are not possible. The criterion “no tear” would lead to different results in different test houses. This is why ICPP proposes to use the test criterion CFR 49 Sec. 178.819 “No rupture or leakage” also in the UN Model Regulations.

Proposals

- 1.) 6.5.6.3.5. Design type test required and sequential order.

replace the table proposed in ST/SG/AC.10/C.3/2006/32 by the following:

Type of IBC	Vibration ^a	Bottom lift	Top lift ^b	Stacking ^c	Leak-proofness	Hydraulic pressure	Drop	Tear	Topple	Righting ^d
Metal:										
11A, 11B, 11N	1st	2nd	3rd	-	-	-	4th ^f	-	-	-
21A, 21B, 21N	1st	2nd	3rd	4th	5th	-	6th ^f	-	-	-
31A, 31B, 31N	1st	2nd	3rd	4th	5th	6th	7th ^f	-	-	-
Flexible ^d	-	x ^d	x	-	-	-	x	x	x	x
Rigid Plastics:										
11H1, 11H2	1st	2nd	3rd	-	-	-	4th	-	-	-
21H1, 21H2	1st	2nd	3rd	4th	5th	-	6th	-	-	-
31H1, 31H2	1st	2nd	3rd	4th	5th	6th	7th	-	-	-
Composite:										
11HZ1, 11HZ2	1st	2nd	3rd	-	-	-	4th ^f	-	-	-
21HZ1, 21HZ2	1st	2nd	3rd	4th	5th	-	6th ^f	-	-	-
31HZ1, 31HZ2	1st	2nd	3rd	4th	5th	6th	7th ^f	-	-	-
Fibreboard	1st	-	2nd	-	-	-	3rd	-	-	-
Wooden	1st	-	2nd	-	-	-	3rd	-	-	-

^a A separate IBC of the same design may be used for the vibration test.

^b When IBCs are designed for this method of handling.

^c When IBCs are designed to be stacked.

^d When IBCs are designed to be lifted from the top or the side.

^e Required test indicated by x; an IBC which has passed one test may be used for other tests, in any order.

^f Another IBC of the same design may be used for the drop test.

2.)

- a) Add a new chapter 6.5.6.13.4. in document ST/SG/AC.10/C.3/2006/32 to be read

“6.5.6.13.4. Selective testing

In case of design type modifications of tested IBCs a new vibration test shall be conducted when essential modifications of an existing design type are performed, i.e. modifications of the

- basic dimensions
- capacity of the inner receptacle
- material of the outer casing
- pallet
- reduced mass of the inner receptacle
- change of plastics material of the inner receptacle”

- b) Change name of former chapter 6.5.6.13.4 to 6.5.6.13.5

3.) Amend 6.5.6.13.4.1 in ST/SG/AC.10/C.3/2006/32 as follows:

6.5.6.13.4.1 No rupture or leakage.
