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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
(Twenty-first session, 1-10 July 2002,
agenda item 6(b))

Packagings (Including IBCs and Large Packagings)

Comments on the Vibration Test Proposals, (ST/SG/AC.10/C.3/2002/2) Spain and (ST/SG/AC.10/C.3/2002/17) USA

Transmitted by
the International Confederation of Container Reconditioners (ICCR)
the International Confederation of Plastics Packaging Manufacturers (ICPP)
the International Confederation of Drum Manufacturers (ICDM)
International Council of Intermediate Bulk Container Associations (ICIBCA)
International Council of Chemical Associations (ICCA)

Background

1. At its Twentieth Session, the UN Committee of Experts amended 4.1.1.1 to accommodate concerns raised by ICAO regarding an increase in failures of steel drums transported by air. The new language stated that dangerous goods should be loaded into packagings that are "strong enough to withstand the shock and loading normally encountered during transport…."

2. During the Sixteenth Session of the Sub-Committee, two proposals were submitted by Spain calling for the creation of a vibration test (ST/SG/AC.10/C.3/1999/71) and a minimum wall thickness (ST/SG/AC.10/C.3/1999/72) for metal drums and light metal packagings. These proposals arose from concerns about incidents involving thin-walled steel drums that were UN certified. During discussion, several Experts and representatives of modal authorities aligned themselves with the views expressed by Spain.
3. In the Seventeenth Session, the Sub-Committee decided that, "in principle, at some time in the future, a vibration test should be included in the Model Regulations on the understanding that the forms the test would take and the criteria for it were still to be defined, and should take account of pertinent ISO standards and existing vibration test standards." The Expert from Spain agreed to take the lead on this issue, working with Experts from other nations and interested groups. (See ST/AG/AC.10/C.3/34, paragraph 100.)

4. Without initiating a consultation process, the Expert from Spain submitted at the Twenty-first session of the UN Committee of Experts (December 2000), another related proposal asserting that the weight of steel and plastic drums, as well as IBCs, has decreased in recent years and, therefore, a new test should be developed to ensure such packagings are resistant to "permanent deformation." (See ST/SG/AC.10/2000/12.)

5. ICCR and ICDM responded to the concern expressed by Spain that some drums are made from lower quality steel than others. The two groups proposed minimum physical properties for steel used in the manufacture of new steel drums having a capacity greater than 100 litres (ST/SG/AC.10/2001/7). The proposal was adopted.

6. ICCR and ICDM jointly asked to have the issue of performance standards for packagings placed on the agenda for the 2001 – 2002 biennium. Their proposal (ST/SG/AC.10/2000/6) was accepted. In addition, the two groups requested data on the ca use of drum failures from all experts. To date, minimal data has been received, and none has shown evidence of failure caused by vibration.

7. New proposals by Spain (ST/SG/AC.10/C.3/2002/2) and the U.S.A. (ST/SG/AC.10/C.3/2002/17) now call for a vibration test for packagings, IBCs, and Large packagings containing both liquids and solids.

Comments on documents

8. Neither paper cites research, incident analysis or actual field performance to support the need for such a test. It is therefore unlikely that the proposed test would lead to a higher safety level.

9. Furthermore, the proposed vibration test would impose significant new costs on manufacturers and remanufacturers of packagings. These costs would fall disproportionately on companies that produce packagings in countries that authorize self-testing because each company would have to invest in new testing equipment, or use expensive third-party laboratories, assuming such laboratories are proximate and are equipped to run these tests.

10. The cost of vibration testing (and some even ask for periodic re-testing) each of the thousands of design-types that would be covered by these proposals, many of which have been in continuous use for years, would be enormous. Some companies have 200 or more design-types in their packaging catalogues. We estimate the average cost of running a single vibration test for one design-type would be approximately U.S. $400.00. The aggregate cost of testing all presently produced design types one time would be several million U.S. dollars. These estimates do not include the cost of a vibration "table" that is capable of handling weights in excess of 500 kg., which can easily exceed US $50,000.00.

11. The proposed vibration test is not a meaningful safety test for some packagings. Paragraph 6 in the U.S.A. paper confirms this point by stating in a comment: "Through experience testing FIBCs in the U.S.A. have determined that the test is not necessary for flexible IBCs." We do not understand why the United States considers it reasonable to exempt only FIBC design-types, but not other packaging design-types for solids.

Proposals

12. For these reasons, we believe the Sub-Committee of Experts should not adopt the vibration test proposals submitted by Spain and the U.S.A.

13. If the Sub-Committee of Experts would decide, however, that there remains a need to further examine packaging vibration issues, the above industrial associations are prepared to assist in this work.
