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COMMITTEE OF EXPERTS ON THE
TRANSPORT OF DANGEROUS GOODS

Sub-Committee of Experts on the
Transport of Dangerous Goods
(Seventeenth session,
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agenda item 5 (e))

MISCELLANEOUS DRAFT AMENDMENTS TO THE MODEL REGULATIONS
ON THE TRANSPORT OF DANGEROUS GOODS

Packagings

New Test for drums of steel 1A1 and 1A2, 1B1 and 1B, 1N1 and 1N2

Transmitted by the expert from Spain

The experience up till now shows that during the drop test of drums the result of the impact during dropping is a deformation in direction to the interior of the drum which mainly causes the closing of any opening or the breakage of the seams of the body of the drum.

However, the performance of a vibration test of these drums under the conditions described below in this proposal, shows that drums which perfectly withstand the drop test, do not withstand 10 minutes of the vibration test. The attached photographs show that the pressure of the contained fluid is extended peripherically on the bottom and sides of the drum and consequently any defect of the seams or welding may cause a crack or fissure and produce leakage.

Therefore we understand that the vibration test should be performed complementarily to the drop testing and consequently should be included in the recommendations of the United Nations.

Consequently the following new section is proposed:

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6.1.5.8 Vibration test for drums of steel, aluminium or other materials

Each drum must be capable of withstanding, without rupture or leakage, the vibration test procedure outlines in this section.

1. Test method. Three sample drums, selected at random, must be filled and closed as for shipment.
2. The three samples must be placed on a vibrating platform that has a vertical or rotary double-amplitude (peak-to-peak displacement) of 25.4 mm. (one inch). The packages should be constrained horizontally to prevent them from falling off the platform, but must be left free to move vertically, bounce and rotate.
3. The test must be performed for one hour at a frequency that causes the drum 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 any package and the platform.
4. Immediately following the period of vibration, each drum must be removed from the platform, turned on its side and observed for any evidence of leakage.
5. *Criteria for passing the test. A drum passes the vibration test if there is no rupture or leakage from any of the drum. No test sample should show any deterioration which could adversely affect transportation safety or any distortion liable to reduce packaging strength.*



