

Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals

14 November 2017

Sub-Committee of Experts on the Transport of Dangerous Goods

Fifty-second session

Geneva, 26 November-6 December 2017

Item 6 (b) of the provisional agenda

Miscellaneous proposals for amendments to the Model Regulations on the Transport of Dangerous Goods: packagings

Drop test for plastic packagings or packagings containing inner plastic packagings/receptacles, IBC's and large packagings – conditioning duration at -18°C

Transmitted by the expert from Belgium

Introduction

1. The subsections 6.1.5.3.2, 6.3.5.3.6.2, 6.5.6.9.2 (c) and 6.6.5.2.3 provide special preparations of test samples for the drop test in case the test samples are made of plastic material or if they contain inner packagings/receptacles made of plastics.
2. In all these requirements it is stipulated that the temperature of the test sample and its contents shall be reduced to -18 °C or lower.
3. However only in 6.3.5.3.6.2 it is clearly stipulated that the conditioning time should be for a period of at least 24 hours.
4. Since the duration of conditioning is not mentioned in 6.1.5.3.2, 6.5.6.9.2 (c) and 6.6.5.2.3., test institutes can fill the samples with cold antifreeze, and leave it for a short, unstandardized period in a conditioning room before performing the drop test(s). It is assumed this was not the intention of the abovementioned subsections.
5. The difference between a minimum conditioning duration of 24 hours and a much shorter cooling period is that with the latter the plastic material of the test samples does not have the time to cool down completely. As a result they may be less brittle and this can influence the results of the drop test.
6. To clarify that a conditioning period of 24 hours is needed to obtain correct drop test results and to avoid differences in test regimes amongst the test institutes it would be preferable to add in 6.1.5.3.2, 6.5.6.9.2 (c) and 6.6.5.2.3. a similar conditioning duration statement as in 6.3.5.3.6.2

Proposal

7. Amend the first paragraph of sub-section 6.1.5.3.2 to read as follows (new text underlined):

“6.1.5.3.2 Special preparation of test samples for the drop test

The temperature of the test sample and its contents shall be reduced to -18 °C or lower for a period of at least 24 hours for the following packagings: ”.

8. Amend sub-section 6.5.6.9.2 (c) to read as follows: (new text underlined, deleted text stricken trough)

“(c) Rigid plastics and composite IBCs: the IBC shall be filled to not less than 95% of its maximum capacity for solids or 98% of its maximum capacity for liquids. Arrangements provided for pressure-relief may be removed and plugged or rendered inoperative. Testing of IBCs shall be carried out when the temperature of the test sample and its contents has been reduced to ~~minus~~ - 18 °C or lower for a period of at least 24 hours. Where test samples of composite IBCs are prepared in this way the conditioning specified in 6.5.6.3.1 may be waived. Test liquids shall be kept in the liquid state, if necessary by the addition of anti-freeze. This conditioning may be disregarded if the materials in question are of sufficient ductility and tensile strength at low temperatures;”.

9. Amend sub-section 6.6.5.2.3. to read as follows: (new text underlined)

“6.6.5.2.3 Large packagings made of plastics materials and large packagings containing inner packagings of plastic materials - other than bags intended to contain solids or articles - shall be drop tested when the temperature of the test sample and its contents has been reduced to -18 °C or lower for a period of at least 24 hours. This conditioning may be disregarded if the materials in question are of sufficient ductility and tensile strength at low temperatures. Where test samples are prepared in this way, the conditioning in 6.6.5.2.4 may be waived. Test liquids shall be kept in the liquid state by the addition of anti-freeze if necessary.”.
