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COMMITTEE OF EXPERTS ON THE TRANSPORT OF DANGEROUS GOODS
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WORK OF THE SUB-COMMITTEE OF EXPERTS ON THE TRANSPORT OF DANGEROUS GOODS

Draft Amendments to the Recommendations on the Transport of Dangerous Goods Packagings

ISO Standard for package testing – Problems of interpretation with Chapter 6.1

Transmitted by the Expert from the United Kingdom

Background

[1] During the December 1999 session of the Sub-Committee of Experts on the Transport of Dangerous Goods the Secretariat circulated copies of draft document ISO/EN16104 which is intended to supplement the provisions of UN Chapter 6.1.5 by clarifying and standardising the approach to testing packaging for dangerous goods.

[2] In April 2000 at the close of the comment and preliminary voting period for this standard there were over 350 comments from 24 countries. The preliminary votes both at ISO and CEN showed over 80% support for the standard – only three countries voted against. In September 2000 the joint ISO/CEN working group met in Vienna and considered all the comments. During that meeting a number of issues were raised that needed to be brought to the attention of the Committee for comment/decision.

[3] The working group met again in November 2000 to finalise the work on this standard and to consider standards for compatibility testing in RID/ADR and an equivalent document for IBCs. The final draft standards will be submitted for voting in the spring of 2001.

[4] The Working Group, for which the United Kingdom acts as Secretary, has identified certain problems in the current wording of the UN Model Regulations on package testing requirements that could be addressed in this biennium. There are others that may need consideration in the future work programme. If the proposals for amendments for the 12th Revised Edition below, can be adopted by the Committee, the decisions can be incorporated into the final draft of the standard before voting takes place. The points for consideration by the committee (the second part of this paper) could be addressed at a later revision stage.

Proposals for adoption by the 21st session of the Committee.

Proposal 1

6.1.5.2 Preparation of packagings for testing

[5] Paragraph 6.1.5.2.1 requires packagings for liquids to be filled to 98% of their maximum capacity and those for solids to be filled to 95%. Flexible packagings such as bags cannot be measured to 95%. During the discussion in December 1999 on the paper submitted by ICIBCA on the terms “fill” and “load” in Chapter 6.5 it was recognised that flexible IBCs would have to be filled to the level of intended use by the designer or user as they cannot be measured to 95%.

Proposal: Add after the second sentence of 6.1.5.2.1: "Bags shall be filled to the mass at which the packaging is intended to be used."

Proposal 2

6.1.5.3 Drop test

[6] Following a number of incidents some years ago certain countries impose a delay between filling and dropping removable head packagings for liquids as instances of gasket relaxation can be shown after a period of about 24 hours. The draft standard contains a condition to this effect.

Proposal: Add a new 6.1.5.3.3 " Removable head packagings for liquids shall not be dropped until at least 24 hours after filling to allow for any possible gasket relaxation."

Subsequent sections would have to renumbered.

Proposal 3

6.1.5.3.4 Antifreeze mixtures for cold drop tests

[7] The Model Regulations provide for the use of water, with a relative density of 1, as test contents when testing packaging. Normally a water glycol mixture with a relative density of 1.08 is used for plastics packaging to prevent freezing when undertaking the drop test at –18°C. There was a view that the drop heights could therefore be less than those specified in 6.1.5.3.4 (a) to take account of the differing relative density as is the case in 6.1.5.3.4(b) The working group were of the view, however, that the minimum drop heights for PG I, PG II and III should remain at 1.8m, 1.2m and 0.8m respectively . The standard will include a note that "The term water includes water/antifreeze mixtures for testing at –18°C".

Proposal: The Committee may wish to include this note at the end 6.1.5.3.4

Proposal 4

6.1.5.7 Cooperage Test

[8] The working group did not consider inclusion of the test in 6.1.5.7, in the draft standard as no testing organisation had ever carried out such a test. Some doubt was expressed as to whether the test was realistic. In the light of the UN Committee's decisions only to permit wooden barrels under very limited circumstances e.g. P001 PP2, SP247 and then to exempt them from UN testing, the Committee might consider deleting this text and the provisions in 6.1.4.6

Proposal: Delete 6.1.4.6 and 6.1.5.7

Since this would remove wooden barrels as a means of packaging dangerous further Consequential Amendments, are needed:

SP 247: Remove reference to Chapter 6.1 by deleting the phrase "deviating from the requirements..... of chapter 6.1"

P001, PP2: Delete text in brackets.

Chapter 6.1

6.1.2.5 " 2 wooden barrel". Delete wooden barrels, replace with Reserved.

6.1.2.7 " 2 Barrels". Delete and replace with Reserved.

Renumber 6.1.4.7 as 6.1.4.6 and renumber following provisions in 6.1.4,
6.1.5.7 Delete and renumber 6.15.8 as 6.1.5.7.

Proposal 5

6.1.5.8 Test Report

[9] 6.1.5.8.2 states "…the packaging prepared as for transport….." This should read "package" as it is the packaging and its contents that are tested.

Proposal: In 6.1.5.8 amend "packaging" to read "package"

This amendment should also apply to **6.6.5.4.3** for large packagings.
[It also applies to infectious substances, see paper ST\SG\AC.10\2000\15 from the expert of the United Kingdom]

POINTS FOR CONSIDERATION BY THE COMMITTEE FOR THE THIRTEENTH REVISED EDITION

[10] The Committee is further asked to consider the following points. The ISO/CEN working group has been divided over interpretation and before considering them further the views of the Committee are being sought.

6.1.5.1 Performance and frequency of tests (Design types)

[11] 6.1.5.1.2 defines design type and includes the phrase "but may include various surface treatments" The phrase is in fact saying that if a coating is placed inside a drum providing other detail such as dimensions, material etc. is unchanged further testing is not required.

6.1.5.1.9 states "If an inner coating is required for safety reasons, it shall retain its protective properties even after the tests"

[12]. There appears to be a conflict between these paragraphs, 6.1.5.1.2 says that the tester doesn't have to take coatings into account while 6.1.5.1.9 requires that the coating remains in place after tests. Without exception, the working group agreed that coatings were not addressed in normal testing. The number of tests could be potentially enormous if every coating had to be assessed. It was felt that 6.1.5.1.9 is already addressed in 4.1.1.2.

Possible Proposal: delete 6.1.5.1.9

6.1.5.3.4 Adjustment of the drop height

[13] 6.1.5.3.4 provides for drop height adjustments. The working group had a number of debates with regard to adjusting drop heights for combination packagings. Some members interpreted the current text as only applying to single packagings e.g. drums for liquids. The argument being that because the result of the testing leads to an "S" in the mark, combination packages should be viewed as packagings intended to contain solids.

[14] Others believed the drop height should be adjusted in accordance with these principles on every occasion. 6.1.5.3.4 is therefore open to interpretation. The text was originally derived from that for single packagings.

Possible proposal: Replace in 6.1.5.3.4 the sentence "For liquids if the test is performed with water:" with:

"For liquids in single packagings and inner packagings of combination packagings if the test is performed with water:"

Partially filled packages

[15] Various sectors of the chemical industry are developing packaging methods associated with various production processes where the packagings are only partly filled with a substance e.g. sometimes as low as 50% of the normal filling ratio. Such procedures are not uncommon for drums that are intended to enable mixing of other constituents on site but it also applies to inner packagings of combination packagings. Some years ago some research was carried out in the field on partially filled drums. The results showed that drums filled to less than 70% of their brimful capacity were more likely to fail the tests.

[16] The Committee is asked to consider whether, where industry want to use partially filled drums, the tests should reflect actual use in accordance with the first sentence of 6.1.5.2.1 "Tests shall be carried out on packagings as prepared for transport…." Or should all testing be carried out at the 95%/98% levels?

[17] If the Committee consider this should be addressed in the model regulations a proposal will be prepared to amend 6.1.5.2.1 to reflect this change.

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