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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

#### Sixty-first session

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Item 3 of the provisional agenda

#### Listing, classification and packing

## Fire tests required in special provisions 283 and 371

### Transmitted by the expert from China\*

#### Introduction

1. A fire test is required in both special provisions 283 and 371 assigned to the entry UN 3164, ARTICLES, PRESSURIZED, PNEUMATIC or HYDRAULIC (containing non-flammable gas). When reviewing the two fire tests, experts from China found that some amendments could be done.

#### Proposal 1: Amendment to special provision 371

2. Special provision 371 contains provisions to determine whether articles containing a small pressure receptacle with a release device can be transported under the entry UN 3164. Paragraph (1)(f) in special provision 371 requires a fire test that applies the provisions of paragraphs 16.6.1.2 except letter g, 16.6.1.3.1 to 16.6.1.3.6, 16.6.1.3.7 (b) and 16.6.1.3.8 of the *Manual of Tests and Criteria*.

3. However, provision of paragraph 16.6.1.3.5 in the *Manual of Tests and Criteria* seems unnecessary and should be deleted.

#### Justification

4. On one hand, 16.6.1.3.5 in the *Manual of Tests and Criteria* is the provision on how the witness screens should be erected. But for apparatus and materials, letter g in 16.6.1.2 about witness screens has already been excepted, which indicates no witness screen is required. There is a contradiction between applying 16.6.1.3.5 and excluding letter g in 16.6.1.3.2.

5. On the other hand, special provision 371 (1)(f) requires that the article or fragments of the article do not rocket more than 10 metres. Whether ejection from the article can perforate the witness screen is not a factor that needs to be assessed. And the erection of

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\* A/75/6 (Sect.20), para. 20.51

witness screen at 4 m as required in 16.6.1.3.5 in the *Manual of Tests and Criteria* will hinder the rocketing of article or fragments and affect the test result. The witness screen is useless and has an adverse impact in this case.

6. Therefore, experts from China propose that paragraph 16.6.1.3.5 should be excluded from applied provisions.

## Proposal

7. It is proposed to amend special provision 371 (1)(f) as follows (new text in **bold underlined**):

“(f) The design type of the article shall be subjected to a fire test. For this test, the provisions of paragraphs 16.6.1.2 except letter g, 16.6.1.3.1 to **16.6.1.3.4**, 16.6.1.3.6, 16.6.1.3.7 (b) and 16.6.1.3.8 of the Manual of Tests and Criteria shall be applied. It shall be demonstrated that the article relieves its pressure by means of a fire degradable seal or other pressure relief device, in such a way that the pressure receptacle will not fragment and that the article or fragments of the article do not rocket more than 10 metres;”

## Proposal 2: Potential amendment to special provision 283

8. Special provision 283 contains requirements for the exemption of some pneumatic or hydraulic pressurized articles containing non-flammable gas classified as UN 3164 and a fire test is required in special provision 283 (e).

9. However, no specific guidance for the fire test has been given in special provision 283. Factors including stacking mode of the samples, total volume, continuous combustion time and method of heating can all impact the results of fire test. In the absence of a unified test method, the requirements proposed in special provision 283 (e) cannot actually place any restrictions on relevant products.

10. Thus, experts from China consider that a clear guidance on this fire test is very important. One possible solution is to apply the same provisions of Test 6(c) external fire (bonfire) test as in special provision 371, to the fire test required in special provision 283, as shown in paragraph 12 below.

11. If the Sub-Committee is not satisfied by this solution, China would like to hear opinions from experts on how the fire test in special provision 283 should be conducted.

## Potential proposal

12. It is proposed to amend special provision 283 (e) as follows (new text in **bold underlined**, deleted text in ~~strike through~~):

“(e) The design type has been subjected to a fire test. **For this test, the provisions of paragraphs 16.6.1.2 except letter g, 16.6.1.3.1 to 16.6.1.3.4, 16.6.1.3.6, 16.6.1.3.7 (b) and 16.6.1.3.8 of the Manual of Tests and Criteria shall be applied. It shall be demonstrated** ~~demonstrating~~ that pressure in the article is relieved by means of a fire degradable seal or other pressure relief device, such that the article will not fragment and that the article does not rocket.”

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