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agenda item 4.5.)

PROPOSAL FOR DRAFT AMENDMENTS (SUPPLEMENT 1) TO REGULATION No. 110

(Specific components for CNG)

Transmitted by the Expert from Italy

Note: The text reproduced below was prepared by the expert from Italy in order to align the text of Annex 3 with the prescriptions of the final version of International Standard ISO 11439:2000 (2000-09-15) "Gas cylinders - High pressure cylinders for on-board storage of natural gas as a fuel for automotive vehicles". It is based on the text of a document distributed by the expert from ENGVA without a symbol (informal document No. 17) during the forty-second session of GRPE (TRANS/WP.29/GRPE/42, para. 21).

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Note: This document is distributed to the Experts on Pollution and Energy only.

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**A. PROPOSAL**

**Annex 3,**

Paragraph 1., amend to read:

"1. SCOPE

This annex sets out minimum requirements for light-weight refillable gas cylinders. The cylinders are intended ....."

Paragraph 4.2., item c), should be deleted.

Paragraph 6.3.2.4., amend to read:

"6.3.2.4. Sulphide stress cracking resistance

If the upper limit of the specified tensile strength for the steel exceeds 950 MPa, the steel from a finished cylinder shall be subjected to a sulphide stress cracking resistance test in accordance with appendix A to this annex, item A.3. and meet the requirements listed therein."

Paragraphs 6.10.2. and 6.10.3. should be deleted.

Paragraph 6.17., table 6.3., correct in the first column (CNG-1 All metal burst pressure [Mpa]) the value of "450" to read "45".

Annex 3, paragraph 11.1., amend to read:

"11.1. ....

a) Mandatory information

(i) "CNG ONLY";

(ii) "DO NOT USE AFTER XX/XXXX", where "XX/XXXX" identifies the month and the year of expiry 1/;

(iii) ...

....."

Annex 3, Appendix A, item A.3, amend to read:

"A.3. Sulphide stress cracking test for steel

Except as identified in the following, testing shall be conducted in accordance with Method A-NACE Standard Tensile Test procedures, as described in NACE Standard TM0177-96. Tests shall be conducted on a minimum of three tensile specimens with a gauge diameter of 3.81 mm (0.150 inches) machined from the wall of a finished cylinder or liner. The specimens shall be placed under a constant tensile load equal to 60 per cent of the specified minimum yield strength of the steel, immersed in a solution of distilled water buffered with 0.5 per cent (mass fraction) sodium acetate trihydrate and adjusted to an initial pH of 4.0, using acetic acid.

The solution shall be continuously saturated at room temperature and pressure with 0.414 kPa (0.06 psia) hydrogen sulphide (balance nitrogen). The tested specimens shall not fail within a test duration of 144 hours.

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## **B. JUSTIFICATION**

Re. Para.1: There is no restriction in the new ISO 11439:2000 standard concerning the cylinder water capacity exceeding 1000 litres.

Re. Para.4.2: No limit for hot countries is applied according to ISO 11439:2000

Re. Paras.6.10.2 and 6.10.3: No more calculation requirements are necessary in according of "fit for purpose" principle

Re. Para.11.1.: The marking with letters of 25 mm high in some small cylinders is very difficult. In the final version of ISO 11439, the dimensions of the letters are covered by the general rule of "6 mm height" laid down in the introductory part of paragraph 11.1.

Re. Appendix A, item A.3: alignment to ISO

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