

Proposal for amendment to ECE/TRANS/WP.29/GRSP/2013/22 (Draft Regulation on hydrogen and fuel cell vehicles)

Note: The modifications to ECE/TRANS/WP.29/GRSP/2013/22 are marked in bold and strikethrough characters.

I. Proposal

Paragraph 5.3.2. (b), amend to read:

- (b) The first group of pressure cycling, 25 cycles are performed to 80 per cent NWP (+2/-0 MPa) at ≤ -40 °C, then 25 cycles to 125 per cent NWP (+2/-0 MPa) at $\geq +50$ °C and 95 (± 2) per cent relative humidity, and the remaining 200 cycles to 125 per cent NWP (+2/-0 MPa) at 20 (± 5) °C;

The second group of pressure cycling, 25 cycles are performed to 125 per cent NWP (**+2/-0 MPa**) at $\geq +50$ °C and 95 (**± 2**) per cent relative humidity, then 25 cycles to 80 per cent NWP (**+2/-0 MPa**) at ≤ -40 °C, and the remaining 200 cycles to 125 per cent NWP (**+2/-0 MPa**) at 20 (± 5) °C.

Paragraph 5.3.5., amend to read:

5.3.5. Residual strength burst test (hydraulic)

The storage container undergoes a hydraulic burst to verify that the burst pressure is ~~within 20~~ **at least 80** per cent of the baseline burst pressure determined in paragraph 5.1.1. (Annex 3, paragraph 2.1. test procedure).

Paragraph 7.1.3.1. (c), amend to read:

- (c) Other pressure relief devices (such as a burst ~~disc~~**disk**) may be ...

Annex 3 Paragraph 3.3. (b), amend to read:

- (b) Pendulum impacts: The upper section of the horizontal storage container is divided into five distinct (not overlapping) areas 100 mm in diameter each (see Figure 2). After 12 hours preconditioning at ≤ -40 (~~+2/-0~~) °C in an environmental chamber, the centre of each of the five areas sustains the impact of a pendulum having a pyramid with equilateral faces and square base, the summit and edges being rounded to a radius of 3 mm. The centre of impact of the pendulum coincides with the centre of gravity of the pyramid. The energy of the pendulum at the moment of impact with each of the five marked areas on the container is 30 J. The container is secured in place during pendulum impacts and not under pressure.

Annex 3 Paragraph 5.1.2. (b)(v), amend to read:

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- (v) As shown in Figure 3 the temperature of the thermocouples in the localized fire exposure area has increased continuously to at least 300 °C within 1 minute of ignition, to at least 600 °C within 3 minutes of ignition, and a temperature of at least 600 °C is maintained for the next 7 minutes. The temperature in the localized fire **exposure** area shall not exceed 900 °C during this period. Compliance to the thermal requirements begins 1 minute after entering the period with minimum and maximum limits and is based on a 1-minute rolling average of each thermocouple in the region of interest. (*Note: The temperature outside the region of the initial fire source is not specified during these initial 10 minutes from the time of ignition.*)

II. Justification

After the submission of the document for ECE/TRANS/WP.29/GRSP/2013/22, a few critical errors are found and thus corrected as above.

The amendments to Paragraph 5.3.2.(b), Paragraph 7.1.3.1.(c) and Annex 3 Paragraph 5.1.2.(b)(v) are for consistency within the document.

The tolerance for Annex 3, Paragraph 3.3 (b) for -40 °C should be aligned to those in paragraphs 5.2.6. and 5.3.2.

Paragraph 5.3.5 should be aligned to paragraph 5.2.8.
