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1958 Agreement:
Consideration of draft amendments
to existing UN Regulations submitted by GRSP

Proposal for Supplement 3 to UN Regulation No. 134 (Hydrogen and Fuel Cells Vehicles (HFCV))

Submitted by the Working Party on Passive Safety*

The text reproduced below was adopted by the Working Party on Passive Safety (GRSP) at its sixty-first session (ECE/TRANS/WP.29/GRSP/61, para. 39). It is based on ECE/TRANS/WP.29/GRSP/2017/5, as amended by Annex VII to the report. It is submitted to the World Forum for Harmonization of Vehicle Regulations (WP.29) and to the Administrative Committee AC.1 for consideration at their November 2017 sessions.

* In accordance with the programme of work of the Inland Transport Committee for 2016–2017 (ECE/TRANS/254, para. 159 and ECE/TRANS/2016/28/Add.1, cluster 3.1), the World Forum will develop, harmonize and update Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.

Proposal for Supplement 3 to UN Regulation No. 134 (Hydrogen and Fuel Cells Vehicles (HFCV))

Paragraphs 5.1.1. and 5.1.2., amend to read:

"5.1.1. Baseline initial burst pressure

Three (3) containers shall be hydraulically pressurized until burst (Annex 3, paragraph 2.1. test procedure). The manufacturer shall supply documentation (measurements and statistical analyses) that establish the midpoint burst pressure of new storage containers, BP_O.

All containers tested shall have a burst pressure within ±10 per cent of BP_O and greater than or equal to a minimum BPmin of 225 per cent NWP.

In addition, containers having glass-fibre composite as a primary constituent to have a minimum burst pressure greater than 350 per cent NWP."

5.1.2. Baseline initial pressure cycle life.

Three (3) containers shall be hydraulically pressure cycled at the ambient temperature of 20 (±5) °C to 125 per cent NWP (+2/-0 MPa) without rupture for 22,000 cycles or until a leak occurs (Annex 3, paragraph 2.2. test procedure). Leakage shall not occur within 11,000 cycles for a 15-year service life."

Paragraph 9.3.1., amend to read:

"9.3.1. Every container shall be tested in accordance with paragraph 5.2.1. of this Regulation. The test pressure is ≥ 150 per cent of NWP."

Paragraphs 9.3.2.1. and 9.3.2.2., amend to read:

"9.3.2.1. Rupture test in batch testing

The test shall be performed according to paragraph 2.1. (hydrostatic pressure rupture test) of Annex 3. The required rupture pressure shall be at least BPmin and the average burst pressure recorded of the last ten tests shall be at or above BP_O-10 per cent.

9.3.2.2. Ambient temperature pressure cycling test in batch testing
The test shall be performed according to paragraph 2.2. (a) to (c) (hydrostatic pressure cycling test) of Annex 3, except that the temperature requirements for the fueling fluid and the container skin, and the relative humidity requirement, do not apply. The cylinder shall be pressure cycled using hydrostatic pressures ≥ 125 per cent of NWP, to 22,000 cycles in case of no leakage or until leakage occurs. For the service life of 15 years, the cylinder shall not leak or rupture within the first 11,000 cycles."

Annex 3,

Paragraph 2.1., amend to read:

"2.1. Burst test (hydraulic)

The burst test is conducted at the ambient temperature of 20 (±5) °C using a non-corrosive fluid."