

**Economic and Social Council**Distr.: General
25 March 2024

Original: English

Economic Commission for Europe**Inland Transport Committee****World Forum for Harmonization of Vehicle Regulations****Working Party on Passive Safety****Seventy-fifth session**

Geneva, 27–31 May 2024

Item 8 of the provisional agenda

UN Regulation No. 17 (Strength of seats)**Proposal for 12 Series of Amendments to UN Regulation No. 17 (Strength of seats)****Submitted by the Submitted by the Informal Working Group on Equitable Occupant Protection ^{*}, ^{**}**

The text reproduced below was prepared by the Informal Working Group on Equitable Occupant Protection (IWG-EqOP), in order to improve the protection of the head restraint by optimising the test procedure. The modifications to the current text of UN Regulation No. 17 are marked in bold for new and strikethrough for deleted characters.

* This document was scheduled for publication after the standard publication date owing to circumstances beyond the submitter's control.

** In accordance with the programme of work of the Inland Transport Committee for 2024 as outlined in proposed programme budget for 2024 (A/78/6 (Sect. 20), table 20.5), the World Forum will develop, harmonize and update UN Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.



I. Proposal

Paragraphs 5.6.4., shall be deleted

Paragraphs 5.6.5. to 5.6.7.(former), renumber as paragraphs 5.6.4. to 5.6.6.

Insert new paragraphs 13.15. to 13.15.5., to read:

- "13.15. As from the official date of entry into force of the 12 series of amendments, no Contracting Party applying this Regulation shall refuse to grant or refuse to accept UN type approvals under this Regulation as amended by the 12 series of amendments.**
- 13.15.1. As from 1 September 2027, Contracting Parties applying this Regulation shall not be obliged to accept UN type approvals to the preceding series of amendments that were first issued on or after 1 September 2027.**
- 13.15.2. Until 1 September 2029, Contracting Parties applying this Regulation shall accept UN type approvals to the preceding series of amendments that were first issued before 1 September 2027.**
- 13.15.3. As from 1 September 2029, Contracting Parties applying this Regulation shall not be obliged to accept type approvals issued to the preceding series of amendments to this Regulation.**
- 13.15.4. Notwithstanding paragraph 13.15.3., Contracting Parties applying the Regulation shall continue to accept UN type approvals to the preceding series of amendments to the Regulation, for vehicles which are not affected by the changes introduced by the 12 series of amendments.**
- 13.15.5. Contracting Parties applying this Regulation shall not refuse to grant UN type approvals according to any preceding series of amendments to this Regulation or extensions thereof."**

Annex 5, paragraph 1., amend to read:

- "1. Purpose
- ~~To demonstrate compliance with the displacement requirements of paragraph 5.6.4. of this Regulation with paragraph 2. of this Annex.~~
- Demonstrate compliance with the displacement requirements of paragraph 5.7.2. of this Regulation with paragraph 2. of this Annex.
- Demonstrate compliance with the strength requirements of paragraph 5.7.3. of this Regulation with paragraph 3. of this Annex."

Annex 5, paragraphs 2.5., shall be deleted

Annex 5, paragraph 2.6. (former), renumber as paragraph 2.5.

Annex 5, insert new paragraph 2.6., to read:

- "2.6. In addition to the test described in paragraph 2.4., the Technical Service responsible for carrying out the tests, shall select one or more additional points with the head restraint positioned in the lowest in-use position, where the rearward displacement of the headform is expected to be highest. The area to be considered is: above a plane perpendicular to the reference line at 540 mm from the R-point and between two vertical longitudinal planes passing at 85 mm on either side of the reference line."**

Annex 8, paragraph 1., amend to read:

- "1. Purpose
- The purpose of this test procedure is to evaluate any gaps ~~within head restraints as well as gaps~~ between the bottom of the head restraint and the top of the seat back, in accordance with the requirements of paragraphs ~~5.6.4. and 5.6.5.~~ of this Regulation.

~~Any gaps within the head restraint shall be measured using the sphere procedure described in paragraph 2. of this Annex.~~

Gaps between the bottom of the head restraint and the top of the seat back shall be measured using the sphere procedure described in paragraph 2.1. to 2.5. of this Annex below or, at the option of the manufacturer, using the linear procedure described in paragraph 3. of this Annex."

Annex 8, paragraphs 2.5., amend to read:

"2.5. Determine the gap dimension by measuring the straight line distance between the inner edges of the two furthest contact points, as shown in Figures 8-1, ~~8-2 and 8-3.~~

Annex 8, paragraphs 2.6., shall be deleted

Annex 8, Figure 8-1 and Figure 8-2, shall be deleted.

Annex 8, Figure 8-3 (former), renumber as Figure 8-1

Annex 8, paragraphs 3.3., amend to read:

"3.3. The gap shall be measured in the longitudinal vertical plane through the R-point as the perpendicular distance between two parallel planes, described as follows (see Figure ~~8-4 8-2~~):

- (a) each plane shall be perpendicular to the design torso line;
- (b) one of the planes shall be tangent to the bottom of the head restraint;
- (c) the other plane shall be tangent to the top of the seat back."

Annex 8, Figure 8-4 (former), renumber as Figure 8-2.

II. Justification

1. The headform displacement test is developed to limit the rearward displacement of the head in relation to the spine (torso) in order to prevent or reduce the severity of, for example, whiplash injuries. For this purpose the maximum headform displacement relative to the torso is limited to 102 mm.
2. The problem with the current procedure is not the requirement itself as defined in paragraph 5.7., but the way that compliance with this requirement is proven when following the test procedure in Annex 5. The current test procedure only verifies the headform displacement at 65 mm from the (effective) top and inside a gap, if this gap has an effective height greater than 60 mm. The provisions itself indicate that the headform displacement shall be retained at different heights and within gaps. In real life, some head restraint designs have a gap of up to 60 mm, which, if tested, would result in a displacement of more than 102 mm. Due to the current test procedure defined in Annex 5, this is not tested.
3. Other head restraint designs show, for example, a frame tube at the effective top, but an area that is covered by foam only (thus only providing limited protection) in the area below the frame tube. Since this is not defined as a gap, it is not tested according to the current test procedure in Annex 5.
4. See also GRSP-74-08, presented at the December 2023 session of the Working Party on Passive Safety.
5. This proposal aims at keeping the requirements at the same level, but making sure that the head restraint offers its protection over its full height, regardless of its design, existence of gaps smaller, larger or equal to 60 mm. To achieve this, the Technical Service is free to choose one or more additional locations to verify the headform displacement.

6. The assumption is made that the occupant adjusts the head restraint to the correct height. Therefore, in case of an adjustable head restraint, the additional positions above 540 mm are verified with the head restraint in its lowest in-use position.
