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World Forum for Harmonization of Vehicle Regulations

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Item 4.8.2 of the provisional agenda

1958 Agreement:

Consideration of draft amendments to existing UN Regulations submitted by GRSP

Proposal for the 04 series of amendments to UN Regulation No. 127 (Pedestrian safety)

Submitted by the Working Party on Passive Safety *

The text reproduced below was adopted by the Working Party on Passive Safety (GRSP) at its seventy-first session (ECE/TRANS/WP.29/GRSP/71, para. 22). It is based on ECE/TRANS/WP.29/GRSP/2022/4 as amended by annex II 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 2022 sessions.

* In accordance with the programme of work of the Inland Transport Committee for 2022 as outlined in proposed programme budget for 2022 (A/76/6 (part V sect. 20) para 20.76), 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.



Insert a new paragraph 2.29.1., to read:

"2.29.1. "Adjustable Ride Height Suspension System (ARHSS)" means a system that could change the vehicle height while driving (e.g. an active suspension)."

Paragraph 4.2., amend to read:

"4.2. An approval number shall be assigned to each type approved in accordance with Schedule 4 of the Agreement (E/ECE/TRANS/505/Rev.3). Section 2 of the approval number shall be supplemented with a slash and one of the following characters as applicable:

(a) the letter "T" for vehicles approved using the specific provisions on WAD 2,100 boundary in accordance with paragraph 11.9.; or

(b) the letter "E" for vehicles approved with the extended WAD 2,500 boundary.

Example:

Example of the first extension to the 2439th type approval issued by the United Kingdom of Great Britain and Northern Ireland for a vehicle approval according to UN Regulation No. 127, third series of amendments and its supplement 1, using the specific provisions related to WAD 2,100 boundary;

E11*127R03/01/T*2439*01."

Insert new paragraphs 5.3. to 5.3.4., to read:

"5.3. In the case of a vehicle fitted with an ARHSS, which could change the vehicle height at the front axle more than 20 mm from the nominal for any vehicle speed between 25 and 40 km/h, the provisions of paragraphs 5.1. and 5.2. shall, in addition to the normal running condition as specified by the manufacturer for a vehicle speed of 40 km/h, be met for all adjustable vehicle steady heights corresponding to vehicle speeds from 25 up to 40 km/h.

For these tests, on request of the manufacturer and agreed by the technical service, either the impact speeds defined in paragraphs 5.1. and 5.2. or the impact speed corresponding to the adjusted vehicle height shall be used. In the latter case, the ratio of the head impact vs. the corresponding vehicle velocity shall be 0.9.

5.3.1. The requirements of paragraph 5.3. are deemed to be fulfilled if the vehicle is equipped with an ARHSS fully corresponding to the conditions of paragraph 5.3.1.1. or 5.3.1.2.

5.3.1.1. ARHSS cannot be activated on public roads and is activated for off-road use only. ARHSS will return automatically to the normal ride attitude, when the vehicle is operating on public roads. The default status of ARHSS on public roads is the normal ride height at the initiation of each new engine start/run cycle.

5.3.1.2. ARHSS can be engaged for use in exceptional low speed use cases (e.g. flood/heavy snow) on public roads. In such cases, ARHSS shall automatically return to the normal ride height when the vehicle speed exceeds 25 km/h or when the system is manually disengaged by the driver. If an ARHSS for use in exceptional low speed use cases is engaged, it is indicated to the driver at least by an optical warning signal.

5.3.1.3. The compliance with the conditions of paragraph 5.3.1.1. or 5.3.1.2. shall be demonstrated by the vehicle manufacturer to the satisfaction of the technical service by independent means (e.g. a physical test). The relevant information shall be described in the information document in Annex I. The exceptional low speed use case of paragraph 5.3.1.2 shall be additionally described in the owner's handbook.

- 5.3.2. The legform impactor to be used is the legform impactor as used for the legform to bumper test in normal running conditions for a speed of 40 km/h.
- 5.3.3. With the agreement of the technical service, compliance shall be demonstrated by a limited number of legform tests or by numerical simulation according to the specification set out in paragraph 5.3, so that the biomechanical limits set out in paragraph 5.1.1. and paragraph 5.1.2. respectively are met.
- 5.3.4. With the agreement of the technical service, compliance shall be demonstrated by a limited number of head impact tests or by numerical simulation showing compliance to the HIC 1,700 requirement on the additional head test area."

Insert new paragraphs 11.14. to 11.18., to read:

- "11.14. As from the official date of entry into force of the 04 series of amendments, no Contracting Party applying this UN Regulation shall refuse to grant or refuse to accept type-approvals under this UN Regulation as amended by the 04 series of amendments.
- 11.15. As from 1 September 2026, Contracting Parties applying this UN Regulation shall not be obliged to accept type-approvals to the preceding series of amendments first issued after 1 September 2026.
- 11.16. Contracting Parties applying this UN Regulation shall continue to accept type approvals issued according to the preceding series of amendments to this UN Regulation first issued before 1 September 2026.
- 11.17. Until 1 September 2028, Contracting Parties applying this UN Regulation shall continue to grant type approvals using the test proceedings related to atypical windscreen fracture behaviour (see Annex 5 paragraphs 4.8. and 5.8.) and specific provisions related to WAD 2,100 boundary (see paragraphs 2.1. and 2.45.).
- 11.18. Until 1 September 2029, Contracting Parties applying this UN Regulation shall continue to accept type approvals issued using the specific provisions related to WAD 2,100 boundary (see paragraphs 2.1. and 2.45.)
- 11.19. As from 1 September 2029, Contracting Parties applying this UN Regulation shall not be obliged to accept type approvals issued for a vehicle with a WAD 2,100 boundary on the bonnet top (see paragraphs 2.1. and 2.45.).

Renumber former paragraphs 11.17. to 11.18., to read:

- 11.20. Contracting Parties applying this UN Regulation may grant type approvals according to any preceding series of amendments to this UN Regulation.
- 11.21. Contracting Parties applying this UN Regulation shall continue to grant extensions of existing approvals to any preceding series of amendments to this UN Regulation."

Annex 1, Part 1, paragraph 9.23.1., amend to read:

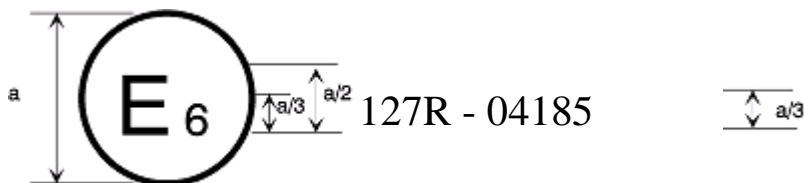
- "9.23.1. A detailed description, including photographs and/or drawings, of the vehicle with respect to the structure, the dimensions, the relevant reference lines and the constituent materials of the frontal part of the vehicle (interior and exterior) shall be provided. This description shall include detail of any active protection system installed and any system, which could change the vehicle height at the front axle while driving (e.g. ARHSS)."

Annex 2, amend to read:

"Annex 2

Arrangements of approval marks

(See paragraphs 4.4. to 4.4.2. of this UN Regulation)



a = 8 mm min

The above approval mark affixed to a vehicle shows that the vehicle type concerned has been approved in Belgium (E 6) with regard to its pedestrian safety performance pursuant to UN Regulation No. 127. The first two digits of the approval number indicate that the approval was granted in accordance with the requirements of UN Regulation No. 127 as amended by the 04 series of amendments."
