

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

Submitted by the experts from OICA*

The text reproduced below was prepared by the experts from OICA to amend document ECE/TRANS/WP.29/GRSP/2022/04 submitted by Germany. It also replaces the OICA informal documents GRSP-67-07, GRSP-68-18 and GRSP-70-17.

The modifications to ECE/TRANS/WP.29/GRSP/2022/04 are marked in blue bold for new or blue strikethrough for deleted characters.

I. Proposal

"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)."

Amend 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 vehicle speeds from 25 up to 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. **and/or 5.3.1.2.**

5.3.1.1. **The ARHSS ~~is determined for~~ operates in off-road use mode only. The ARHSS will return automatically to the normal ride attitude, when the vehicle is operating on public roads. ~~The default status of ARHSS is the normal ride height at the initiation of each new engine start/run cycle.~~**

5.3.1.2. **The ARHSS ~~is determined~~ can be engaged for use in exceptional low speed use cases (e.g. flood/heavy snow) on public roads. In such cases, the ARHSS ~~will~~ shall automatically return to the normal ride height when the vehicle speed exceeds ~~45~~ 25 km/h or when the system is manually ~~switched off 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. ~~The default status of an ARHSS is the normal ride height at the initiation of each new engine start/run cycle.~~

- 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."

Amend paragraphs 11.14. to 11.16., to read:

- "11.14. As from the official date of entry into force of the 04 series of amendments, no Contracting Party applying this Regulation shall refuse to grant or refuse to accept type-approvals under this Regulation as amended by the 04 series of amendments.
- 11.15. As from 1 September ~~2025~~ 2026, Contracting Parties applying this Regulation shall not be obliged to accept type-approvals to the preceding series of amendments first issued after 1 September ~~2025~~ 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 Regulation first issued before 1 September ~~2025~~ 2026."

Insert new paragraphs 11.17. to 11.19., to read:

- "11.17. Until 1 September 2028, Contracting Parties applying this 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 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 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:

- 11.1720. Contracting Parties applying this UN Regulation may grant type approvals according to any preceding series of amendments to this Regulation.

11.4821. 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:

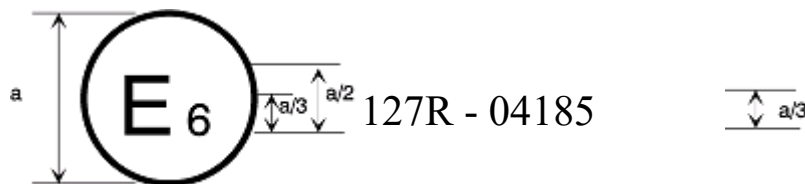
"9.23.1. A detailed description, including photographs and/or drawings, of the vehicle with respect to the structure, the dimensions, the relevant reference lines and the constituent materials of the frontal part of the vehicle (interior and exterior) shall be provided. This description shall include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

Annex 2, amend to read:

"Annex 2

Arrangements of approval marks

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



$a = 8 \text{ mm min}$

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."

II. Justification

This document further amends the working document GRSP/2022/04 submitted by Germany. Besides some editorial changes also some modification of the contents is proposed.

Paragraph 5.3.

For clarification a reference to the nominal ride height was added.

Paragraph 5.3.1.

There could be an AHRSS, which is fulfilling the conditions of both subsequent paragraphs 5.3.1.1. and 5.3.1.2. Therefore, "and" was added in sake of clarification.

Paragraph 5.3.1.1.

The requirement to lower the vehicle at each initiation of a new engine start/run cycle shall be deleted in this paragraph. If a vehicle is in a situation, where a higher ride height is

needed to avoid damage, it must stay in this condition even after new engine start. An example for this would be parking the vehicle in a space it can only approach in an adjusted ride height. Lowering could then lead to a contact with objects on the ground (e.g., stones/rocks) and damage the vehicle.

Paragraph 5.3.1.2.

The speed limit should be aligned with the requirements of 5.3. referring to a speed of 25 km/h as it would be otherwise "out of scope".

The requirement to lower the vehicle at each initiation of a new engine start/run cycle shall also be deleted in this paragraph. When driving through a flooded area and the engine stops by accident, the vehicle must not lower itself to avoid any damage. Also in situations with heavy snow the vehicle could get damaged, if it is parked and lowers itself.

Paragraphs 11.14. to 11.21.

The transitional provisions need to be amended to cope with an unintended situation that will arise if the NT date of the 04 series occurs before the AT date of the 03 series.

Unless addressed correctly, there will be a gap (loophole) created which means a manufacturer could bypass the 03 series and move directly to the 04 series. We do not believe this is the intention of the regulator.

Therefore it is needed to move the 04 series of amendments to after the AT date of the 03 series of amendments

Additionally, the special provisions of the 03 series of amendments shall be copied also to 04 series of amendments to be perfectly clear and not change the original intention.



UN R127-04 IF 1 YEAR POSTPONEMENT / GERMANY'S PROPOSAL NT 2025 → 2026

