

**Informal Group on GTR No 9 – Phase 2 (IG GTR9-PH2)
5th meeting, BASt Bergisch-Gladbach, 5 – 6 December 2012**

Height tolerance for pedestrian protection test vehicles

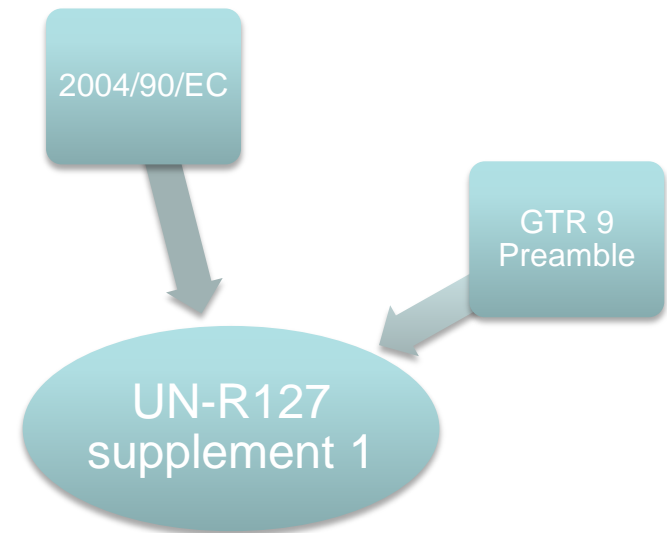


Presented by the pedestrian safety experts of the
International Automobile Manufacturers' Organization (OICA)

Vehicle height tolerance in regulative language

The definition of the tolerance origins from 2004/90/EC and is taken over into gtr No. 9, preamble and proposal for supplement 1 of UN-R127

- 2004/90/EC
- GTR9 - Preamble
- UN-R127 – Proposal for supplement 1



Tolerance for test vehicles in the (repealed) EU Directive 2004/90/EC

Part 1

2. Definitions

2.2. 'Primary reference marks' means holes, surfaces, marks and identification signs on the vehicle body. The type of reference mark used and the vertical (Z) position of each mark relative to the ground shall be specified by the vehicle manufacturer according to the running conditions specified in point

2.3. These marks shall be selected such as to be able to easily check the vehicle front and rear ride heights and vehicle attitude. **If the primary reference marks are found to be within ± 25 mm of the design position in the vertical (Z) axis, then the design position shall be considered to be the normal ride height.** If this condition is met, either the vehicle shall be adjusted to the design position, or all further measurements shall be adjusted, and tests performed, to simulate the vehicle being at the design position.

Preamble of gtr No. 9 language

Part A, Chapter 5., (e) Vehicle design position

61.

As vehicles come in many variants and modifications, the ride height may vary greatly. Taking into account the differences between type approval and self certification, it is recommended that Contracting Parties take this into account upon national implementation of the gtr. As guidance to Contracting Parties, the EU addresses this issue by defining the concept of "primary reference marks". This definition (paragraph 2.2 of EU Commission Decision of 23 December 2003) reads:

"Primary reference marks" means holes, surfaces, marks and identification signs on the vehicle body. The type of reference mark used and the vertical (Z) position of each mark relative to the ground shall be specified by the vehicle manufacturer according to the running conditions specified in paragraph 2.3. These marks shall be selected such as to be able to easily check the vehicle front and rear ride heights and vehicle attitude.

Preamble of gtr No. 9 language

Part A, Chapter 5., (e) Vehicle design position

62.

If the primary reference marks are found to be within ± 25 mm of the design position in the vertical (Z) axis, then the design position shall be considered to be the normal ride height. If this condition is met, either the vehicle shall be adjusted to the design position, or all further measurements shall be adjusted, and tests performed, to simulate the vehicle being at the design position.

UN-R 127

Proposal for Supplement 1 to the draft Regulation

Working Party on Passive Safety - Fifty-first session
(Geneva, 21–25 May 2012) ECE/TRANS/WP.29/GRSP/51

XVIII. Draft Regulation on pedestrian safety (agenda item 19)

A. Proposal for Supplement 1 to the draft Regulation

Documentation: ECE/TRANS/WP.29/GRSP/2011/18
ECE/TRANS/WP.29/GRSP/2011/19

37. With reference to the discussion under agenda item 4(b) (see para. 10), GRSP agreed to defer discussion on this agenda item to its **December 2012** session.

UN-R 127

Proposal for Supplement 1 to the draft Regulation

ECE/TRANS/WP.29/GRSP/2011/18

Insert new paragraph 2.26., to read:

"2.26 "Primary reference marks" means holes, surfaces, marks and identification signs on the vehicle body. The type of reference mark used and the vertical (Z) position of each mark relative to the ground shall be specified by the vehicle manufacturer according to the running conditions specified in paragraph 2.27. These marks shall be selected such as to be able to easily check the vehicle front and rear ride heights and vehicle attitude.

If the primary reference marks are found to be within ± 25 mm of the design position in the vertical (Z) axis, then the design position shall be considered to be the normal ride height. If this condition is met, either the vehicle shall be adjusted to the design position, or all further measurements shall be adjusted, and tests performed, to simulate the vehicle being at the design position."

Vehicle height tolerance in regulative language

For harmonization of the regulative languages and standardization of the test setup the height tolerance shall be taken over in the definitions of GTR9 language.

Vehicle height tolerances (examples)

Design Variation in vehicle height stand

- all wheel drive
- Tires/rim sizes
- Sports suspension

Variation by parts/assembly tolerances

- Geometric tolerances in parts (dimension, shape)
- Assembly tolerance (position, alignment)

Variation in test vehicle setup

- tire pressure
- vehicle ageing (settlement of assembled parts)
- air suspension control accuracy
- tire profile depth
- test vehicle alignment (by test personnel)



THANKS

For detailed questions please refer to the author, Mr. Winfried Schmitt / BMW
as representatives of the Task Force Pedestrians of the European Automobile Manufacturers' Association ACEA
