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World Forum for Harmonization of Vehicle Regulations**Working Party on General Safety Provisions****127th session**

Geneva, 15–19 April 2024

Item 4 (e) of the provisional agenda

Awareness of the Proximity of Vulnerable Road Users:**UN Regulation No. 167 (Vulnerable Road Users Direct Vision)****Proposal for the 01 series of Amendments to the Original Version of UN Regulation No. 167 (Vulnerable Road Users Direct Vision)****Submitted by the expert from the United Kingdom of Great Britain and Northern Ireland ***

The text produced below was prepared by the expert from the United Kingdom to amend UN Regulation No. 167 for Vulnerable Road Users Direct Vision as adopted at the 188th session of the World Forum for Harmonization of Vehicle Regulations (WP.29) by ECE/TRANS/WP.29/2022/140/Rev.1. The modifications to the current text of the UN Regulation are marked in bold for new or strikethrough for deleted characters.

* 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

Insert new paragraph 2.9.4., to read:

"2.9.4. "Subsection Frontal Visible Volume (SFVV)" is defined as a portion of the assessment volume that includes the volume directly in front of the vehicle, between the offside and nearside planes."

Table 1, amend to read:

"Table 1

Minimum Values of Visible Volume

		<i>Minimum Volume (m³) of Direct Vision</i>			
		Level 1		Level 2	Level 3
Nearside Visible Volume		3.4		Not Specified	Not Specified
Front Visible Volume	IAPD ≥ [2156mm]	1.8	IAPD ≥ [2154mm]	1.0	1.0
	IAPD < [2156mm]	See paragraph 5.3	IAPD < [2154mm]	See paragraph 5.3	See paragraph 5.3
Subsection Frontal Visible Volume		0.474		0.163	0.163
Offside Visible Volume		2.8		Not Specified	Not Specified
Total Visible Volume		11.2		8.0	7.0

"

Insert new paragraphs 12 to 12.5., to read:

"12. Transitional provisions

12.1. As from the official date of entry into force of the 01 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 01 series of amendments.

12.2. As from 1 September 2028, Contracting Parties applying this Regulation shall not be obliged to accept type-approvals to the preceding series of amendments, first issued after 1 September 2028.

12.3. Until 1 September 2031, Contracting Parties applying this Regulation shall accept type-approvals to the preceding series of amendments, first issued before 1 September 2028.

12.4. As from 1 September 2028, Contracting Parties applying this Regulation shall not be obliged to accept type-approvals issued to the preceding series of amendments to this Regulation.

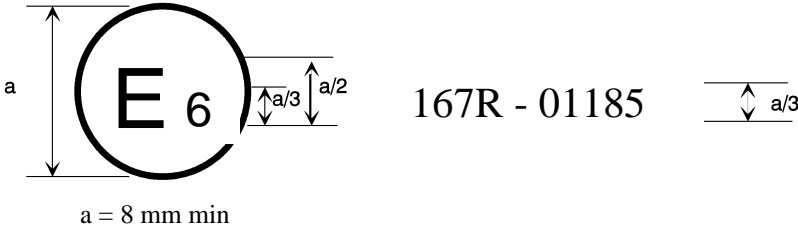
12.5. Notwithstanding paragraphs 12.2. and 12.4., Contracting Parties applying this Regulation shall continue to accept type approvals issued according to the original version of this Regulation, for vehicles which are not affected by the changes introduced by the 01 Series of amendments."

Annex 3, amend to read:

"Annex 3

Arrangements of Approval Marks

(see paragraphs 4.5. of this Regulation)

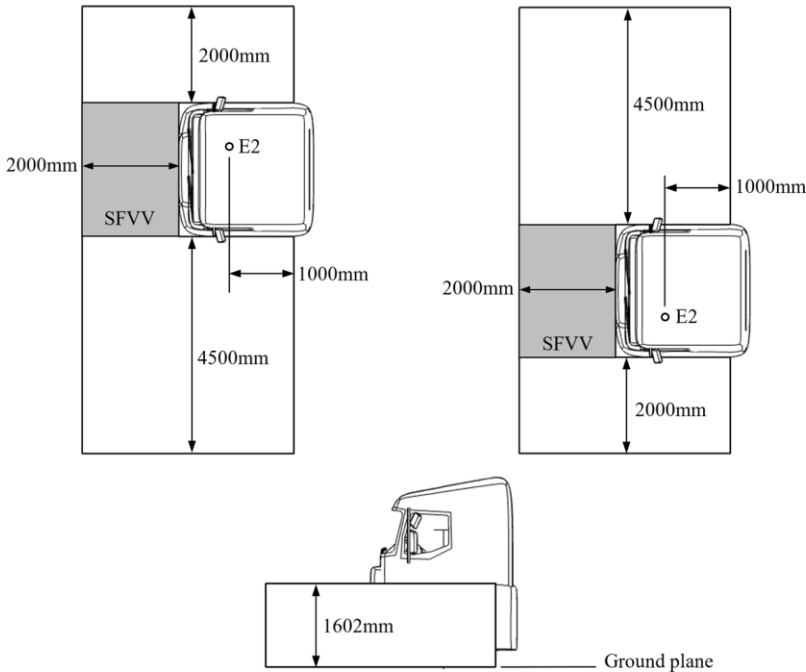


The above approval mark affixed to a vehicle shows that the vehicle type concerned has been approved in Belgium (E6) with regard to Direct Vision pursuant to UN Regulation No. 167. The first two digits of the approval number indicate that the approval was granted in accordance with the requirements of UN Regulation No. 167 as amended by the 01 series of amendments.

..."

Annex 4, Figure 1, amend to read:

"Figure 1 Definition of the Assessment Volume, Based on a Category N₃ Vehicle as an Example



"

Annex 7,

Paragraph 5.1., amend to read:

"5.1. Each of the views to the driver's nearside, front, SFVV, and offside shall be constrained to only those volumes that are within the assessment zone (the

visible volume to each side). The remaining volumes of space shall be designated as:"

Insert new paragraph 5.1.4., to read:

"5.1.4. The Subsection frontal visible volume."

Paragraph 5.2., amend to read:

"5.2. The total visible volume is the sum of the ~~visible volumes to each side~~ nearside, front and offside volumes."

II. Justification

1. The original version of UN Regulation No. 167 defines the visible volume requirements to the front of the vehicle between the two A-pillars. This was not seen as technology neutral by manufacturers and so a recent proposal for an amendment from the VRU-Proxi group introduced a reduction of the front visible volume requirements proportional to any reduction in Inter A-Pillar Distance (IAPD) below the thresholds also indicated in the amended table 1.

2. The analysis that led to this solution also highlighted an additional issue where design changes could be made to vehicles in levels 1, 2 and 3, which could allow the vehicle to pass the frontal requirements defined in the original version, but without enabling adequate direct vision directly in front of the vehicle.

3. The original version involved the definition of volumetric score which must be achieved to the front and sides of the vehicle. This volume score was derived from the correlation between volumetric score and the average of three VRU distances directly in front of the vehicle. Therefore, the intent was to allow that these VRUs be seen by the driver, and not be in a blind spot between direct vision and indirect vision.
