

14 November 2022

Agreement

Concerning the Adoption of Harmonized Technical United Nations Regulations for Wheeled Vehicles, Equipment and Parts which can be Fitted and/or be Used on Wheeled Vehicles and the Conditions for Reciprocal Recognition of Approvals Granted on the Basis of these United Nations Regulations*

(Revision 3, including the amendments which entered into force on 14 September 2017)

Addendum 45 – UN Regulation No. 46

Revision 6 - Amendment 8

05 series of amendments – Date of entry into force: 8 October 2022

Uniform provisions concerning the approval of devices for indirect vision and of motor vehicles with regard to the installation of these devices

This document is meant purely as documentation tool. The authentic and legal binding texts is: ECE/TRANS/WP.29/2022/52.



UNITED NATIONS

* Former titles of the Agreement:

Agreement concerning the Adoption of Uniform Conditions of Approval and Reciprocal Recognition of Approval for Motor Vehicle Equipment and Parts, done at Geneva on 20 March 1958 (original version); Agreement concerning the Adoption of Uniform Technical Prescriptions for Wheeled Vehicles, Equipment and Parts which can be Fitted and/or be Used on Wheeled Vehicles and the Conditions for Reciprocal Recognition of Approvals Granted on the Basis of these Prescriptions, done at Geneva on 5 October 1995 (Revision 2).



Insert a new paragraph 6.1.1.9.:

"6.1.1.9. The requirements of paragraph 6.1.1.3. do not apply to mirrors, if their lower edge is mounted not less than 2 m above the ground when the vehicle is under a load corresponding to its maximum technical permissible mass."

Paragraph 6.2.1.3., amend to read:

"6.2.1.3. The effectiveness of the CMS of Classes I to VI shall not be adversely affected by magnetic or electrical fields. This shall be demonstrated by compliance with the technical requirements and transitional provisions of Regulation No. 10, 04 series of amendments or any later series of amendments."

Paragraph 6.2.2.1.1., amend to read:

"6.2.2.1.1. When the devices of the camera-monitor system are mounted in the position recommended by the manufacturer for normal driving, all parts, irrespective of the adjustment position of the device, including those parts remaining attached to the support after the test provided for in paragraph 6.3.2. below which are in potential, static contact with a sphere either 165 mm in diameter in the case of a CMS or parts of CMS installed inside the vehicle or 100 mm in diameter in the case of a CMS or parts of CMS installed outside the vehicle, shall have a radius of curvature "c" of not less than 2.5 mm."

Paragraph 6.2.2.1.2., amend to read:

"6.2.2.1.2. The requirements in paragraph 6.2.2.1.1. above shall not apply to parts of the external surface which protrude less than 5 mm, but the outward facing angles of such parts shall be blunted, and are considered save where such parts protrude less than 1.5 mm. For determining the dimension of the projection, the following method shall apply:"

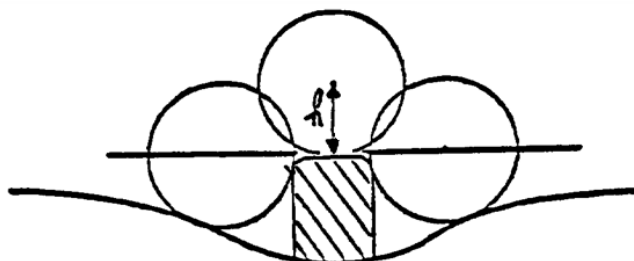
Insert a new paragraph 6.2.2.1.2.1., to read:

"6.2.2.1.2.1. The dimension of the projection of a component which is mounted on a convex surface may be determined either directly or by reference to a drawing of an appropriate section of this component in its installed condition."

Insert a new paragraph 6.2.2.1.2.2., to read:

"6.2.2.1.2.2. If the dimension of the projection of a component which is mounted on a surface other than convex cannot be determined by simple measurement, it shall be determined by the maximum variation of the distance of the centre of a 100 mm diameter sphere from the nominal line of the panel when the sphere is moved over and is in constant contact with that component. Figure 1 shows an example of the use of this procedure."

Figure 1
Example for the measurement by maximum variation



Paragraph 6.2.2.1.3., amend to read:

"6.2.2.1.3. Edges of fixing holes or recesses of which the diameter or longest diagonal is less than 12 mm are exempt from the radius requirements of paragraph 6.2.2.1.1. above provided that they are blunted."

Insert a new paragraph 6.2.2.1.4., to read:

- "6.2.2.1.4. For parts of the camera and the monitor which are made of a material with a Shore A hardness of less than 60 and which are mounted on a rigid support, the requirements of paragraph 6.2.2.1.1. above shall only apply to the support."

Insert a new paragraph 6.2.2.1.5., to read:

- "6.2.2.1.5. The requirements of paragraph 6.2.2.1.1. do not apply to CMS if their lower edge is mounted not less than 2 m above the ground when the vehicle is under a load corresponding to its maximum technical permissible mass."

Paragraph 6.3.1.1., amend to read:

- "6.3.1.1. The test provided for in paragraph 6.3.2. below shall not be required in the case of any Class II to VI exterior device for indirect vision of which no part is less than 2 m from the ground, regardless of the adjustment position, when the vehicle is under a load corresponding to its maximum technically permissible mass.

This derogation also applies to the attachments of devices for indirect vision (attachment plates, arms, swivel joints, etc.) which are situated less than 2 m from the ground and which do not project beyond the overall width of the vehicle, measured in the transverse plane passing through the lowest mirror attachments or any other point forward of this plane if this configuration produces a greater overall width.

In such cases, a description specifying that the device for indirect vision shall be mounted so as to conform to the above-mentioned conditions for the positioning of its attachments on the vehicle shall be provided.

Where advantage is taken of this derogation, the arm shall be indelibly marked with the symbol

Δ
2m

and the type approval certificate shall be endorsed to this effect."

Paragraph 16.1.1., amend to read:

- "16.1.1. Intended use, activation and deactivation

The intended use shall be mentioned within the operator's manual. The procedure for activation and deactivation of the CMS of Classes II and III shall allow a safe use of the vehicle.

The CMS shall be activated when the vehicle is opened (e.g. unlocking of the doors, opening of a front door or any other means by the choice of the manufacturer).

In addition to the requirements mentioned in paragraph 15.2.1.1.2., after each engine switch-off the system shall remain operational for a period of at least $T1 = 120$ s. After $T1$ period and for a period of at least $T2 = (420 - T1)$ seconds the system shall be able to be reactivated such that the required field of vision is made available within 1 second by manoeuvring any front door opening automatically and, if available, manually by the driver. After $T2$ period the system shall be able to be reactivated within 7 seconds (e.g. by initiating any front door opening process).

Notwithstanding the provisions above, any other concept providing at least the same level of safety shall be demonstrated to the Technical Service and to the Approval Authority within the safety concept that is provided according to the provisions in Annex 12, paragraph 2."

Insert new paragraphs 22.18. to 22.25., to read:

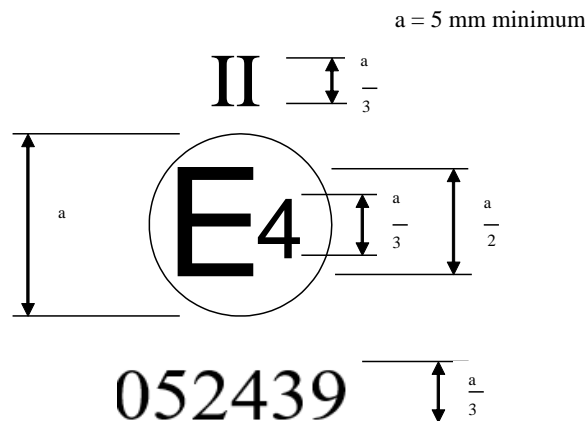
- "22.18. As from the official date of entry into force of the 05 series of amendments, no Contracting Party applying this Regulation shall refuse to grant or refuse to accept type approvals under this Regulation as amended by the 05 series of amendments.
- 22.19. As from 1 September 2024 Contracting Parties applying this Regulation shall not be obliged to accept type approvals to the preceding series of amendments, first issued after 1 September 2024.
- 22.20. Until 1 September 2026, Contracting Parties applying this Regulation shall accept type approvals to the preceding series of amendments, first issued before 1 September 2024.
- 22.21. As from 1 September 2026, Contracting Parties applying this Regulation shall not be obliged to accept type approvals issued to the preceding series of amendments to this Regulation.
- 22.22. Notwithstanding paragraph 22.21., Contracting Parties applying this Regulation shall continue to accept type approvals of devices for indirect vision other than CMS issued according to the preceding series of amendments to this Regulation.
- 22.23. Notwithstanding paragraph 22.21., Contracting Parties applying this Regulation shall continue to accept type approvals issued according to the preceding series of amendments to this Regulation, for the vehicles and CMS which are not affected by the changes introduced by the 05 series of amendments
- 22.24. Contracting Parties applying this Regulation may grant type approvals according to any preceding series of amendments to this Regulation.
- 22.25. Contracting Parties applying this Regulation shall continue to grant extensions of existing approvals to any preceding series of amendments to this Regulation"

Annex 5; amend to read:

"Annex 5

Arrangement of approval mark of a device for indirect vision

(See paragraph 5.4. of the Regulation)



The above approval mark affixed to a device for indirect vision indicates that the device is a main rear-view device, of Class II, which has been approved in the Netherlands (E 4) pursuant

to Regulation No. 46 and under approval number 052439. The first two digits of the approval number indicate that Regulation No. 46 already included the 05 series of amendments when the approval was granted.

Note: The approval number and the additional symbol shall be placed close to the circle and either above or below the "E" or to the left or right of that letter. The digits of the approval number shall be on the same side of the "E" and point in the same direction. The additional symbol shall be directly opposite the approval number. The use of Roman numerals as approval numbers shall be avoided so as to prevent any confusion with other symbols."
