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## Proposal for Supplement 10 to the 04 series of amendments to UN Regulation No. 46 (Devices for indirect vision)

### Submitted by the experts of Germany

The text reproduced below was prepared by the expert from Germany. The proposed text in paragraph 6.2.2.1.1 and 6.3.1.1 had been already presented by Germany as informal documents GRSG-117-41 and GRSG-117-42, submitted for the 117th session of GRSG in October 2019 as corrigendum. In the report of the 117. session of GRSG is noted, that GRSG agreed to resume discussions on corrections to the text of the regulation based on a proposal to be submitted by experts from France and Germany at its next session. In the report the secretariat reminded GRSG on the strict understanding of corrigenda by the Office for Legal Affairs and invited the experts considering a supplement in case of substantive changes to the text. This proposal now is picking up the old proposal and suggests to amend the 04 series of amendments to UN Regulation No. 46. In addition, a text is proposed to bring the radii requirements for CMS of UN-R 46 in line with the radii requirements of UN-R 26 and UN-R 61. The modifications to the current text of the regulation are marked in bold characters and strikethrough for deleted characters.

## I. Proposal

*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..

*Insert a new paragraph 6.2.2.1.4.:*

**6.2.2.1.4. 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 ~~IVVI~~ 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

$$\frac{\Delta}{2m}$$

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

## II. Justification

### *Paragraph 6.2.2.1.1:*

Revision 6 of the UN Regulation No. 46 modified the structure of the regulation and formulated separately the requirements for mirrors and Camera Monitor Systems (CMS) in paragraph 6. As result of this, the requirements in 6.1.1.3 apply now only for mirrors and not for CMS. For CMS there is no only requirement after the impact test which is, that the lens should not be broken.

6.1.1.3. When the mirror is mounted on a plane surface, 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 Class I mirror or 100 mm in diameter in the case of a Class II to VII mirror, shall have a radius of curvature 'c' of not less than 2.5 mm.

### *Paragraph 6.2.2.1.4.:*

To bring the requirements for radii of external projections of CMS in line with the requirements of the UN Regulations with regard to the external projections of passenger cars, UN-R 26, and commercial vehicles, UN-R 61, it is proposed to insert a new paragraph 6.2.2.1.4. to the existing text of the regulation, exempting parts of CMS mounted not less than 2 m above the ground when the vehicle is under a load corresponding to its maximum technical permissible mass, from the radius requirements in paragraph 6.2.2.1.1.

#### 6.2.2.1. General requirements

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 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.

6.2.2.1.2. 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.

6.2.2.1.3. 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 6.2.2.1.4.:*

6.2.2.1.4. 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*

Also with the amendments in Revision 6 of the UN Regulation No. 46 the error to use roman number "IV" instead of "VI" occurred.

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