

Proposal for amendment to Regulation No. 46 (Devices for indirect vision)

The modifications to the current text of UN Regulation No. 46 are marked in bold for new characters and strikethrough for deleted characters.

I. Proposal

Insert a new paragraph 2.4.7. , to read:

"2.4.7. Class VIII: "Close-proximity and rear-view device", giving the field of vision defined in paragraph 15.2.4.8."

Paragraph 5.4.3., amend to read:

"5.4.3. Additional symbol(s) I or II or/and III or/and IV or/and V or/and VI or/and VII **or/and VIII**, specifying the class to which the type of device for indirect vision belongs. The additional symbol shall be placed in any convenient position in the vicinity of the circle containing the letter "E"."

Paragraph 6.1.1.2., amend to read:

"6.1.1.2. (a) Rear-view mirrors (Classes II to ~~VH~~ **VIII**)
The edge of the reflecting surface to the longitudinal median plane of the vehicle.
(b) Rear-view mirrors (Class I)
In cases, this requirement shall apply to the edge of the projecting part."

Paragraph 6.1.1.3., amend to read:

"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 ~~VH~~ **VIII** mirror, shall have a radius of curvature 'c' of not less than 2.5 mm."

Insert new paragraph 6.1.2.1.7., to read:

**"6.1.2.1.7. "Close-proximity and rear" view devices (Class VIII)
The dimensions of the device shall be such that it provides the field of vision specified in paragraph 15.2. of this Regulation using a mirror, camera, sonar or other similar device for checking or detecting the vehicle's surroundings."**

Paragraph 6.1.2.2.4.3., amend to read:

"6.1.2.2.4.3. 300 mm for "wide-angle" mirrors (Class IV) ~~and~~ , "close-proximity" mirrors (Class V) **and "close-proximity and rear" view devices (Class VIII);**"

Paragraph 6.2.2.2., amend to read:

"6.2.2.2. Functional requirements for camera-monitor devices of Classes V ~~and~~ , VI **and VIII** "

Paragraph 6.3.1., amend to read:

"6.3.1. Devices for indirect vision in Classes I to VI and **VIII**, and Class VII mirrors (having fitments identical to Class III) shall be subjected to the tests described in paragraphs 6.3.2.1. and 6.3.2.2. below. Class VII mirrors with a stem, shall be subjected to the tests described in paragraph 6.3.2.3. below. "

Paragraph 6.3.2.2.7.2., amend to read:

"6.3.2.2.7.2. Class II to ~~VH~~ **VIII** mirrors

- (a) Test 1: The point of impact shall be as defined in paragraphs 6.3.2.2.3. or 6.3.2.2.5. above. The impact shall be such that the hammer strikes the mirror on the reflecting surface side.
- (b) Test 2: The point of impact shall be as defined in paragraphs 6.3.2.2.3. or 6.3.2.2.5. above. The impact shall be such that the hammer strikes the mirror on the side opposite to the reflecting surface.

Where from the ground."

Paragraph 15.2.1.1.2., amend to read:

"15.2.1.1.2. In the case a camera-monitor system is used for rendering (the) field(s) of vision, the relevant field(s) of vision shall be permanently visible to the driver when the ignition is on or the vehicle master control switch is activated (whichever is applicable). However, when the vehicle is moving forward at a speed above 10 km/h or backwards, the monitor or the part of the monitor intended for rendering the Class VI **or/and Class VIII** field of vision may be used for other information. Multiple images may be used or displayed provided that the monitor has been approved in this mode."

Paragraph 15.2.2.2., amend to read:

"15.2.2.2. Class II to ~~VH~~ **VIII** mirrors shall be visible through the side windows or through the portion of the windscreen that is swept by the windscreen wiper. Nevertheless, for design reasons, this last provision (i.e. the provisions relating the cleaned part of the windscreen) shall not apply to:

- (a) Class II to VII mirrors on the passenger side and optional exterior mirrors on the driver side of vehicles of categories M₂ and M₃;
- (b) Class VI front-view mirrors."

Paragraph 15.2.2.6., amend to read:

"15.2.2.6. Where the lower edge of a Class II to ~~VH~~ **VIII** mirror is less than 2 m above the ground when the vehicle is loaded to its technically permissible maximum laden mass, this mirror shall not project more than 250 mm beyond the overall width of the vehicle measured without mirrors."

Paragraph 15.2.4.5.5., amend to read:

"15.2.4.5.5. In the case the field of vision described in Figures 8a and 8b can be perceived through the combination of the field of vision from a Class IV wide-angle view device and that of a Class VI **or Class VIII** front-view

device, the installation of a Class V close-proximity view device is not compulsory.

Figures 8a and 8b

Paragraph 15.2.4.5.9., amend to read:

"15.2.4.5.9. To the front, the plane parallel to the vertical plane passing through the driver's ocular points and situated at a distance of 3 m in front of that plane. This field of vision may be partially provided by a front-view device (Class VI) **or a close-proximity and rear-view device (Class VIII).**"

Paragraph 15.2.4.5.10., amend to read:

"15.2.4.5.10. The field of vision prescribed in paragraphs 15.2.4.5.6. to 15.2.4.5.9. above may be partially provided by a wide-angle view device (Class IV) or a combination of a close-proximity view device (Class V) and a front-view device (Class VI) **or a close-proximity and rear-view device (Class VIII).**"

Paragraph 15.2.4.5.11., amend to read:

"15.2.4.5.11. The area prescribed in paragraphs 15.2.4.5.6. to 15.2.4.5.9. above may be viewed using a combination of direct view and indirect vision devices (of Class IV, V, VI, **VIII**). "

Paragraph 15.2.4.5.12., amend to read:

"15.2.4.5.12. The field of vision prescribed in paragraphs 15.2.4.5.1. to 15.2.4.5.4. may be viewed using a combination of a close-proximity view device (Class V) **and/or** a wide-angle view device (Class IV) **and/or** a **close-proximity and rear-view device (Class VIII).**
....."

Paragraphs 15.2.4.8., 15.2.4.9., 15.2.4.9.1., 15.2.4.9.2. and 15.2.4.10.(former), renumber as paragraphs 15.2.4.9., 15.2.4.10, 15.2.4.10.1, 15.2.4.10.2 and 15.2.4.11.

Insert new paragraphs 15.2.4.8. to 15.2.4.8.3., to read:

"**15.2.4.8. Class VIII close-proximity and rear-view device**
15.2.4.8.1. Close-proximity and rear-view device for the vehicle's close-proximity (see Figure 11a)

The field of vision shall be bounded by:

- (a) A transverse vertical plane through the outermost point of the front of the vehicle;**
- (b) A transverse vertical plane in front of the plane defined in (a);**
- (c) Two longitudinal vertical planes parallel to the longitudinal vertical median plane of the vehicle, each of which is situated 300 mm outside the outermost side of the vehicle on the driver's side and opposite to the driver's side, respectively; and**
- (d) A plane passing through the rearmost point of the vehicle and parallel to the transverse vertical plane of the vehicle.**

15.2.4.8.2. Close-proximity and rear-view device for the rear of the vehicle (see Figure 11b)

The field of vision shall be bounded by:

- (a) A transverse vertical plane through the outermost point of the rear of the vehicle;**
- (b) A transverse vertical plane 3,500 mm behind the plane defined in subparagraph (a) above;**
- (c) Two longitudinal vertical planes parallel to the longitudinal vertical median plane of the vehicle, each of which is situated at a distance of 1,500 mm from that plane on either side, respectively; and**
- (d) For the area between the two longitudinal vertical planes defined in subparagraph (c) above and within the width of the vehicle, a transverse vertical plane 300 mm behind the plane defined in (a).**

15.2.4.8.3. The fields of vision defined in paragraphs 15.2.4.8.1. and 15.2.4.8.2. shall be such that the driver can see at least part of cylindrical objects with a height of 1,000 mm and a diameter of 300 mm located in an area extending from the outer side of the vehicle to the boundaries of each field of vision.

If the fields of vision defined in paragraphs 15.2.4.8.1. and 15.2.4.8.2. can be perceived via a combination of devices for indirect vision of other Classes or directly, it is not mandatory to equip the vehicle with a Class VIII close-proximity and rear-view device. In addition, the requirement may be met using a combination of the device and a mirror of Class VIII or other classes."

Insert new Figures 11a and 11b:

"Class VIII fields of vision

Figure 11a

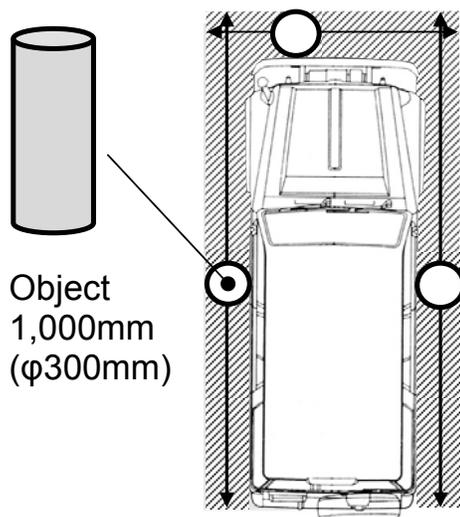
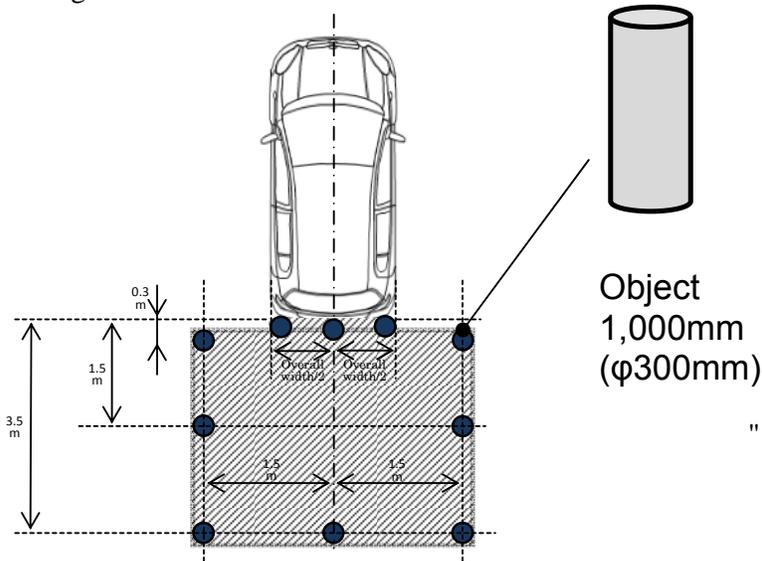


Figure 11b



New paragraph 15.2.4.10.2., amend to read:

"15.2.4.10.2. Classes II, III, IV, V, ~~and~~ VI and VIII devices for indirect vision and Class VII mirrors

In the fields of vision specified above, obstruction due to the bodywork and its components, such as other cab devices for indirect vision, door handles,"

II. Justification

In countries including Japan that have a road traffic environment where vehicles pass by in close proximity to pedestrians, it is extremely important to ensure that the driver notices any pedestrians while driving.

Furthermore, as a large number of accidents have occurred involving pedestrians hit by reversing vehicles, it is similarly necessary to enable the driver to notice any pedestrians behind the vehicle.