

24 February 2011

---

## **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\***

(Revision 2, including the amendments which entered into force on 16 October 1995)

---

## **Addendum 47: Regulation No. 48**

### **Revision 6 – Amendment 4**

Supplement 6 to the 04 series of amendments - Date of entry into force: 30 January 2011

### **Uniform provisions concerning the approval of vehicles with regard to the installation of lighting and light-signalling devices**



UNITED NATIONS

---

\* Former title 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.

Paragraph 2.7.17., amend to read:

"2.7.17. "Conspicuity marking" means a device intended to increase the conspicuity of a vehicle, when viewed from the side or rear (or in the case of trailers, additionally from the front), by the reflection of light emanating from a light source not connected to the vehicle, the observer being situated near the source;"

Insert a new paragraph 2.33., to read:

"2.33. "Rear-end collision alert signal (RECAS)" means an automatic signal given by the leading vehicle to the following vehicle. It warns that the following vehicle needs to take emergency action to avoid a collision."

Paragraphs 5.11. to 5.11.2., amend to read

"5.11. The electrical connections shall be such that the front and rear position lamps, the end-outline marker lamps, if they exist, the side-marker lamps, if they exist, and the rear registration plate lamp can only be switched ON and OFF simultaneously.

5.11.1. This condition does not apply:

5.11.1.1. when front and rear position lamps are switched ON, as well as side-marker lamps when combined or reciprocally incorporated with said lamps, as parking lamps; or

5.11.1.2. when side-marker lamps flash in conjunction with direction indicators or"

Paragraphs 5.11.3. and 5.11.4.(former), renumber as paragraphs 5.11.2. and 5.11.3.

Paragraph 5.15., amend to read:

"5.15. The colours of the light emitted by the lamps are the following:

...

Emergency stop signal: amber or red

Rear-end collision alert signal: amber

Rear registration plate lamp: white

....

Conspicuity marking: white to the front;

white or yellow to the side;

red or yellow to the rear<sup>9</sup>

..."

Paragraph 6.1.9.1., amend to read:

"6.1.9.1. The aggregate maximum intensity of the main-beam headlamps which can be switched on simultaneously shall not exceed 430,000 cd, which corresponds to a reference value of 100."

Paragraph 6.3.6.1.2.2., amend to read:

"6.3.6.1.2.2. depending on the mounting height ... shall have the following value(s):

$h \leq 0.8$

Limits: between -1.0 per cent and -3.0 per cent

Initial aiming: between -1.5 per cent and -2.0 per cent

$h > 0.8$

Limits: between -1.5 per cent and -3.5 per cent

Initial aiming: between -2.0 per cent and -2.5 per cent."

*Paragraph 6.13.1., amend to read:*

"6.13.1. *Presence*

Devices of A or AM categories (visible from the front), and devices of R, R<sub>1</sub>, R<sub>2</sub>, RM<sub>1</sub> or RM<sub>2</sub> Categories (visible from the rear):

Mandatory on vehicles exceeding 2.10 m in width. Optional on vehicles between 1.80 and 2.10 m in width. On chassis-cabs the rear end-outline marker lamps are optional."

*Paragraph 6.19.7.1., amend to read:*

"6.19.7.1. The daytime running lamps shall be switched ON automatically when the device which starts and/or stops the engine (propulsion system) is set in a position which makes it possible for the engine (propulsion system) to operate. However, the daytime running lamps may remain OFF while the following conditions exist:

6.19.7.1.1. The automatic transmission control is in the park position; or

6.19.7.1.2. The parking brake is in the applied position; or

6.19.7.1.3. Prior to the vehicle being set in motion for the first time after each manual activation of the propulsion system.

6.19.7.2. The daytime running lamps may be switched OFF manually when the vehicle speed does not exceed 10 km/h provided they switch ON automatically when the vehicle speed exceeds 10 km/h or when the vehicle has travelled more than 100 m and they remain ON until deliberately switched off again.

6.19.7.3. The daytime running lamp shall switch OFF automatically when the device which starts and/or stops the engine (propulsion system) is set in a position which makes it impossible for the engine (propulsion system) to operate or the front fog lamps or headlamps are switched ON, except when the latter are used to give intermittent luminous warnings at short intervals<sup>15</sup>.

6.19.7.4. The lamps referred to in paragraph 5.11. are not switched ON when the daytime running lamps are switched ON."

*Paragraphs 6.19.7.2. and 6.19.7.3. (former), renumber as paragraphs 6.19.7.5. and 6.19.7.6.*

*Paragraphs 6.21.1.3. to 6.21.1.3.2., amend to read:*

"6.21.1.3. *Optional:*

6.21.1.3.1. To the rear and to the side:

On all other categories of vehicles, not otherwise specified in paragraphs 6.21.1.1. and 6.21.1.2. above, including the cab of tractor units for semi-trailers and the cab of chassis-cabs.

Partial or full contour marking may be applied instead of mandatory line markings, and full contour marking may be applied instead of mandatory partial contour marking.

6.21.1.3.2. To the front:  
Line marking on vehicles of categories O<sub>2</sub>, O<sub>3</sub> and O<sub>4</sub>.  
Partial or full contour marking may not be applied to the front."

*Paragraphs 6.21.5.1., amend to read:*

"6.21.5.1. for rear and front conspicuity markings (see Annex 11, Figures 1a and 1b) the observation plane is perpendicular to the longitudinal axis of the vehicle situated 25 m from the extreme end of the vehicle and bounded by:"

*Paragraph 6.21.6.2., amend to read:*

"6.21.6.2. To the rear and to the front:  
..."

*Paragraph 6.22.9.3., amend to read:*

"6.22.9.3. The aggregate maximum intensity of the lighting units that can be energized simultaneously to provide the main-beam lighting or its modes, if any, shall not exceed 430,000 cd, which corresponds to a reference value of 100.

This maximum intensity shall be obtained by adding together the individual reference marks indicated on the several installation units that are simultaneously used to provide the main-beam.

..."

*Insert new paragraphs 6.25. to 6.25.8., to read:*

**"6.25. Rear-end collision alert signal**

*6.25.1. Presence*

Optional

The rear-end collision alert signal shall be given by the simultaneous operation of all the direction indicator lamps fitted as described in paragraph 6.25.7.

*6.25.2. Number*

As specified in paragraph 6.5.2.

*6.25.3. Arrangement*

As specified in paragraph 6.5.3.

*6.25.4. Position*

As specified in paragraph 6.5.4.

*6.25.5. Geometric visibility*

As specified in paragraph 6.5.5.

*6.25.6. Orientation*

As specified in paragraph 6.5.6.

*6.25.7. Electrical connections.* Compliance with these requirements shall be demonstrated by the applicant, by simulation or other means of verification accepted by the Technical Service responsible for type approval.

- 6.25.7.1. All the lamps of the rear-end collision alert signal shall flash in phase at a frequency of 4.0 +/- 1.0 Hz.
- 6.25.7.1.1. However, if any of the lamps of the rear end collision alert signal to the rear of the vehicle use filament light sources the frequency shall be 4.0 +0.0/-1.0 Hz.
- 6.25.7.2. The rear-end collision alert signal shall operate independently of other lamps.
- 6.25.7.3. The rear-end collision alert signal shall be activated and deactivated automatically.
- 6.25.7.4. The rear-end collision alert signal shall not be activated if the direction indicator lamps, the hazard warning signal or the emergency stop signal is activated.
- 6.25.7.5. The rear-end collision alert signal may only be activated under the following conditions:

$V_r$	activation
$V_r > 30 \text{ km/h}$	$TTC \leq 1.4$
$V_r \leq 30 \text{ km/h}$	$TTC \leq 1.4 / 30 \times V_r$

" $V_r$  (Relative Speed)": means the difference in speed between a vehicle with rear-end collision alert signal and a following vehicle in the same lane.

"TTC (Time to collision)": means the estimated time for a vehicle with rear-end collision alert signal and a following vehicle to collide assuming the relative speed at the time of estimation remains constant.

- 6.25.7.6. The activation period of the rear-end collision alert signal shall be not more than 3 seconds.
- 6.25.8. *Tell-tale*  
Optional"

Annex 9,

Paragraphs 1.3. to 1.3.2., amend to read:

- "1.3. Alignment of dipped-beam headlamps and class "F3" front fog lamps towards the front
- 1.3.1. Initial downward inclination  
The initial downward inclination of the cut-off of the dipped beam and the class "F3" front fog lamps shall be set to the plated figure as required and shown in Annex 7.  
Alternatively ..... paragraph 4.1.
- 1.3.2. Variation of inclination with load  
The variation of the dipped beam downward inclination as a function of the loading conditions specified within this section shall remain within the range:  
0.2 per cent to 2.8 per cent for headlamp mounting height  $h < 0.8$ ;  
0.2 per cent to 2.8 per cent for headlamp mounting height  $0.8 \leq h \leq 1.0$ ; or

0.7 per cent to 3.3 per cent (according to the aiming range chosen by the manufacturer at the approval);

0.7 per cent to 3.3 per cent for headlamp mounting height  $1.0 < h \leq 1.2$  m;

1.2 per cent to 3.8 per cent for headlamp mounting height  $h > 1.2$  m.

In the case of a class "F3" front fog lamp with (a) light source(s) having a total objective luminous flux which exceeds 2,000 lumen, the variation of the downward inclination as a function of the loading conditions specified within this section shall remain within the range:

0.7 per cent to 3.3 per cent for front fog lamp mounting height  $h \leq 0.8$  ;

1.2 per cent to 3.8 per cent for front fog lamp mounting height  $h > 0.8$  m.

The states of loading to be used shall be as follows, as indicated in Annex 5 of this Regulation, for every system adjusted accordingly."

Annex 11, amend the figures to read:

"Figure 1a  
**Rear**

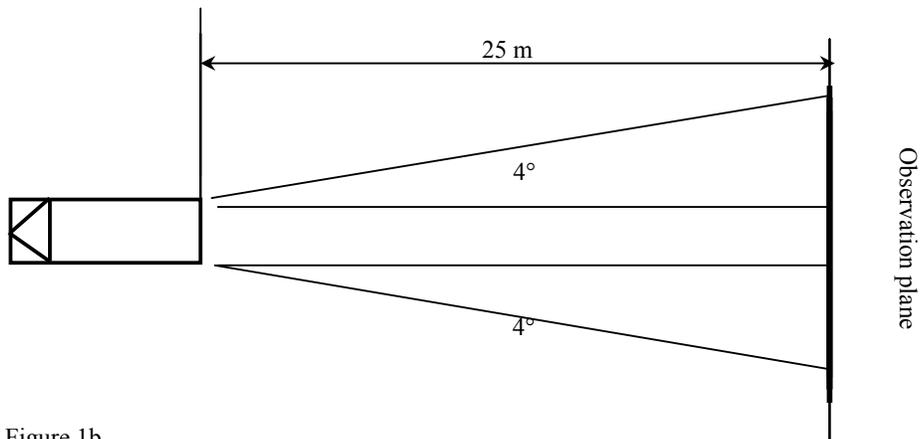


Figure 1b  
**Front (trailers only)**

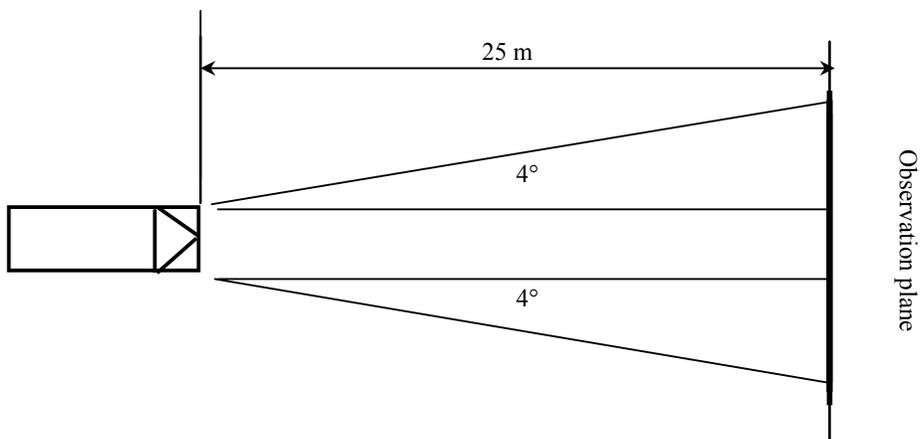


Figure 2  
Side

