

6 August 2013

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## **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)

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

#### **Revision 9 - Amendment 1**

Supplement 1 to the 06 series of amendments – Date of entry into force: 15 July 2013

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



**UNITED NATIONS**

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\* 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.

The table of contents, insert a reference to a new Annex 15, to read:

"...

- 15 Gonio(photo)meter system used for the photometric measurements as defined in paragraph 2.34. of this Regulation ....."

The text of the Regulation,

Insert a new paragraph 2.23.1., to read

- "2.23.1. "Fixed (open) position of a movable component" means the stable or natural rest position(s) of use specified by the vehicle manufacturer, whether locked or not;"

Add a new paragraph 2.34., to read:

- "2.34. "Gonio(photo)meter system (If not otherwise specified in a particular Regulation)" means a system used for the photometric measurements specified by the angular coordinates in degrees on a sphere with a vertical polar axis according to CIE publication No. 70, Vienna 1987, i.e. corresponding to a gonio(photo)meter system with a horizontal ("elevation") axis fixed to the ground and a second, moveable ("rotation") axis perpendicular to the fixed horizontal axis (see Annex 14 to this Regulation). *Note:* The above mentioned CIE publication specifies a procedure to correct the angular coordinates in the case where an alternative gonio(photo)meter system is used."

Paragraph 5.21., amend to read:

- "5.21. The apparent surface ... from the "normal position of use".  
Fixed position of a movable component means the stable or natural rest position(s) of the movable component specified by the vehicle manufacturer, whether locked or not.  
If the above requirement is not practicable:  
(a) Part of Supplement 10 to the 04 series of amendments to Regulation No. 48. Amendments to GRE-67-38 (see para. 13 of the report);"

Paragraph 5.27., amend to read:

- "5.27. For vehicles of M and N categories, the applicant shall demonstrate to the Technical Service responsible for type approval testing that the electric power supply conditions for the devices indicated in paragraphs 2.7.9., 2.7.10., 2.7.12., 2.7.14. and 2.7.15. above comply, when the electrical system of the vehicle is in a constant voltage operating condition, representative for the relevant category of powered vehicle as specified by the applicant, with the following provisions:

- 5.27.1. The voltage supplied at the terminals of devices which, according to their type approval documentation, have been tested by the application of a special power supply/electronic light source control gear, or in a secondary operating mode or at a voltage requested by the applicant, shall not exceed the voltage specified for the relevant devices or functions as they have been approved.
- 5.27.2. In all cases of electric power supply conditions not covered by paragraph 5.27.1., the voltage at the terminals of the device(s) or function(s) shall not exceed 6.75 V (6 Volt-Systems), 13.5 V (12 Volt-Systems) or 28 V (24 Volt-Systems) by more than 3 per cent. The means of controlling the maximum voltage at the terminals of the device may, for convenience, be located within the body of the device.
- 5.27.3. The provisions of paragraphs 5.27.1. and 5.27.2. shall not apply to devices which include an electronic light source control gear or a variable intensity control being part of the device.
- 5.27.4. A report shall be attached to the approval documentation describing the methods used to demonstrate compliance and the results obtained."

*Paragraph 5.29., amend to read:*

- "5.29. A LED module does not need to be replaceable, if so stated in the communication sheet of the component type approval."

*Paragraph 6.4.4.3., amend to read:*

- "6.4.4.3. In length: at the rear of the vehicle  
However, if installed, the two optional devices mentioned in paragraph 6.4.2.2. may be fitted on the side of the vehicle, provided that the requirements of paragraphs 6.4.5.2. and 6.4.6.2. below are fulfilled."

*Paragraph 6.4.5., amend to read:*

- "6.4.5. Geometric visibility
- 6.4.5.1. Devices installed at the rear of the vehicle:  
Defined by angles  $\alpha$  and  $\beta$ , as specified in paragraph 2.13.:  
 $\alpha = 15^\circ$  upwards and  $5^\circ$  downwards,  
 $\beta = 45^\circ$  to right and to left if there is only one device,  
 $45^\circ$  outwards and  $30^\circ$  inwards if there are two.
- 6.4.5.2. Two optional devices mentioned in paragraph 6.4.2.2. if fitted on the side of the vehicle:  
The geometric visibility is considered to be ensured if the reference axis of the respective device is directed outwards with an angle  $\beta$  not exceeding  $15^\circ$  relative to the median longitudinal plane of the vehicle. The vertical aim of the two optional devices may be directed downwards."

*Paragraph 6.4.6., amend to read:*

- "6.4.6. Orientation
- 6.4.6.1. Rearwards

- 6.4.6.2. In addition, if the two optional devices mentioned in paragraph 6.4.2.2., are fitted on the side of the vehicle, the provisions of paragraph 6.4.5.2. above shall apply."

*Paragraph 6.21.4.1.2.*, amend to read:

- "6.21.4.1.2. The cumulative horizontal length of the conspicuity marking elements, as mounted on the vehicle, shall equate to at least 70 per cent of the overall width of the vehicle, excluding any horizontal overlap of individual elements."

*Paragraph 6.21.4.1.3.* shall be deleted

*Paragraphs 6.21.4.2. to 6.21.4.2.2.*, amend to read:

"6.21.4.2. Length

- 6.21.4.2.1. The conspicuity marking shall be as close as practicable to the ends of the vehicle and reach to within 600 mm of each end of the vehicle.

- 6.21.4.2.1.1. For motor vehicles, each end of the vehicle, or in the case of tractors for semi-trailers each end of the cab;

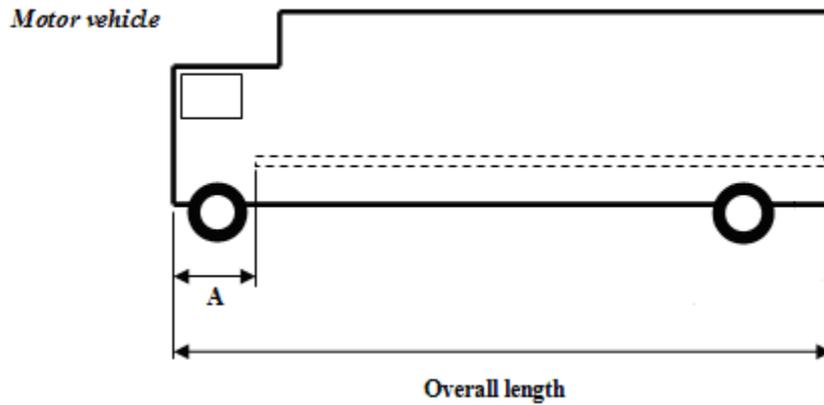
However, an alternative marking mode within 2,400 mm from the front end of the motor vehicle is allowed where a series of retro-reflectors of Class IVA of Regulation No. 3 or Class C of Regulation No. 104 are mounted followed by the required conspicuity marking as follows:

- (a) Retro-reflector size minimum 25 cm<sup>2</sup>;
- (b) One retro-reflector mounted not more than 600 mm from the front end of the vehicle;
- (c) Additional retro-reflectors spaced not more than 600 mm apart;
- (d) The distance between the last retro-reflector and the start of the conspicuity marking shall not exceed 600 mm;

- 6.21.4.2.1.2. For trailers, each end of the vehicle (excluding the drawbar).

- 6.21.4.2.2. The cumulative horizontal length of the conspicuity marking elements, as mounted on the vehicle, excluding any horizontal overlap of individual elements, shall equate to at least 70 per cent of:

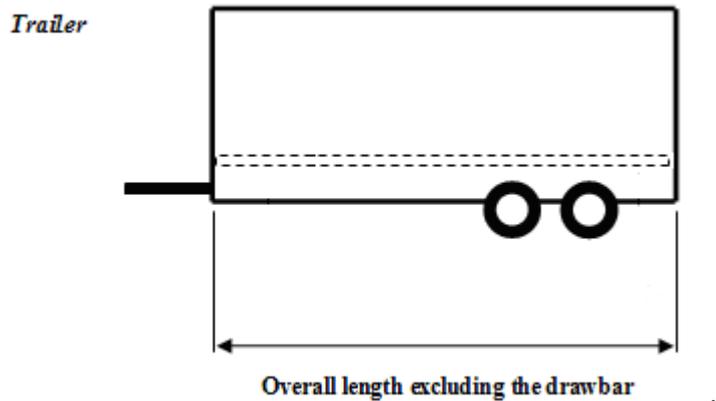
- 6.21.4.2.2.1. For motor vehicles, length of vehicle, or in the case of tractors for semi-trailers, if fitted, the length of the cab; however, when using the alternative marking mode per paragraph 6.21.4.2.1.1., the distance beginning within 2,400 mm from the front end of vehicle to its rear end.



A is the distance between the foremost conspicuity marking and the front end of the vehicle. The maximum value of A is 2,400 mm (see paragraph 6.21.4.2.1.1.)."

Paragraph 6.21.4.2.2.2., amend to read:

"6.21.4.2.2.2. For trailers, the overall length of the vehicle (excluding the drawbar).



Paragraph 6.21.4.2.3., shall be deleted

Paragraph 6.21.5., amend to read:

"6.21.5. Visibility

The conspicuity marking shall be considered visible, if at least 70 per cent of the illuminating surface of the installed marking is visible when viewed by an observer positioned at any point within the observation planes defined below:"

Paragraph 6.6.8., amend to read:

"6.6.8. Tell-tale

Flashing circuit-closed tell-tale mandatory."

*Annex 1,*

*Paragraph 10.5., amend to read:*

"10.5. Comments regarding the extent of coverage of the conspicuity marking if it is less than the minimum value of 70 per cent required by paragraphs 6.21.4.1.2. and 6.21.4.2.2. of the Regulation."

*Add a new Annex 15, to read:*

## "Annex 15

### **Gonio(photo)meter system used for the photometric measurements as defined in paragraph 2.34. of this Regulation**

