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### Economic Commission for Europe

#### Inland Transport Committee

#### World Forum for Harmonization of Vehicle Regulations

#### Working Party on Lighting and Light-Signalling

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Item 14(d) of the provisional agenda

**Other business – Other business**

### **Proposal for draft amendments to Regulation No. 70 (Rear-marking plates for heavy and long vehicles)**

#### **Submitted by the expert from the European Association of Automotive Suppliers\***

The text reproduced below was prepared by the expert from the European Association of Automotive Suppliers (CLEPA). The modifications to the existing text of the Regulation are marked in bold for new and strikethrough for deleted characters.

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\* In accordance with the programme of work of the Inland Transport Committee for 2010–2014 (ECE/TRANS/208, para. 106 and ECE/TRANS/2010/8, programme activity 02.4), the World Forum will develop, harmonize and update Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.

## I. Proposal

*Paragraph 2.1.3.*, amend to read:

- "2.1.3. Classes of rear marking plates
- Class 1: Rear marking plates for heavy motor vehicles (trucks and tractors) with red fluorescent and yellow retro-reflective alternative stripes.
- Class 2: Rear marking plates for long vehicles (trailers and semi-trailers) with red fluorescent border and yellow retro-reflective centre.
- Class 3: Rear marking plates for heavy motor vehicles (trucks and tractors) with red retro-reflective and yellow retro-reflective alternative stripes.
- Class 4: Rear marking plates for long vehicles (trailers and semi-trailers) with red retro-reflective border and yellow retro-reflective centre.
- Class 5: Rear marking plates for motor vehicles or trailers with red and white retro-reflective alternative stripes."**

*Paragraph 7.1.*, amend to read:

"Rear marking plate(s) shall also satisfy the conditions as to shape and stripe slope and the colorimetric, photometric, physical and mechanical requirements set forth in Annexes 5 to 12 to this Regulation. **Class 5 devices are exempted from fulfilling the requirements of Annex 10.**"

*Annex 5*

*Paragraph 2.*, amend to read:

"...

**For mounting of Class 5 devices on non-articulated vehicles, the retro-reflective material shall be made with alternate, oblique stripes of white and red colour.**

..."

*Paragraph 3.2.*, amend to read:

"...

**Class 5 devices shall incorporate a minimum of nine standard areas as described in paragraph 3.4. below on large vehicles with available mounting space, but may be reduced to a minimum of four standard areas on vehicles with limited mounting space.**

..."

*Paragraph 3.4.*, amend to read:

"...

**Class 5 retro-reflective materials shall consist of red and white diagonal stripes each 100 mm wide, sloping outwards and downwards at 45°. The**

basic standard area is a square of 141 mm in length subdivided into a white half and a red half, which represents one standard area.

Prescribed shapes, patterns and dimensional features of Class 5 devices are illustrated in figure 3 of Annex 12 to this Regulation.

..."

Paragraph 3.5., amend to read:

"Rear marking plates **or Class 5 devices** supplied in sets shall form matching pairs."

Annex 6,

Paragraph 2., amend the title, to read:

"Yellow, red **or white** retro-reflective material"

Paragraph 2.1.1., amend to read:

"Luminance factor for:

- (a) Yellow colour shall be  $\geq 0.16$ .
- (b) Red colour shall be  $\geq 0.03$ .
- (c) **White colour shall be  $\geq 0.25$ .**"

Annex 7,

Paragraph 1.1., insert new table 3 after table 2 and amend to read:

"When illuminated with a CIE Standard Illuminant A and measured as recommended by CIE TC 2.3 (CIE Publication No. 54, 1982), the coefficient of retro-reflection  $R'$  in candelas per square metre per lux of the yellow, **white or red** retro-reflective area in new condition shall be at least as indicated in tables 1, 2 **or 3**, according to the class. Devices of class 1 and class 2 shall fulfil the values in table 1, devices of class 3 and class 4 those in table 2, **devices of class 5 those in table 3.**

...

**Table 3**  
Coefficient of retro-reflection  $R'$  [ $\text{cd.m}^{-2}.\text{lx}^{-1}$ ]

| Observation angle $\alpha$ [°]                            | Entrance angle $\beta$ [°] |     |     |     |     |
|---|----------------------------|-----|-----|-----|-----|
|   | $\beta_1$                  | 0°  | 0°  | 0°  | 0°  |
| 20°   | $\beta_2$                  | 5°  | 30° | 40° | 60° |
| Coefficient $R'$<br>[ $\text{cd.m}^{-2}.\text{lx}^{-1}$ ] | Colour: White              | 450 | 200 | 90  | 16  |
|   | Red                        | 120 | 30  | 10  | 2   |

Paragraph 1.3., Table 3 amend to read and renumber as table 4:

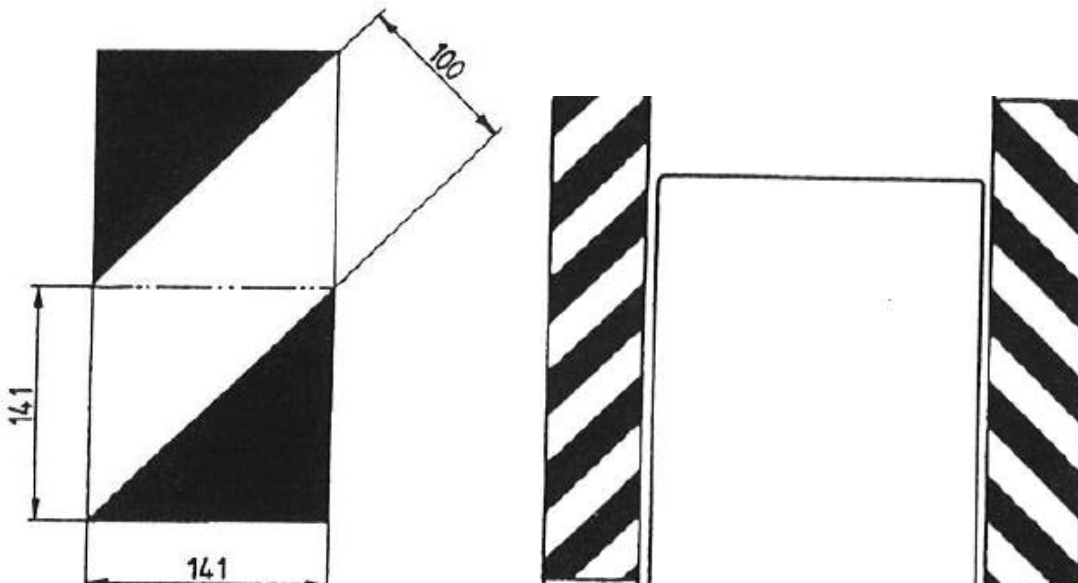
**Table 4**  
**Luminance factor  $\beta$**

| Colour       | Luminance factor $\beta$      |
|--------------|-------------------------------|
| Red          | $\geq 0.03$                   |
| Yellow       | $\geq 0.16$                   |
| <b>White</b> | <b><math>\geq 0.25</math></b> |

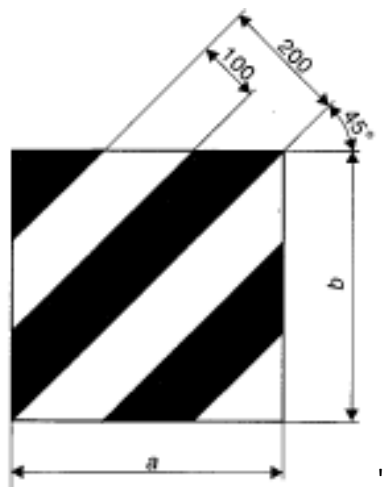
Annex 12, insert a new title after Figure 2 and insert new Figure 3:

**"Rear marking plates (Class 5)**

**Figure 3a**



**Figure 3b**  
**Example for a plate design**



## **II. Justification**

1. This proposal introduces new Class 5 devices made solely of retro-reflective plates with chevron type pattern to be applied to special utility vehicles or trailers not regularly covered by standard rear marking plates.
  2. Some Contracting Parties have national requirements and this amendment attempts to harmonize these requirements.
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