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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

#### Seventieth session

Geneva, 21-23 October 2013

Item 14(d) of the provisional agenda

**Other Business – Other business**

## **Proposal for draft amendments to Regulation No. 104 (Retro-reflective marking for vehicles of category M, N and O)**

### **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

Insert a new paragraph 5.4.3.5., to read:

**"5.4.3.5. "F" for materials for extremities marking, with red and white retro-reflective alternative stripes."**

Annex 2,

Item 2, amend to read:

"Class of the marking material: C/D/E/F 2/"

Annex 3,

Paragraph 1., amend to read:

"...

**Symbol "F" shall indicate material intended for extremities marking."**

Annex 5,

Insert a new paragraph 2., to read:

**"2. Side, rear and/or front marking with strips (Class F)**

**2.1. General**

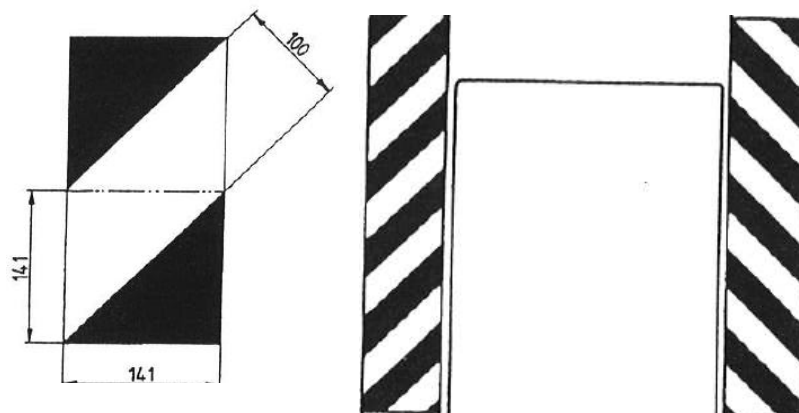
**The markings shall be made of strips of retro-reflective material.**

**2.2. Dimensions**

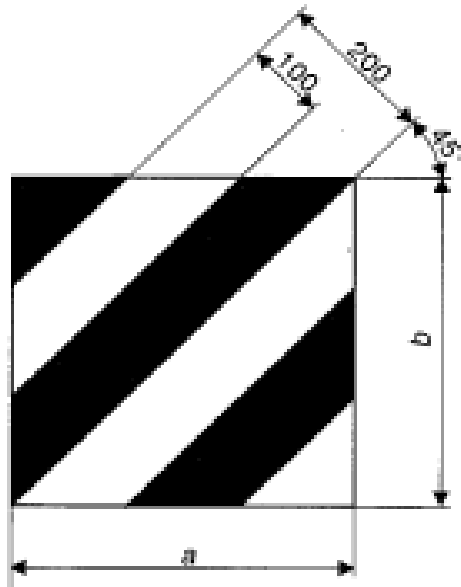
**2.2.1. Class F retro-reflective materials shall consist of red and white diagonal stripes each 100 mm wide sloping outwards and downwards at 45°. The basic standard area is a square of 141 mm in length subdivided into a white half and a red half, which represents one standard area as shown in Figure 3.**

**2.2.2. The minimum length of an element of a retro-reflective marking material shall incorporate a minimum of nine standard areas as described in paragraph 2.2.1. above on large vehicles with available mounting space, but may be reduced to a minimum of four standard areas on vehicles with limited mounting space.**

**Figure 3a**  
**Retro-reflective material marking of class F**



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



Annex 6.

Paragraph 1., amend to read:

"...

**Retro-reflective marking materials (class F) shall be white and red."**

Insert a new paragraph 3., to read:

"3. For class F materials, when measured with a spectrophotometer in accordance with the provisions of CIE document No. 15 (1971) and illuminated with the CIE Standard illuminant D65 at an angle of 45° to the normal and viewed along the normal (45/0 geometry), the colour of the material in new condition shall be within the limits according to paragraph 2.31. of Regulation No. 48."

Insert a new paragraph 3.1., to read:

"3.1. Luminance factor for red colour shall be  $\geq 0.03$ . For white colour, it shall be  $\geq 0.25$ ."

## II. Justification

1. This proposal introduces new Class F marking materials designed with chevron type pattern to be applied to special utility vehicles or trailers not regularly covered by standard contour marking materials.
2. Some Contracting Parties have national requirements and this amendment attempts to harmonise these requirements.