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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

#### Seventy-seventh session

Geneva, 4-7 April 2017

Item 8 (c) of the provisional agenda

#### Other business:

#### Development of the International Whole Vehicle Type Approval

## Proposals for amendments to Regulations Nos. 4, 6, 7, 19, 23, 38, 48, 50, 77, 87, 91, 98, 112, 113, 119 and 123

### Submitted by the expert from the European Commission<sup>\*,\*\*</sup>

The text reproduced below was prepared by the expert from the European Commission to clarify the requirements for light sources in the lighting and light-signalling Regulations listed in Annex 4 to Regulation No. 0 on the International Whole Vehicle Type Approval (IWVTA). The modifications to the existing text of the Regulation are marked in bold for new or strikethrough for deleted characters.

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\* In accordance with the programme of work of the Inland Transport Committee for 2016–2017 (ECE/TRANS/254, para. 159 and ECE/TRANS/2016/28/Add.1, cluster 3.1), 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.

\*\* The present document has been submitted after the official deadline, due to the late arrival.

GE.17-02057(E)



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## I. Proposals

### A. Proposal for Supplement 18 to Regulation No. 4 (Illumination of rear registration plate lamps)

*Paragraph 4.1.*, amend to read:

- “4.1. If the two samples of a type of illuminating device submitted in accordance with paragraph 2. above satisfy the provisions of this Regulation, approval shall be granted. **However, if one or more categories of light sources are prescribed according to paragraph 2., approval of the type of illuminating device is only valid if the type of illuminating device is equipped with light source(s) approved according to those light source categories.**”

### B. Proposal for Supplement 27 to the 01 series of amendments to Regulation No. 6 (Direction indicators)

*Paragraph 4.1.1.*, amend to read:

- “4.1.1. If the two devices submitted for approval in pursuance of paragraph 2.2.4., above, meet the requirements of this Regulation, approval shall be granted. **However, if one or more categories of light sources are prescribed according to paragraph 2.2.2., approval of the device is only valid if the device is equipped with light source(s) approved according to those light source categories.**

All the devices of an interdependent lamp system shall be submitted for type approval by the same applicant.”

### C. Proposal for Supplement 26 to the 02 series of amendments to Regulation No. 7 (Position, stop and end-outline lamps)

*Paragraph 4.1.1.*, amend to read:

- “4.1.1. If the two devices which are submitted in pursuance of paragraph 2.2.4. above satisfy the provisions of this Regulation, approval shall be granted. **However, if one or more categories of light sources are prescribed according to paragraph 2.2.2., approval of the device is only valid if the device is equipped with light source(s) approved according to those light source categories.**

All the devices of an interdependent lamp system must be submitted for type approval by the same applicant.”

### D. Proposal for Supplement 9 to the 04 series of amendments to Regulation No. 19 (Front fog lamps)

*Paragraph 4.1.1.*, amend to read:

- “4.1.1. If all the samples of a type of front fog lamp submitted in pursuance of paragraph 2. of this Regulation satisfy the provisions of this Regulation,

approval shall be granted. **However, if one or more categories of light sources are prescribed according to paragraph 2.4.1., approval of the type of front fog lamp is only valid if the type of front fog lamp is equipped with light source(s) approved according to those light source categories.”**

**E. Proposal for Supplement 21 to Regulation No. 23 (Reversing lamps and manoeuvring lamps)**

*Paragraph 4.1., amend to read:*

- “4.1. If the two samples of a type of reversing lamp or a manoeuvring lamp meet the requirements of this Regulation, approval shall be granted. **However, if one or more categories of light sources are prescribed according to paragraph 2.2.2., approval of the type of reversing lamp or a manoeuvring lamp is only valid if the type of reversing lamp or a manoeuvring lamp is equipped with light source(s) approved according to those light source categories.”**

**F. Proposal for Supplement 18 to Regulation No. 38 (Rear fog lamps)**

*Paragraph 4.1., amend to read:*

- “4.1. If the two samples of a type of rear fog lamp meet the requirements of this Regulation, approval shall be granted. **However, if one or more categories of light sources are prescribed according to paragraph 2.2.2., approval of the type of rear fog lamp is only valid if the type of rear fog lamp is equipped with light source(s) approved according to those light source categories.”**

**G. Proposal for Supplement 9 to the 06 series of amendments to Regulation No. 48 (Installation of lighting and light-signalling devices)**

*Paragraph 4.1., amend to read:*

- “4.1. If the vehicle type submitted for approval pursuant to this Regulation meets the requirements of the Regulation in respect of all the devices specified in the list, approval of that vehicle type shall be granted.

**However, approval of the vehicle type is only valid if lamps installed on the vehicle are equipped with light source(s) for which the devices are approved.”**

*Insert a new paragraph 5.30., to read:*

- “5.30. **Lamps approved for one or more light source categories according to Regulations Nos. 37, 99 or 128, shall be fitted with these light sources approved according to those light source categories.”**

**H. Proposal for Supplement 19 to Regulation No. 50 (Position, stop, direction indicator lamps for mopeds and motorcycles)**

*Paragraph 5.1., amend to read:*

"5.1. If the two devices of a type of device which are submitted in pursuance of paragraph 3. above meet the requirements of this Regulation, approval shall be granted. **However, if one or more categories of light sources are prescribed according to paragraph 3.2.2., approval of the type of device is only valid if the type of device is equipped with light source(s) approved according to those light source categories.**

All the devices of an interdependent lamp system shall be submitted for type approval by the same applicant."

#### **I. Proposal for Supplement 17 to Regulation No. 77 (Parking lamps)**

*Paragraph 5.1.*, amend to read:

"5.1. If the two samples of a parking lamp type submitted in accordance with paragraph 3.2.3. above meet the requirements of this Regulation, approval shall be granted. **However, if one or more categories of light sources are prescribed according to paragraph 3.2.1., approval of the parking lamp is only valid if the parking lamp is equipped with light source(s) approved according to those light source categories.**"

#### **J. Proposal for Supplement 19 to Regulation No. 87 (Daytime running lamps)**

*Paragraph 5.1.1.*, amend to read:

"5.1.1. If the two daytime running lamps which are submitted in pursuance of paragraph 3.2.3. above satisfy the requirements to this Regulation, approval shall be granted. **However, if one or more categories of light sources are prescribed according to paragraph 3.2.2., approval of the daytime running lamp is only valid if the daytime running lamp is equipped with light source(s) approved according to those light source categories.**"

#### **K. Proposal for Supplement 16 to Regulation No. 91 (Side-marker lamps)**

*Paragraph 5.1.*, amend to read:

"5.1. If the two side-marker lamps submitted for approval pursuant to paragraph 3.2.3. above satisfy the provisions of this Regulation, approval shall be granted. **However, if one or more categories of light sources are prescribed according to paragraph 3.2.2., approval of the side-marker lamp is only valid if the side-marker lamp is equipped with light source(s) approved according to those light source categories.**"

#### **L. Proposal for Supplement 8 to the 01 series of amendments to Regulation No. 98 (Headlamps with gas-discharge light sources)**

*Paragraph 4.1.1.*, amend to read:

"4.1.1. If all the samples of a type of headlamp submitted pursuant to paragraph 2. above satisfy the provisions of this Regulation, approval shall be granted. **However, if one or more categories of light sources are prescribed**

according to paragraph 2.1.6., approval of the type of headlamp is only valid if the type of headlamp is equipped with light source(s) approved according to these light source categories.”

**M. Proposal for Supplement 7 to the 01 series of amendments to Regulation No. 112 (Headlamps emitting an asymmetrical passing-beam)**

*Paragraph 4.1.1.*, amend to read:

“4.1.1. If all the samples of a type of headlamp submitted pursuant to paragraph 2. above satisfy the provisions of this Regulation, approval shall be granted. **However, if one or more categories of light sources are prescribed according to paragraph 2.1.5., approval of the type of headlamp is only valid if the type of headlamp is equipped with light source(s) approved according to these light source categories.**”

**N. Proposal for Supplement 7 to the 01 series of amendments to Regulation No. 113 (Headlamps emitting a symmetrical passing-beam)**

*Paragraph 4.1.1.*, amend to read:

“4.1.1. If all the samples of a type of headlamp submitted pursuant to paragraph 2. above satisfy the provisions of this Regulation, approval shall be granted. **However, if one or more categories of light sources are prescribed according to paragraphs 2.1.3. and 2.1.4., approval of the type of headlamp is only valid if the type of headlamp is equipped with light source(s) approved according to these light source categories.**”

**O. Proposal for Supplement 5 to the 01 series of amendments to Regulation No. 119 (Cornering lamps)**

*Paragraph 4.1.*, amend to read:

“4.1. If the two samples of a type of cornering lamp meet the requirements of this Regulation, approval shall be granted. **However, if one or more categories of light sources are prescribed according to paragraph 2.2.2., approval of the type of cornering lamp is only valid if the type of cornering lamp is equipped with light source(s) approved according to those light source categories.**”

**P. Proposal for Supplement 8 to the 01 series of amendments to Regulation No. 123 (Adaptive front-lighting systems (AFS))**

*Paragraph 4.1.1.*, amend to read:

- "4.1.1. If all the samples of a type of a system submitted pursuant to paragraph 2. above satisfy the provisions of this Regulation, approval shall be granted. **However, if one or more categories of light sources are prescribed according to paragraph 2.1.4., approval of the type of system is only valid if the type of system is equipped with light source(s) approved according to these light source categories.**"

## II. Justification

1. This proposal is related to para. 62 of the report of the 170th session of World Forum for Harmonization of Vehicle Regulations (WP.29) (ECE/TRANS/WP.29/1126): "62. The World Forum noted the request by the Informal Working Group (IWG IWVTA) to clarify the individual Regulations on lighting and light-signalling devices with a requirement that light sources in these devices should be type approved pursuant to Regulations Nos. 37, 99 or 128. WP.29 invited GRE, in cooperation with IWG, to consider how to better address this issue, taking into account the IWVTA objectives, the ongoing process of the simplification of lighting and light-signalling Regulations and the fact that not all light sources were covered by Regulations Nos. 37, 99 and 128."

### *Background*

2. UN Regulation No. 0 requires submission of approval certificates for all UN Regulations listed in Annex 4 to the Regulation. In case of lighting this includes the installation of lighting systems, lamp units as well as light sources to be used in these lamp units.

3. Among the approval certificates required, those for lamp units and bulbs are obtained by suppliers, and therefore it is difficult for motor vehicle manufacturers to submit such certificates.

4. It was therefore agreed that those type approvals need not to be provided on condition they are contained in the approval for installation, i.e. in this case the approval to UN Regulation No. 48.

5. This resolves the problem for approvals of light units which are routinely listed in Regulation No. 48 approvals, but not for light sources because approvals according to Regulations Nos. 37, 99 and 128 are not listed in Regulation No. 48 approvals.

### *Proposed solutions*

6. Device Regulations, paragraph "Approval", amend to read:

#### Example of Regulation No. 4

"4.1. If the two samples of a type of illuminating device submitted in accordance with paragraph 2. above satisfy the provisions of this Regulation, approval shall be granted. **However, if one or more categories of light sources are prescribed according to paragraph 2., approval of the type of illuminating device is only valid if the type of illuminating device is equipped with light source(s) approved according to those light source categories.**"

#### Example of Regulation No. 112

"4.1.1. If all the samples of a type of headlamp submitted pursuant to paragraph 2. above satisfy the provisions of this Regulation, approval shall be granted. **However, if one or more categories of light sources are prescribed according to paragraph 2.1.5., approval of the type of headlamp is only**

**valid if the type of headlamp is equipped with light source(s) approved according to those light source categories."**

7. Installation Regulations, paragraphs "Approval" and "General Specifications", amend to read:

Example of Regulation No. 48

"4.1. If the vehicle type submitted for approval pursuant to this Regulation meets the requirements of the Regulation in respect of all the devices specified in the list, approval of that vehicle type shall be granted.

**However, approval of the vehicle type is only valid if lamps installed on the vehicle are equipped with light source(s) for which the devices are approved."**

**"5.30. Lamps approved for one or more light source categories according to Regulations Nos. 37, 99 or 128, shall be fitted with these light sources approved according to these light source categories."**

*Additional information*

8. Lighting and light signalling devices offer several light source options:

- Replaceable light sources,
- Non-replaceable light sources,
- Light source modules or LED modules.

9. Not all of these options are allowed in each Regulation for each application. This is expressed in the device Regulations itself and by means of a reference to use restrictions in Regulations Nos. 37, 99, 128 (and in the Consolidated Resolution R.E.5).

10. In the communication form of the device Regulations the categories of replaceable light sources and light source modules are indicated. Non-replaceable light sources are not specified since these are part of the device or light source module.

11. Replaceable light sources shall be approved according to Regulations Nos. 37, 99 or 128. In some cases also non-replaceable light sources shall be approved (like in Regulation No. 19).

12. The approval of devices equipped with replaceable light sources is usually done with standard (étalon) light sources. Standard (étalon) light sources have tighter tolerances. By using such light sources in approval testing of the device, the effect of the light source tolerances on the performance of the device is minimized.

13. In some specific cases, devices may also be measured using approved production replaceable light sources.

14. A standard light source is not necessarily approved but it shall be accompanied by a test report showing that the standard light source complies to the stricter requirements than those that apply to approved light sources as specified in Regulations Nos. 37, 99 or 128. This is why the device Regulations specify that the category of the (standard) light source must be one of those contained in Regulations Nos. 37, 99 or 128.

15. The device Regulations (so far) do not specify that the certificate and approval of the device are only valid when approved replaceable light sources are used for which the device was approved. The Regulation (so far) is only for approval of the device and does not prescribe the use afterwards. This proposal will change that as suggested by IWVTA.

16. In the same way, the installation Regulation does not require (so far) that devices installed on the vehicle shall be equipped with light sources that are approved. It is supposed to be, but this is not explicitly written. This proposal will change that in addition to the IWG IWVTA suggestion.

17. For vehicle installation approval, device certificates are collected but in case of replaceable approved light sources, this may not be necessary as they are replacement components. Certificates may be available from several manufacturers that happen to produce such light source at that time.

*Notes*

18. Regulation No. 50 (Position, stop, direction indicators lamps for mopeds and motorcycles) is part of the proposal to avoid creating an inconsistency in the device Regulations.

19. Regulation No. 65 (Special warning lamps) is not part of this proposal due to its special character.

20. The other installation Regulations for lighting and light signalling devices Nos. 53, 74 and 84 are not part of this proposal. They may be considered at a later stage.

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