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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-second session**

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Item 4 (i) (iv) of the provisional agenda

1958 Agreement - Regulations**Other business – Any other business****Proposal for Supplement 5 to the 01 series of amendments to Regulation No. 112 (Headlamps emitting an asymmetrical passing-beam)****Submitted by the expert from the International Automotive Lighting and Light Signalling Expert Group (GTB)***

The text reproduced below was prepared by the expert from GTB to amend the requirements for the mixture for the dirt test and to simplify measuring the objective luminous flux of light emitting diode (LED) module(s). The modifications to the existing text of the Regulation are marked in bold for new or strikethrough for deleted characters.

* In accordance with the programme of work of the Inland Transport Committee for 2012–2016 (ECE/TRANS/224, para. 94 and ECE/TRANS/2012/12, 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

Annex 4, paragraph 1.2.1.1., amend to read:

“1.2.1.1. Test mixture

1.2.1.1.1. For headlamp with the outside lens in glass:

The mixture of water and a polluting agent to be applied to the headlamp shall be composed of:

9 parts by weight of silica sand with a particle size of 0-100 µm,

1 part by weight of vegetal carbon dust **produced from** ~~(beech wood)~~ with a particle size of 0-100 µm,

0.2 parts by weight of NaCMC³, and

5 parts by weight of sodium chloride (pure at 99 per cent),

an appropriate quantity of distilled water, with a conductivity of ≤ 1 mS/m.

The mixture must not be more than 14 days old.

1.2.1.1.2. For headlamp with outside lens in plastic material:

The mixture of water and polluting agent to be applied to the headlamp shall be composed of:

9 parts by weight of silica sand with a particle size of 0-100 µm,

1 part by weight of vegetal carbon dust **produced from** ~~(beech wood)~~ with a particle size of 0-100 µm,

0.2 part by weight of NaCMC³,

5 parts by weight of sodium chloride (pure at 99 per cent),

13 parts by weight of distilled water with a conductivity of ≤ 1 mS/m, and

2 ± 1 parts by weight of surface-actant⁴.

The mixture must not be more than 14 days old.”

Annex 10, paragraph 5.2., amend to read:

“5.2. ~~Three~~ **One** modules of each type shall be submitted by the applicant with the light source control gear, if applicable, and sufficient instructions.

Suitable thermal management (e.g. heat sink) may be provided, to simulate similar thermal conditions as in the corresponding headlamp application.

Before the test ~~the~~ LED module shall be aged at least for seventy-two hours under the same conditions as in the corresponding headlamp application.

In the case of use of an integrating sphere, the sphere shall have a minimum diameter of one meter, and at least ten times the maximum dimension of the LED module, whichever is the largest. The flux measurements can also be performed by integration using a goniophotometer. The prescriptions in CIE - Publication 84 - 1989, regarding the room temperature, positioning, etc., shall be taken into consideration.

The LED module shall be burned in for approximately one hour in the closed sphere or goniophotometer.

The flux shall be measured after stability has occurred, as explained in paragraph 4.3.1.2. of Annex 10 to this Regulation.

~~The average of the measurements of the three samples of each type of LED module shall be deemed to be its objective luminous flux.”~~

II. Justification

Amendment to Annex 4, paragraph 1.2.1.1.

1. The UN regulations currently specify several test mixtures to simulate dirt during testing of lamps. As there is no reason to use different kinds of test mixtures it is proposed to amend the UN Regulations by introducing a uniform test mixture to be used for all the corresponding tests. In addition, to avoid misinterpretation the wording “beech wood” is replaced by “produced from beech wood”.

Amendment to Annex 10, paragraph 5.2.

2. This proposal is intended to simplify the test procedures to determine the objective luminous flux of LED module(s). As the purpose of this test is to verify that the luminous flux is greater than 1000 lm, and it is not required to measure an absolute value, it is sufficient to perform this measurement on one LED module instead of on three modules as currently required.
