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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 (GRE)****Sixty-Ninth session**

Geneva, 8-11 April 2013

Item 5(d) of the provisional agenda

**Regulations Nos. 3, 4, 6, 7, 19, 23, 38, 65, 69, 70, 77, 87, 91, 98, 112, 113, and 119****Proposal for Supplement 5 to the 01 series of amendments to Regulation No. 98 (Headlamps equipped with gas-discharge light sources)****Submitted by the expert from Germany\***

The text reproduced below was prepared by the expert from Germany updating the Conformity of Production requirements (CoP). The modifications to the current 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 2010–2014 (ECE/TRANS/208, para. 106 and ECE/TRANS/2010/8, program 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 9.* amend to read:

**"9. Conformity of Production**

**The Conformity of Production procedures shall comply with those set out in the Agreement, Appendix 2 (E/ ECE/ 324-E/ ECE/ TRANS/ 505/ Rev. 2), with the following requirements:**

- 9.1. Headlamps approved under this Regulation shall be so manufactured as to conform to the type approved by meeting the requirements set forth in paragraph 6.**
- 9.1.2. In order to verify that the requirements of paragraph 9.1. are met, suitable controls of the production shall be carried out.**
- 9.1.3. The holder of the approval shall in particular:**
  - 9.1.3.1. Ensure the existence of procedures for the effective control of the quality of products:**
  - 9.1.3.2. Have access to the control equipment necessary for checking the conformity to each approved type;**
  - 9.1.3.3. Ensure that data of test results are recorded and that related documents shall remain available for a period to be determined in accordance with the administrative service;**
  - 9.1.3.4. Analyze the results of each type of test in order to verify and ensure the stability of the product characteristics making allowance for variation of an industrial production;**
  - 9.1.3.5. Ensure that for each type of product at least the tests prescribed in Annex 8 to this Regulation are carried out;**
  - 9.1.3.6. Ensure that any collecting of samples giving evidence of non-conformity with the type of test considered shall give rise to another sampling and another test. All the necessary steps shall be taken to re-establish the conformity of the corresponding production.**
- 9.1.4. The competent authority which has granted type approval may at any time verify the conformity control methods applicable to each production unit.**
  - 9.1.4.1. In every inspection, the test books and production survey records shall be presented to the visiting inspector.**
  - 9.1.4.2. The inspector may take samples at random to be tested in the manufacturer's laboratory. The minimum number of samples may be determined in the light of results of the manufacturer's own checks.**

- 9.1.4.3. When the quality level appears unsatisfactory or when it seems necessary to verify the validity of the tests carried out in the application of paragraph above, the inspector shall select samples, to be sent to the technical service which has conducted the type approval tests, using the criteria of Annex 9.
- 9.1.4.4. The competent authority may carry out any test prescribed in this Regulation. These tests will be on samples selected at random without causing distortion of the manufacturer's delivery commitments and in accordance with the criteria of Annex 9.
- 9.1.4.5. The competent authority shall strive to obtain a frequency of inspection of once every two years. However, this is at the discretion of the competent authority and their confidence in the arrangements for ensuring effective control of the conformity of production. In the case where negative results are recorded, the competent authority shall ensure that all necessary steps are taken to re-establish the conformity of production as rapidly as possible.
- 9.2. Headlamps with apparent defects are disregarded.
- 9.3. The reference mark is disregarded.
- 9.4. The measuring points 14 to 21 from paragraph 6.2.6. of this Regulation are disregarded."

*Annex 8, paragraph 1.2. to 1.2.2.2. amend to read:*

- "1.2. With respect to photometric performance, the conformity of mass-produced headlamps shall not be contested if, when testing photometric performance of any headlamp chosen at random and measured at 13.2 V  $\pm$  0.1 V or as otherwise specified and:
- Either
- Equipped with a removable standard gas-discharge light source according to paragraph 6.1.3. The luminous flux of this gas-discharge light source may differ from the reference luminous flux specified in Regulation No. 99. In this case, the luminous intensities shall be corrected accordingly.
- Or
- Equipped with the serial production gas-discharge light source and the serial ballast. The luminous flux of this light source may deviate from the nominal luminous flux due to light source and ballast tolerances as specified in Regulation No. 99; accordingly the measured luminous intensities may be corrected by 20 per cent in the favourable direction.
- 1.2.1. No luminous intensity value, if measured and corrected according to paragraph 1.2. above, deviates unfavourably by more than 20 per cent from the values prescribed in this Regulation. For values B 50 L (or R) and in Zone A, the maximum unfavourable deviation may be respectively:

<b>B 50 L (or R)<sup>1</sup>:</b>	<b>170 cd equivalent 20 per cent</b>
	<b>255 cd equivalent 30 per cent</b>
<b>Zone A</b>	<b>255 cd equivalent 20 per cent</b>
	<b>380 cd equivalent 30 per cent.</b>

**1.2.2. Or if**

**1.2.2.1. For the passing beam, the values prescribed in this Regulation are met at HV (with a tolerance of +170 cd) and related to that aiming at one point within a circle of 0.35 degrees around points B 50 L (or R)<sup>1</sup> (with a tolerance of 85 cd), 75 R (or L), 50 V, 25 R1, 25 L2, and on segment I;**

**1.2.2.2. And if, for the driving beam, HV being situated within the isocandela line  $0.75 I_{max}$ , a tolerance of +20 per cent for maximum values and -20 per cent for minimum values is observed for the photometric values at any measuring point specified in paragraph 6.3. of this Regulation."**

*Annex9., paragraph 2 and following (to end of this Annex), amend to read:*

**2. First sampling**

**In the first sampling four headlamps are selected at random. The first sample of two is marked A, the second sample of two is marked B.**

**2.1. The conformity of mass-produced headlamps shall not be contested if the deviation of any specimen of samples A and B (all four lamps) is not more than 20 per cent.**

**In the case, that the deviation of both lamps of sample A is not more than 0 per cent the measurement can be closed.**

**2.2. The conformity of mass-produced headlamps shall be contested if the deviation of at least, one specimen of samples A or B is more than 20 per cent.**

**The manufacturer shall be requested to bring his production in line with the requirements (alignment) and a repeated sampling according to paragraph 3. below shall be carried out within two months' time after the notification. The samples A and B shall be retained by the Technical Service until the entire COP process is finished.**

**3. First repeated sampling**

**A sample of four lamps is selected at random from stock manufactured after alignment.**

**The first sample of two is marked C, the second sample of two is marked D.**

**3.1. The conformity of mass-produced headlamps shall not be contested if the deviation of any specimen of samples C and D (all four lamps) is not more than 20 per cent.**

**In the case, that the deviation of both lamps of sample C is not more than 0 per cent, the measurement can be closed.**

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<sup>1</sup> Letters in brackets refer to headlamps intended for left-hand traffic.

- 3.2.** The conformity of mass-produced headlamps shall be contested if the deviation of at least
- 3.2.1** one specimen of samples C or D is more than 20 per cent but the deviation of all specimen of these samples is not more than 30 per cent.
- The manufacturer shall be requested again to bring his production in line with the requirements (alignment).
- A second repeated sampling according to paragraph 4. below shall be carried out within two months' time after the notification. The samples C and D shall be retained by the Technical Service until the entire COP process is finished.
- 3.2.2** one specimen of samples C or D is more than 30 per cent.
- In this case the approval shall be withdrawn and paragraph 5 below shall be applied.
- 4.** Second repeated sampling
- A sample of four lamps is selected at random from stock manufactured after alignment.
- The first sample of two is marked E, the second sample of two is marked F.
- 4.1.** The conformity of mass-produced headlamps shall not be contested if the deviation of any specimen of samples E and F (all four lamps) is not more than 20 per cent.
- In the case, that the deviation of both lamps of sample E is not more than 0 per cent the measurement can be closed.
- 4.2.** The conformity of mass-produced headlamps shall be contested if the deviation of at least one specimen of samples E or F is more than 20 per cent.
- In this case the approval shall be withdrawn and paragraph 5 below shall be applied.
- 5.** Approval withdrawn
- Approval shall be withdrawn according to paragraph 10. of this Regulation.
- 6.** Change of the vertical position of the cut-off line
- With respect to the verification of the change in vertical positions of the cut-off line under the influence of heat, the following procedure shall be applied:
- One of the headlamps of sample A after sampling procedure in Paragraph 2 of this annex shall be tested according to the procedure described in paragraph 2.1. of Annex 4 after being subjected three consecutive times to the cycle described in paragraph 2.2.2. of Annex 4.
- The headlamp shall be considered as acceptable if  $\Delta r$  does not exceed 1.5 mrad.
- If this value exceeds 1.5 mrad but is not more than 2.0 mrad, the second headlamp of sample A shall be subjected to the test after which the mean

**of the absolute values recorded in both samples shall not exceed 1.5 mrad.**

**However, if this value of 1.5 mrad on sample A is not complied with, the two headlamps of sample B shall be subjected to the same procedure and the value of  $\Delta r$  for each of them shall not exceed 1.5 mrad.**

*Figure 1, shall be deleted*

## **II. Justification**

1. The present set of proposals for amendments to the CoP provisions in a number of Regulations on lighting and light-signalling is based on ECE/TRANS/WP.29/GRE/2012/19 which was considered at the sixty-eighth GRE session. GRE invited the expert from Germany to prepare a revised proposal covering all relevant lighting UN Regulations and adding the necessary background information. The proposals reflect the results of discussions and evaluation of input from experts carried out after the sixty-seventh GRE session.

2. The scope of the proposals was defined as follows:

(a) The package of collective amendments covers the CoP provisions in Regulations Nos. 3, 4, 6, 7, 19, 23, 38, 65, 69, 70, 77, 87, 91, 98, 112, 113 and 119. In addition to the proposals for Regulation No.7 and 98 are two informal documents prepared, which contain the entire text of the Regulations.

(b) Regulations Nos. 37, 48, 53, 74 and 99 have not been included, as they are written in a different format.

(c) Regulations Nos. 1, 5, 8, 20, 56, 57, 72 and 82 remain unchanged, because they are not applicable for new approvals.

(d) Regulations Nos. 50, 88 and 104 have also been left behind for the time being, as their CoP provisions are set out as a general paragraph of the Regulation and contain no detailed requirements like the existing annexes on "Minimum requirements for conformity of production control procedures" and "Minimum requirements for sampling by an inspector". The update of these Regulations would require a fundamental approach and can be done after GRE has taken a decision on the CoP issue.

3. The proposals clarify in the relevant paragraphs of the above mentioned Regulations, that the specimens taken at random may deviate unfavourably by not more than 20 per cent from the prescribed (required) values.

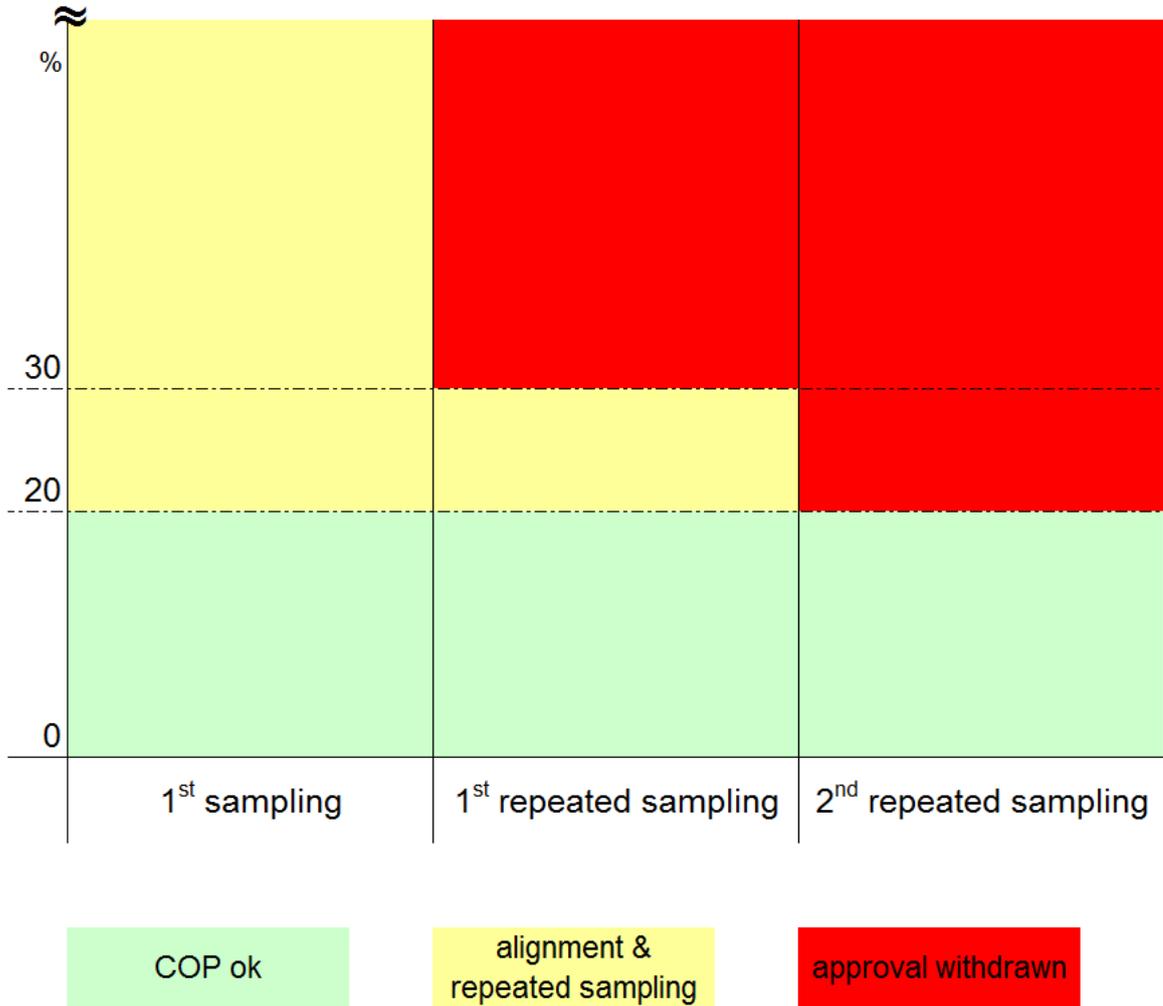
4. In the relevant annexes on "Minimum requirements for conformity of production control procedures" of the light-signalling-regulations, tables equivalent to the lighting regulations were incorporated, which show the equivalent deviation in candela for small values (e.g. geometric visibility).

5. The relevant annexes on "Minimum requirements for sampling by an inspector" were completely restructured and simplified. All former examples which caused a great deal of confusion were deleted.

6. CoP is now described in a clear structured stepwise process (with limited steps), which gives the manufacturer the chance in the first step - in the case of deviations of more than 20 per cent - to align his production process. Also, the CoP process can be completed earlier when the first two samples are in the full specifications.

7. The proposal details the "third step" which defines the condition where the approval shall be withdrawn, when after the second repetition of this process the manufacturer was not in the position to "align" his production process in the correct way.

8. The attached drawing shall demonstrate this stepwise process.



9. The existing Figure 1 could therefore be deleted, because this Figure has rather increased than clarified the confusion - and with the new simplified description it is not necessary anymore.