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**1958 Agreement – Consideration of draft amendments
to existing Regulations submitted by GRE**

Proposal for Supplement 5 to the 01 series of amendments to Regulation No. 98 (Headlamps with gas-discharge light sources)

Submitted by the Working Party on Light and Light-signalling*

The text reproduced below was adopted by the Working Party on Light and Light-signalling (GRE) at its sixty-ninth session (ECE/TRANS/WP.29/GRE/69, paras. 20, 21 and 24). It is based on ECE/TRANS/WP.29/GRE/2013/10 not amended, ECE/TRANS/WP.29/GRE/2013/19 as amended by Annex VI to the report and on ECE/TRANS/WP.29/GRE/2013/34 not amended. It is submitted to the World Forum for Harmonization of Vehicle Regulations (WP.29) and to the Administrative Committee AC.1 for consideration.

* 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.

Contents, Annex 1, the title, amend the content to read:

- "1. Communication concerning the approval or extension or refusal or withdrawal of approval or production definitively discontinued of a type of headlamp pursuant to Regulation No. 98
..."

Ex Paragraph 0, amend to read:

- " Scope ¹
This Regulation applies to headlamps utilizing gas-discharge light sources, for vehicles of categories, M and N and L₃."

Paragraph 2.1.6., shall be deleted.

Paragraph 2.1.7., renumber as paragraph 2.1.6. and amend to read:

- "2.1.6. The category of light source as listed in Regulations Nos. 37 or 99 and their series of amendments in force at the time of application for type approval."

Paragraph 2.2.2., amend to read:

- "2.2.2. A brief technical ...
(b) A drawing with dimensions and the basic electrical and photometric values and the objective luminous flux."

Paragraph 2.2.3.1., amend to read:

- "2.2.3.1. For approval of a headlamp, two samples of each type of headlamp, one sample intended for the installation on the left side of the vehicle and one sample intended for the installation of the right side of the vehicle, with standard gas-discharge light source and one ballast of each type to be used, where applicable."

Paragraph 2.3., shall be deleted.

Paragraph 2.4., renumber as paragraph 2.3. and amend to read:

- "2.3. The materials making up the lens shall be accompanied by the test report of the characteristics of these materials and coatings if they have already been tested."

Paragraph 3.1., amend to read:

- "3.1. Headlamps submitted for approval shall bear legibly and indelibly the trade name or mark of the applicant."

Paragraph 3.5., shall be deleted.

Paragraphs 3.6. to 3.7.2., renumber as paragraphs 3.5. to 3.6.2.

Paragraph 4.2.2.8., shall be deleted.

Paragraph 4.2.5., amend to read:

- "4.2.5. The marks and symbols referred to in paragraphs 4.2.1. to 4.2.3. above shall be clearly legible and be indelible. They may be placed on an inner or outer part (transparent or not) of the headlamp, which cannot be separated from the transparent part of the headlamp emitting the light."

Paragraph 4.3.2.2.2., amend to read:

"4.3.2.2.2. Or in a group, in such a way that each of the grouped, combined or reciprocally incorporated lamps may be clearly identified (see possible examples in Annex 2, Figures 10, 11, 12)."

Paragraph 4.3.2.5., amend to read:

"4.3.2.5. Annex 2, Figures 10, 11, 12 of this Regulation give examples of arrangements of approval marks for grouped, combined or reciprocally incorporated lamps with all the above-mentioned additional symbols."

Paragraph 4.3.3.1., amend to read:

"4.3.3.1. In addition, where the same lens is used, the latter may bear the different approval marks relating to the different types of headlamps or units of lamps, provided that the main body of the headlamp, ..."

Paragraph 4.3.3.2., amend to read:

"4.3.3.2. Annex 2, Figure 10 of this Regulation gives examples of arrangements of approval marks relating to the above case."

Paragraph 4.3.4., shall be deleted.

Paragraphs 5.8. to 5.8.4., amend to read:

"5.8. Light sources

5.8.1. The gas-discharge light source(s) used in gas-discharge headlamps shall be replaceable and approved according to Regulation No. 99 and its series of amendments in force at the time of application for type approval.

5.8.2. In the case that one or more (additional) filament light sources are used in the gas-discharge headlamp, these filament light sources shall be replaceable and approved according to Regulation No. 37 and its series of amendments in force at the time of application for type approval, provided that no restriction on the use is made in Regulation No. 37 and its series of amendments in force at the time of application for type approval.

5.8.3. The design of the device shall be such that the light source(s) can be fixed in no other position but the correct one.

5.8.4. The lamp holder shall conform to the dimensional characteristics as given on the data sheet of IEC Publication 60061, relevant to the category of light source(s) used. The light source(s) shall fit easily into the headlamp."

Paragraphs 5.9. to 5.9.3., shall be deleted.

Paragraphs 5.10. to 5.13., renumber as paragraphs 5.9. to 5.12.

Paragraph 6.1.1., amend to read:

"6.1.1. Headlamps shall be so made that with suitable gas-discharge light source they give adequate illuminance without dazzle when emitting the passing-beam, and good illumination when emitting the driving-beam."

Paragraph 6.1.3., amend to read:

"6.1.3. The headlamp shall be deemed satisfactory if the photometric requirements set in the present paragraph 6. are met with one light source, which has been aged during at least 15 cycles, in accordance with Annex 4, paragraph 4. of Regulation No. 99.

It shall be a standard (étalon) light-source approved according to Regulation No. 99 and its luminous flux may differ from the objective luminous flux specified in Regulation No. 99. In this case, the luminous intensities shall be corrected accordingly. "

Paragraph 9., amend to read:

"9. Conformity of Production

The Conformity of Production (CoP) 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. Analyse 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 1, list of items, line above the list, amend to read:

"... of a type of headlamp pursuant to Regulation No. 98 ..."

Annex 1, list of items, item 1., amend to read:

"1. Trade name or mark of the headlamp:" "

Annex 1, list of items, item 2., amend to read:

"2. Manufacturer's name for the type of device:....."

Annex 1, list of items, item 9.1., amend to read:

"9.1. Headlamp submitted for approval as type:" "

Annex 1, list of items, item 9.4., amend to read:

"9.4. Category (or categories) of light source(s):" "

Annex 1, list of items, item 9.8., shall be deleted.

Annex 1, list of items, items 9.9. and 9.10., renumber as items 9.8. and 9.9.

Annex 1, list of items, note 3, shall be deleted.

Annex 1, list of items, note 4, shall be deleted.

Annex 2, Figure 10 including the explanatory text, shall be deleted.

Annex 2, Figures 11, 12 and 13, renumber as Figures 10, 11 and 12.

Annex 4, test on complete headlamps, amend to read:

"...

- (b) In case of light sources: using mass production filament light sources,
..."

Annex 4, paragraph 1.1.1.2., amend to read:

"1.1.1.2. Test voltage

The voltage shall be applied to the terminals of the test sample as follows:

- (a) In case of filament light source(s) operated directly under vehicle voltage system conditions: the test shall be performed at 6.3 V, 13.2 V or 28.0 V as applicable except if the applicant specifies that the test sample may be used at a different voltage. In this case, the test shall be carried out with the filament light source operated at the highest voltage that can be used.

- (b) In case of gas discharge light source(s): The test voltage for the electronic light source control-gear is 13.2 ± 0.1 volts for 12 V vehicle voltage system, or otherwise specified in the application for approval.
- (c) In the case of light sources being operated independently from vehicle supply voltage and fully controlled by the system, or, in the case of light sources supplied by a supply and operating device, the test voltages as specified above shall be applied to the input terminals of that device ..."

Annex 5, paragraph 1.2., amend to read:

- "1.2. The two samples of complete lamps supplied pursuant to paragraph 2.2.4. of this Regulation and incorporating lenses of plastic material shall, with regard to the lens material, satisfy the specifications below."

Annex 8, paragraphs 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 ± 0.1 volts or as otherwise specified and:

Either

Equipped with a 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 50 L (or R) ¹ :	170 cd equivalent 20 per cent
	255 cd equivalent 30 per cent
Zone A	255 cd equivalent 20 per cent
	380 cd equivalent 30 per cent.

- 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)¹ (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

¹ Letters in brackets refer to headlamps intended for left-hand traffic.

for minimum values is observed for the photometric values at any measuring point specified in paragraph 6.3. of this Regulation."

Annex 9, paragraph 1.2., amend to read:

"...

Either

equipped with a standard gas-discharge light source according ..."

Annex 9, 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.
- 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 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 Δr does not exceed 1.5 mrad upwards and does not exceed 2.5 mrad downwards.

If this value exceeds 1.5 mrad but is not more than 2.0 mrad upwards or exceeds 2.5 mrad but is not more than 3.0 mrad downwards, 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 upwards and shall not exceed 2.5 mrad downwards.

However, if this value of 1.5 mrad upwards and 2.5 mrad downwards on sample A is not complied with, the two headlamps of sample B shall be subjected to the same procedure and the value of Δr for each of them shall not exceed 1.5 mrad upwards and shall not exceed 2.5 mrad downwards."

Annex 9, Figure 1, shall be deleted
