

Regulation No. 117
**(UNIFORM PROVISIONS CONCERNING THE APPROVAL OF TYRES WITH
REGARD TO ROLLING SOUND EMISSIONS AND TO ADHESION ON WET
SURFACES
AND TO ROLLING RESISTANCE)**

PROPOSAL FOR AMENDMENTS TO REGULATION No. 117

The modifications in this document versus the Informal document No GRB-51-11 are marked yellow

Note: This document proposes amendments to chapter 3, **6** and 8 in Regulation No. 117 with the following aims:

- make sure tyre characteristics are stable by including specification of physical properties of rubber compounds in the application for type approval.
- **Make sure traction tyres will have an increased performance compared to a (coming) reference tyre.**
- introduce a Conformity of production (COP) procedure which ensures the stability of the product characteristics.
- ensure the consumers can make a well-founded choice of tyres, based on a type-approval value and an accompanied/associated proper COP procedure.

(The modifications to the version of these chapters are **in bold** or as ~~strikethrough~~)

A. PROPOSAL

3. APPLICATION FOR APPROVAL

- 3.1. The application for approval of a type of tyre with regard to this Regulation shall be submitted by the tyre manufacturer or by his duly accredited representative. It shall specify:
- 3.1.1. The performance characteristics to be assessed for the tyre type; "rolling sound emissions level" or "adhesion performance level on wet surfaces" or "rolling resistance level". Tyre "snow performance level" in case the category of use is snow;

- 3.1.2. Name of manufacturer;
- 3.1.3. Name and address of applicant;
- 3.1.4. Address(es) of manufacturing plant(s);
- 3.1.5. Brand name(s), trade description(s), trade mark(s);
- 3.1.6. Tyre class (Class C1, C2 or C3) (see paragraph 2.4. of this Regulation);
- 3.1.6.1. Section width range for class C1 tyres (see paragraph 6.1.1. of this Regulation);

NOTE: This information is required only for approval with regard to rolling sound emission level.

- 3.1.7. Tyre structure;
- 3.1.8. For Class C1 tyres, state whether:
 - (a) Reinforced (or extra load) in case of approval with regard to rolling sound emission level;
 - (b) Speed category symbol "Q" or below (not including "H") or "R" and above (including "H") in case of "snow" tyres for approval with regard to adhesion on wet surfaces;

For Class C2 and C3 tyres, state whether :

- (a) M+S marked in case of approval with regard to rolling sound emission level at stage 1.
 - (b) Traction in case of approval with regard to rolling sound emission level at stage 2.
- 3.1.9. Category of use (normal, snow, or special);
 - 3.1.10. A list of tyre size designations covered by this application.

3.2. The application for approval shall be accompanied (in triplicate) by:

- 3.2.1. Details of the major features, with respect to the effects on tyre performance (i.e. rolling sound emission level or adhesion on wet surfaces respectively, **rolling resistance and snow grip**) of ~~the tread pattern(s) to be used on the tires included in the designated range of tyre sizes.~~ This may be by **descriptions supplemented by technical data, drawings, photographs and CT (Computer Tomography) x-rays**, and must be sufficient to allow the type approval authority or technical service to determine whether any subsequent changes to the major features will adversely affect the tyre performance. **Technical data for the physical properties of the rubber compound(s) of the tread shall always be given, according to method in**

Annex 10¹ (DMA-measurements). If several compounds are used in the tread, geometrical data shall be given, as well as DMA-data for each of the compounds. The effects of changes to minor details of tyre construction on tyre performances will be evident and determined during checks on conformity of production;

- 3.2.2. Drawings or photographs of the tyre sidewall, showing the information given in paragraph 3.1.4. above and the approval marking referred to in paragraph 5., shall be submitted once the production has been established, but no later than one year after the date of granting of type approval.
- 3.3. At the request of the type approval authority, the applicant shall submit samples of tyres for test or copies of test reports from the technical services, communicated as given in paragraph 11. of this Regulation.
- 3.4. With regard to the application, testing may be confined to a worst case selection, at the discretion of the type approval authority or designated technical service.
- 3.5. The laboratories and test facilities of a tyre manufacturer may be designated as an approved laboratory and the type-approval authority shall have the option of being represented during any tests.

6. SPECIFICATIONS

6.5 In order to be classified as a 'traction tyre', a tyre is required to meet at least one of the conditions of paragraph 6.5.1 og 6.5.2 below.

6.5.1 (not sure of the wording agreed upon at the 51st GRB meeting)

6.5.2 The tyre shall have an increased performance compared to a Standard Reference Test Tyre /footnote/

footnote: The use of paragraph 6.5.2 will apply at a later time point following a further amendment to the Regulation including a reference to appropriate test methods and limit values

8. 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:

- 8.1. Any tyre approved under this Regulation shall be so manufactured as to conform to the performance characteristics of the type of tyre approved and satisfy the requirements of paragraph 6. above;
- 8.2. In order to verify conformity as prescribed in paragraph 8.1. above, a random sample of tyres bearing the approval mark required by this Regulation shall be taken from the series production. The normal frequency of verification of conformity of production shall be at least once every two years;

¹ Proposal for Annex 10 will be written and forwarded

- 8.2.1. In the case of verifications with regard to approvals in accordance with paragraph 6.2., these shall be carried out using the same procedure (see Annex 5 to this Regulation) as that adopted for original approval, and the type approval authority shall satisfy itself that all tyres falling within an approved type comply with the approval requirement. The assessment shall be based upon the production volume of the tyre type at each manufacturing facility, taking into account the quality management system(s) operated by the manufacturer. Where the test procedure involves testing a number of tyres at the same time, for example a set of four tyres for the purpose of testing wet grip performance in accordance with the standard vehicle procedure given in Annex 5 to this Regulation, then the set shall be considered as being one unit for the purposes of calculating the number of tyres to be tested.
- 8.3. Production shall be deemed to conform to the requirements of this Regulation if the levels measured comply with the **type approval value of the tyre approved** ~~limits prescribed in paragraph 6.1. above~~, with an additional allowance of 1 dB(A) for possible mass production variations.
- 8.4 Production shall be deemed to conform to the requirements of this Regulation if the levels measured comply with the type approval value of the tyre approved** ~~limits prescribed in paragraph 6.3. above~~, with an additional allowance of 0.3 N/kN for possible mass production variations.

B. JUSTIFICATION

Concerning tyre characteristics dependent on the rubber compounds

There is a need for specification of the physical properties of rubber compounds in the application for type approval (paragraph 3.2.1). In the present system it is possible for the manufacturer to change the rubber compounds and their physical properties after a type approval. This might influence on the product characteristics.

Concerning performance of traction tyres

There are no functional requirements for traction tyres. To prevent improper use of the definition it's important to establish test methods, reference tyre and limit values for the qualities of traction tyres.

Concerning COP

Today's COP in Regulation 117 can, as we understand it, give the situation that for example a C1 tyre with a type-approval limit value of 74 dB, and a measured type-approval value of 67 dB will be accepted in a COP with 75 dB. This means that the consumer can buy a tyre, which according to the type approval data has a noise level of 67 dB, but might be 7 dB noisier.

The COP as of today only states product properties versus minimum standards for noise emissions and rolling resistance. For all purposes not checking for conformity with minimum standards, but rather type approval levels, this is unsatisfactory. Examples of such use are data for

- a) communication with consumers
- b) tyre labelling regulation (Reg (EC) No 1222/2009)
- c) incentive based schemes
- d) statistical purposes

Regulation 117, paragraph 8, has a reference to the Agreement, Appendix 2 (E/ECE/324 - E/ECE/TRANS/505/Rev 2) which in paragraph 2 Conformity of production states that the holder of the approval must in particular

2.3.4. Analyze 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;

Reg 117 paragraph 8.3 and 8.4 is in our opinion not in accordance to 2.3.4 mentioned above. As we understand the text in Reg 117, there is no need to confirm the stability of production as long as the measured value is below the type approval limit.

A possible solution is to use the procedure in ECE regulation No 101 – Rev. 2 *Emissions of carbon dioxide and fuel consumption* which uses a statistical method for the COP. This ensures the stability of the production, and gives the user/consumer a more reliable value. The same method could be considered for Regulation No 117.

With regard to the provisions for Conformity of Production, Norway propose that the production conformity should be based on the original values achieved at type-approval rather than the limit values prescribed by the regulation.
