

**Economic and Social Council**Distr.: General
Date: 19 June 2020

Original: English

Economic Commission for Europe

Inland Transport Committee

World Forum for Harmonization of Vehicle Regulations

Working Party on Noise and Tyres

Seventy-second session

Geneva, 7–9 September 2020

Item 5 (b) of the provisional agenda

Tyres: UN Regulation No. 54 (Tyres for commercial vehicles and their trailers)**Proposal for amendments to UN Regulation No. 54****Submitted by the experts from the European Tyre and Rim Technical Organization***

The text reproduced below was prepared by the experts from the European Tyre and Rim Technical Organization (ETRTO). The modifications to the existing text of the UN 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 2020 as outlined in proposed programme budget for 2020 (A/74/6 (part V sect. 20) para 20.37), the World Forum will develop, harmonize and update UN Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.



I. Proposal

Title of the Regulation, amend to read:

"Uniform provisions concerning the approval of pneumatic tyres for commercial vehicles and their trailers"

Paragraph 2.20., amend to read:

"2.20. **"Tyre-size designation" means, except in the case of types of tyre for which the tyre-size designation is shown in the first column of the tables in Annex 5 to this Regulation, a designation showing:"**

Paragraph 2.20.1., delete:

~~"2.20.1. A designation showing:"~~

Paragraph 2.20.1.1., renumber as 2.20.1. and amend to read:

~~"2.20.1.1. The nominal section width (S₁). This width must be expressed in mm, except in the case of types of tyre for which the size designation is shown in the first column of the tables in Annex 5 to this Regulation;"~~

Paragraph 2.20.1.2., renumber as 2.20.2. and amend to read:

~~"2.20.1.2. The nominal aspect ratio, except in the case of certain types of tyre for which the size designation is shown in the first column of the tables in Annex 5 to this Regulation or, depending on the tyre design type, the nominal outer diameter expressed in mm;"~~

Insert new paragraphs 2.20.3. to 2.20.3.2., to read:

"2.20.3. An indication of the structure placed in front of the rim diameter marking as follows:

2.20.3.1. on diagonal (bias-ply) tyres, a dash "-" or the letter "D";

2.20.3.2. on radial-ply tyres, the letter "R";"

Paragraphs 2.20.1.3. and 2.20.1.3.1., renumber as 2.20.4. and 2.20.4.1., respectively.

Paragraph 2.20.1.4., renumber as 2.20.5. and amend to read:

~~"2.20.5.1.4. An indication of the tyre to rim fitment configuration when it differs from the standard configuration and is not already expressed by the symbol "d" denoting the nominal rim diameter code; in the case of tyres first approved after 1 March 2004 this identification shall be placed only immediately after the rim diameter marking;"~~

Insert a new paragraph 2.20.6., to read:

"2.20.6. The prefix "LT" before the nominal section width, or the suffix "C" or "LT" after the rim diameter marking or, if applicable, after the tyre to rim fitment configuration; notwithstanding the foregoing, instead of a prefix or a suffix to the tyre-size designation "LT" may be placed after the service description;"

Insert new paragraphs 2.20.8. and 2.20.9., to read:

"2.20.8. The suffix "MPT" after the rim diameter marking for tyres specifically designed for the equipment of multi-purpose commercial vehicles;

2.20.9. The prefix "ST" before the nominal section width for tyres specifically designed for the equipment of special trailers."

Insert a new paragraph 2.35., to read:

"2.35. "Service description" means the association of the load index or indices with a speed category symbol (for example, 164M or 121/119S); the service

description may include either one or two load indices which indicate the load the tyre can carry in single or in single and dual operation."

Paragraph 3.1.4., amend to read:

"3.1.4. ~~An indication of the structure as follows: (omitted)"~~

Paragraphs 3.1.4.1. and 3.1.4.2., delete:

~~3.1.4.1. — On diagonal (bias ply) tyres: no indication, or the letter "D";~~

~~3.1.4.2. — On radial ply tyres: the letter "R" placed in front of the rim diameter marking and, optionally, the word "RADIAL";~~

Paragraph 3.1.12., amend to read:

"3.1.12. ~~In the case of tyres first approved after 1 March 2004 the identification referred to in paragraph 2.20.1.4. shall be placed only immediately after the rim diameter marking referred to in paragraph 2.20.1.3 (omitted)"~~

Paragraph 3.1.14., amend to read:

"3.1.14. ~~The prefix "LT" before the tyre size designation, or the suffix "C" or "LT" after the rim diameter marking referred to in paragraph 2.20.1.3., and, if applicable, after the tyre to rim fitment configuration referred to in paragraph 2.20.1.4., or the suffix "The inscription "LT" after the service description.~~ **The inscription "LT" after the service description, if it is not marked as part of the tyre size designation; tyres whose tyre-size designation includes the suffix "C" or "CP" may be marked with the additional inscription "LT" away from the tyre-size designation;**"

Paragraph 3.1.14.1., renumber as 2.20.6.1.:

~~3.1.14.1.~~ **2.20.6.1.** This marking is optional in the case of tyres fitted on 5° drop centre rims, suitable for single and dual fitment, having a load capacity index in single lower or equal to 121 and destined for the equipment of motor vehicles;"

Paragraph 3.1.14.2., renumber as 2.20.6.2.

~~3.1.14.2.~~ **2.20.6.2.** This marking is mandatory in the case of tyres fitted on 5° drop centre rims, suitable for single fitment only, having a load capacity index higher or equal to 122 and destined for the equipment of motor vehicles;"

Paragraph 3.1.15., renumber as 2.20.7. and amend to read:

~~3.1.15.~~ **2.20.7.** The suffix "CP" after the rim diameter marking, ~~referred to in paragraph 2.20.1.3., and, or, if applicable, after the tyre to rim fitment configuration; referred to in paragraph 2.20.1.4. This~~ **this** marking is mandatory in the case of tyres fitted on 5° drop centre rims, having a load capacity index in single lower or equal to 121 and specifically designed for the equipment of motor caravans;"

Paragraph 3.1.16., renumber as 3.1.15.

Paragraph 3.4., amend to read:

"3.4. The markings referred to in paragraph 3.1 and the approval mark prescribed in paragraph 5.4. of this Regulation ~~shall be moulded on to or into the tyres. They shall be clearly legible, indelible and raised above or sunk below the tyre surface. and shall, except for the marking referred to in paragraph 3.1.1., 3.1.2. and 3.1.13. above, be located on at least one lower sidewall.~~

Paragraph 3.4.1., amend to read:

"3.4.1. **The markings shall be situated in the lower area of the tyre on at least one of its sidewalls, except for the inscriptions mentioned in paragraphs 3.1.1. and 3.1.2.**

However, for tyres identified by the "tyre to rim fitment configuration" (see paragraph 2.20.1.4) symbol "A", the markings may be placed anywhere on the sidewall of the tyre."

Insert a new paragraph 3.4.2. to read:

“3.4.2. In the case that the date of manufacture is not moulded, it shall be applied not later than 24 hours after the tyre is removed from the mould.”

Paragraph 4.1.13, amend to read:

"4.1.13. The additional load/speed combinations **and, if different from the inflation pressure specified according to paragraph 4.1.12, the applicable inflation pressure** in cases where paragraph 6.2.5. below is applied."

Paragraph 6.1.2.1., amend to read:

"6.1.2.1. ...
 d is the conventional number defined in paragraph ~~2.20.1.3.~~**2.20.4.** above, expressed in millimetres;
 ..."

Paragraph 6.2.3., amend to read:

"6.2.3. **Except for tyres with radial structure, the** ~~The~~ outer diameter of the tyre, measured six hours after the load/speed endurance test, must not differ by more than ±3.5 per cent from the outer diameter as measured before the test."

Paragraph 6.2.5., amend to read:

"6.2.5. Where application is made for the approval of a type of tyre which has a load/speed combination in addition to the one that is subject to the variation of load with speed given in the table in Annex 8, the endurance test prescribed in paragraph 6.2.1. above shall also be carried out on a second tyre of the same type at the additional load/speed combination **and the applicable inflation pressure. At the option of the tyre manufacturer, one test at the highest load index, the highest speed symbol and the lowest test inflation pressure indicated may be submitted.**"

Insert a new paragraph 12., to read:

"12. Transitional Provisions

12.1. Until 3 months after the date of entry into force of Supplement [xx] to the original version of this Regulation, Contracting Parties applying this Regulation may continue to grant and/or extend type approvals according to the original version of this Regulation, without taking into account the provisions of Supplement [xx].

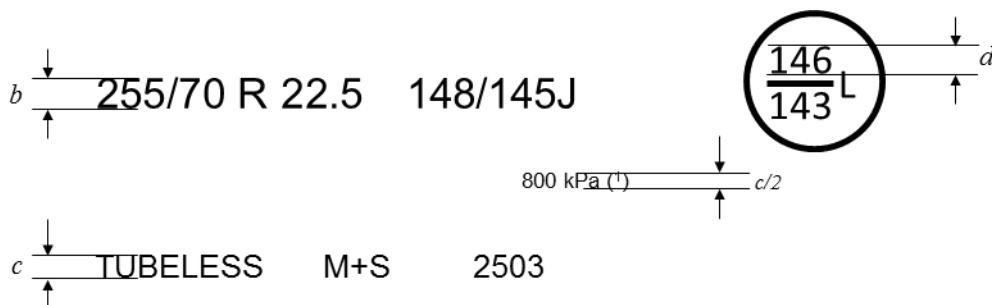
12.2. For tyres first approved before the entry into force of Supplement [xx] the markings "MPT" and "ST" do not need to be placed as a prefix or a suffix to the tyre size designation."

Annex 1, item 4.1., amend to read

"4.1. ~~Size of tyre~~**Tyre-size designation**

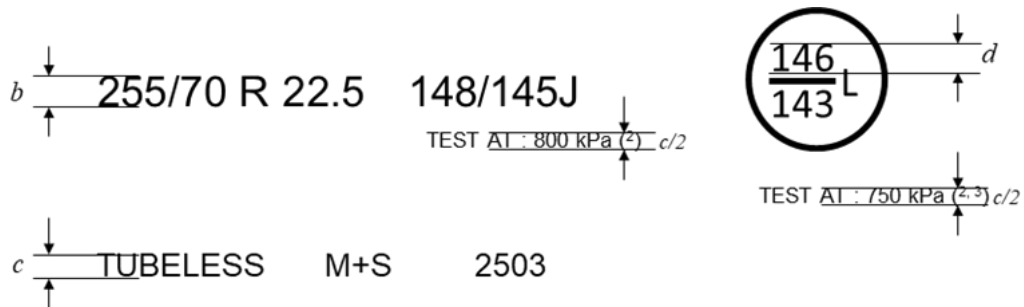
Annex 3, Figure, replace and amend to read:

"Example 1:



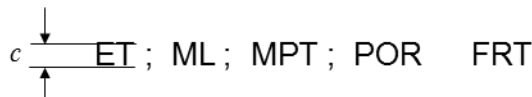
- (1) PSI marking instead of kPa is allowed for tyres first type approved before 1 January 2018. **The kPa marking may be preceded by "TEST AT : " or, alternatively, by "TEST INFL : " or the symbol "@".**

Example 2:



- (2) "TEST AT : " may be replaced by "TEST INFL : " or the symbol "@" or be omitted.
- (3) The indication of a second inflation pressure for the additional service description is optional. If there is no indication, the same test inflation applies to both load/speed combinations.

Dimensional requirements for further markings (4):



- (4) For "ML" and "MPT" being part of the tyre size designation marking the minimum dimension *b* applies."

Annex 3,

Paragraph 1., last indent, amend to read:

"...

Requiring to be inflated to ~~620~~**800** kPa for **both** load/speed endurance tests in **Example 1** and **800 kPa** for the load/speed endurance test according to the main load/speed combination and **750 kPa** for the test according to the additional load/speed combination in **Example 2** for which the PSI symbol is 90."

Insert a new subparagraph 3. (e) to read:

- "(e) If there are two indications for the test inflation pressure, they must be placed in such a way that it is clear which pressure indication belongs to which load/speed combination."**

Annex 5, Part II, Table B, note 4, delete the quotation marks at the end of the text and amend to read:

"4 In case of ~~Tyre~~**tyre**-size designations ...

...

The outer diameter (D) is calculated as follows:

- (a) ~~Normal~~**Highway Tread** D (mm) = (overall diameter (expressed by code) – 0.48) * 25.4 rounded to the nearest mm.
- (b) ~~Snow~~**Traction Tread** D (mm) = (overall diameter (expressed by code) – 0.24) * 25.4 rounded to the nearest mm."

"

Annex 5, Part II, Table B, note 5, amend to read:

- "⁵ Traction tread tyres are those bearing at least one of the following inscriptions:
- Inscription(s) defined in section 3.1.13. of this Regulation.
 - Alpine symbol (~~3PMSE~~) as defined in UN Regulation No. 117.
 - "TRACTION" inscription as defined in UN Regulation No. 117."

Annex 9, Communication, delete the quotation marks at the end of the text:

"5.3. Signature: "

II. Justification

1. In line with the changes introduced in UN Regulation No. 30 by Supplement 21 to the 02 series of amendments, it is proposed to change the definition of the tyre size designation by including prefixes and suffixes as well as the code for the tyre structure. In addition to the changes in UN Regulation No. 30, it is proposed to clarify in the initial paragraph of the section that the following definition is only valid for size that are not listed in Annex 5, whereas the size designations of sizes listed in Annex 5 is shown in the first column of the respective table. Because some countries require that all tyres for light commercial vehicles are marked with "LT", it is proposed to clarify that the provisions shall not be interpreted as to prohibit such an additional marking.

2. As presented in Informal document GRBP-71-08, the use of wording "moulded" is a technical limitation linked to the technology available at the time of the first issue of the regulations, but now is only one of the various technical solution. The removal of this technical limitation would be advisable following the principle of not stopping the technical innovations. ETRTO proposes to amend the UN Regulations on tyres in order to allow tyre marking methods other than moulding by keeping the following criteria:

- Any technical solution alternative to the "moulding" shall guarantee that the markings on the tyre sidewall is clearly legible and indelible.
- It shall be made sure that the marking of the manufacturing date will be done within 24 hours after de-moulding of the tyre (like in the United States of America Code of Federal Regulations 49 CFR 574.5).
- Once amending the UN Regulations on tyres, it will be then possible and advisable to propose same requirements at global level to other major countries not applying them (i.e. the United States of America, China and India) by amending UN Global Technical Regulation (GTR) No. 16.

3. For radial the variation of outer diameter of the tyre, measured six hours after the load/speed performance test as specified in paragraph 2. of Annex 7, is far below ± 3.5 per cent from the outer diameter as measured before the test. It is proposed to keep the restriction of measurement of overall diameter after load/speed test only to diagonal tyres.

4. Some editorial corrections are proposed to align the wording and to cure errors that were unintentionally introduced by Supplement 23.

5. It is proposed to introduce a definition of "service description" in line with UN GTR No. 16, because this term is used several times throughout the document.

6. In line with the changes introduced in UN Regulation 30 by Supplement 21 to the 02 series of amendments, it is proposed to include a general provision addressing the gap between the effective date of entry into force and the date of notification of the adoption of the Supplement to the Contracting Parties. Currently, during this period, the type approval cannot be granted pursuant to the new Supplement in force, although it is mandatory. Even after the notification of the adoption of the Supplement, the Type Approval Authorities and Technical Services may need further time to implement the requirements of the new Supplement. This period shall also be covered by the proposed provisions.

7. The addition of footnote 4 to Annex 5, Part II, Table B was proposed and adopted at the eighty-sixth session of Working Party on Brakes and Running Gear (GRRF) through the following documents:

- (a) ECE/TRANS/WP.29/GRRF/2018/5
- (b) ECE/TRANS/WP.29/GRRF/2018/11

8. In document (a) the formulas to calculate to outer diameter were correctly reporting “Highway Tread” and “Traction Tread” in line with the headers of the fourth and fifth column of Table B proposed in the document itself.

9. Instead in document (b) the formulas to calculate to outer diameter were wrongly reporting “Normal” and “Snow” and therefore were not in line with the headers of the fourth and fifth column of Table B proposed in the document itself.

10. After the adoption of both documents at the eighty-sixth session of GRRF the proposal was submitted to the World Forum for Harmonization of Vehicle Regulations (WP.29) and to the Administrative Committee AC.1 for consideration at their June 2018 sessions through the document ECE/TRANS/WP.29/2018/55.

11. Unfortunately, in this document note 4 of Annex 5, Part II, Table B was same as the one in ECE/TRANS/WP.29/GRRF/2018/11. Therefore, in the current text of Supplement 23 to UN Regulation No. 54 the formulas given in Annex 5, Part II, Table B, note 4 for calculating the outer diameter is not aligned with the headers of the fourth and fifth columns of Table B in which a reference to note 4 is given.

12. The alpine symbol "3PMSF" is not referred to in UN Regulation No.117.

13. The current proposal aims at providing clear rules for the indication of the test inflation pressure also considering an optional additional test inflation pressure marking for the additional service description, introducing at the same time marking of the test inflation pressure pursuant to UN GTR No. 16.
