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Economic Commission for Europe**Inland Transport Committee****World Forum for Harmonization of Vehicle Regulations****Working Party on Brakes and Running Gear****Eighty-sixth session**

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Item 7(c) of the provisional agenda

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

The text reproduced below was prepared by the experts from the European Tyre and Rim Technical Organisation (ETRTO) amending UN Regulation No. 54. 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 2014–2018 (ECE/TRANS/240, para. 105 and ECE/TRANS/2014/26, 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

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 2.4720.1.4. shall be placed only immediately after the rim diameter marking referred to in paragraph 2.4720.1.3;"

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 and shall, except for the marking referred to in paragraphs 3.1.1., **3.1.2. and 3.1.12.** above, be located on at least one lower sidewall."

Paragraph 4.1.1., amend to read:

"4.1.1. The tyre-size designation ~~as defined in paragraph 2.19. of this Regulation;~~"

Paragraph 6.1.1.2., amend to read:

"6.1.1.2. However, for the ~~existing~~ types of tyres whose designation is given in the first column of the tables in Annex 5 to this Regulation, the section width shall be deemed to be that given opposite the tyre designation in those tables."

Paragraph 6.1.2.2., amend to read:

"6.1.2.2. However, for the ~~existing~~ types of tyres whose designation is given in the first column of the tables in Annex 5 to this Regulation, the outer diameter shall be deemed to be that given opposite the tyre designation in those tables."

Paragraph 6.1.4.2., amend to read:

"6.1.4.2. It may exceed that value by 4 per cent in case of radial-ply tyres and by 8 per cent in the case of diagonal (bias-ply) tyres. However, for tyres ~~with nominal section width exceeding 305 mm~~ intended for dual mounting (twinning), **listed in column A of the following table, the overall width of the tyre may exceed** the value determined pursuant to paragraph 6.1.1. above **taking into account the tolerances listed in column B; different specific tolerances are listed in annex 5 Part II in foot notes of the relevant tables.** ~~shall not be exceeded by more than 2 per cent for radial ply tyres with nominal aspect ratio higher than 60, or 4 per cent for diagonal (bias ply) tyres.~~ The respective limits shall be rounded to the nearest millimetre (mm).

<i>A</i>	<i>B</i>
Radial metric tyres with nominal section width exceeding 305 mm and aspect ratio higher than 60	2%
Radial tyres listed in Annex 5 Part 1 with section width exceeding 305 mm	2%
Diagonal (bias-ply) metric tyres with nominal section width exceeding 305 mm	4%
Diagonal (bias-ply) tyres listed in Annex 5 Part 1 with section width exceeding 305 mm	4%

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

"

Tyre-size designation ^{1,4}	Measuring rim width code	Nominal rim diameter <i>d</i> (mm)	Outer diameter <i>D</i> (mm) ²		Section width <i>S</i> (mm) ³
			Highway Tread ⁵	Traction Tread ⁶	
...

¹ Tyres in Radial construction are identified by the letter "R" in place of "-" (e.g. 24x7.50 R 13LT).

² Coefficient 'b' for the calculation of Dmax: 1.07.

³ Overall width may exceed this value up to +7 per cent.

⁴ **In case of Tyre size designations not included in this table (e.g. 37x14.50R17LT):**

(a) the first number (e.g. 37) represents the nominal overall diameter expressed by code

(b) the second number (e.g. 14.50) represents the nominal section width (S1) expressed by code (must end in .50),

(c) the third number (e.g. 17) represents the nominal rim diameter (d) expressed by code.

To convert dimensions expressed in code to mm multiply by 25.4 and round to the nearest mm.

The theoretical rim width code (A₁) is taken to equal to the nominal section width (S₁) expressed by code multiplied by the factor 0.8 rounded to the nearest 0.5 step.

The Outer diameter (D) is calculated as follows:

(a) Highway Tread D (mm) = (overall diameter (expressed by code) – 0.48) x 25.4 rounded to the nearest mm.

(b) Traction Tread D (mm) = (overall diameter (expressed by code) – 0.24) x 25.4 rounded to the nearest mm."

⁵ Category of Use: Highway tread include Normal tyres and tyres with the "M+S" inscription.

⁶ Category of Use: Traction tread tyres will bear at least one of the following inscriptions:

- Inscription(s) defined in section 3.1.12. of this Regulation.
- Alpine symbol (3PMSF) as defined in UN Regulation 117.
- "TRACTION" inscription as defined in UN Regulation 117."

Annex 5, Part II, Table C, add the following entries:

"Table C

Code designated tyres mounted on 5° tapered or flat base rims

Diagonal and radial

Tyre-size designation ¹	Measuring rim width code	Nominal rim diameter <i>d</i> (mm)	Outer diameter <i>D</i> (mm) ²			Section width <i>S</i> (mm) ³
			Normal		Snow	
			(a)	(b)		
...	
16.00-20	11.25	508	1309	1320	438	

"

Annex 5, Part II, Table E, add the following entries:

"Table E

Code designated tyres mounted on 15° tapered rims

Diagonal and radial

Tyre-size designation ¹	Measuring rim width code	Nominal rim diameter <i>d</i> (mm)	Outer diameter <i>D</i> (mm) ²			Section width <i>S</i> (mm) ³
			Normal		Snow	
			(a)	(b)		
...	
24R20.5	18.00	521	1369		606	

II. Justification

1. The current text does not refer correctly to the proper paragraphs after the renumbering has been needed due to the introduction of new paragraphs. By separating para. 3.1. into paras. 3.1.1. and 3.1.2., not all paragraphs referring to 3.1.1. and 3.1.2. were properly amended.
2. The reference to para. 3.1.12. in para. 3.4. is included for consistency with Regulation No. 30.
3. The deletion of the reference in para. 4.1.1. is proposed in order to be consistent with Regulation No. 30 (Revision 3, Amendment 3, justified at the time by the secretariat as "delete this superfluous cross reference"). This would also limit the renumbering problems in case of further amendments (it has already been amended from para. 2.17. to para. 2.19. by Supplement 21).
4. The deletion of the word "existing" into paras. 6.1.1.2. and 6.1.2.2. is proposed for consistency with all the other tyre UN Regulations.
5. The amendment of paragraph 6.1.4.2. is aimed to properly take into account the requirements for size designations in Annex 5 in addition to what already expressed. As a guideline the Maximum Overall Width has been taken from ETRTO and Tyre and Rim Association (TRA).
6. The addition of the footnotes to Annex 5, Part II, Table B is the answer to the request by the Working Party on Brakes and Running Gear (GRRF) to ETRTO ("...to introduce the appropriate formulae in the Regulation instead of continuously updating Annex 5." - see ECE/TRANS/WP.29/GRRF/83, para. 36).
7. The addition of the sizes in Annex 5, Part II, Tables C and E are needed because they are old sizes that do not follow the guidelines/formulae applicable for high flotation tyres.