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Item 5 (c) of the provisional agenda

Tyres: UN Regulation No. 75 (Tyres for L-category vehicles)**Proposal for amendments to UN Regulation No. 75****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

Paragraph 2.5.1., delete the reference to footnote:

2.5.1. "Diagonal" or "bias ply" describes a tyre structure in which the ply cords extend to the beads and are laid at alternate angles substantially less than 90° to the centre line of the tread.⁺

Paragraph 2.5.2., amend to read:

"2.5.2. "Bias belted" describes a tyre structure of diagonal (bias-ply) type in which the carcass is the ply cords that extend to the beads are laid at alternate angles of substantially less than 90° to the centre line of the tread, the structure being restricted by a belt comprising two or more layers of substantially inextensible cord material laid at alternate angles close to those of the carcass."

Paragraph 2.5.3., delete the reference to footnote 1:

2.5.3. "Radial" describes a tyre structure in which the ply cords extend to the beads and are laid substantially at 90° to the centreline of the tread, the carcass being stabilized by an essentially inextensible circumferential belt.⁺

Footnote 1, delete:

⁺Applicable also to Regulation No. 54

Paragraph 2.5.4., renumber as 2.6.

Paragraphs 2.6. to 2.18., renumber as 2.7. to 2.19., respectively.

Paragraph 2.19., renumber as 2.20. and amend to read:

"2.19.20. "Tyre-size designation" is for the tyre sizes listed in Annex 5 of this Regulation the designation shown in the first column of the tables in Annex 5 and for other tyre sizes a designation showing:"

Paragraph 2.19.1., renumber as 2.20.1. and amend to read:

"2.19.20.1. The nominal section width (S1), which 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 2.19.2., renumber as 2.20.2. and amend to read:

"2.19.20.2. 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;"

Insert new paragraphs 2.20.3. to 2.20.3.3. to read:

"2.20.3. An indication of the structure as follows:

2.20.3.1. "-" or the letter "D" for diagonal (bias-ply) tyres,

2.20.3.2. The letter "B" for bias-belted tyres;

2.20.3.3. The letter "R" for radial-ply tyres;"

Paragraphs 2.19.3. and 2.19.3.1., renumber as 2.20.5. and 2.20.5.1.

Paragraph 2.19.4., delete.

Add a new paragraph 2.20.6. to read:

"2.20.6. The suffix "M/C" for tyres intended to be fitted on rims designed for motorcycles; this suffix is mandatory for tyres having a nominal rim diameter equivalent to code 13 (330 mm) or above and optional for tyre sizes listed in Annex 5."

Paragraphs 2.20. to 2.31., renumber as 2.21. to 2.32., respectively.

Paragraph 2.31.1., renumber as 2.32.1. and amend to read:

"~~2.31.32.1.~~ 2.32.1. The speeds, expressed by the speed category symbol as shown in the table in paragraph ~~2.28.2.2.32.2.~~ **below.**"

Paragraph 2.31.2., renumber as 2.32.2.

Paragraph 2.31.3., renumber as 2.20.4. and amend to read:

"~~2.31.3.20.4.~~ **2.20.4. In front of the indication of the structure the letter code "V" for tyres** Tyres suitable for maximum speeds in excess of 240 km/h but below 270 km/h ~~shall be identified by means of letter codes "V" and the letter code "Z" for tyres suitable for maximum speeds of 270 km/h or above; shall be identified by means of letter code "Z".~~ The letter code shall be placed within the tyre size designation in front of the indication of the structure (see paragraph 3.1.4.); **the indication of the structure as "-" for diagonal (bias-ply) tyres may be omitted in this case;**"

Paragraph 2.32., renumber as 2.33. and amend to read:

"~~2.32.33.~~ **2.33.** "Snow tyre" means a tyre whose tread pattern and whose structure are primarily designed to ensure in mud and fresh or melting snow a performance better than that of **a normal an ordinary (road type) tyre with regard to its ability to initiate or maintain vehicle motion.** ~~The tread pattern of a snow tyre generally consists of groove (rib) and/or solid block elements more widely spaced than on an ordinary (road type) tyre.~~"

Paragraphs 2.33. to 2.34., renumber as 2.34. to 2.35.

Paragraph 2.35., renumber as 2.36. and amend to read:

"~~2.35.36.~~ **2.36.** "Motor cycle tyre" means a tyre designed primarily for the equipment of motor cycles (categories L₃, L₄ and L₅). However, they may also equip mopeds (categories L₁ and L₂) and light trailers (category ~~04O1~~)."

Paragraph 2.36., renumber as 2.37.

Paragraph 2.36.1., renumber as 2.37.1. and amend to read:

"~~2.36.37.1.~~ 2.37.1. For speeds lower or equal to 130 km/h, the maximum load rating must not exceed the percentage of the value associated with the relevant load capacity index of the tyre as indicated in the table "~~Load capacity variation with speed~~ **Tyre load capacities at various speeds**" (see paragraph ~~2.27. Annex 8~~) with reference to the speed category symbol of the tyre and the speed capability of the vehicle to which the tyre is fitted."

Paragraphs 2.36.2. to 2.37., renumber as 2.37.2. to 2.38., respectively.

Insert a new paragraph 2.38. to read:

"**2.38.** "Service description" means the association of the load index with a speed category symbol (for example, 72H);"

Paragraph 3.1.4., amend to read:

"3.1.4. **Optionally, an** An indication of the structure as follows:

~~3.1.4.1. On diagonal (bias ply) tyres, no marking, or the letter "D",~~

3.1.4.2.1. On bias-belted tyres, ~~the letter "B" placed in front of the rim diameter marking, and in addition~~ the words "BIAS-BELTED" ~~can be added,~~

3.1.4.3.2. On radial-ply tyres, ~~the letter "R" placed in front of the rim diameter marking, and,~~ the word "RADIAL" ~~can be added;,"~~

Paragraph 3.1.5., amend to read:

"3.1.5. **A service description**~~An indication of the tyre's speed category symbol;~~"

Paragraph 3.1.6., delete.

Paragraphs 3.1.7. to 3.1.12., renumber as 3.1.6. to 3.1.11., respectively.

Paragraphs 3.1.13. and 3.1.14., delete.

Paragraph 3.1.15., renumber as 3.1.5.1. and amend to read:

"3.1.5.1. ~~Tyres~~**For tyres** suitable for speeds above 240 km/h but below 270 km/h **and identified with the letter code "V" within the size designation, the service description** shall ~~bear, be marked~~ within parenthesis, ~~the marking and shall consist~~ of the load-capacity index (~~see paragraph 3.~~) applicable at a speed of 210 km/h and ~~a reference~~ **the** speed category symbol (~~see paragraph 3.~~) as follows: "V" in case of tyres identified with the letter code "V" within the size designation."

Paragraph 3.1.16., renumber as 3.1.5.2. and amend to read:

"3.1.5.2. ~~Tyres~~**For tyres** suitable for speeds above 270 km/h **and identified with the letter code "Z" within the size designation, the service description** shall ~~bear, be marked~~ within parenthesis, ~~the marking and shall consist~~ of the load-capacity index (~~see paragraph 3.~~) applicable at a speed of 240 km/h and ~~a reference~~ **the** speed category symbol (~~see paragraph 3.~~) as follows: "W" in case of tyres identified with the letter code "Z" within the size designation."

Paragraph 3.1.17., renumber as 3.1.12.

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.**"

Insert a new paragraph 3.4.1. to read:

"**3.4.1. 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 4.1.14., amend to read:

"4.1.14. The factor X referred to in paragraph ~~2.19.~~**2.23.** above;"

Paragraph 4.1.16., amend to read:

"4.1.16. For all terrain (AT) tyres, the symbol identifying the reference inflation pressure (see paragraph ~~3.1.15.~~**3.1.12.**)"

Paragraph 4.2., amend to read:

"4.2. The application for approval shall be accompanied (all in triplicate) by a sketch, or a representative photograph, which identify the tyre tread pattern and a sketch of the envelope of the inflated tyre mounted on the measuring rim showing the relevant dimensions (see paragraphs 6.1.1. and 6.1.2.) of the type submitted for approval. It shall also be accompanied either by the test report issued by the approved test laboratory or by one or two samples of the ~~tyre type~~ **type of tyre**, at the discretion of the competent authority. Drawings or photographs of the side wall and tread of the tyre shall be submitted once production has been established, no later than one year after the date of issue of the type approval."

Paragraph 5.2., amend to read:

"5.2. An approval number shall be assigned to each type approved. Its first two digits (at present 00) shall indicate the series of amendments incorporating the most recent major technical amendments made to the Regulation at the time of issue of the approval. The same Contracting Party shall not assign the same number to another ~~tyre type~~ **type of tyre** covered by this Regulation."

Paragraph 6.1.2.1., amend to read:

"6.1.2.1. The outer diameter of a tyre shall be obtained by means of the following formula:

$$D = d + 2H$$

Where

D is the outer diameter expressed in millimetres;

d is the nominal rim diameter defined in paragraph ~~2.16.3~~ **2.20.5** above expressed in millimetres;

H is the nominal section height rounded to the nearest millimetre and is equal to

$$H = S_1 \cdot 0.01 Ra, \text{ where}$$

S_1 is the nominal section width in millimetres;

Ra is the nominal aspect ratio;

all as shown on the sidewall of the tyre in the tyre-size designation in conformity with the requirements of paragraph 3.4. above."

Paragraph 6.2.1.1., amend to read:

"6.2.1.1. Where application is made for tyres identified by means of letter code "V" within the size designation and suitable for speeds over 240 km/h or for tyres identified by means of letter code "Z" within the size designation and suitable for speeds over 270 km/h (see paragraph 4.1.15.), the above load/speed test is carried out on one tyre at the load and speed conditions marked within parenthesis on the tyre (see ~~paragraph 3.1.15.~~ **paragraphs 3.1.5.1. and 3.1.5.2.**). Another load/speed test must be carried out on a second tyre of the same type at the load and speed conditions, if any, specified as maximum by the tyre manufacturer (see paragraph 4.1.15.). For tyres identified by means of letter code "V" within the size designation and suitable for speeds over 240 km/h, the maximum load specified by the manufacturer shall not exceed the maximum load rating indicated in paragraph ~~2.36.4~~ **2.37.4** with reference to the maximum speed specified by the manufacturer."

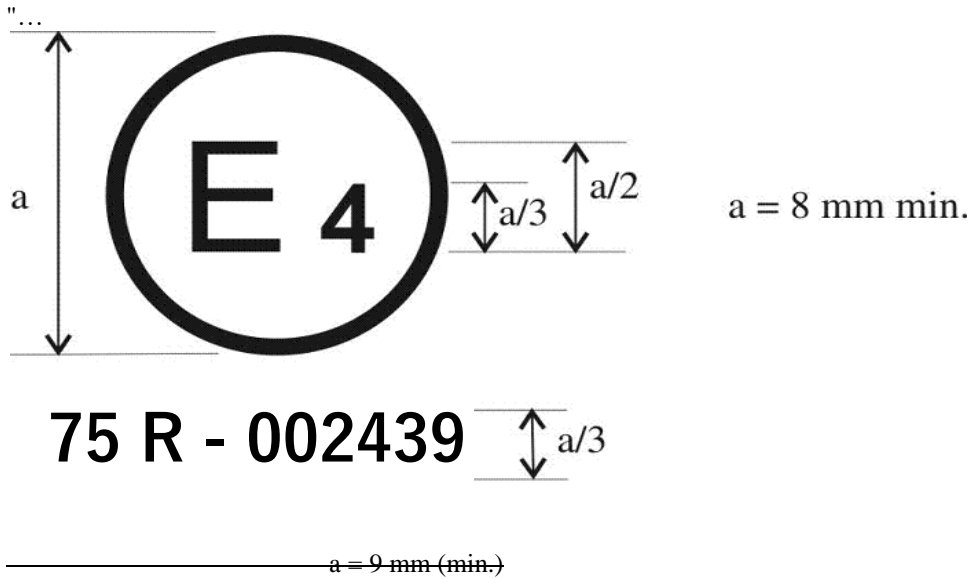
Paragraph 6.2.3., amend to read:

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

Insert a new paragraph 12.4. to read:

"**12.4. 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].**"

Annex 2, amend to read:



The above approval mark affixed to a tyre shows that the type of tyre concerned has been approved in the Netherlands (E4) pursuant to Regulation No. 75 under approval number ~~022439~~-002439. The first two digits of the approval number indicate that the approval was granted in accordance with the requirements of Regulation No. 75 in its original form.

..."

Annex 3, last paragraph, amend to read:

" ...

- (d) In case of tyres suitable for speeds above 240 km/h the letter code "V" or "Z" as applicable, must be marked in front of the marking of structure (e.g. 140/60ZR18). The reference load capacity index and speed category symbol must be marked within parenthesis as applicable (see ~~paragraph 3.1.14~~ paragraphs 3.1.5.1. and 3.1.5.2.)."

Annex 7,

Paragraph 2.2.2., amend to read:

- "2.2.2. The maximum load rating associated with a maximum speed of 240 km/h for tyres with speed symbol "V" (see paragraph ~~2.33.3.~~2.37.3. of this Regulation);"

Paragraph 2.2.3., amend to read:

- "2.2.3. The maximum load rating associated with a maximum speed of 270 km/h for tyres with speed symbol "W" (see paragraph ~~2.36.5.~~2.37.5. of this Regulation);"

Paragraph 2.2.5., renumber as 2.2.4.

Paragraph 2.4., amend to read:

- "2.4. During the test the temperature in the test room must be maintained between ~~20°C~~20 °C and ~~30°C~~30 °C or at a higher temperature if the manufacturer so agrees."

Paragraph 2.5.2., amend to read:

- "2.5.2. Initial test speed: 30 km/h less than the speed corresponding to the speed category symbol marked on the tyre (~~see paragraph 2.28.2. of this Regulation~~) if a 2.0 m diameter test drum is used, or 40 km/h less if a 1.7 m diameter test drum is ~~used~~ used;"

Paragraph 2.5.2.1., delete.

Paragraph 2.5.6.1., delete.

Paragraph 2.6., amend to read:

"2.6. However, in case a second test is performed to assess the top performances of tyres suitable for ~~speed~~**speeds** above 240 km/h **and whose service description is marked in parentheses (see paragraphs 3.1.5.1. and 3.1.5.2. of this Regulation)** the procedure shall be the following:"

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 sizes that are not listed in Annex 5, whereas the designations of sizes listed in Annex 5 are shown in the first column of the respective table.

2. In line with the change introduced in UN Regulation No. 30 by Supplement 21 to the 02 series of amendments, it is proposed to move the definition of "reinforced" into a paragraph that is not subordinated to the definition of "Structure of a tyre", because "reinforced" does not describe a tyre structure, like radial or diagonal.

3. The proposal corrects references and typographical errors.

4. The proposal rearranges paragraphs and amendments in order to increase the readability of the Regulation.

5. The proposal deletes an unnecessary cross-reference to UN Regulation No. 54.

6. 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 "bias-belted". The purpose of this change is to converge to consistent definitions across UN tyre Regulations as presented in Informal document GRRF-82-21, which should be amended in order to allow technical progress.

7. It is proposed to amend the definition of "snow tyres" by replacing "ordinary (road-type) tyres" (which is not defined) by "normal tyre", removing the note that snow tyres generally have more widely spaced ribs or blocks (to avoid impeding technical progress) and adapt the wording to that used in the other tyre UN Regulations (Nos. 30, 54, ...).

8. In line with the changes introduced in 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.

9. 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.

10. 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).
11. In Annex 2, there are two conflicting provisions concerning the minimum size of the approval mark. It is proposed to remove the larger of the two values.
12. Wording regarding "M/C" marking in current paragraph 3.1.13. implies that mounting motorcycle tyres on motorcycle rims does not represent the standard configuration. Proposed wording is aimed to clarify that mounting motorcycle tyres on motorcycle rims is the standard configuration and that "M/C" marking is optional for the sizes listed in Annex 5. "M/C" is part of tyre size designation, which is a mandatory marking.
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