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### Economic Commission for Europe

#### Inland Transport Committee

#### World Forum for Harmonization of Vehicle Regulations

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Item 4.9.1 of the provisional agenda

##### 1958 Agreement:

**Consideration of draft amendments to  
existing UN Regulations submitted by GRB**

### **Proposal for Supplement 21 to the 02 series of amendments to UN Regulation No. 30 (Tyres for passenger cars and their trailers)**

#### **Submitted by the Working Party on Noise\***

The text reproduced below was adopted by the Working Party on Noise (GRB) at its sixty-ninth session (ECE/TRANS/WP.29/GRB/67, paras. 16 and 17). It is based on ECE/TRANS/WP.29/GRVA/2018/6, ECE/TRANS/WP.29/GRB/2019/5 and Annex III to the report. It is submitted to the World Forum for Harmonization of Vehicle Regulations (WP.29) and to the Administrative Committee AC.1 for consideration at their June 2019 sessions.

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\* In accordance with the programme of work of the Inland Transport Committee for 2018–2019 (ECE/TRANS/274, para. 123 and ECE/TRANS/2018/21/Add.1, Cluster 3.1), 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.

## Supplement 21 to the 02 series of amendments to UN Regulation No. 30 (Tyres for passenger cars and their trailers)

Paragraph 2.1., amend to read:

"2.1. "Type of tyre" means tyres which do not differ in such essential characteristics as:

...

(d) Structure (diagonal (bias-ply), bias-belted, radial (radial-ply), run flat tyre);"

Paragraphs 2.8. to 2.8.2., renumber as 2.9. to 2.9.2. accordingly.

Paragraph 2.8.3., renumber as 2.9.3. and amend to read:

"2.9.3. "Radial" or "radial-ply" describes tyre structure in which the ply cords extend to the beads and are laid substantially at 90° to the centre line of the tread, the carcass being stabilized by an essentially inextensible circumferential belt;"

Paragraph 2.8.4., renumber as 2.10. and delete "structure".

Paragraph 2.8.5., renumber as 2.8.

Paragraph 2.8.6., renumber as 2.8.1.

Paragraph 2.8.7., renumber as 2.9.4. and amend to read:

"2.9.4. "Run flat tyre" or "Self supporting tyre" describes a tyre structure provided with any technical solutions (for example, reinforced sidewalls, etc.) allowing the tyre, mounted on the appropriate wheel and in the absence of any supplementary component, to supply the vehicle with the basic tyre functions, at least, at a speed of 80 km/h and a distance of 80 km when operating in flat tyre running mode."

Paragraphs 2.9. to 2.15. (former), renumber as 2.12. to 2.18. accordingly.

Insert a new paragraph 2.11., to read:

"2.11. "Extended Mobility Tyre (EMT)" describes a tyre with a radial structure allowing the tyre, mounted on the appropriate wheel and in the absence of any supplementary component, to provide the vehicle with the basic tyre functions at a speed of 80 km/h and a distance of 80 km when operating in flat tyre running mode."

Paragraph 2.15.1., renumber as 2.18.1. and replace 3.1.10. with 2.27.1.

Paragraphs 2.16. to 2.21., renumber as 2.19. to 2.24. accordingly.

Paragraph 2.22., renumber to 2.25. and amend to read:

"2.25. "Tyre-size designation" is a designation showing:"

Paragraph 2.22.1., delete

Paragraphs 2.22.1.1. and 2.22.1.2., renumber as 2.25.1. and 2.25.2.

Add new paragraphs 2.25.3. to 2.25.3.5. to read:

"2.25.3. An indication of the structure as follows:

- 2.25.3.1. on diagonal (bias-ply) tyres, no marking or the letter "D" placed in front of the rim diameter marking;
- 2.25.3.2. on radial-ply tyres, the letter "R" placed in front of the rim-diameter marking, and, optionally, the word "RADIAL";
- 2.25.3.3. on bias-belted tyres, the letter "B" placed in front of the rim-diameter marking, and in addition the words "BIAS-BELTED";
- 2.25.3.4. on radial ply tyres suitable for speeds in excess of 240 km/h but not exceeding 300 km/h (tyres marked with the speed symbol "W" or "Y" as part of the service description), the letter "R", placed before the rim diameter marking, may be replaced with the inscription "ZR"; on tyres suitable for speeds in excess of 300 km/h, the letter "R" placed in front of the rim diameter marking shall be replaced by the inscription "ZR";
- 2.25.3.5. on "run flat" or "self supporting" tyres the letter "F" placed in front of the rim diameter marking."

*Paragraphs 2.22.1.3. and 2.22.1.4., renumber as 2.25.4. and 2.25.5.*

*Add a new paragraph 2.25.6. to read:*

"2.25.6. Optionally the letter "P" in front of the nominal section width;"

*Paragraph 2.22.1.5., renumber as 2.25.7.*

*Paragraphs 2.23. to 2.39., renumber as 2.26. to 2.42., respectively.*

*Paragraph 2.40. (former), delete.*

*Paragraph 2.41. (former), renumber as 2.43. and amend to read:*

"2.43. "Deflected section height" is the difference between the deflected radius, measured from the centre of the rim to the surface of the drum, and one half of the nominal rim diameter as defined in paragraph 2.26. of this Regulation."

*Paragraphs 3.1.4. to 3.1.4.5., delete.*

*Paragraph 3.1.5.1., amend to read:*

"3.1.5.1. On tyres suitable for speeds in excess of 300 km/h, in addition to what is already defined in 2.24.3.4. the tyre shall be marked with a service description consisting of the speed symbol "Y" and the corresponding load index. The service description shall be marked within brackets, for example, "(95Y)"."

*Paragraph 3.1.8., renumber to 3.1.4.*

*Paragraphs 3.1.9. to 3.1.11., renumber as 3.1.8. to 3.1.10., accordingly.*

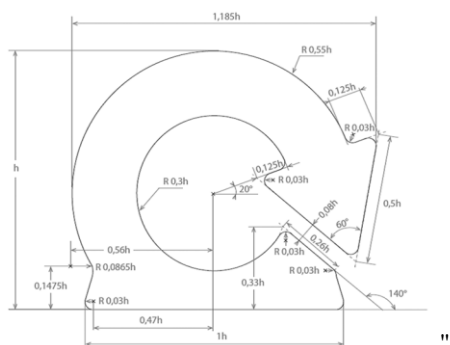
*Paragraph 3.1.12., renumber as 3.1.11. and amend to read:*

"3.1.11. In the case of tyres first approved after the entry into force of Supplement 13 to the 02 series of amendments to UN Regulation No. 30, the identification referred to in paragraph 2.25.7. shall be placed immediately after the rim diameter marking referred to in paragraph 2.25.4."

*Paragraphs 3.1.13. to 3.1.14., renumber as 3.1.12. to 3.1.13.*

*Insert a new paragraph 3.1.15., to read:*

"3.1.15. The symbol below if the tyre is an EMT, where "h" is at least 12 mm.



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 situated in the lower area of the tyre on at least one of its side walls, except for the inscription mentioned in paragraphs 3.1.1., 3.1.2. and 3.1.12. above."

Paragraph 3.4.1., replace 3.1.10. with 2.27.1.

Insert a new paragraph 4.1.9., to read:

"4.1.9. Whether the tyre is an EMT;"

Paragraphs 4.1.9. to 4.1.16. (former), renumber as 4.1.10. to 4.1.17. respectively.

Paragraph 4.1.15. (former 4.1.14.), amend to read:

"4.1.14. The factor x referred to in paragraph 2.28. above."

Paragraph 6.1.1.3., replace 3.1.10. with 2.27.1.

Paragraph 6.1.2.1., replace 2.23. with 2.26.

Paragraph 6.1.2.3., replace 3.1.10. with 2.27.1.

Paragraph 6.1.4.2.4., replace 3.1.10. with 2.27.1.

Paragraph 6.1.5.1., replace 3.1.10. with 2.27.1.

Paragraph 6.2.1.1., replace twice 4.1.15. with 4.1.16.

Paragraph 6.2.1.2., amend to read:

"6.2.1.2. Where application is made for the type approval of a "run flat tyre" the above load speed test is carried out on one tyre, inflated as per paragraph 1.2. of Annex 7, at the load and speed conditions marked on the tyre (see paragraphs 3.1.5. and 3.1.8.). Another load/speed test must be carried out on a second sample of the same tyre type as specified in paragraph 3. of Annex 7. The second test may be carried out on the same sample if the manufacturer agrees."

Insert new paragraph 6.2.1.3., to read:

"6.2.1.3. Where application is made for the type approval of an EMT the above load speed test is carried out on one tyre, inflated as per paragraph 1.2. of Annex 7, at the load and speed conditions marked on the tyre (see paragraphs 3.1.5. and 3.1.8. ). Another load/speed test must be carried out on a second sample of the same tyre type as specified in paragraph 4. of Annex 7. The second test may be carried out on the same sample if the manufacturer agrees."

*Paragraph 6.2.2.2.*, amend to read:

"6.2.2.2. If a "run flat tyre" which, after undergoing the test as specified in paragraph 3. of Annex 7, does not exhibit a change in the deflected section height, compared to the deflected section height at the start of the test, higher than 20 per cent and retains the tread connected to the two sidewalls, it is deemed to have passed the test."

*Insert a new paragraph 6.2.2.3.*, to read:

"6.2.2.3 If an EMT which, after undergoing the test as specified in paragraph 4. of Annex 7, does not exhibit a change in the deflected section height, compared to the deflected section height at the start of the test, higher than 20 per cent and retains the tread connected to the two sidewalls, it is deemed to have passed the test."

*Annex 1,*

*Insert a new item 4.6.*, to read:

"4.6. Extended Mobility Tyre: (Yes / No) 2/....."

*Annex 3,*

*Paragraph 2.*, replace 3.1.3. with 2.25.3.

*Paragraph 3.*, amend to read:

- "3. The positioning and order of the markings constituting the tyre designation shall be the following:
- (a) the size designation as defined in paragraph 2.25. of this Regulation shall be grouped as shown in the above examples: 185/70 R 14, P185/70 R 14, T185/70 R 14 and 185-560 R 400A or 185-560 R 400U;
  - (b) the service description comprising the load index and the speed symbol shall be placed immediately after the tyre size designation as defined in paragraph 2.25. of this Regulation;
  - (c) The symbols "TUBELESS", "REINFORCED", "M + S" and "ET" and "POR" may be at a distance from the size-designation."

*Annex 6,*

*Paragraph 1.1.*, replace 4.1.12. with 4.1.13.

*Paragraph 1.2.3.*, amend to read:

"1.2.3. in standard radial tyres and in standard Run Flat tyres: to 1.8 bar;"

*Paragraph 1.2.4.*, amend to read:

"1.2.4. in reinforced radial tyres and in reinforced Run Flat tyres: to 2.2 bar;"

*Annex 7,*

*Paragraph 1.1.*, replace 4.1.12. with 4.1.13.

*Paragraph 1.2., table, title of the third column,* replace " Radial / Run flat system" with "Radial and Run flat tyres".

*Paragraph 2.2.2.*, replace 2.37.2. with 2.40.2.

*Paragraph 2.2.3.*, replace 2.37.3. with 2.40.3.

*Paragraph 2.2.4.*, replace 2.37.4. with 2.40.4.

*Paragraph 2.5.2.*, replace 2.34.1. with 2.37.1.

*Paragraph 2.6.1.*, replace 4.1.15. with 4.1.16.

*Paragraph 3.*, amend to read:

"3. Procedure to assess the "flat tyre running mode" of "run flat tyre"

*Paragraph 3.1.*, amend to read:

"3.1. Mount a new tyre on a test rim corresponding to the following specifications:

- (a) Measuring rim width, according to ISO 4000-1;
- (b) Contour with hump (round or flat) on both rim sides, according to ISO 4000-2."

*Paragraph 3.2.*, amend to read:

"3.2. Carry out the procedure as detailed in paragraphs 1.2. to 1.5. above with a test room temperature at  $38\text{ }^{\circ}\text{C} + 3\text{ }^{\circ}\text{C}$  in relation to conditioning the tyre-and-wheel assembly as detailed in paragraph 1.4. The temperature sensor shall be at a distance not less than 0.15 m and not more than 1.00 m from the tyre sidewall."

*Paragraph 3.8.2.*, amend to read:

"3.8.2. Test speed: 80 km/h in case of  $2.0\text{ m} \pm 1\text{ per cent}$  drum diameter, or 75 km/h in case of  $1.7\text{ m} \pm 1\text{ per cent}$  drum diameter"

*Insert new paragraphs from 4. to 4.9.1.*, to read:

"4. Procedure to assess the "flat tyre running mode" of "extended mobility tyres"

4.1. Mount a new tyre on a test rim corresponding to the following specifications:

- (a) Measuring rim width, according to ISO 4000-1
- (b) Contour with hump (round or flat) on both rim sides, according to ISO 4000-2.

4.2. Carry out the procedure as detailed in paragraphs 1.2. to 1.5. above with a test room temperature at  $25\text{ }^{\circ}\text{C} \pm 3\text{ }^{\circ}\text{C}$  in relation to conditioning the tyre-and-wheel assembly as detailed in paragraph 1.4. The temperature sensor shall be at a distance not less than 0.15 m and not more than 1.00 m from the tyre sidewall.

4.3. Remove the valve insert and wait until the tyre deflates completely.

4.4. Mount the tyre-and-wheel assembly to a test axle and press it against the outer surface of a smooth wheel  $1.70\text{ m} \pm 1\text{ per cent}$  or  $2.0\text{ m} \pm 1\text{ per cent}$  in diameter.

4.5. Apply to the test axle a load equal to 60 per cent of the maximum load rating corresponding to the load capacity index of the tyre.

4.6. At the start of the test, measure the deflected section height (Z1).

4.7. During the test the temperature of the test room must be maintained at  $25\text{ }^{\circ}\text{C} \pm 3\text{ }^{\circ}\text{C}$ .

4.8. Carry the test through, without interruption in conformity with the following particulars:

4.8.1. Time taken to pass from zero speed to constant test speed: 5 minutes

4.8.2. Test speed: 80 km/h in case of  $2.0\text{ m} \pm 1\text{ per cent}$  drum diameter, or 75 km/h in case of  $1.7\text{ m} \pm 1\text{ per cent}$  drum diameter

- 4.8.3. Duration of test at the test speed: 60 minutes
- 4.9. At the end of the test, measure the deflected section height (Z2).
- 4.9.1. Calculate the change in per cent of the deflected section height compared to the deflected section height at the start of the test as  $((Z1 - Z2) / Z1) \times 100$ ."

*Paragraph 4. (former), renumber as paragraph 5 and amend to read:*

- "5. Equivalent test methods  
If a method other than that described in paragraphs 2. and/or 3., and/or 4. above is used, its equivalence must be demonstrated."

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