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**Economic Commission for Europe**

Inland Transport Committee

**World Forum for Harmonization of Vehicle Regulations**

**189th session**

Geneva, 7-9 March 2023

Item 4.6.3 of the provisional agenda

**1958 Agreement:
Consideration of draft amendments to existing
UN Regulations submitted by GRBP**

 **Proposal for Supplement 25 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 and Tyres**[[1]](#footnote-2)\*

The text reproduced below was adopted by the Working Party on Noise and Tyres (GRBP) at its seventy-sixth session (ECE/TRANS/WP.29/GRBP/74, para. 14). It is based on ECE/TRANS/WP.29/GRBP/2022/21. The proposal is submitted to the World Forum for Harmonization of Vehicle Regulations (WP.29) and to the Administrative Committee (AC.1) for consideration at their March 2023 sessions.

*Paragraph 2.6.,* amend to read:

"2.6. "*Snow tyre*" means a tyre whose tread pattern, tread compound or construction is primarily designed to achieve in mud and/or snow conditions a performance better than that of a normal tyre with regard to its ability to initiate and control vehicle motion."

*Paragraph 2.9.3.,* amend to read:

"2.9.3. "*Radial*" or "*radial-ply*" describes a tyre structure in which the ply cords extend to the beads and are laid substantially at 90° to the centre line of the tread in a zone including most of the side wall and located outside the bead and the essentially inextensible circumferential belt that stabilizes the carcass;"

*Paragraph 2.10.,* amend to read:

"2.10. "*Reinforced*" or "*Extra Load*" means a tyre designed to carry more load at a higher inflation pressure than the load carried by the corresponding standard version tyre at the standard inflation pressure as specified in ISO 4000-1:2021;"

*Paragraph 2.12.,* amend to read:

"2.12. "*Bead*" means the part of a tyre which is of such shape and construction as to fit the rim and hold the tyre on it; 1/"

*Paragraph 2.25.3.2,* amend to read:

"2.25.3.2. on radial-ply tyres, the letter "R" placed in front of the rim‑diameter marking;"

*Paragraph 2.25.3.3.,* amend to read:

"2.25.3.3. on bias-belted tyres, the letter "B" placed in front of the rim‑diameter marking;"

*Paragraph 2.25.3.4.,* amend to read:

"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-category 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";"

*Paragraph 2.25.3.5.,* amend to read:

"2.25.3.5. on run flat or self-supporting tyres, the letters "RF" placed in front of the rim diameter marking (for example, "235/45 RF 17")."

*Paragraph 2.25.7.,* amend to read:

"2.25.7. an indication of the tyre to rim fitment configuration when it differs from the standard configuration;"

*Insert a new paragraph 2.25.8.*, to read:

"2.25.8. optionally the letters "HL" in front of the nominal section width in the case of Extra Load tyres."

*Insert a new paragraph 2.38.,* to read:

"2.38. "*Service description*" means the association of the load-capacity index with a speed-category symbol (for example, "94H")."

*Paragraphs 2.38. to 2.43.,* renumber as 2.39. to 2.44.

*Paragraph 3.1.1.,* amend to read:

"3.1.1. The manufacturer's name or the brand name/trademark;"

*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 2.25.3.4. the tyre shall be marked with a service description that includes the speed-category symbol "Y". The service description shall be marked within brackets, for example, "(95Y)"."

*Paragraph 3.1.6.,* amend to read:

"3.1.6. The inscription "M+S" or "M.S" or "M&S" if the tyre is classified in the category of use "snow tyre" or if the tyre is classified in the category of use "special use tyre" when declared by the tyre manufacturer at paragraph 4.1.3. as complying also with the definition given in paragraph 2.6.;

 "M+S" or "M.S" or "M&S" means "Mud and Snow";"

*Paragraph 3.1.12.1.,* amend to read:

"3.1.12.1. In addition, in the case of T-type temporary use spare tyres, the legend "INFLATE TO 420 kPa (60 psi)", the upper case characters being at least 12.7 mm high."

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

"3.1.15. Optionally, the word "RADIAL" on radial-ply tyres;"

*Insert a new paragraph 3.1.16.,* to read:

"3.1.16. The words "BIAS-BELTED" on bias-belted tyres;"

*Insert a new paragraph 3.1.17.,* to read:

"3.1.17. The letters "ERS" (meaning "Extended Radial Structure") for tyres with radial structure having a carcass where the ply cords are not laid substantially at 90° to the centre line of the tread across the complete cross section of the tyre;"

*Insert a new paragraph 4.1.4.1.,* to read:

"4.1.4.1. For tyres with radial structure, whether the ply cords of the carcass are laid substantially at 90° to the centre line of the tread across the complete cross section of the tyre;"

*Paragraph 6.1.1.1.,* amend to read:

"6.1.1.1. The section width shall be calculated by the following formula:

$S=S\_{1}+K∙\left(A-A\_{1}\right)$,

 where:

*S* is the section width rounded to the nearest millimetre;

*S*1 is the nominal section width (in mm) as shown on the side wall of the tyre in the designation of the tyre as prescribed;

*A* is the width (expressed in mm) of the measuring rim, as shown by the manufacturer in the descriptive note; 5/

*A*1 is the width (expressed in mm) of the theoretical rim.

*A*1 shall be taken to equal *S*1 multiplied by the factor *x*, as specified by the manufacturer, and *K* shall be taken to equal 0.4."

*Footnote 5/,* amend to read:

"5/ When the rim width is given by code, the value in mm is obtained by multiplying such number by 25.4."

*Paragraph 6.1.2.1.,* amend to read:

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

$$D=d+2 H$$

where:

*D* is the outer diameter expressed in millimetres;

*d* is the nominal rim diameter defined in paragraph 2.26. above, expressed in millimetres**;**

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

$ H=0.01 S\_{1}∙R\_{a}$, where

*S*1 is the nominal section width in millimetres (mm);

*Ra* is the nominal aspect ratio;

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

*Paragraph 6.1.4.2.2.,* amend to read:

"6.1.4.2.2. in radial-ply and run flat tyres: 4 per cent;"

*Paragraph 6.2.1.1.,* amend to read:

"6.2.1.1. Where application is made for tyres identified by means of letter code "ZR" within the tyre-size designation and suitable for speeds over 300 km/h (see paragraph 4.1.16.), the above load/speed test is carried out on one tyre at conditions appropriate for the load-capacity index marked on the tyre and the speed-category symbol "Y". Another load/speed test must be carried out on a second sample of the same tyre type according to paragraph 2.6. of Annex 7 corresponding to the load and speed conditions specified as maximum by the tyre manufacturer (see paragraph 4.1.16. of this Regulation).

The second test may be carried out on the same tyre sample if the tyre manufacturer agrees."

*Paragraph 6.2.2.1.,* amend to read:

"6.2.2.1. However, a tyre marked with the speed-category symbol "Y" which, after undergoing the relevant test, exhibits superficial blistering of the tyre tread caused by the specific test equipment and conditions, is deemed to have passed the test."

*Paragraph 6.3.1.,* amend to read:

"6.3.1. In order to be categorized as a special use tyre a tyre shall have a block tread pattern in which the blocks are larger and more widely spaced than for normal tyres and have the following characteristics:

 (a) a tread depth ≥ 9 mm and

 (b) a void-to-fill ratio ≥ 30 per cent"

*Paragraph 6.3.2.,* amend to read:

"6.3.2. In order to be classified as a professional off-road tyre, a special use tyre shall have all of the following characteristics:

 (a) a tread depth ≥ 11 mm and

 (b) a void-to-fill ratio ≥ 35 per cent and

 (c) a speed category ≤ 160 km/h."

*Insert a new paragraph 11.5.*, to read:

"11.5. Contracting Parties applying this Regulation shall not refuse to grant extensions of approvals first issued before the entry into force of Supplement 25 to the 02 series of amendments to this Regulation and containing in the communication form the information that the tyre-size designation is preceded by the letters "HL" by adding the letters "HL" to the tyre-size designation pursuant to 2.25.8."

*Annex 1,*

*Insert a new item 4.2.1.,* to read:

"4.2.1. For special use tyres, whether professional off-road tyre: yes/no"

*Insert a new item 4.3.1.,* to read:

"4.3.1. For tyres with radial structure, whether the ply cords of the carcass are laid substantially at 90° to the centre line of the tread across the complete cross section of the tyre: yes/no"

*Annex 3,*

*Paragraph 1.*, replace the figure by the following:

*"*



 ET; POR

c

 ERS

c

b = 6 mm (min.)

c = 4 mm (min.)"

*Paragraph 1.(e),* amend to read:

"(e) having a load capacity of 580 kg, corresponding to load-capacity index 89 in Annex 4 to this Regulation;"

*Paragraph 2, last sentence,* amend to read:

"The marking of the load-capacity index, speed-category symbol, date of manufacture and other markings, shall be as given in example 1 above."

*Paragraph 3.(b),* amend to read:

"(b) the service description shall be placed immediately after the tyre size designation as defined in paragraph 2.25. of this Regulation;"

*Paragraph 3.(c),* amend to read:

"(c) The symbols "TUBELESS", "REINFORCED", "M+S" and "ET" and "POR" may be at a distance from the size-designation."

*Insert a new paragraph 3.(d),* to read:

"(d) the symbol "ERS" shall be placed close to the tyre-size designation."

*Annex 6,*

*Paragraphs 1.1. to 1.2.5.,* amend to read:

"1.1. Mount the tyre on the measuring rim specified by the manufacturer pursuant to paragraph 4.1.13. of this Regulation and inflate it to a pressure of 300 kPa to 350 kPa.

1.2. Adjust the pressure as follows:

1.2.1. in standard bias-belted tyres: to 170 kPa;

1.2.2. in diagonal (bias-ply) tyres: to:

|  |  |
| --- | --- |
| *Ply rating* | *Pressure (kPa)* |
| *Speed-category symbol* |
| *L, M, N* | *P, Q, R, S* | *T, U, H, V* |
| 4 | 170 | 200 | — |
| 6 | 210 | 240 | 260 |
| 8 | 250 | 280 | 300 |

1.2.3. in standard radial tyres and in standard run flat tyres: to 180 kPa;

1.2.4. in reinforced radial tyres and in reinforced run flat tyres: to 220 kPa;

1.2.5. in T-type temporary use spare tyres: to 420 kPa."

*Annex 7,*

*Paragraph 1.2.,* amend to read:

"1.2. Inflate it to the appropriate pressure as given (in kPa) in the table below:

T-type temporary use spare tyres: to 420 kPa

| *Speed-category symbol* | *Diagonal (bias-ply) tyres* | *Radial and run flat tyres* | *Bias-belted tyres* |
| --- | --- | --- | --- |
| *Ply rating* | *Standard* | *Reinforced* | *Standard* |
| *4* | *6* | *8* |
| L, M, N | 230 | 270 | 300 | 240 | 280 | — |
| P, Q, R, S | 260 | 300 | 330 | 260 | 300 | 260 |
| T, U, H | 280 | 320 | 350 | 280 | 320 | 280 |
| V | 300 | 340 | 370 | 300 | 340 | — |
| W | — | — | — | 320 | 360 | — |
| Y | — | — | — | 320 *a* | 360 | — |

*a* The value 320 kPa in respect of tyres with speed-category symbol "Y" was inadvertently omitted from Supplement 5 to the 02 series of amendments which entered into force on 8 January 1995 and may be considered as a Corrigendum to this Supplement and to have been effective from that same date."

*Paragraph 2.1.,* amend to read:

"2.1. Mount the tyre-and-wheel assembly on a test axle and press it against the outer face of a smooth wheel 1.7 m ± 1 per cent or 2.0 m ± 1 per cent in diameter."

*Paragraphs 2.2.1. to 2.2.4.,* amend to read:

"2.2.1. the maximum load rating corresponding to the load-capacity index for tyres with speed-category symbols "L" to "H" inclusive;

2.2.2. the maximum load rating associated with a maximum speed of 240 km/h for tyres with speed-category symbol "V" (see paragraph 2.41.2. of this Regulation);

2.2.3. the maximum load rating associated with a maximum speed of 270 km/h for tyres with speed-category symbol "W" (see paragraph 2.41.3. of this Regulation);

2.2.4. the maximum load rating associated with a maximum speed of 300 km/h for tyres with speed-category symbol "Y" (see paragraph 2.41.4. of this Regulation)."

*Paragraph 2.4.,* amend to read:

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

*Paragraph 2.5.2.,* amend to read:

"2.5.2. Initial test speed: prescribed maximum speed for the type of tyre (see paragraph 2.37.1. of this Regulation), less 40 km/h in the case of the smooth wheel having1.7 m ± 1 per cent in diameter or less 30 km/h in the case of the smooth wheel having 2.0 m ± 1 per cent in diameter;"

*Paragraphs 2.5.6. and 2.5.7.,* amend to read:

"2.5.6. maximum test speed: prescribed maximum speed for the type of tyre, less 10 km/h in the case of the smooth wheel having 1.7 m ± 1 per cent in diameter or equal to the prescribed maximum speed in the case of the smooth wheel having 2.0 m ± 1 per cent in diameter;

2.5.7. however, for tyres suitable for maximum speed of 300 km/h (speed-category symbol "Y"), the duration of the test is 20 minutes at the initial test speed step and 10 minutes at the last speed step."

*Paragraph 3.2.,* amend to read:

"3.2. Inflate the tyre to an inflation pressure of 250 kPa and condition the tyre-and-wheel assembly at a test room temperature at 38 ºC ± 3 ºC for not less than three hours."

*Paragraph 3.5.,* amend to read:

"3.5. Apply to the test axle the test load equal to 65 per cent of the maximum load rating corresponding to the load capacity index of the tyre."

*Paragraph 3.6.,* renumber as 3.8.2. and amend to read:

"3.8.2. Measure the deflected section height (*Z*1);"

*Paragraph 3.8.,* amend to read:

"3.8. Conduct the test without interruption in conformity with the following particulars:"

*Paragraph 3.8.1.,* amend to read:

"3.8.1. Accelerate the tyre-and-wheel assembly from zero speed to the constant test speed within 5 minutes;"

*Paragraph 3.8.2. (former),* renumber as 3.6. and amend to read:

"3.6. Test speed: 80 km/h in case of 2.0 m ± 1 per cent drum diameter, or 75 km/h in case of 1.7 m ± 1 per cent drum diameter"

*Paragraph 3.8.3.,* amend to read:

"3.8.3. Run the tyre-and-wheel assembly at the constant test speed and the constant test load for 60 minutes;"

*Paragraph 3.9.,* renumber as 3.8.4. andamend to read:

"3.8.4. Measure the deflected section height (*Z*2)."

*Paragraph 3.9.1.,* renumber as 3.9. amend to read:

3.9. Calculate the change in per cent of the deflected section height compared to the deflected section height at the start of the test as $\left[\left(Z\_{1}-Z\_{2}\right)/Z\_{1}\right]×100$. "

*Paragraph 4.2.,* amend to read:

"4.2. Inflate it to an inflation pressure of 250 kPa and condition the tyre-and-wheel assembly at a test room temperature at 25 ºC ± 3 ºC for not less than three hours."

*Paragraph 4.5.,* amend to read:

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

*Paragraph 4.6.,* renumber as 4.8.2. and amend to read:

"4.8.2. Measure the deflected section height (*Z*1);"

*Paragraph 4.8.,* amend to read:

"4.8. Conduct the test without interruption in conformity with the following particulars:"

*Paragraph 4.8.1.,* amend to read:

"4.8.1. Accelerate the tyre-and-wheel assembly from zero speed to the constant test speed within 5 minutes;"

*Paragraph 4.8.2. (former),* renumber as 4.6. and amend to read:

"4.6. Test speed: 80 km/h in case of 2.0 m ± 1 per cent drum diameter, or 75 km/h in case of 1.7 m ± 1 per cent drum diameter"

*Paragraph 4.8.3.,* amend to read:

"4.8.3. Run the tyre-and-wheel assembly at the constant test speed and the constant test load for 60 minutes;"

*Paragraph 4.9.,* renumber as 4.8.4. andamend to read:

"4.8.4. Measure the deflected section height (*Z*2)."

*Paragraph 4.9.1.,* renumber as 4.9. amend to read:

4.9. Calculate the change in per cent of the deflected section height compared to the deflected section height at the start of the test as $\left[\left(Z\_{1}-Z\_{2}\right)/Z\_{1}\right]×100$. "

1. \* In accordance with the programme of work of the Inland Transport Committee for 2023 as outlined in proposed programme budget for 2023 (A/77/6 (Sect. 20), table 20.6), 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. [↑](#footnote-ref-2)