

22 November 2023

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## **Agreement**

### **Concerning the Adoption of Harmonized Technical United Nations Regulations for Wheeled Vehicles, Equipment and Parts which can be Fitted and/or be Used on Wheeled Vehicles and the Conditions for Reciprocal Recognition of Approvals Granted on the Basis of these United Nations Regulations\***

(Revision 3, including the amendments which entered into force on 14 September 2017)

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#### **Addendum 29 – UN Regulation No. 30**

#### **Revision 3 - Amendment 11**

Supplement 25 to the 02 series of amendments – Date of entry into force: 24 September 2023

#### **Uniform provisions concerning the approval of pneumatic tyres for motor vehicles and their trailers**

This document is meant purely as documentation tool. The authentic and legal binding text is: ECE/TRANS/WP.29/2023/4.



**UNITED NATIONS**

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\* Former titles of the Agreement:

Agreement concerning the Adoption of Uniform Conditions of Approval and Reciprocal Recognition of Approval for Motor Vehicle Equipment and Parts, done at Geneva on 20 March 1958 (original version); Agreement concerning the Adoption of Uniform Technical Prescriptions for Wheeled Vehicles, Equipment and Parts which can be Fitted and/or be Used on Wheeled Vehicles and the Conditions for Reciprocal Recognition of Approvals Granted on the Basis of these Prescriptions, done at Geneva on 5 October 1995 (Revision 2).



*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; <sup>1/</sup>"

*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:

$$S = S_1 + K \cdot (A - A_1),$$

where:

- S is the section width rounded to the nearest millimetre;
- S<sub>1</sub> 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<sub>1</sub> is the width (expressed in mm) of the theoretical rim.
- A<sub>1</sub> shall be taken to equal S<sub>1</sub> 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:
- $$H = 0.01 S_1 \cdot R_a, \text{ where}$$
- $S_1$  is the nominal section width in millimetres (mm);
- $R_a$  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  $\geq 9$  mm and
- (b) a void-to-fill ratio  $\geq 30$  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  $\geq 11$  mm and
- (b) a void-to-fill ratio  $\geq 35$  per cent and
- (c) a speed category  $\leq 160$  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:

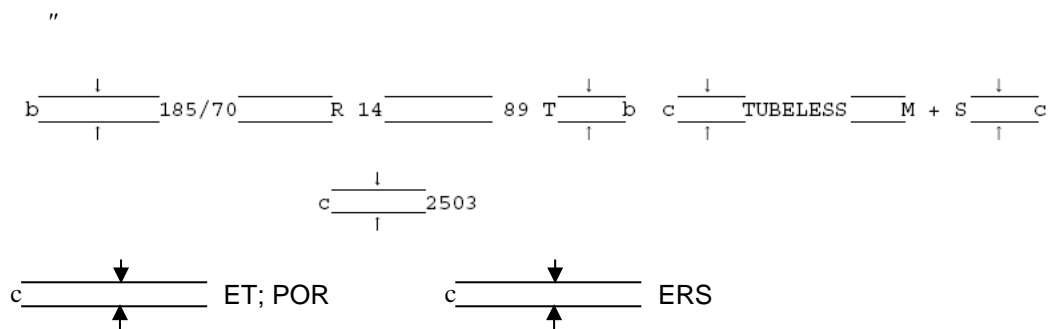
"4.2.1. For special use tyres, whether professional off-road tyre: yes/no"

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:



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 <sup>a</sup>	360	—

<sup>a</sup> 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 having  $1.7 \text{ m} \pm 1$  per cent in diameter or less 30 km/h in the case of the smooth wheel having  $2.0 \text{ m} \pm 1$  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  $1.7 \text{ m} \pm 1$  per cent in diameter or equal to the prescribed maximum speed in the case of the smooth wheel having  $2.0 \text{ m} \pm 1$  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  $38 \text{ °C} \pm 3 \text{ °C}$  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  $2.0 \text{ m} \pm 1$  per cent drum diameter, or 75 km/h in case of  $1.7 \text{ m} \pm 1$  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. and amend 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  $[(Z_1 - Z_2)/Z_1] \times 100$ . "

*Paragraph 4.2.*, amend to read:

"4.2. Inflation it to an inflation pressure of 250 kPa and condition the tyre-and-wheel assembly at a test room temperature at  $25\text{ °C} \pm 3\text{ °C}$  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  $2.0\text{ m} \pm 1\text{ per cent}$  drum diameter, or 75 km/h in case of  $1.7\text{ m} \pm 1\text{ per cent}$  drum diameter"

*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. and amend 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  $[(Z_1 - Z_2)/Z_1] \times 100$ . "

