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Item 7(c) of the provisional agenda

Tyres – Other business**Proposal for amendments to Regulation No. 106 (Tyres for agricultural vehicles)****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) to amend the provisions of Regulation No. 106, inserting a new marking and, under "categories of use", a definition for construction application (Industrial tractor) tyres. The modifications to the existing text of the Regulation are marked in bold for new and strikethrough for deleted characters.

* In accordance with the programme of work of the Inland Transport Committee for 2010–2014 (ECE/TRANS/208, para. 106 and ECE/TRANS/2010/8, 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 1, amend to read:

"It does not apply to tyre types designated primarily for other purposes, such as:

(a) ~~Construction application (tyres marked "Industrial" or "IND" or "R4" or "F3");~~

(a) Earth-moving equipment;

(b) Industrial and lift trucks."

Paragraph 2.1.3., amend to read:

"2.1.3. category of use:

.....

(g) Forestry machines – standard tread;

(h) Forestry machines – special tread.

(i) **Construction applications (IND)"**

Insert a new paragraph 2.15.9., to read:

"2.15.9 the letters "IND" after the nominal rim diameter marking in case of tyres for construction application (industrial tractors)"

Insert a new paragraph 2.42., to read:

"2.42. "Construction application (industrial tractor) tyre" means a tyre designed to be fitted on industrial tractors, backhoe loaders and other vehicles working in industrial or construction applications (e.g. loaders, excavators, etc.) or some agricultural vehicles (e.g. telehandlers)"

Paragraph 3.1.7., amend to read:

3.1.7. the inscriptions "F-1" or "F-2" **or "F-3"** in the case of a Tractor steering wheel tyre that is not already marked as per paragraph 2.15.6. above"

Insert a new paragraph 3.1.13., to read:

"3.1.13. the inscription "R-4" in the case of a construction application tyre, identified in Annex 5 table 8, that is not already marked as per paragraph 2.15.9. above"

Paragraph 6.4.2., add to the table a new row, to read

Construction Applications	0.96	1.04	0.97	1.07
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Annex 3

Add a new part E, to read:

"PART E: TYRES FOR CONSTRUCTION APPLICATIONS (INDUSTRIAL TRACTORS)

Example of the markings to be borne by types of tyres complying with this Regulation

b 400/80 – 24 IND b b 156 A8 b b 153 B b
 c TUBELESS c c 2513 c

Minimum Heights of Markings:

b: 9 mm c: 4 mm

These markings define a tyre for construction applications (IND):

- (a) having a nominal section width of 400;
- (b) having a nominal aspect ratio of 80;
- (c) of diagonal ply structure (-);
- (d) having a nominal rim diameter of 610 mm for which the code is 24;
- (e) having a load capacity of 4000 kg, corresponding to load index 156 in Annex 4;
- (f) classified in the speed category A8 (reference speed 40 km/h) ;
- (g) allowed to be used additionally at 50 km/h (speed category symbol B) with a load, capacity of 3650 kg corresponding to the load capacity index 153 shown in Annex 4;
- (h) for fitting without an inner tube ("TUBELESS");
- (i) manufactured during the twenty-fifth week of the year 2013 (see paragraph 3.2. of the Regulation).

The positioning and order of the markings constituting the tyre designation are as follows:

- (a) the size designation, comprising the nominal section width, the nominal aspect ratio, the type of structure symbol, the nominal rim diameter and the suffix IND, must be grouped as shown in the above example: 400/80 – 24 IND;
- (b) the service description (load index and the speed category symbol) is placed near the size designation. It may either precede or follow it or be placed above or below it;
- (c) the symbols 'TUBELESS', 'R-4' if applicable, and the date of production may be at a distance from the size designation";
- (d) the marking of the additional Service Description inside the circle, if any, may show either the speed category symbol after or below the load index.

Annex 5,

Table 1,

Note 1, amend to read:

- "1. Agricultural steering wheels tyres are identified either by suffix "Front" placed after the Tyre size designation (e.g. 4.00 - 9 Front) or by one of the following additional markings added to the Tyre sidewalls: "F - 1", "F - 2" or "F - 3".

Annex 5,

Add a new table 8, to read:

"Table 8 – Tyres for Construction Applications (Industrial Tractors)

<i>Tyre Size Designation</i>	<i>Theoretical rim width code (AI)</i>	<i>Nominal section Width (S1) (mm)</i>	<i>Overall Diameter (D) (mm)</i>	<i>Nominal rim Diameter (d)</i>	<i>Tyre Size Designation</i>	<i>Theoretical rim width</i>
		<i>Radial</i>	<i>Diagonal</i>	<i>Radial</i>	<i>Diagonal</i>	<i>(mm)</i>
14.9-24	13	378	378	1 245	1 240	610
14.9-28	13	378	378	1 350	1 345	711
16.9-24	15	429	429	1 320	1 310	610
16.9-28	15	429	429	1 420	1 410	711
16.9-34	15		429		1 560	864
17.5L-24	15	445	445	1 250	1 241	610
18.4-24	16	467	467	1 395	1 375	610
18.4-26	16		467		1 425	660
18.4-28	16	467	467	1 490	1 477	711
18.4-30	16		467		1 525	762
19.5L-24	17	495	495	1 320	1 314	610
21L-24	18	533	533	1 395	1 378	610
23.1-26	20		587		1 580	660

- Notes:
1. These tyres are identified either by suffix "IND", placed after the Tyre size designation (e.g. 14.9-24 IND), or by the following marking added to the tyre sidewalls: "R – 4".
 2. Tyres of radial structure are identified by means of the letter "R " in place of " - " (e.g. 14.9 R 24).
 3. Coefficient for the calculation of the overall width of radial tyres: + 8 %"

Annex 7 - Add a new part E, to read:

"PART E: Tyres FOR CONSTRUCTION APPLICATIONS (INDUSTRIAL TRACTORS)

Applicable to tyres classified with categories of use: " Construction Applications "
(see paragraph 2.42.)

Variation of load carrying capacity (per cent) for tyres marked with speed category symbol A8

<i>Speed (km/h)</i>	<i>Variation of load carrying capacity (%)</i>	
	<i>Constant Load</i>	<i>Cyclic Applications (+)</i>
5	+ 45	+ 67 (1)
10	+ 25	+ 50 (2)
15	+ 13	+ 34
20	+ 9	+ 23
25	+ 6	+ 11
30	+ 4	+ 7
35	+ 2	+ 3
40	[0]	[0]
45	- 4	- 4
50	- 9	- 9

- (+) Cyclic means applications where tyres are used one way laden and return unladen (e.g loaders).
- (1) One way distance 150 m, fully loaded.
- (2) One way distance 600 m, fully loaded."

II. Justification

1. Tyres for construction applications (industrial tractors) were in the past excluded from UN Regulation No. 106 because they were exclusively fitted to backhoe loaders or excavators and therefore not specific to agricultural applications.
2. However, today these are the only tyres equipping vehicles for normal road service not yet covered by a safety regulation and moreover some special agricultural vehicles, as for example telehandlers are equipped with this category of tyres.
3. This amendment will permit the type approval of the new category of tyres, at present not specified in the Regulation, and complete the type approval process for all tyres suitable for use on public roads or on agricultural vehicles.