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REGULATION No. 106 (Pneumatic tyres for agricultural tractors)

Proposal for draft amendments to Regulation No. 106

Submitted by the experts from the European Tyre and Rim Technical Organisation (ETRTO)

The text reproduced below was prepared by the experts from ETRTO to amend the provisions of Regulation No. 106, inserting a new marking and, under "categories of use", a definition for forestry tyres. The modifications to the existing text of the Regulation are marked in **bold** characters or as strikethrough.

A. PROPOSAL

Paragraph 2.1.3., amend to read:

- "2.1.3. category of use:
- (a) Tractor - Steering wheel;
 - (b) Tractor - Drive wheel - standard tread;
 - (c) Tractor - Drive wheel - special tread;
 - (d) Implement - traction;
 - (e) Implement - trailer;
 - (f) Implement - mixed applications;
 - (g) Forestry machines – standard tread;**
 - (h) Forestry machines – special tread."**

Paragraph 2.20., amend to read:

"2.20. driven axles of agricultural ~~and forestry~~ tractors"

Insert a new paragraph 2.41., to read:

"2.41. Forestry tyre: means a tyre designed to be fitted to machines or equipments used in forestry applications suitable for high torque (HT) service at low load (e.g. skidders) or low torque (LT) service at high load (e.g. forwarders, harvesters and forestry trailers)."

Paragraph 3.1.8., amend to read:

"3.1.8. the inscriptions 'LS-1', 'LS-2', 'LS-3' or 'LS-4' in the case of ~~tractor drive wheel tyres to be fitted to driven axles of forestry tractors~~ tyres **for forestry machines.**"

Insert a new paragraph 3.1.8.1., to read:

"3.1.8.1. 'LS-3' identifies special tread tyres."

Paragraph 6.4.2., the table, amend "Drive wheels - normal" to read "**Tractor** drive wheels **and forestry machines** - normal", and " Drive wheels - special" to read "**Tractor** drive wheels **and forestry machines** – special".

Annex 3

Part A, the title, amend to read:

"PART A: DRIVE WHEEL TYRES FOR AGRICULTURAL ~~AND FORESTRY~~ TRACTORS"

Add a new part D, to read:

"PART D: TYRES FOR FORESTRY MACHINES

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

600/55 – 26.5 $\begin{array}{c} \downarrow \\ \text{---} \\ \text{b} \\ \text{---} \\ \uparrow \end{array}$ LS-2 $\begin{array}{c} \downarrow \\ \text{---} \\ \text{b} \\ \text{---} \\ \uparrow \end{array}$ 154 A8 $\begin{array}{c} \downarrow \\ \text{---} \\ \text{b} \\ \text{---} \\ \uparrow \end{array}$

TUBELESS $\begin{array}{c} \downarrow \\ \text{---} \\ \text{c} \\ \text{---} \\ \uparrow \end{array}$ 2506 $\begin{array}{c} \downarrow \\ \text{---} \\ \text{c} \\ \text{---} \\ \uparrow \end{array}$

MINIMUM HEIGHTS OF MARKINGS: b: 9 mm c: 4 mm

These markings define a tyre for forestry machines (LS):

- (a) having a nominal section width of 600,
- (b) having a nominal aspect ratio of 55,
- (c) of diagonal ply structure (-),
- (d) having a nominal rim diameter of 673 mm for which the code is 26.5,
- (e) having an intermediate tread ("LS-2"),
- (f) having a load capacity of 3750 kg, corresponding to load index 154 in Annex 4,
- (g) classified in the speed category A8 (reference speed 40 km/h),
- (h) for fitting without an inner tube ("tubeless"),
- (i) manufactured during the twenty-fifth week of the year 2006 (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 (where applicable) and the nominal rim diameter, must be grouped as shown in the above example: 600/55 – 26.5;
- (b) the inscription 'LS', followed by the number 1, 2, 3 or 4 as appropriate, is placed after the size designation, as shown in the above example: LS-2;
- (c) 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;
- (d) the symbols 'TUBELESS' and the date of production may be at a distance from the size designation."

Annex 5, table 4, for the tyre size designation 260/70R16, 260/70R18 and 260/70R20, the whole row should be deleted.

Annex 7

PART A, the title, amend to read:

"PART A: DRIVE WHEEL TYRES FOR AGRICULTURAL AND FORESTRY TRACTORS"

Add a new part D, to read:

"PART D: TYRES FOR FORESTRY MACHINES
Applicable to tyres classified with categories of use: "Forestry machines"
(see paragraph 2.41.)

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

Service Condition	Speed (km/h)	per cent
Forestry service –high torque	10	[0]
Forestry service –low torque	10	23
Road service	20	23
	30	7
	40	[0]

Note: the above mentioned service conditions for Forestry service may also be marked on the tyre sidewall, for user's reference, in the following form, given as an example:

600/55-26.5 LS-2 154 A8

HT 154 A2
LT 161 A2

Meaning:

- (a) when applied with high torque (HT) in forestry service (e.g. for the equipment of skidders) the maximum permissible load capacity is 3750 kg, corresponding to load index 154, at a reference speed of 10 km/h, corresponding to speed category A2
- (b) when applied with low torque (LT) in forestry service (e.g. for the equipment of forwarders, harvesters and forestry trailers) the maximum permissible load capacity is 4625 kg, corresponding to load index 161, at a reference speed of 10 km/h, corresponding to speed category A2

as per the variation of load carrying capacity percentages shown in the table above."

B. JUSTIFICATION

Tyres for forestry machines: In the past, it was customary for forestry applications to use agricultural drive wheel traction tyres. However, a new family of tyres has been developed for the use on forestry machines (forwarders, harvesters, skidders, etc.) to reduce tyre damages due to the specific field of application and following the development of specialized forestry equipments, since the first publication of UNECE Regulation No. 106. This amendment will permit the type approval of new type of tyres, at the present not specified in the Regulation.

Deletion of tyre sizes dimensions from Annex 5, table 4: The dimensional data of the three sizes do not conform to those available on the market, which strictly follow specifications of paragraphs 6.1.1. and 6.2.1.
