

Proposal for amendments to
ECE/TRANS/WP.29/GRRF/2007/20/rev1 (Regulation No.106 on
tyres for agricultural vehicles)

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.

Revisions of and addition to document ECE/TRANS/WP.29/GRRF/2007/20 rev 1, to take into account comments of some CP's at the 64 meeting, by excluding off the road applications, are marked in *striked through italic bold* characters.

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 new paragraphs 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).~~

~~2.41.1 high torque (HT) in forestry service: means applications where tyres are subjected to high and sustained torque (e.g. for the equipment of skidders)~~

~~2.41.2 low torque (LT) in forestry service: means applications where tyres are not subjected to high and sustained torque (e.g. for the equipment of 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., amend the second and third row in the table to read

"Tractor drive wheels and forestry machines - normal",
"Tractor drive wheels and forestry machines – special".

Annex 3

Part A, amend the title 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	$\frac{\text{---}}{\text{b}}$	LS-2	$\frac{\text{---}}{\text{b}}$	154 A8	$\frac{\text{---}}{\text{b}}$
	↑		↑		↑
	↓			↓	

TUBELESS ┌ └ c ↑	2506 ┌ └ c ↑
---	---

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.

Delete from table 4 all data for the following three tyre size designations:
260/70R16, 260/70R18 and 260/70R20.

Annex 7

PART A, , amend the title 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 optionally be, but are not required to 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

<i>HT 154 A2</i>
<i>LT 161 A2</i>

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

This document consolidates previous document ECE/TRANS/WP.29/GRRF/2007/20 rev 1 taking into account the verbal comments expressed by experts at the last meeting in September

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 present not yet specified in the Regulation.

~~The additional optional marking suggested in annex 7 part D is just an example, as it adds no information to the coefficients already published in the table above.~~

~~Moreover that optional marking is not addressed to the final users, but could just be considered eventually as help/reminder to vehicle manufacturers in the selection of tyres when designing a the given type of vehicle.~~

~~However the vehicle manufacturers and the vehicle type approval authorities, knowing exactly the type of vehicle and the content of the regulation, already receive sufficient information from the table of load variation coefficients for the proper selection of the tyre size and version, as they are used to in case of all other types of vehicles (agricultural machineries, motorcycles or commercial vehicles), when used for the specific conditions depicted in the tables of annex 7.~~

~~In fact the same tyre size, identified by the unique service description having speed symbol A8, is capable of all the different performances when fitted to the appropriate vehicle and for the given type of service.~~

~~Once the final user selects for replacement, on a given vehicle, a tyre size marked with the correct service description (the one with speed symbol A8), the same as specified for the original equipment of the vehicle, he will need no additional information on tyre performances specific to the type of application/service in order to fit the correct equipment.~~

Deletion of some tyre sizes from Annex 5, table 4: The dimensional data of the three sizes as published in table 4 of annex 5 do not conform to those of the tyres available on the market, which strictly follow all specifications of paragraphs 6.1.1. and 6.2.1. of regulation 106 and thus their dimensional data do not need to be listed in annex 5
