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World Forum for Harmonization of Vehicle Regulations**Working Party on Noise and Tyres****Seventy-ninth session**

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Item 7 (c) of the provisional agenda

Tyres: UN Regulations on retreaded tyres**Proposal for the 01 series of amendments to UN Regulation
No. 109****Submitted by the expert from the small working group on retreaded
tyres***

The text reproduced below was prepared by the expert from the small working group on retreaded tyres with the aim to move the prescriptions of snow grip performance of retreaded tyres and their classification as traction tyres from Regulation No. 109 to a new dedicated UN Regulation on type approval of retreaded tyres of classes C1, C2 and C3 with respect to their snow grip performance and/or classification as traction tyre. The modifications to the current text of the UN Regulation are marked in bold for new or strikethrough for deleted characters.

* In accordance with the programme of work of the Inland Transport Committee for 2024 as outlined in proposed programme budget for 2024 (A/77/6 (Sect. 20), table 20.5), 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.



I. Proposal

Table of contents,

Add a new chapter 13 to read:

"13. Transitional provisions"

Annex 8, amend to read:

"Annex 8 - Variation of load capacity with speed: commercial vehicle tyres – **Radial Tyres**"

Annex 10 and its Appendices 1 and 2, delete:

~~"Annex 10 – Procedures for snow performance testing relative to snow tyre for use in severe snow conditions"~~

~~Appendix 1 – Pictogram definition of "Alpine Symbol"~~

~~Appendix 2 – Test reports and test data for C2 tyres~~

~~Appendix 3 – Test reports and test data for C3 tyres"~~

Paragraph 1.1., amend to read:

"1. Scope

This Regulation covers the production of retreaded pneumatic tyres ^{*/~~≠~~} ^{**/} designed primarily for vehicles of category M2, M3, N, O3 and O4 1/ 2/. However, it does not apply to the production of:"

Paragraph 1.1., amend to read:

"1.1. Retreaded tyres with a **nominal speed category symbol capability** below **eighty** (80) km/h;"

Paragraph 1.3., amend to read:

"1.3. Tyres originally produced without **UN Regulation No. 54** type approval ~~and without either an "E" or "e" mark.~~"

Paragraph 2.1, amend to read:

"2. ~~Range of retreaded tyres~~ **"Range of retreaded tyres"** means a range of retreaded tyres as quoted in paragraph 4.1.5."

Paragraph 2.3, amend to read:

"2.3. **"Tyre Manufacturer"** means the person or body who was responsible to the TAA having granted the original ~~new~~-type approval **of new tyres** and for ensuring the conformity of production under the applicable Regulation for new tyres."

Paragraph 2.7.1., amend to read:

"2.7.1. **"Diagonal"** or ~~**"Bias ply"**~~ **"Bias-ply"** describes a tyre structure in which the ply cords extend to the beads and are laid at alternate angles substantially less than 90° to the centreline of the tread;"

Paragraph 2.7.2., delete:

^{*/~~≠~~} For the purpose of this Regulation "tyres" means "pneumatic tyres".

^{**/} **Retreaded tyres are refurbished tyres after retreading process**

^{1/} As defined in Annex 7 to the Consolidated Resolution on the Construction of Vehicles (R.E.3) (document TRANS/WP.29/78/Rev.1 as last amended by Amend.4).

^{2/} This Regulation defines requirements for tyres as a component. It does not limit their installation on any categories of vehicles.

~~"2.7.2. "Bias belted" describes a pneumatic tyre structure of diagonal (bias ply) type in which the carcass is stabilised by a belt, comprising two or more layers of substantially inextensible cord material laid at alternate angles close to those of the carcass;"~~

Paragraph 2.7.3., renumber as 2.7.2. and amend to read:

"2.7.32. ~~"Radial"~~ **"Radial"** or ~~"radial ply"~~ **"radial-ply"** describes a tyre structure in which the ply cords extend to the beads and are laid substantially at 90° to the centreline of the tread, the carcass being stabilised by an essentially inextensible circumferential belt."

Paragraph 2.8., amend to read:

"2.8. "Category of use":"

Paragraphs 2.8.1. to 2.8.3., amend to read:

2.8.1. ~~"Normal tyre"~~ **"Normal tyre"** is a tyre intended for normal road use only.

2.8.2. ~~"Special use tyre"~~ **"Special use tyre" means** is a tyre intended for mixed use, both on- and off-road **or for other special duty** ~~and/or at restricted speed~~. These tyres are primarily designed to initiate and maintain the vehicle in motion in off-road conditions.

2.8.3. "Snow tyre" means a tyre whose **major features including** tread pattern, ~~tread compound or structure~~ are 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 ~~or maintain~~ **and control** vehicle motion."

Paragraph 2.8.3.1., renumber as 2.53. and amend to read:

"2.538.3.1. ~~"Snow tyre for use in severe snow conditions"~~ means a snow tyre **or a special use tyre** whose **major features including** tread pattern, ~~tread compound or structure~~ **are** specifically designed to be used in severe snow conditions and that fulfils the requirements of paragraph ~~7.2.~~ **6.1.** of ~~this Regulation No. [XXX].~~

Paragraph 2.8.4., renumber as 2.54. and amend to read:

"2.548.4. ~~"Traction tyre"~~ **"Traction tyre"** means a tyre in class C2 or C3 bearing the inscription TRACTION and intended to be fitted primarily to the drive axle(s) of a vehicle to maximize force transmission in various circumstances."

Paragraphs 2.9. to 2.18., amend to read:

2.9. ~~"Bead"~~ **"Bead"** means the part of a tyre which is of such shape and structure as to fit the rim and hold the tyre on it.

2.10. ~~"Cord"~~ **"Cord"** means the strands forming the fabric of the plies in the tyre.

2.11. ~~"Ply"~~ **"Ply"** means a layer of "rubber" coated parallel cords.

2.12. ~~"Belt"~~ **"Belt"** applies to a radial ply or bias belted tyre and means a layer or layers of material or materials underneath the tread, laid substantially in the direction of the centre line of the tread to restrict the carcass in a circumferential direction.

2.13. ~~"Breaker"~~ **"Breaker"** applies to a diagonal ply tyre and means an intermediate ply between the carcass and tread.

2.14. ~~"Protective breaker"~~ **"Protective breaker"** applies to a radial ply tyre and means an optional intermediate ply between the tread and the belt to minimize damage to the belt.

2.15. ~~"Chaffer"~~ **"Chaffer"** means material in the bead area to protect the carcass against chafing or abrasion by the wheel rim.

2.16. ~~"Carcass"~~ **"Carcass"** means that ~~structural~~ part of a tyre other than the tread and ~~outermost, "rubber"~~ of the **rubber** sidewalls which, when inflated, ~~supports~~

bears the load.

- 2.17. ~~"Tread"~~ means that part of a tyre which ~~is designed to~~ comes into contact with the ground, protects the carcass against mechanical damage and contributes to ground adhesion.
- 2.18. ~~"Sidewall"~~ means the part of a tyre between the tread and the area designed to be covered by the rim flange."

Paragraphs 2.19. to 2.26., amend to read:

- 2.19. ~~"Lower area of tyre"~~ **"Lower area of the sidewall"** means the area included between the line of maximum section width of the tyre and the area designed to be covered by the edge of the rim.
- 2.20. ~~"Tread groove"~~ **"Tread groove"** means the space between ~~the two~~ adjacent ribs **and/or** blocks in the tread pattern.
- 2.21. ~~"Section width (S)"~~ means the linear distance between the outside of the sidewalls of an inflated tyre, ~~when fitted to the specified measuring rim, but~~ excluding elevations due to labelling (marking), decoration or protective bands or ribs.
- 2.22. ~~"Overall width"~~ means the linear distance between the outside of the sidewalls of an inflated tyre, ~~when fitted to the specified measuring rim, and~~ including labelling (marking), decoration or protective bands or ribs.
- 2.23. ~~"Section height"~~ **"Section height (H)"** means a distance equal to half the difference between the outer diameter of the tyre and the nominal rim diameter.
- 2.24. ~~"Nominal aspect ratio"~~ **"Nominal aspect ratio (Ra)"** means one hundred times the number obtained by dividing the number expressing the nominal section height by the number expressing the nominal section width, both dimensions being in the same units.
- 2.25. ~~"Outer diameter"~~ **"Outer diameter (D)"** means the overall diameter of an inflated, newly retreaded tyre.
- 26. ~~"Tyre size designation"~~ means, except in the case of types of tyre for which the tyre-size designation is shown in the first column of the tables in Annex 5 to this Regulation, a designation showing:"

Paragraph 2.26.1., amend to read:

- "2.26.1. The nominal section width (~~S~~**S₁**)."

Paragraphs 2.26.4., 2.26.4.1. and 2.26.5., amend to read:

- 2.26.4. ~~A conventional number "d"~~ **A conventional number "d"** (the "d" symbol) denoting the nominal rim diameter of the rim and corresponding to its diameter expressed either ~~by~~ **in** codes (numbers below 100) or in millimetres (numbers above 100). Numbers corresponding to both types of measurements may be used **together** in the designation;
- 2.26.4.1. The values of the "d" symbols expressed in millimetres are shown below:

Nominal Rim Diameter Code – "d" symbol	Value of the "d" symbol expressed in mm
8	203
9	229
10	254
11	279
12	305
13	330
14	356
15	381
16	406

<i>Nominal Rim Diameter Code – "d" symbol</i>	<i>Value of the "d" symbol expressed in mm</i>
17	432
18	457
19	483
20	508
21	533
22	559
24	610
25	635
26	660
28	711
30	762
32	813
34	864
36	914
38	965
40	1016
42	1067
14.5	368
16.5	419
17.5	445
19.5	495
20.5	521
22.5	572
24.5	622
26.5	673
28.5	724
30.5	775
26	660
28	711
30	762

2.26.5. ~~an~~**An** indication of the tyre to rim fitment configuration when it differs from the standard configuration and is not already expressed by the symbol "d" denoting the nominal rim diameter code."

Add new paragraphs 2.26.6., 2.26.6.1., 2.26.6.2., 2.26.7., 2.26.7., 2.26.8. and 2.26.9., to read:

2.26.6. The prefix "LT" before the nominal section width, or the suffix "C" or "LT" after the rim diameter marking or, if applicable, after the tyre to rim fitment configuration; notwithstanding the foregoing, instead of a prefix or a suffix to the tyre-size designation "LT" may be placed after the service description.

2.26.6.1. This marking is optional in the case of tyres fitted on 5° drop centre rims, suitable for single and dual fitment, having a load-capacity index in single lower or equal to 121 and destined for the equipment of motor vehicles.

2.26.6.2. This marking is mandatory in the case of tyres fitted on 5° drop centre rims, suitable for single fitment only, having a load-capacity index higher or equal to 122 and destined for the equipment of motor vehicles.

2.26.7. The suffix "CP" after the rim diameter marking, or, if applicable, after the tyre to rim fitment configuration; this marking is mandatory in the case of tyres fitted on 5° drop centre rims, having a load-capacity index in

single lower or equal to 121 and specifically designed for the equipment of motor caravans.

2.26.8. **Optionally the suffix "MPT" after the rim diameter marking for tyres specifically designed for the equipment of multi-purpose commercial vehicles.**

2.26.9. **Optionally the prefix "ST" before the nominal section width for tyres specifically designed for the equipment of special trailers."**

Paragraphs 2.27. to 2.30., amend to read:

"2.27. ~~"Nominal rim diameter (d)"~~ **"Nominal rim diameter (d)"** means the diameter of the rim on which a tyre is designed to be mounted.

2.28. ~~"Rim"~~ **"Rim"** means the support, either for a tyre-and-tube assembly or for a tubeless tyre, on which the tyre beads are seated.

2.28.1. ~~"Tyre to rim fitment configuration"~~ **"Tyre to rim fitment configuration"** means the type of rim to which the tyre is designed to be fitted. In the case of non-standard rims this will be identified by a symbol applied to the tyre, for example, "A".

2.29. ~~"Measuring rim"~~ **"Measuring rim"** means the rim specified as a 'measuring rim width' or 'design rim width' for a particular tyre size designation in any edition of one or more of the International Tyre Standards.

2.30. ~~"Test rim"~~ **"Test rim"** means any rim specified as approved or recommended or permitted in one of the International Tyre Standards for a tyre of that size designation and type."

Paragraph 2.31., amend to read:

"2.31. ~~"International Tyre Standard"~~ **"International Tyre Standard"** means any one of the following standard documents:

- (a) The European Tyre and Rim Technical Organisation (ETRTO) ^{3/}: 'Standards Manual';
- (b) The European Tyre and Rim Technical Organisation (ETRTO) ^{3/}: ~~'Engineering Design Information—obsolete data'~~; **'Previous Standard Data'**;
- (c) The Tire and Rim Association Inc. (TRA) ^{4/}: 'Year Book';
- (d) The Japan Automobile Tire Manufacturers Association (JATMA) ^{5/}: 'Year Book';
- (e) The Tyre and Rim Association of Australia (TRAA) ^{6/}: 'Standards Manual';
- (f) ~~The Associação Brasileira de Pneus e Aros (ABPA)~~ **Associação Latino Americano de Pneus e Aros (ALAPA)** ^{7/}: ~~'Manual de Normas Técnicas'~~ **'Normas Técnicas'**;
- (g) The Scandinavian Tyre and Rim Organisation (STRO) ^{8/}: 'Data Book'."

Paragraphs 2.32. to 2.37., amend to read:

The tyre standards can be obtained from the following addresses:

^{3/} ETRTO, Rue Defacqz 78 – B-1060 Avenue d'Auderghem 22-28 - B 1040 Brussels, Belgium

^{4/} TRA, 175 Montrose West Avenue, Suite 150, Copley, Ohio, 44321 USA

^{5/} JATMA, 9th Floor, Toranomom Building No. 1-12, 1-Chome Toranomom Minato-ku, Tokyo 105, Japan

^{6/} TRAA, Suite 1, Hawthorn House, 795 Glenferrie Road, Hawthorn, Victoria, 3122 Australia

^{7/} ~~ABPA~~ **ALAPA**, Avenida Paulista 2444-12º Andar, conj. 124, CEP, 01310-300 São São Paulo, S.P. Brazil

^{8/} STRO, Älggatan 48 A, Nb, S-216 15 Malmö, Sweden

- "2.32. ~~"Chunking"~~ **"Chunking"** means the breaking away of pieces of rubber from the tread.
- 2.33. ~~"Cord separation"~~ **"Cord separation"** means the parting of the cords from their rubber coating.
- 2.34. ~~"Ply separation"~~ **"Ply separation"** means the parting of adjacent plies.
- 2.35. ~~"Tread separation"~~ **"Tread separation"** means the pulling away of the tread from the carcass.
- 2.36. ~~"Service description"~~ **"Service description"** means the ~~specific combination~~ **association** of the load index ~~or indices and with a speed category symbol of the tyre (for example, 164M or 121/119S); the service description may include either one or two load indices which indicate the load the tyre can carry in single or in single and dual operation.~~
- 2.37. **"Load-capacity index"** means a ~~number numerical code~~ which indicates the load the tyre can carry at the speed corresponding to the associated speed symbol and when operated in conformity with the **requirements governing utilization** ~~service conditions~~ specified by the original tyre manufacturer or the retreader. ~~A tyre can have more than one load index to indicate its load capacity when used in single or dual (twin) formation, or to indicate an alternative load capacity (Unique point) on which a load variation in accordance with paragraph 2.40. and Annex 8 to this Regulation is not permitted.~~
- The list of load indices and their corresponding loads ~~is given are shown in Annex 4 to this Regulation.~~

Paragraphs 2.38., 2.38.1. and 2.38.2., amend to read:

- "2.38. ~~"Speed symbol"~~ **"Speed category"** means:
- 2.38.1. ~~An alphabetical symbol indicating the~~ **The speeds, indicated by a symbol,** at which the tyre can carry the load ~~given~~ **indicated** by the associated load index;
- 2.38.2. ~~The symbols of speed symbols categories and corresponding speeds are as shown in the table below:~~

<i>Speed category symbol</i>	<i>Corresponding maximum speed (km/h)</i>
E	70
F	80
G	90
J	100
K	110
L	120
M	130
N	140
P	150
Q	160
R	170
S	180
T	190
U	200
H	210

"

Paragraphs 2.39. to 2.41., amend to read:

- "2.39. ~~"Unique Point" means an additional service description, marked adjacent to the normal service description, but which must not be used for calculating a load capacity variation with speed as defined in paragraph 2 and in Annex 8 to this Regulation.~~

"Additional service description" means an additional service description, marked within a circle, to identify a special type of service (load-capacity index or indices and speed category symbol) to which the retreaded tyre is also allowed to operate in addition to the applicable load variation with speed (see Annex 8).

- 2.40. ~~"Load capacity variation with speed" means an alternative load capacity for the tyre when used at a speed different from that indicated by the speed symbol in the normal service description. The permissible variations are given in the table in Annex 8 to this Regulation.~~

"Table load-capacity variation with speed" means:

The table, in Annex 8, showing as a function of the load-capacity indices and nominal-speed-category symbols the load variations which a tyre can withstand when used at speeds different from that conforming to its nominal-speed-category symbol. The load variations do not apply in the case of the additional service description obtained when the provisions of paragraph 6.6.1.2. are applied.

- 2.41. ~~"Retreading production unit"~~ **"Retreading production unit"** means a site or group of localized sites where finished retread tyres are produced."

Paragraphs 2.42., 2.42.1., 2.42.2. and 2.42.3., amend to read:

- "2.42. ~~"Retreading"~~ **"Retreading"** means the generic term for ~~reconditioning~~ **refurbishing** a used tyre by replacing the worn tread with new material. It may also include renovation of the outermost sidewall surface (e.g. ASP) and replacement of the crown plies or the protective breaker. It covers the following process methods:

- 2.42.1. ~~"Top capping"~~ **"Top capping"** - replacement of the tread;

- 2.42.2. ~~"Re-capping"~~ **"Re-capping"** - replacement of the tread and with the new material extending over part of the sidewall; ^{2/}

Paragraphs 2.43. to 2.45., amend to read:

- "2.43. ~~"Casing"~~ **"Casing"** is the worn tyre comprising carcass and remaining tread and sidewall material.

- 2.44. ~~"Buffing"~~ **"Buffing"** is the process of removing old material from the casing to prepare the surface for the new material.

- 2.45. ~~"Repair"~~ **"Repair"** is the remedial work carried out to damaged casings within recognised limits."

Paragraphs 2.46., 2.46.1., 2.46.2., 2.46.3. and 2.46.4., amend to read:

- "2.46. ~~"Tread material"~~ **"Tread material"** is a material in a condition suitable for replacing the worn tread. It can be in several forms for example:

- 2.46.1. ~~"Camel back"~~ **"Camel-back"** - pre-cut lengths of material which has been extruded to give the required cross section profile and subsequently fitted cold to the prepared casing. The new material must be cured;

- 2.46.2. ~~"Strip wound"~~ **"Strip-wound"** - a ribbon of tread material which is directly extruded and wound on to the prepared casing and built up to the required cross sectional contour. The new material must be cured;

- 2.46.3. ~~"Direct extrusion"~~ **"Direct extrusion"** - tread material extruded to give the required cross sectional profile and directly extruded on to the prepared casing. The new material must be cured;

- 2.46.4. ~~"Pre-cured"~~ **"Pre-cured"** - a previously formed and cured tread applied to the

^{2/} Including the process method used in applying of ASP.

prepared casing. The new material must be bonded to the casing."

Paragraphs 2.47. to 2.50., amend to read:

- "2.47. ~~"Sidewall veneer"~~ **"Sidewall veneer"** is a material used to cover the sidewalls of the casing thereby allowing the required markings to be formed. This material can also be used to protect the outside of the tyre against abrasion in service. In this case the protective rubber layer is called ASP (additional sidewall protection).
- 2.48. ~~"Cushion gum"~~ **"Cushion gum"** is a material used as a bonding layer between new tread and casing and for repairing minor damage.
- 2.49. ~~"Cement"~~ **"Cement"** is an adhesive solution to hold new materials in place prior to the curing process.
- 2.50. ~~"Cure"~~ **"Cure"** is the term used to describe the change in physical properties of the new material which is brought about usually by the application of heat and pressure for a set period of time under controlled conditions."

Paragraphs 2.51. to 2.55., delete:

- ~~"2.51. Representative tyre size" means the tyre size which is submitted to the test described in Annex 10 to this Regulation to assess the performance of a range of tyres produced by the retreading production facility with regard to their performance for use in severe snow conditions. It can be either a retreaded tyre produced with a pre-cured tread or a retreaded tyre with mould-cure process.~~
- ~~2.52. "Standard Reference Test Tyre" or "(SRTT)" means a tyre that is produced, controlled and stored in accordance with the standards of ASTM International:~~
- ~~(a) — F2872 — 16 for the size 225/75 R 16 C and referred to as "SRTT16C";~~
- ~~(b) — F2871 — 16 for the size 245/70R19.5 and referred to as "SRTT19.5";~~
- ~~(c) — F2870 — 16 for the size 315/70R22.5 and referred to as "SRTT22.5";~~
- ~~(d) — F2493 — 20 for the size P225/60R16 and referred to as "SRTT16".~~
- ~~2.53. "Control tyre" means a new production tyre that is used to establish the snow grip performance of tyre sizes unable to be fitted to the same vehicle as the standard reference test tyre — see paragraph 3.4.3. of Annex 10 to this Regulation.~~
- ~~2.54. "Snow grip index (SG)" means the snow grip performance of the candidate tyre relative to the performance of the applicable SRTT.~~
- ~~2.55. "Candidate tyre" means a tyre, that is submitted to one of the procedures for snow performance testing relative to snow tyre for use in severe snow conditions — see Annex 10 to this Regulation."~~

Paragraph 2.56., renumber as 2.51. and amend to read:

- "2.5156. Class C2 tyres: Tyres conforming to Regulation No. 54 and identified by a load-capacity index in single formation lower or equal to 121 and a speed category symbol higher or equal to "N";"

Paragraph 2.57., renumber as 2.52. and amend to read:

- "2.5257. Class C3 tyres: Tyres conforming to Regulation No. 54 and identified by:
- (a) A load-capacity index in single formation higher or equal to 122 or;
- (b) A load-capacity index in single formation lower or equal to 121 and a speed category symbol lower or equal to "M"."

Paragraph 2.58., renumber as 2.55. and amend to read:

- "2.5558. ~~"Professional off-road tyre"~~ **"Professional off-road tyre"** is a special use tyre primarily used for service in severe off-road conditions."

Paragraph 2.59., renumber as 2.56. and amend to read:

"~~2.5659.~~ ~~"Tread depth"~~ **"Tread depth"** means the depth of the principal grooves."

Paragraph 2.59.1, renumber as 2.56.1. and amend to read:

"~~2.5659.1.~~ ~~"Principal grooves"~~ **"Principal grooves"** means the wide circumferential grooves positioned in the central zone of the tyre tread, which, in the case of passenger and light truck (commercial) tyres, have the treadwear indicators located in the base."

Paragraph 2.60., renumber as 2.57. and amend to read:

"~~2.5760.~~ ~~"Void to fill ratio"~~ **"Void to fill ratio"** means the ratio between the area of voids in a reference surface and the area of this reference surface calculated from the mould drawing."

Add new paragraphs 2.58 and 2.59. to read:

2.58. "Supplier of the tread used for retreading process" means the person or body who is responsible to the Type Approval Authority for all aspects of the type-approval under UN Regulation No. [XXX].

2.59. "Tread used for retreading process" means either a pre-cured tread or the specification of the major features of the tread used for mould cure process."

Paragraph 3.2.4.3., delete:

~~3.2.4.3. On bias belted tyres; the letter "B" placed in front of the rim diameter marking and in addition the words "BIAS BELTED".~~

Paragraph 3.2.5., amend to read:

3.2.5. The service description ~~comprising:~~ **as defined in paragraph 2.36."**

Paragraphs 3.2.5.1. and 3.2.5.2., delete:

~~3.2.5.1. An indication of the tyre's nominal load capacity/capacities in the form of the load index/indices prescribed in paragraph 2.;~~

~~3.2.5.2. An indication of the tyre's nominal speed capability in the form of the speed symbol prescribed in paragraph 2.;"~~

Paragraph 3.2.6., amend to read:

3.2.6. If applicable, one ~~alternative service description, the Unique point, comprising:~~ **additional service description surrounded by a circle in case the provisions of paragraph 6.6.1.2. are applied."**

Paragraphs 3.2.6.1. and 3.2.6.2., delete:

~~3.2.6.1. An indication of the tyres load capacity/capacities in the form of the load index/indices prescribed in paragraph 2.;~~

~~3.2.6.2. An indication of the speed capability in the form of the speed symbol prescribed in paragraph 2.;"~~

Paragraphs 3.2.8. and 3.2.8.1, amend to read:

3.2.8. The inscription M+S or MS or M.S. or M & S ~~in the case of a snow tyre 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 4.1.5.3.1. as complying also with the definition given in paragraph 2.8.3.~~

3.2.8.1. The "Alpine" symbol (3-peak-mountain with snowflake) ~~shall be added if the snow tyre or the special use tyre is classified as "snow-tyre for use in severe snow conditions.~~

~~In addition, in case a pre-cured tread is used for the retreading process, the~~

inscription M+S or MS or M.S. or M & S and the "Alpine" symbol shall be marked, at least once, on both sides of the tread shoulder.

~~In both cases, the~~ **The** "Alpine" symbol ("3-peak-mountain with snowflake") shall conform to the symbol described in Annex 7-40, Appendix 1 to UN Regulation No. 117."

Paragraph 3.2.9., delete:

~~"3.2.9. The date of retreading as follows:"~~

Paragraph 3.2.9.1., delete:

~~"3.2.9.1. Up to 31 December 1999; either as prescribed in paragraph 3.2.9.2. or in the form of a group of three digits, the first two showing the week number and the third, the year of the decade of manufacture. The date code can cover a period of production from the week indicated by the week number up to and including the week number plus three. For example, the marking "253" could indicate a tyre which was retreaded in weeks 25, 26, 27 or 28 of the year 1993.~~


~~The date code may be marked on one sidewall only."~~

Paragraph 3.2.9.2., renumber as 3.2.9. and amend to read:

~~"3.2.9.2. As from 1 January 2000;~~ **The date of retreading** in the form of a group of four digits, the first two showing the week number and the second two showing the year in which the tyre was retreaded. The date code can cover a period of production from the week indicated by the week number up to and including the week number plus three. For example, the marking "2503" could indicate a tyre which was retreaded in weeks 25, 26, 27 or 28 of the year 2003.

The date code may be marked on one sidewall only."

Paragraph 3.2.10., amend to read:

"3.2.10. In the case of tyres which can be regrooved, the symbol " in a circle at least 20 mm in diameter, or the word "REGROOVABLE", moulded into or on to each sidewall."

Paragraphs 3.2.13. to 3.2.14., amend to read:

"3.2.12. The term "RETREAD". At the request of the retreader, the same term in other languages may also be added.

3.2.13. The inscription "MPT" (or alternatively "ML" or "ET") and/or "POR" if the tyre is classified in the category of use "special use tyre". **In addition, they may also bear the inscription M+S or M.S or M&S.**

"ET" means Extra Tread, "ML" stands for Mining and Logging, "MPT" means Multi-Purpose Truck and "POR" means Professional Off-Road.

3.2.14. Tyres retreaded using the "bead to bead" process as defined in paragraph 2.42.3., or any process in which the sidewall material is renewed, shall have the identification referred to in paragraph 2.26.45., placed only immediately after the rim diameter marking referred to in paragraph 2.26.34."

Paragraph 3.2.15., amend to read:

"3.2.15. **The inscription "LT" after the service description, if it is not marked as part of the tyre size designation; tyres whose tyre-size designation includes the suffix "C" or "CP" may be marked with the additional inscription "LT" away from the tyre-size designation.**

~~The prefix "LT" or the suffix "C" or "LT" following the rim diameter marking referred to in paragraph 2.26.3. and, if applicable, after the tyre to rim fitment configuration symbol referred to in paragraph 2.26.4. or the suffix "LT" after the service description."~~

Paragraphs 3.2.15.1., 3.2.15.2. and 3.2.16., delete:

~~3.2.15.1. This marking is optional in the case of tyres fitted on 5° drop centre rims, suitable for single and dual fitment, having a load index in single fitment equal to or less than 121 and intended for the equipment of motor vehicles.~~

~~3.2.15.2. This marking is mandatory in the case of tyres fitted on 5° drop centre rims, suitable for single fitment only, having a load index equal to or greater than 122 and intended for the equipment of motor vehicles~~

~~3.2.16. The suffix "CP" following the rim diameter marking referred to in paragraph 2.26.3. and, if applicable, after the tyre to rim configuration symbol referred to in paragraph 2.26.4. This marking is mandatory in the case of tyres fitted on 5° drop centre rims, having a load index in single fitment equal to or less than 121 and specifically designed for the equipment of motor caravans."~~

Paragraph 3.2.18., amend to read:

3.2.18. The inscription "TRACTION" if the tyre is classified as traction;⁴⁰ ~~10~~

Add new paragraph 3.4.1.:

3.4.1. In the case of retreaded tyre classified as "snow tyre for use in severe snow conditions" and/or as "traction tyre", the approval mark referred to in paragraph 5.4. to UN Regulation No. [XXX] and shown in its Annex 2 shall be affixed in addition."

Paragraph 4.1.5.2., amend to read:

4.1.5.2. The structure of tyres (diagonal (**bias-ply**) ~~or bias ply, bias belted or radial~~);"

Paragraph 4.1.5.3., amend to read:

4.1.5.3. The category of use of tyres (normal, snow or special **use** tyres);"

Add a new paragraph 4.5.1.3.1. to read:

4.1.5.3.1. For the tyres belonging to the category of use "special use tyre" those which may bear the inscription M+S or M.S or M&S."

Paragraph 4.1.5.3.1. (former), renumber as 4.5.3.2. and amend to read:

~~4.1.5.3.1.2. For snow tyres the~~ **The list of tyres classified as tyre for use in severe snow conditions and/or as traction tyre. having to fulfil the requirements of paragraph 7.2.:"**

Paragraph 4.1.5.3.1.1. (former), renumber as 4.5.3.2.1. and amend to read:

~~4.1.5.3.1.2.1. For retreaded tyres retreaded-produced by using either pre-cured tread material or mould cure tread material or mould cure process with a-the same tread~~ **For retreaded tyres produced by using either pre-cured tread material or mould cure tread material or mould cure process with a-the same tread** pattern covered by paragraph 6.4.4.1. the list shall clearly identify the tyres in order to make the relevant link with the list(s) quoted in paragraph 6.4.4.1. b). The following table is an example:

Tyre Size Designation, Load indexes, Speed symbol	TM1	TM2	TM3
215/75 R 17.5 126/124 M	TPM1/TPR1, TAR1/TL1	-	TPM2/TPR2, TAR2/TL2
235/75 R 17.5 132/130 M	TPM1/TPR1, TAR1/TL1	-	-
265/70 R 17.5 138/136 M	-	TPM3/TPR3, TAR3/TL3	TPM4/TPR4, TAR4/TL4
245/70 R 19.5 136/134 M	-	-	-
12 R 22.5 152/148 K	-	TPM5/TPR5, TAR5/TL5	-

Notes:

TM: ~~Identification-Brand name/trademark~~ of the **Pre-Cured** Tread Manufacturer

TPM: ~~Identification-Trade description/commercial name~~ of the Tread Pattern by the **pre-cured** tread

⁴⁰10/ Minimum height of marking: refer to dimension C in Annex 3 of this Regulation.

Manufacturer

TPR: ~~Identification~~ Trade description/commercial name of the Tread Pattern by the Retreader if different of TPM

TAR: ~~Number of the test report~~ Number of the approval granted according to UN Regulation No. [XXX] to the type of retreaded tyre produced by using either a pre-cured tread or mould cure process with a tread having the same major features including tread pattern.

TL: Reference of the list linked to the test report"

Paragraph 4.1.5.3.1.2.(former), renumber as 4.5.3.2.2. and amend to read:

"4.1.5.3.4.2.2. For **retreaded** tyres ~~retreaded~~ produced by using either mould cure **process** or pre-cured tread material with the same major features including tread pattern(s) as a new **type of tyre** type and covered by paragraph 6.4.4.2., the list shall clearly identify the tyres in order to make the relevant link with the list(s) quoted in paragraph 6.4.4.2. ab). **The following table is an example:**

<i>Tyre Size Designation, Load indexes, Speed symbol</i>	<i>TM1</i>	<i>TM2</i>	<i>TM3</i>
215/75 R 17.5 126/124 M	TPM1/TPR1, TA1	-	TPM2/TPR2,TA2
235/75 R 17.5 132/130 M	TPM1/TPR1, TA1	-	-
265/70 R 17.5 138/136 M	-	TPM3/TPR3, TA3	TPM4/TPR4, TA4
245/70 R 19.5 136/134 M	-	-	-
12 R 22.5 152/148 K	-	TPM5/TPR5, TA5	-

Notes:

TM: Brand name/trademark of the Tyre Manufacturer

TPM: Trade description/commercial name of the Tread Pattern by the Tyre Manufacturer

TPR: Trade description/commercial name of the Tread Pattern by the Retreader

TA: Number of the approval granted according to UN Regulation No. [XXX] to the type of retreaded tyre produced by using the pre-cured tread or mould cure process with a tread having the same major features including tread pattern of new tyres approved according to Regulation No. 117."

Paragraph 4.1.5.3.1.3. (former), renumber as 4.5.3.2.3. and amend to read:

"4.1.5.3.4.2.3. For **retreaded** tyres ~~retreaded~~ produced by using mould cure ~~tread material~~ **process with a tread pattern** covered by paragraph 6.4.4.3. the list shall clearly identify the tyres in order to make the relevant link with the list(s) quoted in paragraph 6.4.4.3. b). **The following table is an example:**

<i>Tyre Size Designation, Load indexes, Speed symbol</i>	<i>TPR1</i>	<i>TPR2</i>	<i>TPR3</i>
215/75 R 17.5 126/124 M	TA1	-	TA3
235/75 R 17.5 132/130 M	TA1	-	-
265/70 R 17.5 138/136 M	-	TA2	TA3
245/70 R 19.5 136/134 M	-	-	-
12 R 22.5 152/148 K	-	TA2	-

Notes:

TPR: Trade description/commercial name of the Tread Pattern by the Retreader

TA: Number of the approval granted according to UN Regulation No. [XXX] to the type of retreaded tyre produced by using mould cure process"

Add a new paragraph 4.1.5.5.1. to read:

"4.1.5.5.1. The speed category symbol E can be used only for the additional service description."

Paragraphs 4.2. and 4.2.1., delete:

"4.2. The application for approval shall be accompanied by:

~~4.2.1. Details of the major features, including the tread pattern, with respect to the effects on the snow grip performance of the range of tyre sizes listed as required by paragraph 4.1.5.3.1. This may be by means of descriptions supplemented by drawings and/or photographs which must be sufficient to allow the type approval authority or technical service to determine whether any subsequent changes to the major features will adversely affect the tyre performance. The effects of changes to minor details of tyre construction on tyre performances will be evident and determined during checks on conformity of production;"~~

Paragraph 4.3., renumber as 4.2.:

"4.23. At the request of the Type Approval Authority, the Retreader shall submit samples of tyres for test or copies of test reports from the technical services, communicated as given in paragraph 12. of this Regulation."

Paragraph 5.4., amend to read:

"5.4. Before granting approval the authority must be satisfied that retreaded tyres conform to this Regulation and that the tests have been successfully carried out:

- (a) ~~On~~ **on** at least five and not necessarily more than 20 samples of retreaded tyres representative of the range of tyres produced by the retreading production unit when prescribed according to paragraphs 6.5. and 6.6.1. and;
- (b) ~~On at least one sample of retreaded tyres, of each pattern covered by paragraph 6.4.4.3., representative of the range of tyres produced by the retreading production unit when prescribed according to paragraph 6.6.2.* In case of paragraphs 6.4.4.1. and 6.4.4.2., the Type Approval Authority might request a test of compliance for the retreaded tyre. Testing of sampled sizes may be confined to a worst case selection*, at the discretion of the Type Approval Authority or designated Technical Service."~~

Paragraphs 6.4.4.1., 6.4.4.2. and 6.4.4.3., amend to read:

"6.4.4.1. For **retreaded** tyres ~~retreaded-produced~~ by using pre-cured tread material(s) or ~~an identical tread pattern design in a~~ **by using** mould cure **process** product with ~~a-the same~~ tread pattern not covered by paragraph 6.4.4.2. ~~having to fulfil the requirements of paragraph 7.2. *and type approved pursuant to UN Regulation No. [XXX],~~ the retreader shall ensure that the ~~material manufacturer(s) or the material supplier(s) of the tread(s) used for retreading process pre-cured tread(s)~~ provides to the Type Approval Authority (TAA) and the Technical Service issuing the approval according to this Regulation and optionally to the retreader:

- (a) A copy of **UN Regulation No. [XXX] certificate(s), as issued by the relevant Type Approval Authority.** ~~test report(s) as in Annex 10, Appendix 2 and/or 3 of the representative tyre size(s) (see definition in paragraph 2.) demonstrating compliance of the pre-cured tread(s) to the requirements of paragraph 7.2.~~
- (b) The list(s) of tyre sizes **annexed to UN Regulation No. [XXX] certificate(s).** ~~to which it can be applied for the retreading process and validated by the same designated Technical Service and TAA which issued the test report(s) in paragraph 6.4.4.1. (a).~~ The list(s) shall

* ~~If a tread pattern can be applied by mould cure and pre-cure retread processes, the snow test may be performed with a representative tyre size retreaded with only one of the two possible processes and the snow performance test report can be used for both cases as long as the major features of the tread are technically identical. This will be proven by means of written official permission by the holder of the tread snow performance report.~~

include at least the tyres defined in paragraph 4.1.5.3.42.1.;

- (c) **The drawing(s) of the tread pattern(s) covered by UN Regulation No. [XXX] certificate(s) including the major features with respect to the snow performance;**
- (d) A copy of the **last report of the Conformity of Production as required in UN Regulation No. [XXX]**. ~~measures taken to ensure the conformity of production. These measures shall include test results demonstrating that the minimum levels of the snow performances required in paragraph 7.2.1 will be maintained, and demonstrating periodically the compliance with the requirement defined in paragraph 9.2.3. or 9.4.3.~~

6.4.4.2. For **retreaded** tyres ~~retreaded~~ **produced** by using either mould cure **process** or pre-cured tread ~~material(s) with the same major features including tread pattern(s) as a new type of tyre type-approved according to UN-Regulation No. 117 having fulfilled the requirements about minimum snow performance in severe snow conditions, the retreader shall ensure that the manufacturer of the new tyre type provides to the Type Approval Authority (and the Technical Service) issuing the approval according to this UN Regulation and optionally to the retreader:~~

- (a) a copy of **UN Regulation No. [XXX] certificate(s), as issued by the relevant Type Approval Authority based on the UN-Regulation No. 117 certificate(s) and a copy of the compliance of the new tyre to the minimum snow performance in severe snow conditions;**
- (b) The list(s) of tyre sizes **annexed to UN Regulation No. [XXX] certificate(s)** ~~to which it can be applied for the retreading process and validated by the same designated Technical Service ** and/or Type Approval Authority that issued the UN Regulation No. 117 certificate(s).~~ The list(s) shall include at least the tyres defined in paragraph 4.1.5.3.42.23.;
- (c) The drawing(s) of the tread pattern(s) covered by the ~~UN-Regulation No 117 certificate(s) including the major features with respect to the snow performance;~~
- (d) A copy of the last report of the Conformity of Production as required in ~~UN-Regulation No. 117, and demonstrating periodically the compliance with the requirement defined in paragraph 9.2.4. or 9.4.4.~~

6.4.4.3. For **retreaded** tyres ~~retreaded~~ **produced** by using mould cure **process** ~~tread material(s) and design(s) not covered by paragraphs 6.4.4.1. or 6.4.4.2., having to fulfil the requirements of paragraph 7.2.*; and type approved pursuant to UN Regulation No. [XXX] the retreader shall provide to the Type Approval Authority (TAA) and the Technical Service issuing the approval according to this Regulation:~~

- (a) A copy of **UN Regulation No. [XXX] certificate(s), as issued by the relevant Type Approval Authority test report(s) as in Annex 10, Appendix 2 and/or 3 of the representative tyre size(s) (see definition in paragraph 2.) demonstrating compliance of the mould cure tread(s) to the requirements of paragraph 7.2.;**
- (b) The list(s) of tyre sizes **annexed to UN Regulation No. [XXX] certificate(s)**. ~~to which it can be applied for the retreading process and validated by the same designated Technical Service and TAA which issued the test report(s) requested in paragraph 6.4.4.3. (a).~~ The list(s)

** Refer to the designated Technical Services listed in the document ECE/TRANS/WP.29/343 in its latest revision.

shall include at least the tyres defined in paragraph 4.1.5.3.42.34.;

- (c) **The drawing(s) of the tread pattern(s) including the major features with respect to the snow performance;**
- (ed) **A copy of the last report of the Conformity of Production as required in UN Regulation No. [XXX].** ~~measures taken to ensure the conformity of production. These measures shall include test results demonstrating that the minimum levels of the snow performances required in paragraph 7.2.1. will be maintained and demonstrating periodically the compliance with the requirement defined in paragraph 9.2.2. or 9.4.2.;~~
- ~~(d) The drawing(s) of the tread pattern(s) including the major features with respect to the snow performance."~~

Add a new paragraph 6.4.4.4. to read:

"6.4.4.4. For retreaded tyres produced by using pre-cured tread and type approved pursuant to UN Regulation No. [XXX], the retreader shall ensure the packaging of the pre-cured tread bear the sticker with the approval marking till it is open and start to be used for the retreading process unless the approval marking is displayed on the tread shoulder."

Paragraph 6.5.3., amend to read:

"6.5.3. For the purposes of quality control a number of retreaded tyres shall be subjected to destructive or **non-destructive** ~~non-destructive~~ testing or examination. The quantity of tyres checked and the results shall be recorded."

Paragraph 6.6., delete:

~~"6.6. Performance tests"~~

Paragraphs 6.6.1. and 6.6.1.1., renumber as 6.6. and 6.6.1.:

~~"6.6.1. Load/speed endurance test:~~

~~6.6.1.1. Tyres retreaded to comply with this Regulation shall be capable of meeting the load/speed endurance test as specified in Annex 7 to this Regulation."~~

Add new paragraphs 6.6.1.1., 6.6.1.2. and 6.6.1.2.1. to read:

"6.6.1.1. In case of retreaded tyre following the load/speed combinations given in the table in Annex 8, the endurance test prescribed in paragraph 6.6.1. above need not be carried out for load and speed values other than the nominal values.

6.6.1.2. In case of retreaded tyre which has an additional service description, the endurance test prescribed in paragraph 6.6.1. above shall also be carried out on a second tyre of the same size, structure and tread pattern at the additional load/speed combination and the applicable inflation pressure. At the option of the retreader, one test at the highest load index, the highest speed symbol and the lowest test inflation pressure indicated may be submitted.

6.6.1.2.1. Tyres marked with an additional service description for which the load-capacity represents a difference in load not greater than 2 per cent with respect to a load/speed combination applicable to the nominal speed category symbol (see Annex 8) can be exempted from performing an additional load/speed test, provided that the speed category of the additional service description differs from the speed category of the nominal service description and that there is no second test inflation pressure marked for the additional service description."

Paragraph 6.6.1.2. (former), renumber as 6.6.2.:

~~"6.6.1.2. A retreaded tyre which after undergoing the load/speed endurance test does not~~

exhibit any tread separation, ply separation, cord separation, chunking or broken cords shall be deemed to have passed the test."

Paragraph 6.6.1.3. (former), renumber as 6.6.3.:

"6.6.3. ~~The~~ Except for tyres with radial structure, the outer diameter of the tyre, measured six hours after the load/speed endurance test, must not differ by more than ~~±3.5~~ 3.5 per cent."

Paragraphs 6.6.2. and 6.6.2.1., delete:

~~"6.6.2. Snow test~~

~~6.6.2.1. Retreaded Snow Tyres for use in severe snow conditions to comply with this regulation shall be capable of meeting snow performance test as specified in Annex 10 to this Regulation."~~

Paragraph 7.1.4., amend to read:

"7.1.4.1. The actual overall width may be less than the section width or widths determined in paragraph 7.1.1."

Paragraphs 7.2., 7.2.1., 7.3. and 7.3.1., delete:

~~"7.2. In order to be classified as a "snow tyre for use in severe snow conditions", the retreaded tyre to comply with this Regulation shall meet the performance requirements of paragraph 7.2.1. The retreaded tyre size shall meet these~~

- ~~(a) The mean fully developed deceleration ("mfdd") in a braking test;
(b) Or alternatively an average traction force in a traction test;
(c) Or alternatively the average acceleration in an acceleration test~~

~~of a candidate tyre is compared to that of a Standard Reference Test Tyre (SRTT).~~

~~The relative performance shall be indicated by a snow grip index.~~

~~7.2.1. For Class C2 and C3 tyres, the minimum snow grip index value, as calculated in the procedure described in Annex 10 and compared with the respective Standard Reference Test Tyre (SRTT) shall be as follows:~~

Class of tyre	Snow grip index (brake on snow method) ^(a)	Snow grip index (spin traction method) ^(b)	Snow grip index (acceleration method) ^(c)
	Ref.s = SRTT16C	Ref.s = SRTT16	Ref.s = SRTT19.5, SRTT22.5
C2	1.02	1.10	No
C3	No	No	1.25

~~^(a) See paragraph 3 of Annex 10 to this Regulation~~

~~^(b) See paragraph 2 of Annex 10 to this Regulation~~

~~^(c) See paragraph 4 of Annex 10 to this Regulation~~

~~7.3. In order to be classified as a "traction tyre", a tyre is required to meet the conditions of paragraph 7.3.1. below.~~

~~7.3.1. The tyre shall have a tread pattern with minimum two circumferential ribs, each containing a minimum of 30 block like elements, separated by grooves and/or sipe elements the depth of which has to be minimum of one half of the tread depth. The use of an alternative option of a physical test will only apply at a later stage following a further amendment to the Regulation including a reference to an appropriate test methods and limit values."~~

Paragraph 7.4., renumber as 7.2. and amend to read:

"7.24. In order to be classified 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) For C2 tyres: a tread depth ≥ 11 mm and void to fill ratio ≥ 35 per cent;

- (b) For C3 tyres: a tread depth ≥ 16 mm and void to fill ratio ≥ 35 per cent.

* **blocks may be shaped as lugs and cleats.**"

Paragraph 7.5., renumber as 7.3. and amend to read:

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

- (a) For C2 tyres:
- (i) ~~A-a~~ tread depth ≥ 11 mm; **and**
 - (ii) ~~A-a~~ void-to-fill ratio ≥ 35 per cent; **and**
 - (iii) ~~A-a~~ maximum-speed **category rating** of $\leq Q-160$ km/h.
- (b) For C3 tyres:
- (i) ~~A-a~~ A tread depth ≥ 16 mm; **and**
 - (ii) ~~A-a~~ void-to-fill ratio ≥ 35 per cent; **and**
 - (iii) ~~A-a~~ maximum-speed **category rating** of $\leq K-110$ km/h."

Paragraph 9., amend to read:

"9. Conformity of production

The conformity of production procedures shall comply with those set out in the Agreement, Appendix 2 (E/ECE/324-E/ECE/TRANS/505/Rev.23), with the following requirements:"

Paragraphs 9.2. and 9.2.1., amend to read:

"9.2. The holder of the approval shall ensure that, at least the following number of tyres, representative of the range being produced, is checked and tested as prescribed in this Regulation:

9.2.1. 0.01 per cent of the total annual production but in any case not less than 2 **tyres** and not necessarily more than 10 **tyres** during each year of production, and spread throughout that year;"

Paragraphs 9.2.2., 9.2.3. and 9.2.4., delete:

~~"9.2.2. At least 1 tyre once every two years in order to verify conformity of the performance of the snow tyres for use in severe snow conditions fulfilling paragraph 6.6.2. and covered by paragraph 6.4.4.3.~~

~~9.2.3. At least one tyre once every four years in order to verify conformity of the performance of the snow tyres for use in severe snow conditions fulfilling paragraph 6.6.2. and covered by paragraph 6.4.4.1. The retreader can use the snow performance periodic test results obtained by the tread manufacturer or tread supplier for this purpose;~~

~~9.2.4. At least one tyre once every four years in order to verify conformity of the performance of the snow tyres for use in severe snow conditions fulfilling paragraph 6.6.2. and covered by paragraphs 6.4.4.2. The retreader can use the current snow performance periodic test results obtained by the owner of the original UN Regulation No. 117 approval certificate."~~

Paragraph 9.4., amend to read:

"9.4. The authority which has approved the retreading production unit may at any time verify the conformity control methods applied in each production facility ~~including among others the prescriptions defined in the paragraph 6.4.4.1.(c), 6.4.4.2.(d) and 6.4.4.3.(e).~~ For each production facility, the type Approval Authority shall take samples at random and at least the following number of tyres, representative of the range being produced, shall be checked and tested as prescribed in this Regulation:"

Paragraphs 9.4.2., 9.4.3. and 9.4.4., delete:

- ~~"9.4.2. At least 1 tyre once every two years in order to verify conformity of the performance of the snow tyres for use in severe snow conditions fulfilling paragraph 6.6.2. and covered by paragraph 6.4.4.3.~~
- ~~9.4.3. At least one tyre once every four years in order to verify conformity of the performance of the snow tyres for use in severe snow conditions fulfilling paragraph 6.6.2. and covered by paragraphs 6.4.4.1. The retreader can use the snow performance periodic test results obtained by the tread manufacturer or tread supplier for this purpose.~~
- ~~9.4.4. At least one tyre once every four years in order to verify conformity of the performance of the snow tyres for use in severe snow conditions fulfilling paragraph 6.6.2. and covered by paragraphs 6.4.4.2. The retreader can use the current snow performance periodic test results obtained by the owner of the original UN Regulation No. 117 approval certificate."~~

Add a new chapter 13. and paragraphs 13.1., 13.2., 13.3. and 13.4. to read:

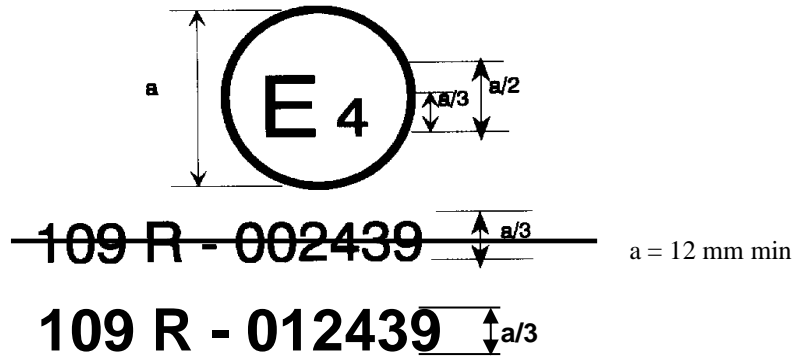
"13. Transitional provisions

- 13.1. As from the official date of entry into force of the 01 series of amendments, no Contracting Party applying this Regulation shall refuse to grant or refuse to accept type approvals under this Regulation as amended by the 01 series of amendments.**
- 13.2. Contracting Parties applying this Regulation shall continue to accept type approvals of, and to grant extensions of approvals to, the retreading production units to the preceding series of amendments to this Regulation which are not affected by the changes introduced by the 01 series of amendments.**
- 13.3. As from [1 September 2025], Contracting Parties applying this Regulation shall not be obliged to accept type approvals issued according to the preceding series of amendments, first issued after [1 September 2025].**
- 13.4. Until [1 September 2028], Contracting Parties applying this Regulation shall accept type approvals issued according to the preceding series of amendments, first issued before [1 September 2025]."**

Annex 2, amend to read:

"Annex 2

Arrangement of Approval Mark



The above approval mark affixed to a retreaded tyre shows that the retreading production unit concerned has been approved in the Netherlands (E4) under approval number 109R0912439 meeting the requirements of **01 series of amendments** to this Regulation ~~in its original form (00)~~.

The approval number must be placed close to the circle and either above or below the "E" or left or right of that letter. The digits of the approval number must be on the same side of the "E" and face in the same direction. The use of Roman numerals as approval numbers should be avoided so as to prevent any confusion with other symbols."

Annex 3, Example 2, amend to read:

"Example 2:

...

The above example defines a retreaded tyre:

- Having a nominal section width of ~~295~~**255**;
- Having a nominal aspect ratio of ~~80~~**70**;
- Of radial-ply structure (R);
- Having a nominal rim diameter of 572 mm, for which the code is 22.5;
- Having load capacities of ~~3550~~**3150** kg (single) and ~~3150~~**2900** kg (twinned or dual), corresponding respectively to the load indices ~~152~~**148** and ~~148~~**145** shown in Annex 4 to this Regulation;
- Having a nominal speed symbol ~~K~~**J** (reference speed ~~140~~**100** km/h);
- Able to be used ~~at the Unique Point~~ **additionally at 120 km/h** (speed category symbol L (~~reference speed 120 km/h~~); with a load capacity of ~~3350~~**3000** kg (single) and ~~3000~~**2725** kg (twinned or dual), corresponding respectively to the load indices ~~150~~**146** and ~~146~~**143** shown in Annex 4 to this Regulation;
- Intended to be used without an inner tube ("TUBELESS") and of Snow type (M+S);
- Retreaded in the weeks 25, 26, 27 or 28 of the year 2003.
- Requiring to be inflated to 800 kPa for both load/speed endurance tests in Example 1 and 800 kPa for the load/speed endurance test according to the main load/speed combination and 750 kPa for the test according to the additional load/speed combination in Example 2.

2. ...
3. The positioning and order of the markings constituting the tyre designation shall be as follows:
- The size designation as defined in paragraph 2. of this Regulation shall be grouped as shown in the above examples: ~~295/80~~**255/70** R 22.5 or 235-700 R 450 A.
 - The service description comprising the load index (indices) and the speed symbol(s) shall be placed immediately after the tyre size designation as defined in paragraph 2. of this Regulation.
 - The symbol "TUBELESS" and "M+S" may be at a distance from the size-designation symbol.
 - The word "RETREAD" may be at a distance from the size-designation symbol.
 - If paragraph 3.2.6. of this Regulation is applied, the additional service description (~~Unique Point~~), comprising the load indices and speed symbol, shall be shown inside a circle near the nominal service description appearing on the tyre sidewall.
 - If there are two indications for the test inflation pressure, they must be placed in such a way that it is clear which pressure indication belongs to which load/speed combination."

Annex 5, amend to read:

"Annex 5

Tyre size designation and dimensions

(IN ACCORDANCE WITH UN REGULATION No. 54)

FOR THIS INFORMATION REFER TO ANNEX 5 OF UN REGULATION No. 54

Note that with reference to **paragraph** ~~paragraph~~ 6.5.4. of this Regulation, ..."

Annex 6, paragraph 4., amend to read:

- "4. The overall width ~~shall be~~ **is** measured at six equally spaced points around the tyre, ~~taking account~~ **being taken** of the thickness of ~~any~~ **the** protective ribs or bands. The highest ~~reading~~ **measurement** obtained ~~shall be~~ **is** taken as the overall width. "

Annex 7, paragraph 2.1., amend to read:

- "2.1. Mount the tyre and wheel assembly on the test axle and press it against the outer face of a smooth surfaced power-driven test drum **of at least** 1.70 m ± 1 per cent diameter having a surface at least as wide as the tyre tread."

Annex 7, appendix 1, amend to read:

"Annex 7 - Appendix 1

Endurance-test programme

Load index	Speed symbol	Test-drum speed [km.h ⁻¹]		Load placed on the wheel as a percentage of the load corresponding to the load index		
		Radial-ply	Diagonal (<i>bias-ply</i> <i>bias-ply</i> and <i>bias belted</i>)	7 h.	16 h.	24 h.

122 or more	E	32	32	66%	84%	101%
	F	32	32			
	G	40	32			
	J	48	40			
	K	56	48			
	L	64	-			
	M	72	-			
N	80	-				
121 or less	E	32	32	70%	88%	106%
	F	32	32			
	G	40	40			
	J	48	48			
	K	56	56			
	L	64	56			
	M	80	64			
	N	88	-			
P	96	-				
				4 h.	6 h.	
				75%	97%	114%
				75%	97%	114%
				75%	97%	114%

Notes:

(1) "Special-use" tyres (see paragraph 2.8. of this Regulation) shall be tested at a speed equal to 85 per cent of the speed prescribed for equivalent normal tyres.

(2) Tyres having a load index equal to or greater than 122, a speed symbol "N" or "P" and the additional markings "C" or "LT" included in the tyre size designation (referred to in paragraph 3.2.15. of this Regulation), shall be tested with the same programme as specified in the above table for tyres having a load index equal to or less than 121.

(3) In case of a test drum diameter larger than 1,700 mm ± 1 per cent, the above "percentage of test load" shall be increased as follows:

$$F_1 = K \cdot F_2$$

Where:

$$K = \sqrt{\frac{(R_1/R_2) \cdot (R_2 + r_T)}{(R_1 + r_T)}}$$

R_1 is the diameter of test drum, in millimetres

R_2 is the diameter of the reference test drum of 1,700 mm

r_T is the tyre outer diameter (see paragraph 6.1.5 of Regulation No. 54), in millimetres

F_1 is the percentage of load to be applied for the test drum

F_2 is the percentage of load, as per above table, to be applied for reference test drum of 1,700 mm

Example:

$K = 1$ for a test drum diameter of 1,700 mm;

In case of a test drum diameter of 3,000 mm and a tyre diameter of 1,500 mm:

$$K = \sqrt{\frac{(3000/1700) \cdot (1700+1500)}{(3000+1500)}} = 1.12$$

Annex 8, amend to read:

"Annex 8

Variation of load capacity with speed: commercial vehicle tyres – Radial Tyres

RADIAL AND DIAGONAL PLY
(IN ACCORDANCE WITH REGULATION No. 54)

Variation of Load Capacity (%load capacity (per cent))										
Speed (km/h)	All load indices				Load indices ≥ 122 ^{1/}		Load indices ≤ 121 ^{12/}			
	Speed category symbol ^{Symbol}				Speed category symbol ^{Symbol}		Speed category symbol ^{Symbol}			
	F	G	J	K	L	M	L	M	N	P ^{26/}
0	+150	+150	+150	+150	+150	+150	+110	+110	+110	+110
5	+110	+110	+110	+110	+110	+110	+90	+90	+90	+90
10	+80	+80	+80	+80	+80	+80	+75	+75	+75	+75
15	+65	+65	+65	+65	+65	+65	+60	+60	+60	+60
20	+50	+50	+50	+50	+50	+50	+50	+50	+50	+50
25	+35	+35	+35	+35	+35	+35	+42	+42	+42	+42
30	+25	+25	+25	+25	+25	+25	+35	+35	+35	+35
35	+19	+19	+19	+19	+19	+19	+29	+29	+29	+29
40	+15	+15	+15	+15	+15	+15	+25	+25	+25	+25
45	+13	+13	+13	+13	+13	+13	+22	+22	+22	+22
50	+12	+12	+12	+12	+12	+12	+20	+20	+20	+20
55	+11	+11	+11	+11	+11	+11	+17.5	+17.5	+17.5	+17.5
60	+10	+10	+10	+10	+10	+10	+15.0	+15.0	+15.0	+15.0
65	+7.5	+8.5	+8.5	+8.5	+8.5	+8.5	+13.5	+13.5	+13.5	+13.5
70	+5.0	+7.0	+7.0	+7.0	+7.0	+7.0	+12.5	+12.5	+12.5	+12.5
75	+2.5	+5.5	+5.5	+5.5	+5.5	+5.5	+11.0	+11.0	+11.0	+11.0
80	0	+4.0	+4.0	+4.0	+4.0	+4.0	+10.0	+10.0	+10.0	+10.0
85	-3	+2.0	+3.0	+3.0	+3.0	+3.0	+8.5	+8.5	+8.5	+8.5
90	-6	0	+2.0	+2.0	+2.0	+2.0	+7.5	+7.5	+7.5	+7.5
95	-10	-2.5	+1.0	+1.0	+1.0	+1.0	+6.5	+6.5	+6.5	+6.5
100	-15	-5	0	0	0	0	+5.0	+5.0	+5.0	+5.0
105	-	-8	-2	0	0	0	+3.75	+3.75	+3.75	+3.75
110	-	-13	-4	0	0	0	+2.5	+2.5	+2.5	+2.5
115	-	-	-7	-3	0	0	+1.25	+1.25	+1.25	+1.25
120	-	-	-12	-7	0	0	0	0	0	0
125	-	-	-	-	-	0	-2.5	0	0	0
130	-	-	-	-	-	0	-5.0	0	0	0
135	-	-	-	-	-	-	-7.5	-2.5	0	0
140	-	-	-	-	-	-	-10	-5	0	0
145	-	-	-	-	-	-	-	-7.5	-2.5	0
150	-	-	-	-	-	-	-	-10.0	-5.0	0
155	-	-	-	-	-	-	-	-	-7.5	-2.5
160	-	-	-	-	-	-	-	-	-10.0	-5.0

^{1/} The load indices refer to operation in single formation.

^{2/} Load variations are not allowed for speeds above 160 km/h. For speed symbols "Q" and above the speed corresponding to the speed symbol specifies the maximum permissible speed for the tyre."

Annex 10, delete.

Annex 10, Appendices 1, 2 and 3, delete.

II. Justification

1. This new series of amendments to Regulation No. 109 is proposed in order to address the following difficulties that the rereaders and the Type Approval Authorities have been facing in practice with regards to the approval of retreading facilities producing "tyres for use in severe snow conditions" and the verification of the conformity of production of these retreaded tyres:

- (a) acceptance of snow test reports provided by the tread material suppliers or new tyre manufacturers as a proof of compliance to the snow requirements and their consequent marking with “Alpine” symbol;
 - (b) unclear situation concerning the repartition of responsibilities between the retreader and the tread material suppliers or new tyre manufacturers, especially concerning the verification of the Conformity of Production of retreaded tyres either relying on tests under control plan of the tread supplier or on the compliance statement of new tyres approved according to UN Regulation No. 117 with a tread having the same major features including tread pattern of the retreaded tyres.
2. The proposal has been elaborated considering the removal of the prescriptions of snow grip performance of retreaded tyres from UN Regulation No. 109 and their implementation on a new specific UN Regulation on type approval of retreaded tyres of classes C1, C2 and C3 with respect to this performance. The rationale behind this proposal is to segregate type approval of retreading workshop from the performances of the retreaded tyres which result from the tread pattern used for the retreading process.
 3. Additionally, based on the rationale mentioned at point 1, also the current requirements for the classification as “traction tyre” have been removed from UN Regulation No. 109 and implemented in the new specific regulation and there complemented by the new requirements introduced by the 04 series of amendments of Regulation No. 117 with pertinent transitional provisions.
 4. Finally, the full text of the Regulation has been made subject of editorial corrections where needed and aligned as much as possible to the text of the up-to-date version of UN Regulation No. 54.
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