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**Economic Commission for Europe**

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Item 4.9.4 of the provisional agenda

**1958 Agreement – Consideration of draft amendments**

**to existing Regulations submitted by GRRF**

Proposal for Supplement 21 to the 01 series of amendments to Regulation No. 54 (Tyres for commercial vehicles and their trailers)

**Submitted by the Working Party on Brakes and Running Gear**[[1]](#footnote-2)\*

The text reproduced below was adopted by the Working Party on Brakes and Running Gear (GRRF) at its eightieth session (ECE/TRANS/WP.29/GRRF/80, para. 37) and its eighty-first session (ECE/TRANS/WP.29/GRRF/81, paras. 31-35). It is based on ECE/TRANS/WP.29/GRRF/2015/26 and ECE/TRANS/WP.29/GRRF/2015/28 as well as ECE/TRANS/WP.29/GRRF/2016/12, ECE/TRANS/WP.29/GRRF/2016/13, ECE/TRANS/WP.29/GRRF/2016/16 as amended by para. 34 of the session report and ECE/TRANS/WP.29/GRRF/2016/17. It is submitted to the World Forum for Harmonization of Vehicle Regulations (WP.29) and to the Administrative Committee AC.1 for consideration at their June 2016 sessions.

 Supplement 21 to the 01 series of amendments to Regulation No. 54 (Tyres for commercial vehicles and their trailers)

*Paragraph 1.,* amend to read (footnotes remain unchanged):

"1. Scope

 This Regulation covers new pneumatic tyres\* designed primarily for vehicles of categories M2, M3, N, O3 and O4. 1, 2 However, it does not apply to tyre types identified by speed category symbols corresponding to speeds below eighty (80) km/h.

\* For the purpose of this Regulation, "tyres" means "pneumatic tyres"."

*Paragraph 2.1.,* amend to read:

"2.1. "*Type of tyre*" means tyres which do not differ in such essential characteristics as:

(a) The manufacturer’s name :

(b) Tyre-size designation;

(c) Category of use (normal tyre, snow tyre, special use tyre);

(d) Structure (diagonal (bias-ply, radial);

(e) Speed category symbol;

(f) Load-capacity indexes;

(g) Tyre cross-section."

*Insert a new paragraph 2.2.,* to read:

"2.2. "*Manufacturer*" means the person or body who is responsible to the Type Approval Authority (TAA) for all aspects of the type-approval and for ensuring the conformity of production."

*Insert a new paragraph 2.3.,* to read:

"2.3. "*Brand name/trademark*" means the identification of the brand or trademark as defined by the tyre manufacturer and marked on the sidewall(s) of the tyre. The brand name/trademark may be the same as that of the manufacturer".

*Insert a new paragraph 2.4.,* to read:

"2.4. "*Trade description/commercial name*" means an identification of a range of tyres as given by the tyre manufacturer. It may coincide with the brand name/trademark."

*Renumber paragraphs 2.2. to 2.31. as 2.5. to 2.34. and in these renumbered paragraphs, replace* "pneumatic tyre" *by* "tyre".

*Paragraph 2.17.1.3.1.,* amend to read:

"2.17.1.3.1. 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* |
| --- | --- |
| 891011121314 | 203229254279305330356 |
| 1516171819 | 381406432457483 |
| 2021222425 | 508533559610635 |
| 14.516.517.519.520.522.524.5262830 | 368419445495521572622660711762 |

"

*Paragraph 3.1.,* amend to read:

"3.1. Tyres submitted for approval shall bear on both side walls in the case of symmetrical tyres and at least on the outer side wall in the case of asymmetrical tyres:

3.1.1. The manufacturer’s name or the Brand name/trademark;

3.1.2. The trade description/commercial name (see paragraph 2.4. of this Regulation). However, the trade description is not required when it coincides with the Brand name/trademark. "

*Renumber paragraphs 3.1.2. to 3.1.15. as 3.1.3. to 3.1.16.*

*Paragraph 3.1.5.,* amend to read:

"3.1.5. 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 2.2.2."

*Paragraph 3.1.10.,* amend to read:

"3.1.10. An indication, by the "PSI" index, of the inflation pressure to be adopted for the load/speed endurance tests, as explained in Annex 7, Appendix 2. However, this indication, which it is permissible to restrict to one sidewall, shall not be mandatory, on any tyre submitted for approval, until two years after the date of entry into force of this Regulation**.** 5

For tyres first approved after 1 January 2018, the I nflation pressure for the dimension measurement and for the load/speed endurance test, pursuant to paragraph 4.1.12. of this Regulation, shall be indicated in kilopascals, replacing the "PSI" index.

It is allowed to use kPa marking instead of PSI for tyres first type approved before 1 January 2018."

*Paragraph 3.1.12.,* amend to read:

"3.1.12.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 6;"

*Paragraph 4.1.,* amend to read:

"4.1. The application for approval of a type of tyre with regard to this Regulation shall be submitted by the tyre manufacturer or by his duly accredited representative. It shall specify:

4.1.1. The tyre-size designation as defined in paragraph 2.19. of this Regulation;

4.1.2. The manufacturer's name;

4.1.2.1. The Brand name(s)/trademark(s);

4.1.2.2. The trade description(s)/commercial name(s)."

*Paragraph 4.1.3.,* amend to read:

"4.1.3. Category of use (normal tyre, snow tyre, special use tyre);

4.1.3.1. 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 4.1.6*., amend to read:

"4.1.6. The load-capacity indexes;"

*Paragraph 4.1.12.*, amend to read:

"4.1.12. The inflation pressure for the dimension measurement and for the load/speed endurance test pressure;"

*Replace in paragraphs 5.1., 5.2., 5.3., 5.4., 6.1.3., 6.2.1., 6.2.4., 6.2., 5., 9.1. and 10.* "pneumatic tyre" *by* "tyre"

*Paragraph 6.1.1.1.,* amend to read:

"6.1.1.1. The section width shall be obtained by means of the following formula:

 S = S1 + K (A - A1),

 Where:

S is the "section width" rounded to the nearest millimetre and measured on the measuring rim;

S1 is "the nominal section width" in millimetres, as shown on the sidewall of the tyre in the tyre designation as prescribed;

A is the width of the measuring rim in millimetres, as shown by the manufacturer in the descriptive note; and

A1 is the width of the theoretical rim in millimetres.

 A1 shall be taken to equal S1 multiplied by the factor x as specified by the manufacturer, and K shall be taken to equal 0.4."

*Paragraph 6.1.2.1.,* amend to read:

"6.1.2.1. The outer diameter of a tyre shall be obtained by means of the following formula:

 D = d + 2H

 where:

D is the outer diameter expressed in millimetres;

d is the conventional number defined in paragraph 2.17.1.3. above, expressed in millimetres;

H is the nominal section height rounded to the nearest millimetre and is equal to

H = S1 • 0.01 Ra, where

S1 is the nominal section width in millimetres;

Ra is the nominal aspect ratio;

 all as shown on the sidewall of the tyre in the tyre-size designation in conformity with the requirements of paragraph 3.4. above."

*Paragraph 6.1.4.2.,* amend to read:

"6.1.4.2. It may exceed that value by 4 per cent in case of radial-ply tyres and by 8 per cent in the case of diagonal (bias-ply) tyres. However, for tyres with nominal section width exceeding 305 mm intended for dual mounting (twinning), the value determined pursuant to paragraph 6.1.1. above shall not be exceeded by more than 2 per cent for radial-ply tyres with nominal aspect ratio higher than 60, or 4 per cent for diagonal (bias-ply) tyres. The respective limits shall be rounded to the nearest millimetre (mm)."

*Paragraph 6.1.5.,* amend to read:

"6.1.5. Tyre outer diameter specifications

 The outer diameter of a tyre must not be outside the values Dmin and Dmax obtained from the following formulae:

 Dmin = d + 2 • Hmin

 Dmax = d + 2 • Hmax

 Where:

Hmin = H • a rounded to the nearest mm

Hmax = H • b rounded to the nearest mm

 and"

*Paragraph 6.1.5.1.,* amend to read:

"6.1.5.1. For sizes listed in Annex 5 and for tyres identified by the "tyre to rim fitment configuration" (see paragraph 3.1.11.) symbol "A", the nominal section height H is equal to:

H = 0.5 (D-d) , rounded to the nearest mm - for references see paragraph 6.1.2.1."

*Paragraph 6.1.5.3.3.,* amend to read:

"6.1.5.3.3. For snow tyres the outer diameter shall not exceed the following value

 Dmax,snow = 1.01 • Dmax rounded to the nearest mm

 where Dmax is the maximum outer diameter established in conformity with the above.

For tyres of the category of use "snow tyre" the outer diameter (Dmax) established in conformity with the above may be exceeded by one per cent."

*Paragraph 11.,* amend to read:

"11.1. The Contracting Parties to the 1958 Agreement which apply this Regulation shall communicate to the United Nations Secretariat the names and addresses of the technical services responsible for conducting approval tests and, where applicable, of the approved test laboratories and of the Type Approval Authorities which grant approval and to which forms certifying approval or extension of approval or refusal of approval or withdrawal of approval or production definitively discontinued, issued in other countries, are to be sent.

11.2. The Contracting Parties to the 1958 Agreement which apply this Regulation may designate laboratories of tyre manufacturers, as approved, test laboratories.

11.3. Where a Contracting Party to the 1958 Agreement applies paragraph 11.2. above, it may, if it so desires, be represented at the tests by one or more persons of its choice."

*Annex 1,* amend to read:

 "Communication

…

…

of a type of tyre for motor vehicles pursuant to Regulation No. 54."

*Item 1.* amend to read:

"1. Manufacturer's nameand address : "

*Item 2.* amend to read:

"2. Tyre type designation3

2.1. Brand name(s)/trademark(s):

2.2. Trade description(s)/ Commercial name(s)/

3. A list of brand name(s)/trademark(s) or Trade description(s)/ Commercial name(s) may be annexed to this communication"

*Delete* *item 3.*

*Renumber items 4. to 14. into 3. to 13.*

*Annex 2,* amend to read:

**"…**

The above approval mark affixed to a tyre shows that the type of tyre concerned has been approved in the Netherlands (E 4) under approval number 002439. The first two digits of the approval number indicate that the approval was granted in accordance with the requirements of Regulation No. 54 in its original form……"

*Annex 3,* amend to read:

"………

1. These markings define a tyre:

….."

*Annex 3, figure*, amend to read:



(\*) PSI marking instead of kPa is allowed for tyres first type approved before 1 January 2018. "

*Annex 5, part II, table B,* add the following entries:

"Table B

Tyres for light commercial vehicles (high flotation tyres)

Diagonal and radial

| *Tyre-size designation1* | *Measuring rim width code* | *Nominal rim diameter**d (mm)* | *Outer diameterD (mm)2* | *Section widthS (mm)3* |
| --- | --- | --- | --- | --- |
| *Normal* | *Snow* |
| 9-15LT | 8.00 | 381  | 744  | 755  | 254  |
| 10-15LT | 8.00 | 381  | 773  | 783  | 264  |
| 11-15LT | 8.00 | 381  | 777  | 788  | 279  |
|  |  |  |  |  |  |
| 24x7.50-13LT | 6.00  | 330  | 597  | 604  | 191  |
| 27x8.50-14LT | 7.00  | 356  | 674  | 680  | 218  |
| 28x8.50-15LT | 7.00  | 381  | 699  | 705  | 218  |
| 29x9.50-15LT | 7.50  | 381  | 724  | 731  | 240  |
| 30x9.50-15LT | 7.50  | 381  | 750  | 756  | 240  |
| 31x10.50-15LT | 8.50  | 381  | 775  | 781  | 268  |
| 31x11.50-15LT | 9.00  | 381  | 775  | 781  | 290  |
| 31x12.50R15LT | 10.00 | 381 | 775 | 781 | 318 |
| 31x13.50-15LT | 11.00  | 381  | 775  | 781  | 345  |
| 31x15.50-15LT | 12.00  | 381  | 775  | 781  | 390  |
| 32x11.50-15LT | 9.00  | 381  | 801  | 807  | 290  |
| 33x9.50 R15LT | 7.50 | 381 | 826 | 832 | 240 |
| 33x10.50R15LT | 8.50 | 381 | 826 | 832 | 268 |
| 33x10.50R17LT | 8.50 | 432 | 826 | 832 | 268 |
| 33x10.50R18LT | 8.50 | 457 | 826 | 832 | 268 |
| 33x11.50R18LT | 9.00 | 457 | 826 | 832 | 290 |
| 33x12.50-15LT | 10.00  | 381  | 826  | 832  | 318  |
| 33x12.50R17LT | 10.00 | 432 | 826 | 832 | 318 |
| 33x12.50R18LT | 10.00 | 457 | 826 | 832 | 318 |
| 33x12.50R20LT | 10.00 | 508 | 826 | 832 | 318 |
| 33x12.50R22LT | 10.00 | 559 | 826 | 832 | 318 |
| 33x13.50R15LT | 11.00 | 381 | 826 | 832 | 345 |
| 33x15.50R15LT | 12.00 | 381 | 826 | 832 | 390 |
| 34x10.50R17LT | 8.50 | 432 | 851 | 858 | 268 |
| 34x12.50R18LT | 10.00 | 457 | 851 | 858 | 318 |
| 35x11.50R18LT | 9.00  | 457  | 877  | 883  | 290  |
| 35x11.50R20LT | 9.00  | 508  | 877  | 883  | 290  |
| 35x12.50-15LT | 10.00  | 381  | 877  | 883  | 318  |
| 35x12.50R17LT | 10.00 | 432 | 877 | 883 | 318 |
| 35x12.50R18LT | 10.00 | 457 | 877 | 883 | 318 |
| 35x12.50R20LT | 10.00 | 508 | 877 | 883 | 318 |
| 35x12.50R22LT | 10.00 | 559 | 877 | 883 | 318 |
| 35x13.50R15LT | 11.00 | 381 | 877 | 883 | 345 |
| 35x13.50R18LT | 11.00 | 457 | 877 | 883 | 345 |
| 35x13.50R20LT | 11.00 | 508 | 877 | 883 | 345 |
| 35x14.50R15LT | 12.00 | 381 | 877 | 883 | 372 |
| 36x13.50R18LT | 11.00 | 457 | 902 | 908 | 345 |
| 36x14.50R15LT | 12.00 | 381 | 902 | 908 | 372 |
| 36x14.50R17LT | 12.00 | 432 | 902 | 908 | 372 |
| 36x14.50R18LT | 12.00 | 457 | 902 | 908 | 372 |
| 36x15.50R15LT | 12.00 | 381 | 902 | 908 | 390 |
| 37x11.50R20LT | 9.00  | 508  | 928  | 934  | 290  |
| 37x12.50-15LT | 10.00  | 381  | 928  | 934  | 318  |
| 37x12.50 R17LT | 10.00 | 432 | 928 | 934 | 318 |
| 37x12.50R18LT | 10.00 | 457 | 928 | 934 | 318 |
| 37x12.50R20LT | 10.00 | 508 | 928 | 934 | 318 |
| 37x12.50R22LT | 10.00 | 559 | 928 | 934 | 318 |
| 37x13.50R15LT | 11.00 | 381 | 928 | 934 | 345 |
| 37x13.50R17LT | 11.00 | 432 | 928 | 934 | 345 |
| 37x13.50R18LT | 11.00 | 457 | 928 | 934 | 345 |
| 37x13.50R20LT | 11.00 | 508 | 928 | 934 | 345 |
| 37x13.50R22LT | 11.00 | 559 | 928 | 934 | 345 |
| 37x13.50R24LT | 11.00 | 610 | 928 | 934 | 345 |
| 37x14.50-15LT | 12.00  | 381  | 928  | 934  | 372  |
| 38x13.50R17LT | 11.00 | 432 | 953 | 959 | 345 |
| 38x13.50R20LT | 11.00 | 508 | 953 | 959 | 345 |
| 38x13.50R22LT | 11.00 | 559 | 953 | 959 | 345 |
| 38x13.50R24LT | 11.00 | 610 | 953 | 959 | 345 |
| 38x14.50R17LT | 12.00 | 432 | 953 | 959 | 372 |
| 38x14.50R18LT | 12.00 | 457 | 953 | 959 | 372 |
| 38x14.50R20LT | 12.00 | 508 | 953 | 959 | 372 |
| 38x15.50R15LT | 12.00 | 381 | 953 | 959 | 390 |
| 38x15.50R17LT | 12.00 | 432 | 953 | 959 | 390 |
| 38x15.50R18LT | 12.00 | 457 | 953 | 959 | 390 |
| 38x15.50R20LT | 12.00 | 508 | 953 | 959 | 390 |
| 39x13.50R17LT | 11.00 | 432 | 978 | 985 | 345 |
| 40x13.50R17LT | 11.00 | 432 | 1004 | 1010 | 345 |
| 40x13.50R20LT | 11.00 | 508 | 1004 | 1010 | 345 |
| 40x14.50R17LT | 12.00 | 432 | 1004 | 1010 | 372 |
| 40x14.50R18LT | 12.00 | 457 | 1004 | 1010 | 372 |
| 40x14.50R20LT | 12.00 | 508 | 1004 | 1010 | 372 |
| 40x15.50R20LT | 12.00 | 508 | 1004 | 1010 | 390 |
| 40x15.50R22LT | 12.00 | 559 | 1004 | 1010 | 390 |
| 40x15.50R24LT | 12.00 | 610 | 1004 | 1010 | 390 |
| 42x14.50R17LT | 12.00 | 432 | 1055 | 1061 | 372 |
| 42x14.50R20LT | 12.00 | 508 | 1055 | 1061 | 372 |
|  |
| 8.00-16.5LT | 6.00 | 419  | 720  | 730  | 203  |
| 8.75-16.5LT | 6.75 | 419  | 748  | 759  | 222  |
| 9.50-16.5LT | 6.75 | 419  | 776  | 787  | 241  |
| 10-16.5LT | 8.25 | 419  | 762  | 773  | 264  |
| 12-16.5LT | 9.75 | 419  | 818  | 831  | 307  |
|  |
| 30x9.50-16.5LT | 7.50 | 419  | 750  | 761  | 240  |
| 31x10.50-16.5LT | 8.25 | 419  | 775  | 787  | 266  |
| 33x12.50-16.5LT | 9.75 | 419  | 826  | 838  | 315  |
| 35x12.50 R16.5LT | 10.00 | 419 | 877 | 883 | 318 |
| 37x12.50-16.5LT | 9.75 | 419  | 928  | 939  | 315  |
| 37x14.50-16.5LT | 11.25 | 419 | 928 | 939 | 365 |
| 1 Tyres in Radial construction are identified by the letter "R" in place of "-" (e.g. 24x7.50 R 13LT).2 Coefficient 'b' for the calculation of Dmax: 1.07. 3 Overall width may exceed this value up to +7 per cent." |

*Annex 6*, *title*, amend to read:

 "Method of dimension measurement for measuring tyres"

*Paragraph 1.*, amend to read:

"1. The tyre is mounted on the measuring rim specified by the manufacturer pursuant to paragraph 4.1.11. of this Regulation and is inflated to the pressure specified by the manufacturer pursuant to paragraph 4.1.12. of this Regulation."

*Annex 7,*

*Paragraph 1.3.*, amend to read:

"1.3. Inflate the tyre to the pressure corresponding to the pressure specified by the manufacturer pursuant to paragraph 4.1.12. of this regulation"

*Appendix 1,* amend to read:

 "Endurance-test programme

| *Load index* | *Tyre speedcategory symbol* |  *Test-drum speed* | *Load placed on the wheel as a percentage of the load corresponding to the load index* |
| --- | --- | --- | --- |
| *Radial-plykm.h-1* | *Diagonal (bias-ply)km.h-1* | *7 h.* | *16 h.* | *24 h.* |
| 122 or more | FGJKLM |  32 40 48 56 64 72 | 32324048-- |  66 % | 84 % | 101 % |
| 121 or less | FGJK |  32 40 48 56 | 32404856 |  |  |  |
|  | LMNP |  64 80 88 96 | 5664-- |  70 % 4 h.75 %75 %75 % |  88 %  6 h. 97 %97 %97 % | 106 %114 %114 %114 % |
| *Notes:*(1) "Special-use" tyres (see paragraph 2.1.3. of this regulation) should be tested at a speed equal to 85 per cent of the speed prescribed for equivalent normal tyres.(2) Tyres with load index 122 or more, speed category symbols N or P and the additional marking "LT", or "C", referred to in paragraph 3.1.13. of this regulation, shall be tested with the same programme as specified in the above table for tyres with load index 121 or less. |

"

*Annex 9,* amend to read:

"…

1. Manufacturer's name: ..

2. Manufacturer's tyre type designation:

2.1. Brand name(s)/trademark(s):

2.2. Trade description(s)/ Commercial name(s)/

3. Tyre Size designation:

…"

1. \* In accordance with the programme of work of the Inland Transport Committee for 2016–2017 (ECE/TRANS/254, para. 159 and ECE/TRANS/2016/28/Add.1, cluster 3.1), 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. [↑](#footnote-ref-2)