

Final report on Phase 1b on the development of UN Global Technical Regulation No. 16 on tyres – Amendment No. 1 to UN GTR No. 16

This report was prepared in accordance with Article 6, paragraph 6.2.4.2.1 of the 1998 Agreement. It describes the work done to complete the Phase 1b of UN GTR No. 16 on tyres.

A. Background

1. UN GTR No. 16 on tyres was established in the Global Registry on 13 November 2014. The informal working group on the Tyre GTR was challenged by reaching harmonization of technical provisions making those acceptable both for type approval and self-certification compliance assessment systems.
2. Meanwhile, in parallel to development of UN GTR No. 16, UN Regulation No. 117, which is a base for UN GTR No. 16, had been amended several times by inclusion of the provisions to tyre wet grip performance, rolling resistance and qualification for use at severe snow conditions for all tyre classes included in its scope. The other base UN Regulations Nos. 30 and 54 were also subjects to certain amendments, and the relevant provisions of UN GTR N. 16 became needed to be aligned.
3. As harmonization of the newly introduced provisions of UN Regulation No. 117 was not feasible in a reasonable time frame, the decision for draft UN GTR on tyres was not to consider those provisions for inclusion in the text of GTR at the time of its development.
4. As the aforesaid new provisions of UN Regulation No. 117, as well as those of UN Regulations Nos. 30 and 54 represent the state-of-the art level and are important for assessment of performance of tyres on the markets worldwide, at the 79th GRRF session the decision was made to prepare a draft amendment keeping in line the UN GTR on tyres with the latest regulatory developments (ECE/TRANS/WP.29/GRRF/79, para. 27).
5. The ETRTO agreed to prepare a draft Amendment No. 1 to UN GTR No. 16 considered as Phase 1b of the development of the UN GTR on tyres. The Government of the Russian Federation assumed the duties of the technical sponsor for that development.
6. The Executive Committee of the 1958 Agreement (AC.3) at its forty-fourth session adopted ECE/TRANS/WP.29/2015/70 tabled by the Russian Federation to request authorization to start work on developing the Amendment No. 1 to UN GTR No. 16.

B. Organization of process

7. The proposal for Amendment No. 1 to UN GTR No. 16 including the approved changes in the relevant FMVSS and supplements/corrigenda of UN Regulations was

drafted by the experts from ETRTO with the intention to make the proposed text neutral with regard to the compliance assessment schemes.

8. The draft document was reviewed by the interested experts at the informal meeting held on 25-26 June 2015 in the Palace of Nations in Geneva in conjunction with the 166th WP.29 session. The representatives from the Contracting Parties to the 1998 Agreement from Canada, EC, Egypt, Hungary, Portugal, Russian Federation, Spain, UK and US, the representatives from industry: ETRTO, JATMA, ITTAC and RMA and the representative from the UNECE secretariat participated to this meeting. The revision of the draft text reflecting the meeting deliverables together with the items requesting the GRRF guidance was presented at the 80th GRRF session.

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C. Development of the gtr

1. The objective of this proposal is to develop, in the framework of the 1998 Agreement, an amendment to UN Global Technical Regulation (GTR) No. 16 on tyres aimed at adaptation of UN GTR No. 16 to the technical progress by including the newly developed provisions to wet grip performance, rolling resistance and qualification for use at severe snow conditions both for passenger car (PC) and light truck / commercial (LT/C) tyres, recently adopted within UN Regulation No. 117. The approved changes in the relevant FMVSS and UN Regulations Nos. 30 and 54 also had been included.

2. The Amendment No. 1 to UN GTR No. 16 incorporates:

- (a) Amendment of Part I by adding new paragraphs 4-bis, 23-bis, 28-bis and 28-ter;
- (b) Amendment of Part II basing on the following documents:

(i) Addition of new definitions (Section 2):

UN Regulation No. 117:

Supplement 1 to the 02 series of amendments – ECE/TRANS/WP.29/2012/2, as amended by para. 65 of the report of the 156th WP.29 session (ECE/TRANS/WP.29/1095);

Supplement 2 to the 02 series of amendments – ECE/TRANS/WP.29/2012/54, as amended by para. 63 of the report of the 158th WP.29 session (ECE/TRANS/WP.29/1099);

Supplement 7 to the 02 series of amendments – ECE/TRANS/WP.29/2015/5 adopted during the 165th WP.29 session (ECE/TRANS/WP.29/1114);

UN Regulation No. 30:

Supplement 17 to the 02 series of amendments – ECE/TRANS/WP.29/2012/48 as amended by para. 50 of the report of the 157th WP.29 session (ECE/TRANS/WP.29/1097);

UN Regulation No. 54:

Supplement 18 to the original version of the Regulation – ECE/TRANS/WP.29/2012/49 adopted during the 157th WP.29 session (ECE/TRANS/WP.29/1097);

(ii) Marking (Section 3.2):

Final rule standardizing the Tire Identification Number (TIN)

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(iii) Other sidewall marking (Section 3.3):

UN Regulation No. 117:

Supplement 2 to the 02 series of amendments – ECE/TRANS/WP.29/2012/54, as amended by para. 63 of the report of the 158th WP.29 session (ECE/TRANS/WP.29/1099);

UN Regulation No. 54:

Supplement 18 to the original version of the Regulation – ECE/TRANS/WP.29/2012/49 adopted during the 157th WP.29 session (ECE/TRANS/WP.29/1097);

(iv) Physical dimensions of tires (Section 3.5):

UN Regulation No. 30 :

Supplement 17 to the 02 series of amendments – ECE/TRANS/WP.29/2012/48 as amended by para. 50 of the report of the 157th WP.29 session (ECE/TRANS/WP.29/1097);

(v) Strength test for passenger car tyres (Section 3.6)

UN Regulation No. 30 :

Supplement 17 to the 02 series of amendments – ECE/TRANS/WP.29/2012/48 as amended by para. 50 of the report of the 157th WP.29 session (ECE/TRANS/WP.29/1097);

(vi) Tyre rolling sound emission test (Section 3.8):

UN Regulation No. 117:

Exemptions added as in the 02 series of amendments;

For the test surface the reference is made to ISO 10844:2014 (Supplement 4 to the 02 series of amendments – ECE/TRANS/WP.29/2013/55;

Supplement 8 to the 02 series of amendments to Regulation No. 117 (Tyre rolling resistance, rolling noise and wet grip) ECE/TRANS/WP.29/2015/65 as amended by para.66 of the report of the 166th WP.29 session (ECE/TRANS/WP.29/1116);

(vii) Modification of test for adhesion performance on wet surfaces (Section 3.12):

UN Regulation No. 117:

Exemptions added as in the 02 series of amendments;

Supplement 1 to the 02 series of amendments – ECE/TRANS/WP.29/2012/2, as amended by para. 65 of the report of the 156th WP.29 session (ECE/TRANS/WP.29/1095);

Supplement 6 to the 02 series of amendments – ECE/TRANS/WP.29/2013/66, as amended by para. 56 of the report of the 162nd WP.29 session (ECE/TRANS/WP.29/1108);

Special session of GRRF held during the 163rd session of WP.29

ECE/TRANS/WP.29/GRRF/77 approved by para 28 of the 164th WP.29 session (ECE/TRANS/WP.29/1112)

(viii) Strength test for LT/C tyres (section 3.14):

The following has been introduced for consistency with 3.6.(Strength test for passenger car tyres) and definition 2.89 :

UN Regulation No. 30 :

Supplement 17 to the 02 series of amendments – ECE/TRANS/WP.29/2012/48 as amended by para. 50 of the report of the 157th WP.29 session (ECE/TRANS/WP.29/1097);

(ix) Addition of new requirements to rolling resistance (new Section 3.22):

UN Regulation No. 117:

02 series of amendments – ECE/TRANS/WP.29/2010/63, as amended by para. 45 of the report of the 151st WP.29 session (ECE/TRANS/WP.29/1085);

Supplement 1 to the 02 series of amendments – ECE/TRANS/WP.29/2012/6 adopted during the 156th WP.29 session (ECE/TRANS/WP.29/1095);

Supplement 2 to the 02 series of amendments – ECE/TRANS/WP.29/2012/54, ECE/TRANS/WP.29/2012/55 as amended by para. 63 of the report of the 158th WP.29 session (ECE/TRANS/WP.29/1099);

Supplement 3 to the 02 series of amendments – ECE/TRANS/WP.29/2013/7 adopted during the 159th WP.29 session (ECE/TRANS/WP.29/1102);

Supplement 7 to the 02 series of amendments – ECE/TRANS/WP.29/2015/5 adopted during the 165th WP.29 session (ECE/TRANS/WP.29/1114);

(x) Addition of new requirements for qualification of a tyre to be designated for use in severe snow conditions (new Section 3.23):

UN Regulation No. 117:

Supplement 1 to the 02 series of amendments – ECE/TRANS/WP.29/2012/2, as amended by para. 65 of the report of the 156th WP.29 session (ECE/TRANS/WP.29/1095);

Supplement 2 to the 02 series of amendments – ECE/TRANS/WP.29/2012/54, as amended by para. 63 of the report of the 158th WP.29 session (ECE/TRANS/WP.29/1099);

Supplement 5 to the 02 series of amendments – ECE/TRANS/WP.29/2013/59 adopted during the 161th WP.29 session (ECE/TRANS/WP.29/1106);

Supplement 7 to the 02 series of amendments – ECE/TRANS/WP.29/2015/5 adopted during the 165th WP.29 session (ECE/TRANS/WP.29/1114);

(c) Addition of new Annexes containing the details of the newly added test methods.

Annex 11 - Rolling resistance test equipment tolerances

Supplement 1 to the 02 series of amendments – ECE/TRANS/WP.29/2012/6 adopted during the 156th WP.29 session (ECE/TRANS/WP.29/1095);

Supplement 2 to the 02 series of amendments – ECE/TRANS/WP.29/2012/55 adopted during the 158th WP.29 session (ECE/TRANS/WP.29/1099);

Supplement 7 to the 02 series of amendments – ECE/TRANS/WP.29/2015/5 adopted during the 165th WP.29 session (ECE/TRANS/WP.29/1114);

Supplement 8 to the 02 series of amendments to Regulation No. 117 (Tyre rolling resistance, rolling noise and wet grip) ECE/TRANS/WP.29/2015/65 as amended by para.66 of the report of the 166th WP.29 session (ECE/TRANS/WP.29/1116);

Annex 12 – Measuring rim width;

02 series of amendments – ECE/TRANS/WP.29/2010/63, as amended by para. 45 of the report of the 151st WP.29 session (ECE/TRANS/WP.29/1085);

Annex 13 – Test report - Rolling resistance for tyres;

02 series of amendments – ECE/TRANS/WP.29/2010/63, as amended by para. 45 of the report of the 151st WP.29 session (ECE/TRANS/WP.29/1085);

Annex 14 – Deceleration method - Measurements and data processing for deceleration value obtaining in differential form $d\omega/dt$;

Supplement 7 to the 02 series of amendments – ECE/TRANS/WP.29/2015/5 adopted during the 165th WP.29 session (ECE/TRANS/WP.29/1114);

Annex 15 – Test reports and test data for C1 and C2 tyres – Snow test;

02 series of amendments – ECE/TRANS/WP.29/2010/63, as amended by para. 45 of the report of the 151st WP.29 session (ECE/TRANS/WP.29/1085);

Supplement 2 to the 02 series of amendments – ECE/TRANS/WP.29/2012/54 as amended by para. 63 of the report of the 158th WP.29 session (ECE/TRANS/WP.29/1099);

Annex 16 – Test reports and test data for C3 tyres – Snow test.

Supplement 1 to the 02 series of amendments – ECE/TRANS/WP.29/2012/2, as amended by para. 65 of the report of the 156th WP.29 session (ECE/TRANS/WP.29/1095);

(d) Modifications of annexes.

Annex 8 - Test report – Rolling sound emissions for tyres;

Supplement 4 to the 02 series of amendments-ECE/TRANS/WP.29/2013/55 as amended by para. 67 of the report of the 160th WP.29 session (ECE/TRANS/WP.29/1104);

Supplement 8 to the 02 series of amendments to Regulation No. 117 (Tyre rolling resistance, rolling noise and wet grip) ECE/TRANS/WP.29/2015/65 as amended by para.66 of the report of the 166th WP.29 session (ECE/TRANS/WP.29/1116);

Annex 9 - Test reports examples of wet grip index

Supplement 1 to the 02 series of amendments - ECE/TRANS/WP.29/WP.29/2012/2 amended by para 65 of the report of the 156th WP.29 session (ECE/TRANS/WP.29/1095);

D. Future work

1. The future work that remains to be done includes the design of harmonized tests for LT/C tyres (Phase 2 of development of UN GTR No. 16):
 - (a) Physical dimensions;
 - (b) Markings;
 - (c) High speed test;
 - (d) Endurance test.
2. The tubeless tyre bead unseating resistance test for passenger car tyres (Section 3.7) shall also be amended in the Phase 2 according to the recommendations of RMA once ASTM F2663-15 is published in NHTSA regulation.
3. The work on the Amendment No. 2 to UN GTR No. 16 reflecting the Phase 2 of its development can be started [after the adoption of the Amendment No. 1].

E. Conclusion

1. Following the adoption of the draft Amendment No. 1 to UN GTR No. 16 at its [81st] session, GRRF requests AC.3 voting for establishing this Amendment No. 1 (ECE/TRANS/WP.29/2016/??) in the Global Registry.
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