United Nations ECE/TRANS/WP.29/GRB/2012/10

Economic and Social Council

Distr.: General
19 June 2012

Original: English

Economic Commission for Europe

Inland Transport Committee

World Forum for Harmonization of Vehicle Regulations

Working Party on Noise

Fifty-sixth session
Geneva, 3-5 September 2012
Item 6 of the provisional agenda
Regulation No. 117 (Tyre rolling noise and wet grip adhesion)

Proposal for Supplement 3 to the 02 series of amendments to Regulation No. 117

Submitted by the expert from the European Tyre and Rim Technical Organisation[1]

The text reproduced below was prepared by the experts from the European Tyre and Rim Technical Organisation (ETRTO) to align the text of Annex 6 of the UN Regulation to the ISO Standard 28580. The modifications to the existing text of the Regulation are marked in bold for new or strikethrough for deleted characters.

[1] In accordance with the programme of work of the Inland Transport Committee for 2010–2014 (ECE/TRANS/208, para. 106 and ECE/TRANS/2010/8, programme activity 02.4), 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.

I. Proposal

Annex 6, paragraph 6.2, amend to read:

"6.2. Temperature correction

If measurements at temperatures other than 25 °C are unavoidable (only temperatures not less than 20 °C or more than 30 °C are acceptable), then a correction for temperature shall be made using the following equation, with:

F_{r25} is the rolling resistance at 25 °C, in Newton:

$$F_{r25} = F_r\left[1 + K\left(t_{amb} - 25\right)\right]$$

Where:

F_r is the rolling resistance, in Newton,

t_{amb} is the ambient temperature, in degree Celsius,

K is equal to:
0.008 for Class C1 tyres
0.010 for Class C2 **and C3** tyres **with load index equal or lower than 121**
0.006 for Class C3 tyres **with load index greater than 121**"

II. Justification

1. The definition of the temperature correction coefficient "K" currently shows a deviation between R117.02 and ISO 28580. It is linked to the definition of tyre categories, ISO just refers to load index, whereas Reg.117.02 refers to class C1, C2 and C3.

ISO 28580: RR (25°C) = RR * [1 + K*(T_amb - 25)]

Constant K:

ISO 28580	**R117.02**	**Proposal to correct R117.02**
0.008 for passenger tyres	0.008 for Class C1 tyres	0.008 for Class C1 tyres
0.010 for truck and bus tyres with LI 121 or smaller	0.010 for Class C2 tyres	C2 and C3 : 0.010 when LI lower or equal to 121 and C3: 0.006 when LI > 121
0.006 for truck and bus tyres with LI larger 121	0.006 for Class C3 tyres	

2. In case the ambient temperature during the RR tests deviates from the reference temperature of 25°C, an equation defined in ISO 28580 is applied to correct the data for temperature. The allowed temperature range is 25 +/- 5°C. With the deviation observed now between R117.02 and ISO 28580, the RR results of the concerned tyres (for example C2 tyres with LI > 121) may change up to 2 per cent (in case the test temperature deviates by 5°C from the reference temperature). In order to avoid this unnecessary discrepancy, we propose to correct R117.02 to be again in line with ISO 28580.