

Proposal for Supplement 6 to the 02 series of amendments to Regulation No. 117

Submitted by the experts from the European Tyre and Rim Technical Organisation

The text reproduced below was prepared by the experts from the European Tyre and Rim Technical Organisation (ETRTO) in order to correct inconsistencies in time measurement accuracy in annex 6. This document is based on ECE/TRANS/WP.29/GRRF/2013/30. The modifications to the existing text of the Regulation are underlined for new or strikethrough for deleted characters.

I. Proposal

Annex 6, Appendix 1

Paragraph 4, amend to read:

"4. Control accuracy

...

- (d) Time +/- **0.02 s for the ISO 28580 force, torque, deceleration and power method and +/- 0.5 ms for the deceleration method for which the deceleration j is determined in exact $d\omega/dt$ form.**"

Paragraph 5, amend to read:

"5. Instrumentation accuracy

The instrumentation used for readout and recording of test data shall be accurate within the tolerances stated below:

<i>Parameter</i>	<i>Load Index ≤ 121</i>	<i>Load Index > 121</i>
Tyre load	±10 N or ±0.5 % ^(a)	±30 N or ±0.5 % ^(a)
Inflation pressure	±1 kPa	±1.5 kPa
Spindle force	±0.5 N or +0.5 % ^(a)	±1.0 N or +0.5 % ^(a)
Torque input	±0.5 Nm or +0.5 % ^(a)	±1.0 Nm or +0.5 % ^(a)
Distance	±1 mm	±1 mm
Electrical power	±10 W	±20 W
Temperature	±0.2 °C	
Surface speed	±0.1 km/h	
Time	±0.01 s ^(b)	
Angular velocity	±0.1 %	

^(a) Whichever is greater.

^(b) For the ISO 28580 force, torque, deceleration and power method +/- 0.25 ms for the deceleration method for which the deceleration j is determined in exact $d\omega/dt$ form"

II. Justification

The 3rd proposal in the document ECE-TRANS-WP29-GRB-53-inf11e requested the following amendment to ECE/TRANS/505/Rev.2/Add.116/Rev.2:

"Annex 6., Test procedure for measuring rolling resistance. Appendix 1, paragraph 4, item (d), replace time measurement accuracy norm, to read: "(d) time: +/- ~~0.02 s~~ 0.5 ms"

The amendment was adopted through the document ECE/TRANS/505/Rev.2/Add.116/Rev.2/Amend.1.

Later-on it was observed that this change leads to an inconsistency in time measurement accuracy:

Control accuracy: +/- 0.5 ms (annex 6, appendix 1, paragraph 4, item d)

Instrumentation accuracy: +/- 0.01 s (annex 6, appendix 1, paragraph 5)

For technical reasons, the instrumentation accuracy has to be smaller as compared to the control accuracy.

To correct this, ETRTO proposes to apply the amendment proposed in ECE-TRANS-WP29-GRB-53-inf11e only for the new deceleration method and keep the previous definition for the other methods included in ISO 28580.

For the new deceleration method, the more stringent time accuracy is required due to the limited sampling frequency of only 1 measurement per drum or tyre revolution. For the other methods, the time accuracy as defined in ISO 28580 already proved efficient and does not need to be changed.
