



**Economic and Social
Council**

Distr.
GENERAL

ECE/TRANS/WP.29/2008/64
10 April 2008

Original: ENGLISH

ECONOMIC COMMISSION FOR EUROPE

INLAND TRANSPORT COMMITTEE

World Forum for Harmonization of Vehicle Regulations

One-hundred-and-forty-fifth session
Geneva, 24-27 June 2008
Item 4.2.6 of the provisional agenda

1958 AGREEMENT

Consideration of draft amendments to existing Regulations

Proposal for Supplement 1 to the 03 series of amendments to Regulation No. 78
(Motorcycle braking)

Submitted by the Working Party on Brakes and Running Gear (GRRF) */

The text reproduced below was adopted by GRRF at its sixty-third session. It is based on ECE/TRANS/WP.29/GRRF/2007/13, as amended by Annex II to the report. It is submitted to WP.29 and AC.1 for consideration (ECE/TRANS/WP.29/GRRF/63, para. 15).

*/ In accordance with the programme of work of the Inland Transport Committee for 2006-2010 (ECE/TRANS/166/Add.1, programme activity 02.4), the World Forum will develop, harmonize and update Regulations in order to enhance performance of vehicles. The present document is submitted in conformity with that mandate.

Annex 3

Paragraph 1.1.1.(c), amend to read (inserting a new footnote */):

- "(c) The surface has a nominal peak braking coefficient (PBC) of ≥ 0.9 unless otherwise specified. */
If rear wheel lift occurs, a surface with a peak braking coefficient (PBC) lower than 0.9 may be used in that case."

Paragraph 1.1.3.(b), amend to read:

- "(b) The method specified in Appendix 1 to this annex."

Add a new Appendix 1, to read:

"Annex 3 - Appendix 1

ALTERNATIVE METHOD FOR THE DETERMINATION OF
PEAK BRAKING COEFFICIENT (PBC)
(see paragraph 1.1.3. to this annex)

1.1. General:

- (a) The test is to establish a PBC for the vehicle type when being braked on the test surfaces described in Annex 3, paragraphs 1.1.1. and 1.1.2.
- (b) The test comprises a number of stops with varying brake control forces. Both wheels shall be braked simultaneously up to the point reached before wheel lock, in order to achieve the maximum vehicle deceleration rate on the given test surface.
- (c) The maximum vehicle deceleration rate is the highest value recorded during all the test stops.
- (d) The Peak Braking Coefficient (PBC) is calculated from the test stop that generates the maximum vehicle deceleration rate, as follows:

$$PBC = \frac{0.566}{t}$$

Where:

t = time taken for the vehicle speed to reduce from 40 km/h to 20 km/h in seconds.

Note: For vehicles unable to achieve a test speed of 50 km/h, PBC shall be measured as follows:

$$PBC = \frac{0.566}{t}$$

*/ The term "nominal" means the target value for the surface when it is certified.

Where:

t = time taken, in seconds, for the speed of the vehicle to reduce from 0.8 V_{max} to (0.8 V_{max} - 20), where V_{max} is measured in km/h.

- (e) The value of k shall be rounded to three decimal places.

1.2. Vehicle condition:

- (a) The test is applicable to vehicle categories L₁ and L₃.
(b) The anti-lock system shall be either disconnected or inoperative, between 40 km/h and 20 km/h.
(c) Lightly loaded.
(d) Engine disconnected.

1.3. Test conditions and procedure:

- (a) Initial brake temperature: ≥ 55 °C and ≤ 100 °C.
(b) Test speed: 60 km/h or 0.9 V_{max}, whichever is lower.
(c) Brake application:
Simultaneous actuation of both service brake system controls, if so equipped, or of the single service brake system control in the case of a service brake system that operates on all wheels.
For vehicles equipped with a single service brake system control, it may be necessary to modify the brake system if one of the wheels is not approaching maximum deceleration.
(d) Brake actuation force:
The control force that achieves the maximum vehicle deceleration rate as defined in paragraph 1.1.(c).
The application of the control force must be constant during braking.
(e) Number of stops: until the vehicle meets its maximum deceleration rate.
(f) For each stop, accelerate the vehicle to the test speed and then actuate the brake control(s) under the conditions specified in this paragraph."

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