Commission Regulation (EU) No 228/2011 of 7 March 2011 amending Regulation (EC) No 1222/2009 of the European Parliament and of the Council with regard to the wet grip testing method for C1 tyres (Text with EEA relevance)

COMMISSION REGULATION (EU) No 228/2011

of 7 March 2011

amending Regulation (EC) No 1222/2009 of the European Parliament and of the Council with regard to the wet grip testing method for C1 tyres

(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EC) No 1222/2009 of the European Parliament and of the Council of 25 November 2009 on the labelling of tyres with respect to fuel efficiency and other essential parameters[(1)], and in particular Article 11(c) thereof,

Whereas:

(1) In accordance with Annex I, part B to Regulation (EC) No 1222/2009, the wet grip index of C1 tyres shall be determined as specified in UNECE Regulation No 117 and its subsequent amendments. However, representatives of the industry have developed a revised wet grip testing method on the basis of Annex 5 to UNECE Regulation No 117 that significantly improves the accuracy of the testing results.

(2) Accuracy of testing results is a key factor for determining wet grip classes of tyres. It ensures a fair comparison between tyres from different suppliers. In addition, accurate testing prevents that a tyre may be classified into more than one class and reduces the risks that different testing results will be obtained by market surveillance authorities in comparison to the testing results declared by the suppliers only because of the uncertainty of the testing method.

(3) Therefore, it is necessary to update the wet grip testing method in order to improve accuracy of the tyre testing results.

(4) Regulation (EC) No 1222/2009 should therefore be amended accordingly.

(5) The measures provided for in this Regulation are in accordance with the opinion of the Committee established by Article 13 of Regulation (EC) No 1222/2009,

HAS ADOPTED THIS REGULATION:

Article 1

Amendment to Regulation (EC) No 1222/2009

Regulation (EC) No 1222/2009 is amended as follows:

Changes to legislation: Commission Regulation (EU) No 228/2011 is up to date with all changes known to be in force on or before 21 February 2021. There are changes that may be brought into force at a future date. Changes that have been made appear in the content and are referenced with annotations. (See end of Document for details) View outstanding changes

(1) in Annex I, part B, the first sentence is replaced by the following:

> The wet grip class of C1 tyres must be determined on the basis of the wet grip index (G) according to the "A" to "G" scale specified in the table below and measured in accordance with Annex V.;

(2) the text set out in the Annex to this Regulation is added as Annex V.

Article 2

Entry into force

This Regulation shall enter into force on the 20th day following its publication in the *Official Journal of the European Union*.

This Regulation shall be binding in its entirety and directly applicable in the Member States in accordance with the Treaties.

Done at Brussels, 7 March 2011.

For the Commission

The President

José Manuel BARROSO

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ANNEX

ANNEX V

Testing method for measuring the wet grip index (G) of C1 tyres

1. MANDATORY STANDARDS

The following documents listed apply.

(1) ASTM E 303-93 (Reapproved 2008), Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester;

(2) ASTM E 501-08, Standard Specification for Standard Rib Tire for Pavement Skid-Resistance Tests;

(3) ASTM E 965-96 (Reapproved 2006), Standard Test Method for Measuring Pavement Macrotexture Depth Using a Volumetric Technique;

(4) ASTM E 1136-93 (Reapproved 2003), Standard Specification for a Radial Standard Reference Test Tire (SRTT14″);

(5) ASTM F 2493-08, Standard Specification for a Radial Standard Reference Test Tire (SRTT16″).

2. DEFINITIONS

For the purposes of testing wet grip of C1 tyres, the following definitions apply:

(1) “test run” means a single pass of a loaded tyre over a given test track surface;

(2) “test tyre(s)” means a candidate tyre, a reference tyre or a control tyre or tyre set that is used in a test run;

(3) “candidate tyre(s) *(T)*” means a tyre or a tyre set that is tested for the purpose of calculating its wet grip index;

(4) “reference tyre(s) *(R)*” means a tyre or a tyre set that has the characteristics indicated in ASTM F 2493-08 and referred to as Standard Reference Test Tyre 16 inches (SRTT16″);

(5) “control tyre(s) *(C)*” means an intermediate tyre or a set of intermediate tyres which is used when the candidate tyre and the reference tyre cannot be directly compared on the same vehicle;

(6) “braking force of a tyre” means the longitudinal force, expressed in newton, resulting from braking torque application;

(7) “braking force coefficient of a tyre *(BFC)*” means the ratio of the braking force to the vertical load;

(8) “peak braking force coefficient of a tyre” means the maximum value of a tyre braking force coefficient that occurs prior to wheel lockup as the braking torque is progressively increased;

(9) “lockup of a wheel” means the condition of a wheel in which its rotational velocity about the wheel spin axis is zero and it is prevented from rotating in the presence of applied wheel torque;

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(10) "vertical load" means the load in newton imposed on the tyre perpendicular to the road surface;

(11) "tyre test vehicle" means a dedicated special purpose vehicle which has instruments to measure the vertical and the longitudinal forces on one test tyre during braking.

3. GENERAL TEST CONDITIONS

3.1 **Track characteristics**

The test track shall have the following characteristics:

(1) The surface shall have a dense asphalt surface with a uniform gradient of not more than 2 % and shall not deviate more than 6 mm when tested with a 3 m straight edge.

(2) The surface shall have a pavement of uniform age, composition, and wear. The test surface shall be free of loose material and foreign deposits.

(3) The maximum chipping size shall be 10 mm (tolerances permitted from 8 mm to 13 mm).

(4) The texture depth as measured by a sand patch shall be 0,7 ± 0,3 mm. It shall be measured in accordance with ASTM E 965-96 (Reapproved 2006).

(5) The wetted frictional properties of the surface shall be measured with either method (a) or (b) in section 3.2.

3.2 **Methods to measure the wetted frictional properties of the surface**

(a) *British Pendulum Number (BPN) method*

The British Pendulum Number method shall be as defined in ASTM E 303-93 (Reapproved in 2008).

Pad rubber component formulation and physical properties shall be as specified in ASTM E 501-08.

The averaged British Pendulum Number (BPN) shall be between 42 and 60 BPN after temperature correction as follows.

BPN shall be corrected by the wetted road surface temperature. Unless temperature correction recommendations are indicated by the British pendulum manufacturer, the following formula is used:

BPN = BPN (measured value) + temperature correction

temperature correction = $-0{,}0018\ t^2 + 0{,}34\ t - 6{,}1$

where t is the wetted road surface temperature in degrees Celsius.

Effects of slider pad wear: The pad shall be removed for maximum wear when the wear on the striking edge of the slider reaches 3,2 mm in the plane of the slider or 1,6 mm vertical to it in accordance with section 5.2.2 and Figure 3 of ASTM E 303-93 (Reapproved 2008).

For the purpose of checking track surface BPN consistency for the measurement of wet grip on an instrumented passenger car: the BPN values of the test track should not vary over the entire stopping distance so as to decrease the dispersion of test results. The wetted frictional properties of the surface shall be measured five times at each point of the BPN measurement every 10 meters and the coefficient of variation of the averaged BPN shall not exceed 10 %.

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(b) *ASTM E 1136 Standard Reference Test Tyre (SRTT14") method*

By derogation with point (4) of section 2, this method uses the reference tyre that has the characteristics indicated in ASTM E 1136-93 (Reapproved 2003) and referred to as SRTT14″[(2)].

The average peak braking force coefficient ($\mu_{peak,ave}$) of the SRTT14″ shall be 0,7 ± 0,1 at 65 km/h.

The average peak braking force coefficient ($\mu_{peak,ave}$) of the SRTT14″ shall be corrected by the wetted road surface temperature as follows:

peak braking force coefficient ($\mu_{peak,ave}$) = peak braking force coefficient (measured) + temperature correction

temperature correction = $0{,}0035 \times (t - 20)$

where t is the wetted road surface temperature in degrees Celsius.

3.3 **Atmospheric conditions**

The wind conditions shall not interfere with wetting of the surface (wind-shields are allowed).

Both the wetted surface temperature and the ambient temperature shall be between 2 °C and 20 °C for snow tyres and 5 °C and 35 °C for normal tyres.

The wetted surface temperature shall not vary during the test by more than 10 °C.

The ambient temperature must remain close to the wetted surface temperature; the difference between the ambient and the wetted surface temperatures must be less than 10 °C.

4. TESTING METHODS FOR MEASURING WET GRIP

For the calculation of the wet grip index (G) of a candidate tyre, the wet grip braking performance of the candidate tyre is compared to the wet grip braking performance of the reference tyre on a vehicle travelling straight ahead on a wet, paved surface. It is measured with one of the following methods:

— vehicle method consisting of testing a set of tyres mounted on an instrumented passenger car,

— testing method using a trailer towed by a vehicle or a tyre test vehicle, equipped with the test tyre(s).

4.1 **Testing method using an instrumented passenger car**

4.1.1 *Principle*

The testing method covers a procedure for measuring the deceleration performance of C1 tyres during braking, using an instrumented passenger car equipped with an Antilock Braking System (ABS), where "instrumented passenger car" means a passenger car that is fitted with the measuring equipment listed in section 4.1.2.2 for the purpose of this testing method. Starting with a defined initial speed, the brakes are applied hard enough on four wheels at the same time to activate the ABS. The average deceleration is calculated between two pre-defined speeds.

4.1.2 *Equipment*

4.1.2.1 *Vehicle*

Permitted modifications on the passenger car are as follows:

— those allowing the number of tyre sizes that can be mounted on the vehicle to be increased,