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World Forum for Harmonization of Vehicle Regulations

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Item 4.5.2 of the provisional agenda

1958 Agreement – Consideration of draft amendments to existing Regulations proposed by GRPE

Proposal for Supplement 10 to the 05 series of amendments to Regulation No. 83 (Emissions of M₁ and N₁ vehicles)

Submitted by the Working Party on Pollution and Energy*

The text reproduced below was adopted by the Working Party on Pollution and Energy (GRPE) at its sixtieth session in order to update the specifications for the proportional speed fan which can be used during testing of the vehicle on the chassis dynamometer and to bring in the line the requirements for type VI test with those of the European Union directive 2001/100/EC. It is based on ECE/TRANS/WP.29/GRPE/2010/11 and ECE/TRANS/WP.29/GRPE/2010/12, both not amended. It is submitted to the World Forum for Harmonization of Vehicle Regulations (WP.29) and to the Administrative Committee (AC.1) for consideration (ECE/TRANS/WP.29/GRPE/60, paras. 35 and 37).

* 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 the performance of vehicles. The present document is submitted in conformity with that mandate.

Paragraph 5.3.5.1., amend to read:

“5.3.5.1. This test shall be carried out on all vehicles of category M₁ and N₁ equipped with a positive-ignition engine except such vehicles that run only on a gaseous fuel (LPG or NG). Vehicles, that can be fuelled with both petrol and gaseous fuel but where the petrol system is fitted for emergency purposes or starting only and which petrol tank cannot contain more than 15 litre of petrol, will be regarded for Type VI test as vehicles that can only run on a gaseous fuel. Vehicles which can be fuelled with petrol and either LPG or NG shall be tested in test Type VI with petrol only.

This paragraph is applicable to new types of vehicles of category N₁ and M₁ with a maximum mass not exceeding 3,500 kg.”

Paragraph 5.3.5.2., the table, amend to read:

“Test temperature 266 K (–7 °C)

Category	Class	Mass of carbon monoxide (CO) L ₁ (g/km)	Mass of hydrocarbons (HC) L ₂ (g/km)
M ₁ ⁽¹⁾	—	15	1.8
N ₁	I	15	1.8
N ₁ ⁽²⁾	II	24	2.7
	III	30	3.2

⁽¹⁾ Except for vehicles designed to carry more than six occupants and vehicles which maximum mass exceeds 2,500 kg.

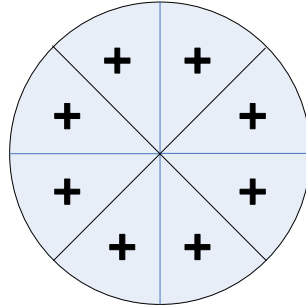
⁽²⁾ And category M₁ vehicles specified in note (1).”

Annex 4, paragraph 6.1.3., amend to read:

“6.1.3. A current of air of variable speed shall be blown over the vehicle. The blower speed shall be within the operating range of 10 km/h to at least 50 km/h, or as an alternative, at the request of the manufacturer, within the operating range of 10 km/h to at least the maximum speed of the test cycle being used. The linear velocity of the air at the blower outlet shall be within ±5 km/h of the corresponding roller speed within the range of 10 km/h to 50 km/h. At the range over 50 km/h, the linear velocity of the air shall be within ±10 km/h of the corresponding roller speed. At roller speeds of less than 10 km/h, air velocity may be zero.

The above mentioned air velocity shall be determined as an averaged value of a number of measuring points which

- (a) For blowers with rectangular outlets are located at the centre of each rectangle dividing the whole of the blower outlet into 9 areas (dividing both horizontal and vertical sides of the blower outlet into 3 equal parts).
- (b) For circular blower outlets, the outlet shall be divided into 8 equal arcs by vertical, horizontal and 45° lines. The measurement points lie on the radial centre line of each arc (22.5°) at a radius of two thirds of the total (as shown in the diagram below).



These measurements shall be made with no vehicle or other obstruction in front of the fan.

The device used to measure the linear velocity of the air shall be located at between 0 and 20 cm from the air outlet.

The final selection of the blower shall have the following characteristics:

- (c) Area: at least 0.2 m²;
- (d) Height of the lower edge above ground: approximately 20 cm;
- (e) Distance from the front of the vehicle: approximately 30 cm.

As an alternative, at the request of the manufacturer the blower speed shall be fixed at an air speed of at least 6 m/s (21.6 km/h).

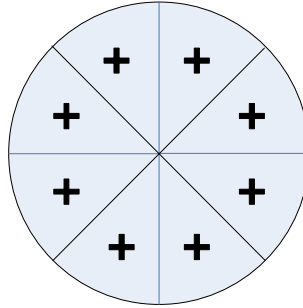
The height and lateral position of the cooling fan can also be modified at the request of the manufacturer.”

Annex 4a, paragraph 3.4.2., amend to read:

“3.4.2. A current of air of variable speed shall be blown over the vehicle. The blower speed shall be, within the operating range of 10 km/h to at least 50 km/h, or as an alternative, at the request of the manufacturer within the operating range of 10 km/h to at least the maximum speed of the test cycle being used. The linear velocity of the air at the blower outlet shall be within ± 5 km/h of the corresponding roller speed within the range of 10 km/h to 50 km/h. At the range over 50 km/h, the linear velocity of the air shall be within ± 10 km/h of the corresponding roller speed. At roller speeds of less than 10 km/h, air velocity may be zero.

The above mentioned air velocity shall be determined as an averaged value of a number of measuring points which:

- (a) For blowers with rectangular outlets are located at the centre of each rectangle dividing the whole of the blower outlet into 9 areas (dividing both horizontal and vertical sides of the blower outlet into 3 equal parts).
- (b) For circular blower outlets, the outlet shall be divided into 8 equal arcs by vertical, horizontal and 45° lines. The measurement points lie on the radial centre line of each arc (22.5°) at a radius of two thirds of the total (as shown in the diagram below).



These measurements shall be made with no vehicle or other obstruction in front of the fan.

The device used to measure the linear velocity of the air shall be located at between 0 and 20 cm from the air outlet.

The final selection of the blower shall have the following characteristics:

- (c) Area: at least 0.2 m²;
- (d) Height of the lower edge above ground: approximately 0.2 m;
- (e) Distance from the front of the vehicle: approximately 0.3 m.

As an alternative, at the request of the manufacturer the blower speed shall be fixed at an air speed of at least 6 m/s (21.6 km/h).

The height and lateral position of the cooling fan can also be modified at the request of the manufacturer.”