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**PROPOSAL FOR DRAFT 10 SERIES OF AMENDMENTS
TO REGULATION No. 13**

(Braking)

Transmitted by the Working Party on Brakes and Running Gear (GRRF)

Note: The text reproduced below was adopted by GRRF at its fifty-fifth session and is transmitted for consideration to WP.29 and to AC.1. It is based on documents TRANS/WP.29/GRRF/2003/3; TRANS/WP.29/GRRF/2003/4; TRANS/WP.29/GRRF/2004/5; TRANS/WP.29/GRRF/2003/29; TRANS/WP.29/GRRF/53, annex 3; informal documents Nos. GRRF-55-1 and GRRF-55-10; as amended in TRANS/WP.29/GRRF/55, annex 3.

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Paragraph 2.15., delete the reference to footnote 1/ and the corresponding footnote.

Paragraph 2.15.2.2., delete the reference to footnote 2/ and the corresponding footnote.

Through the Regulation, the references to footnotes 3/ to 9/ and their corresponding footnotes, renumber as footnotes 1/ to 7/.

Paragraph 4.2., amend to read :

" ...its first two digits (at present 10) shall indicate... "

Paragraph 5.2.1.28.2., amend to read :

"5.2.1.28.2. The action of the coupling force control shall be to reduce the difference between the dynamic braking rates of towing and towed vehicles. The operation of the coupling force control shall be checked at the time of type approval. The method by which this check is carried out shall be agreed between the vehicle manufacturer and the technical service with the method of assessment and results being appended to the type approval report."

Paragraph 5.2.1.28.6., amend to read :

"5.2.1.28.6. A coupling force control system shall only control the coupling forces generated by the service braking system of the motor vehicle and the trailer. Coupling forces resulting from the performance of endurance braking systems shall not be compensated by the service braking systems of either the motor vehicle or trailer. It is considered that endurance braking systems are not part of the service braking systems."

Insert new paragraphs 12.1.1.2. and 12.1.1.3., to read:

"12.1.1.2. Unless otherwise stated, or unless the context requires otherwise, supplements to the 10 series of amendments shall also apply to the issuing and maintenance of 09 series approvals.

12.1.1.3. As from the official date of entry into force of the 10 series of amendments, no Contracting Party applying this Regulation shall refuse to grant approval under this Regulation as amended by the 10 series of amendments."

Insert new paragraphs 12.1.2.5. to 12.1.2.7., to read:

"12.1.2.5. As from 24 months after the date of entry into force of the 10 series of amendments, Contracting Parties applying this Regulation shall grant approvals only if the vehicle type to be approved meets the requirements of this Regulation as amended by the 10 series of amendments.

- 12.1.2.6. Until 48 months after the date of entry into force of the 10 series of amendments to this Regulation, no Contracting Party applying this Regulation shall refuse national type approval of a vehicle type approved to the preceding series of amendments to this Regulation.
- 12.1.2.7. Starting 48 months after the entry into force of the 10 series of amendments to this Regulation, Contracting Parties applying this Regulation may refuse first national registration (first entry into service) of a vehicle which does not meet the requirements of the 10 series of amendments to this Regulation."

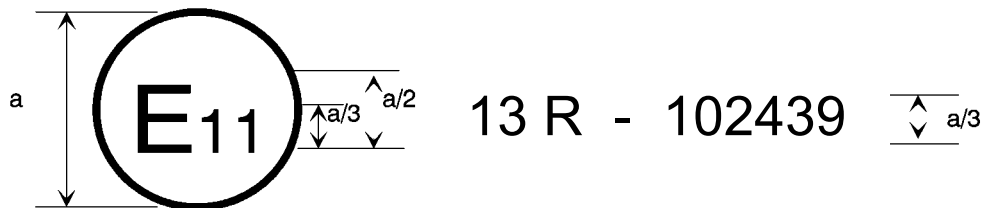
Annex 3, amend to read:

"Annex 3

ARRANGEMENTS OF APPROVAL MARKS

Model A

(See paragraph 4.4. of this Regulation)

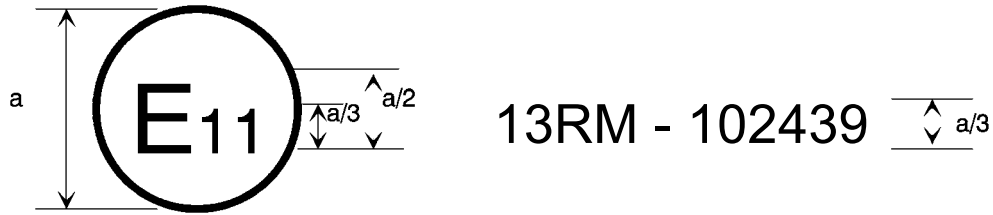


a = 8 mm min.

The above approval mark affixed to a vehicle shows that the vehicle type concerned has, with regard to braking, been approved in the United Kingdom (E 11) pursuant to Regulation No. 13 under approval number 102439. This number indicates that the approval was given in accordance with the requirements of Regulation No. 13 with the 10 series of amendments incorporated. For vehicles of categories M₂ and M₃, this mark means that that type of vehicle has undergone the Type-II test.

Model B

(See paragraph 4.5. of this Regulation)

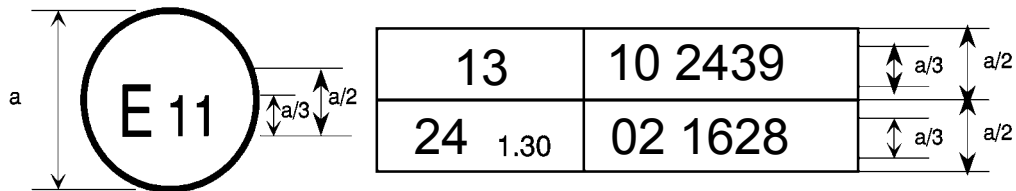


a = 8 mm min.

The above approval mark affixed to a vehicle shows that the vehicle type concerned has, with regard to braking, been approved in the United Kingdom (E 11) pursuant to Regulation No. 13. For vehicles of categories M₂ and M₃, this mark means that the type of vehicle has undergone the Type-IIA test.

Model C

(See paragraph 4.6. of this Regulation)



a = 8mm min

The above approval mark affixed to a vehicle shows that the vehicle type concerned has been approved in the United Kingdom (E 11) pursuant to Regulations Nos. 13 and 24 1/. (In the case of the latter Regulation the corrected absorption coefficient is 1.30 m⁻¹.)

1/ This number is given merely as an example."

Annex 10,

Paragraph 1.1., insert a reference to a new footnote */ and the corresponding footnote */ , to read:

" as defined in annex 13 to this Regulation shall meet all the requirements of this annex. If a special device is used, this must operate automatically. */

However, vehicles - other than those of category M₁ –

*/ In the case of trailers with electronically controlled brake force distribution the requirements of this annex shall only apply when the trailer is electrically connected to a towing vehicle by the ISO 7638:1997 connector."

Insert a new paragraph 1.1.1., to read:

"1.1.1. Where a vehicle is installed with an endurance braking system the retarding force produced by that system shall not be taken into consideration when determining the vehicle performance with respect to the provisions of this annex."

Paragraph 1.2., amend to read:

" of this annex, are valid both for vehicles with a pneumatic control line according to paragraph 5.1.3.1.1. of this Regulation and for vehicles with an electric control line according to paragraph 5.1.3.1.3. of this Regulation. In both cases, ... in the electric control line, according to ISO 11992:2003. Vehicles equipped according ... "

Insert new paragraphs 1.3. to 1.3.1.1., and the corresponding footnote, to read:

"1.3. Validation of the development of braking force.

1.3.1. At the time of type approval it shall be checked that the development of braking on an axle of each independent axle group */ shall be within the following pressure ranges:

(a) Laden vehicles:

At least one axle shall commence to develop a braking force when the pressure at the coupling head is within the pressure range 0.2 to 1.0 bar.

At least one axle of every other axle group shall commence to develop a braking force when the pressure at the coupling head is at a pressure ≤ 1.2 bar.

(b) Unladen vehicles:

At least one axle shall commence to develop a braking force when the pressure at the coupling head is within the pressure range 0.2 to 1.0 bar.

*/ In the case of multiple axles, where the axle spread is greater than 2.0 m, each individual axle shall be considered as an independent axle group."

1.3.1.1. With the wheel(s) of the axle(s) raised off the ground and free to rotate, apply an increasing brake demand and measure the coupling head pressure corresponding to when the wheel(s) can no longer be rotated by hand. This condition is defined as the development of the braking force.

Paragraph 1.3. (former), renumber as paragraph 1.4.

Paragraph 7.5., amend to read:

"7.5. Electronically controlled brake force distribution systems that cannot fulfil the requirements of paragraphs 7.1., 7.2., 7.3. and 7.4. above shall have a self-checking procedure of the functions, which influence brake force distribution. In addition, when the vehicle is stationary, it must be possible to carry out the checks defined in paragraph 1.3.1. above by generating the nominal demand pressure value associated with the commencement of braking for both the laden and the unladen conditions."

Paragraph 8., amend to read:

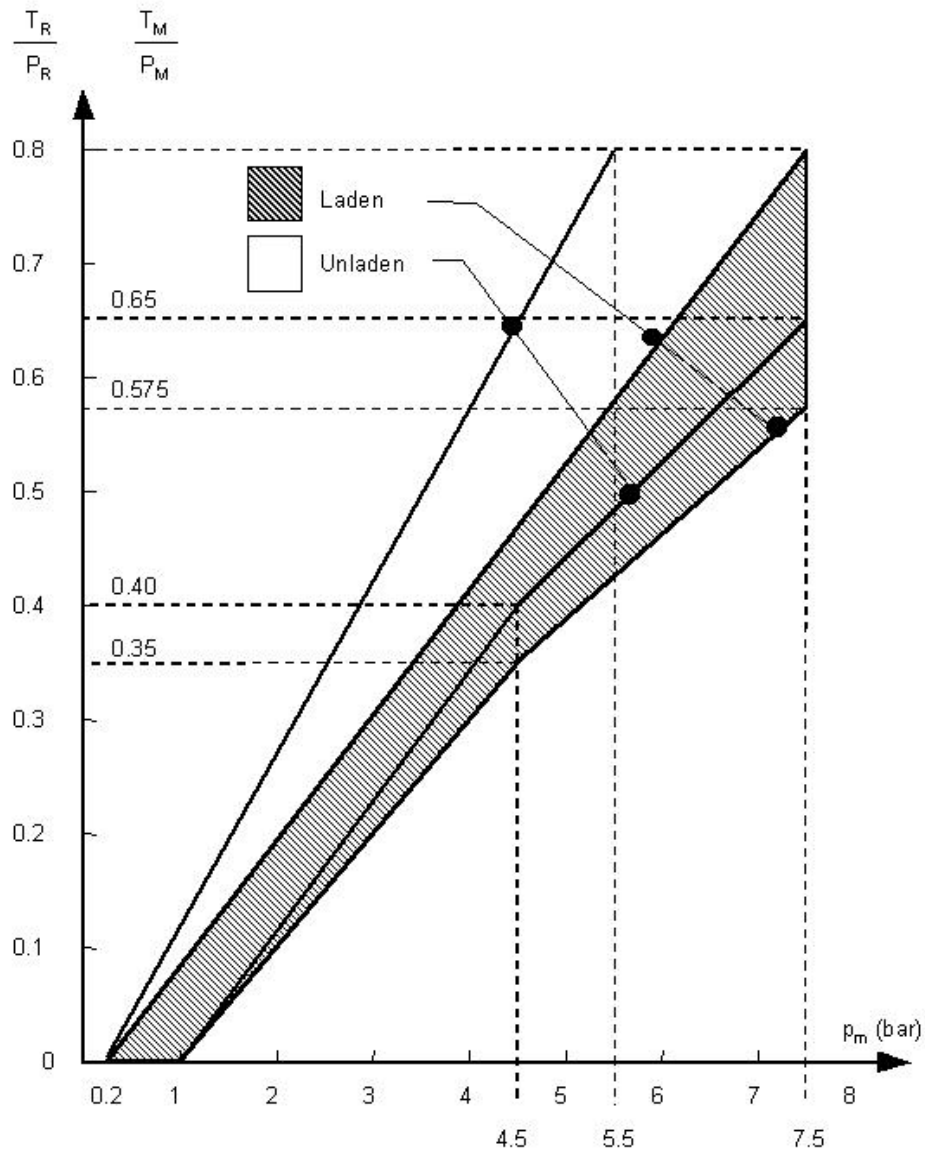
"8. VEHICLE TESTING

At the time of type approval the technical service shall verify conformity with the requirements contained within this annex and carry out any further tests considered necessary to this end. The results of any further tests shall be recorded and appended to the type approval report."

Diagrams 2, 3 and 4A, amend to read:

"DIAGRAM 2

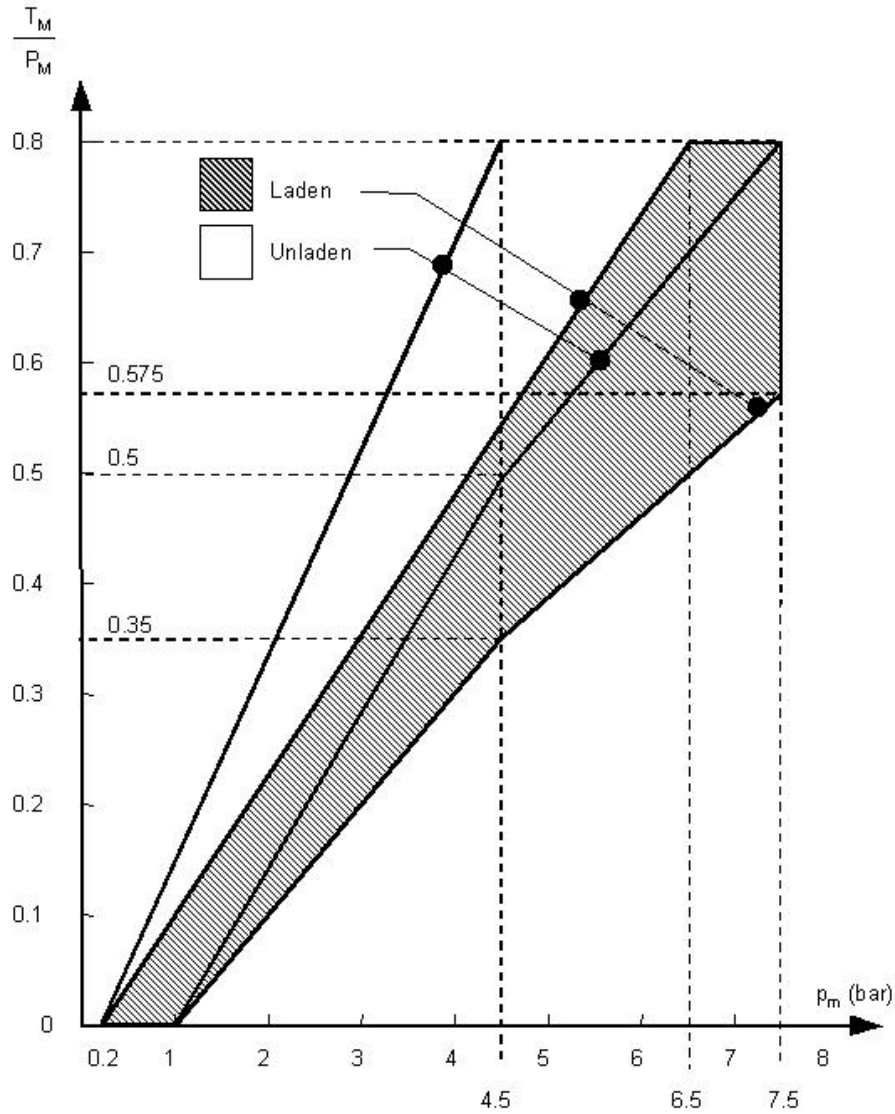
TOWING VEHICLES AND TRAILERS
(except tractors for semi-trailers and semi-trailers)
(see paragraph 3.1.5.1. of this annex)



Note: The relationships required by the diagram shall apply progressively for intermediate states of loading between the laden and the unladen states and shall be achieved by automatic means.

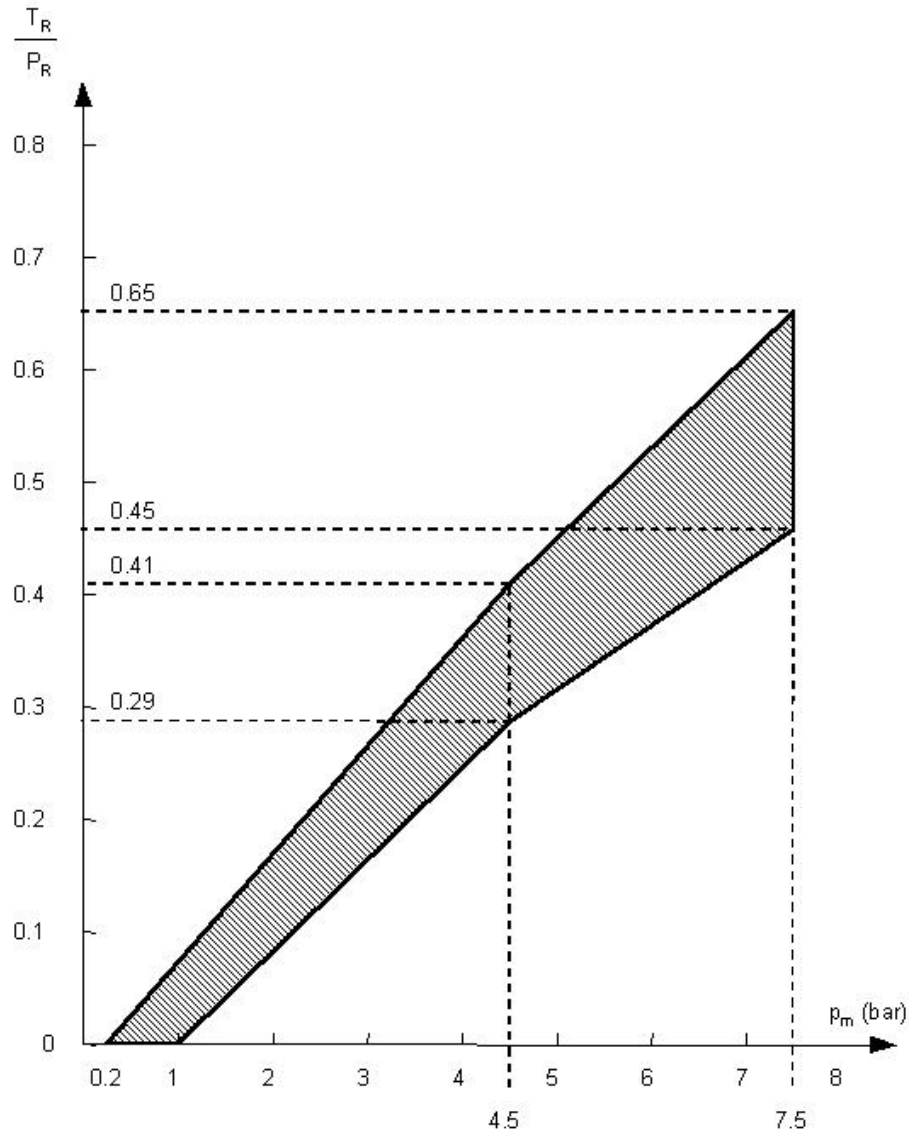
DIAGRAM 3

TRACTORS FOR SEMI-TRAILERS
(see paragraph 3.1.6. of this annex)



Note: The relationships required by the diagram shall apply progressively for intermediate states of loading between the laden and the unladen states and shall be achieved by automatic means.

DIAGRAM 4A
SEMI-TRAILERS
(see paragraph 4. of this annex)



Note: The relation between the braking rate T_R/P_R and the control line pressure for the laden and unladen conditions is determined as follows:

The factors K_c (laden), K_v (unladen) are obtained by reference to diagram 4B. To determine the areas corresponding to the laden and unladen conditions, the values of the ordinates of the upper and lower limits of the hatched area in diagram 4A are multiplied by the factors K_c and K_v respectively."

Annex 13,

Paragraph 1.1., add at the end:

" for compatibility set out in annex 10 to this Regulation. However, for all load conditions, a braking rate shall be developed between a pressure of 0.2 and 1 bar or equivalent digital demand value at the coupling head of the control line(s)."

Add a new paragraph 4.6., to read:

"4.6. Vehicles equipped with an integrated endurance braking system must also be equipped with an anti-lock braking system acting at least on the service brakes of the endurance braking system's controlled axle and on the endurance braking system itself, and shall fulfill the relevant requirements of this annex."
