

Proposal for amendments to ECE/TRANS/WP.29/GRVA/2024/25

The proposal aims to allow the PTI to perform the necessary tests and verifications related the HDV braking systems in an easy and reliable way to grant the road safety without burdening the vehicle owners/managers. This document proposes amendments to ECE/TRANS/WP.29/GRVA/2024/25.

Proposed changes compared to ECE/TRANS/WP.29/GRVA/2024/25 are indicated in *italic*, **bold** for new characters and **~~bold strikethrough~~** for deleted characters.

I. Proposal

Paragraph 2.44., amend to read:

2.44. "Wheel brake demand value" means the demand value for the braking force of a single wheel brake being electrically actuated. **This value is expressed as a percent of the wheel braking force under Type-0 conditions.**

Renumber current paragraphs 2.45. to 2.55. as 2.46. to 2.56.

Insert new paragraph 2.45., to read:

2.45. "**Wheel brake actuator value**" means the value applied to the wheel brake actuator being electrically actuated for a determined wheel brake demand value. **The magnitude for this value shall be determined by the manufacturer (e.g. voltage or power demand).**

Paragraph 5.1.4.2., amend to read:

5.1.4.2. For the purpose of determining the in-use braking forces of each axle of the vehicle, **with a compressed-air braking system, air pressure** test connections are required:

Renumber current paragraphs 5.1.4.2.1. to 5.1.4.2.5. as 5.1.4.2.1.1. to 5.1.4.2.1.5.

Insert new paragraphs 5.1.4.2.1., 5.1.4.2.2., 5.1.4.2.2.1., 5.1.4.2.2.2. and 5.1.4.2.2.3. to read:

5.1.4.2.1. For vehicles with a compressed-air braking system:

5.1.4.2.2. For vehicles with an electrical transmission braking system:

5.1.4.2.2.1. At the closest readily accessible position to the least favourably placed energy storage device within the meaning of Annex 7, section D.

5.1.4.2.2.2. In each independent circuit of the braking system so it is possible to check the input wheel brake actuator value of the complete transmission line.

5.1.4.2.2.3. The test connections shall comply with [SAE Standard J2222 / DIN Standard 43589].

Renumber current paragraphs 5.1.4.6.2. and 5.1.4.6.3. as 5.1.4.6.1.1. and 5.1.4.6.1.2.

Paragraph 5.1.4.6.2. amend to read:

5.1.4.6.2. Reference braking forces for an electrical transmission braking system using a roller brake tester shall be defined according to the following requirements.

5.1.4.6.2.1. It shall be possible on the vehicle to evaluate the relationship between the **brake demand value(s) (e.g. as a percent value, voltage, brake pedal force or stroke) wheel brake actuator value** and the measured braking force on a roller brake tester. The vehicle manufacturer shall **describe the method by which this can be realized, and make this information available freely by e.g. handbook, electronic data**

~~record etc.~~ **indicate which is the parameter applied for the wheel brake actuator value and make this value readable live for each axle.**

5.1.4.6.2.2. Reference braking forces are to be determined for each axle for a **wheel brake demand actuator** value from zero to a value corresponding to a braking force generated under Type-0 conditions. The applicant for type approval shall nominate these reference braking forces. These data shall be made available by the vehicle manufacturer, according to paragraph 5.1.4.5.1. above.

5.1.4.6.2.3. The reference braking forces shall be declared such that the vehicle is capable of generating a braking rate equivalent to that defined in Annex 4 of this Regulation for the relevant vehicle (50 per cent in the case of vehicles of category M2, M3, N2, ~~and~~ **N3, O3 and O4 except semi-trailers, 45 per cent in the case of semi-trailers**) whenever the measured roller braking force, for each axle irrespective of load, is not less than the reference braking force for a given brake demand value within the declared operating brake demand value range*.

Footnote reads: * For the purpose of periodic technical inspection, the minimum limit braking rate values defined for the whole vehicle may need adjustment to reflect national or international in-service requirements.

II. Justification

This proposed amendment to UN Regulation No. 13 aims the inclusion of pertinent provisions for Periodic Technical Inspection (PTI) regarding electrical transmission braking systems in Heavy Duty Vehicles (HDV).

The justification for this amendment is rooted in the necessity to update and reinforce vehicular safety standards, acknowledging the increasing prevalence and complexity of the electrical transmission braking systems in the automotive industry.

Furthermore, this measure aims to ensure the effectiveness and reliability of technical inspections, promoting the safeguarding vehicle's safety, the reduction of road accidents, and the enhancement of road safety worldwide, without burdening the vehicle owner and/or fleet managers, while aligning with current provisions.
