

# Amendments to UN R13 Type II-A test (endurance brake) provisions with regard to test mass

for 17th session of GRVA  
September 2023

# Background

The regulatory text of paragraph 1.8.1.2 in relation to paragraphs 1.8.2.1 and 1.8.2.2 is unclear and subject to interpretation.

At a European Level clarification has been searched at the 12<sup>th</sup> Meeting of the Forum for the Exchange on Information on Enforcement, 17<sup>th</sup> of February 2022.

MS agreed to continue discussion and seek for clear wording at the GRVA level of UNECE.

Current text

# UN R13 „Type II-A“ (Annex 4, Paragraph 1.8.)

## **1.8.1. Vehicles of the following categories shall be subject to the Type-IIA test:**

- 1.8.1.1. Vehicles of category M3, belonging to Classes II, III or B as defined in the Consolidated Resolution on the Construction of Vehicles (R.E.3).
- 1.8.1.2. Vehicles of category N3 which are authorized to tow a trailer of category O4. If the maximum mass exceeds 26 tonnes, the test mass is limited to 26 tonnes or, in the case where the unladen mass exceeds 26 tonnes, this mass is to be taken into account by calculation.
- 1.8.1.3. Certain vehicles subject to ADR (see Annex 5).

**Scope**

# UN R13 „Type II-A“ (Annex 4, Paragraph 1.8.)

## **1.8.2. Test conditions and performance requirements**

- 1.8.2.1. The performance of the endurance braking system shall be tested at the maximum mass of the vehicle or of the vehicle combination.
- 1.8.2.2. Laden vehicles shall be tested in such a manner that the energy input is equivalent to that recorded in the same period of time with a laden vehicle driven at an average speed of 30 km/h on a 7 per cent downgradient for a distance of 6 km...
- 1.8.2.3. For vehicles in which the energy is absorbed by the braking action of the engine alone, a tolerance of  $\pm 5$  km/h on the average speed shall be permitted, ...

**Testing provisions**

Issues

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- 1.8.1.2. Vehicles of category N3 which are authorized to tow a trailer of category O4. **If the maximum mass exceeds 26 tonnes, the test mass is limited to 26 tonnes or, in the case where the unladen mass exceeds 26 tonnes, this mass is to be taken into account by calculation.**
- 1.8.1.3. Certain vehicles subject to ADR (see Annex 5).

1.8.1.2. All N3 authorized to tow O4 are subject to 1.8.

The mass considerations refer to test provisions (calculation of test mass) not to scope in- or exclusions

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- 1.8.2.2. Laden vehicles shall be tested in such a manner that the energy input is equivalent to that recorded in the same period of time with a laden vehicle driven at an average speed of 30 km/h on a 7 per cent downgradient for a distance of 6 km...
- 1.8.2.3. For vehicles in which the energy is absorbed by the braking action of the engine alone, a tolerance of  $\pm 5$  km/h on the average speed shall be permitted, ...

1.8.2.1. It remains somehow unclear, whether N3+O4 shall be tested according to the mass of the towing vehicle or the total mass of the vehicle combination



Additional background

# R13 „Type II-A“ (Annex 5/ADR, Paragraph 2.3.)

## 2.3. Endurance braking system (for ADR)

2.3.1. Power-driven vehicles having a maximum mass exceeding 16 tonnes, or authorised to tow a trailer of category O4 shall be fitted with an endurance braking system according to paragraph 2.15 of this Regulation which complies with the following requirements:

2.3.1....

2.3.1.5. The performance of the endurance braking system shall be such that it fulfils the requirements of paragraph 1.8 of Annex 4 to this Regulation (Type-IIA test), with a laden vehicle mass comprising the laden mass of the motor vehicle and its authorised maximum towed mass but not exceeding a total of 44 tonnes.

2.3.1.5. **For ADR vehicles** it is always the total mass of the combination (up to 44 t), which is relevant for calculating the test mass.

# Reasoning

In the past every N3, authorized to tow O4, could have been configured to be used for ADR. The OEM could not know in advance. Therefore brake systems have been installed, which are compatible with ADR requirements.

Therefore the question on test mass (only towing vehicle vs. total mass of the combination) did not show up.

Today, it can be known in advance, that BEV N3 vehicles will not be used for ADR. Thus the ambiguity in wording of Annex 4, 1.8.2.1 needs to be resolved.

For traffic and vehicle safety reasons, DE suggests to clarify that for the calculation of the test mass of N3 authorized to tow O4, the mass of the combination shall be taken into consideration.

# Reasoning

If the weight of the towing vehicle extends certain limits (26t), reductions to the total mass of the combinations might be applicable.

# Proposed Amendment

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- 1.8.1.2. Vehicles of category N3 which are authorized to tow a trailer of category O4. ~~If the maximum mass exceeds 26 tonnes, the test mass is limited to 26 tonnes or, in the case where the unladen mass exceeds 26 tonnes, this mass is to be taken into account by calculation.~~
- 1.8.1.3. Certain vehicles subject to ADR (see Annex 5).

*Propose to delete and transfer to test provision section*

# UN R13 „Type II-A“ (Annex 4, Paragraph 1.8.)

## 1.8.2. Test conditions and performance requirements

1.8.2.1. The performance of the endurance braking system shall be tested at the maximum mass of the vehicle or, **in the case of a motor vehicle authorized to tow a trailer, at the maximum mass** of the vehicle combination **but not exceeding 44 tonnes.**

**If the maximum mass of a motor vehicle of category N3 which is authorized to tow a trailer and which is not subject to ADR (see Annex 5) exceeds 26 tonnes, the test mass of this motor vehicle of category N3 shall be 26 tonnes. In the case where the unladen mass of this motor vehicle of category N3 exceeds 26 tonnes, this mass is to be taken into account by calculation.**