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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 46417-2025

**Commercial vehicle - Straight-ahead braking on the
split-surface - Vehicle stability test method**

商用车 对开路面直线制动 车辆稳定性试验方法

(English Translation)

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is modified to adopt ISO 16234:2006 "Open-loop test of straight-line braking on roads with different coefficients of adhesion for heavy commercial vehicles and buses".

method".

This document has undergone significant structural adjustments compared to ISO 16234:2006. A table comparing the structural numbering changes between the two documents is provided.

See Appendix A.

The technical differences between this document and ISO 16234:2006, and the reasons therefor, are as follows.

---The standard's scope of application has been expanded to include "M2 category vehicles with a gross vehicle weight greater than 3500 kg," harmonizing with GB/T 46416-2025

(see...).

Chapter 1);

---ISO 611 has been replaced by the normatively referenced GB/T 5620; ISO 3833 has been replaced by GB/T 3730.1; and GB/T 12549 has been replaced by GB/T 5620.

The standard has been changed to ISO 8855, and normative references GB/T 3730.2 and GB/T 15089 (see Chapter 3) have been added to adapt to my country's standards.

Technical conditions, increasing operability;

---ISO 15037-2:2002 (see Chapter 3, 4.2, 4.3, 4.4, 5.1) has been replaced by the normatively referenced GB/T 40499-2021.

(6.1, 6.4.2, 6.4.4, 7.2) The degree of consistency between the two documents is modified to adapt to my country's technical conditions and increase operability.

Actual nature;

---The term "electronic stability control system" and its definition have been added (see 3.1);

---Requirements for testing instruments, equipment, and sensors have been added (see 4.1);

---Chapter 4, "Principles," of ISO 16234:2006 has been removed to improve the standard's focus and facilitate implementation;

---Increased accuracy requirements for longitudinal vehicle speed (see Table 1);

---Added requirements for longitudinal and transverse road surface slopes (see 6.2);

---The section on test roads stating that "the difference between high and low adhesion and the value of low adhesion number should be measured at least once before and after the test" has been deleted (see...).

According to ISO 16234:2006, section 7.2, all domestic tests are conducted at specialized sites with stable road conditions.

---Added environmental wind speed requirements to the meteorological conditions (see 6.3);

---A break-in test method for brakes has been added (see 6.4.5);

---The data processing method has been changed (see 8.3.2, 8.3.5), and a data processing method for assembling the ESC device has been added (see Appendix).

C) to make the standard more applicable;

---Added the characteristic quantities "Brake Deviation" and "Yaw Angle Change" (see 8.3.1

and 8.3.6);

---The definition of the effective braking time point has been deleted (see 8.4.3 of ISO 16234:2006), and it has been detailed in 7.4.2 and 8.1.1.

Detailed regulations facilitate the implementation of the standard.

The following editorial changes have been made to this document.

---The standard name has been changed to "Stability Test Method for Commercial Vehicles Braking on Straight-Line Road".

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the Ministry of Industry and Information Technology of the People's Republic of China.

This document is under the jurisdiction of the National Automotive Standardization Technical Committee (SAC/TC114).

1 Scope

This document describes a test method for evaluating vehicle stability when commercial vehicles are subjected to straight-line braking on split-road surfaces.

This document applies to vehicles and automobile trains belonging to categories M3, N2, N3, O3, and O4. Category M2 vehicles with a gross vehicle weight exceeding 3500 kg are also included.

Vehicles shall be handled in accordance with the same guidelines.

This document applies to vehicles equipped with anti-lock braking systems or automobiles whose first vehicle unit is equipped with anti-lock braking systems.

train.

This document applies to vehicles that use only the service braking system or in combination with retarder and engine braking when braking.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

GB/T 3730.1 Terms and definitions for automobiles, trailers and automobile combinations - Part 1: Types GB/T 3730.2 Road vehicle quality vocabulary and codes (GB/T 3730.2-1990, ISO 1176:1990, IDT) GB/T 5620 Road Vehicles - Motor Vehicles and Trailers - Braking - Terminology and Definitions (GB/T 5620-2020, ISO 611.

2003, IDT)

GB/T 12534-1990 General Rules for Road Test Methods of Automobiles GB/T 12549 Terminology and Definitions for Vehicle Handling Stability GB 12676-2014 Technical requirements and test methods for braking systems of commercial vehicles and trailers GB/T 15089 Classification of Motor Vehicles and Trailers GB/T 40499-2021 General conditions for testing the handling stability of heavy-duty vehicles (ISO 15037-2:2002, MOD)

3 Terms and Definitions

The definitions in GB/T 3730.1, GB/T 3730.2, GB/T 5620, GB/T 12549, GB/T 15089 and GB/T 40499-2021 the following terms and definitions apply to this document.

Real-time monitoring of vehicle status allows for adjustments to engine torque and yaw moment as needed, ensuring the vehicle moves according to the driver's intentions.

Active safety system.

[Source. GB/T 30677-2014, 3.2, with modifications]

4 Measuring equipment

4.1

The test instruments, equipment, and sensors shall comply with the requirements of 3.5 in GB/T 12534-1990.