INTERNATIONAL STANDARD

ISO
11026

First edition
2010-07-01

Heavy commercial vehicles and buses — Test method for roll stability — Closing-curve test

Véhicules utilitaires lourds et autobus — Méthode d'essai de stabilité au renversement — Essai en courbe se fermant
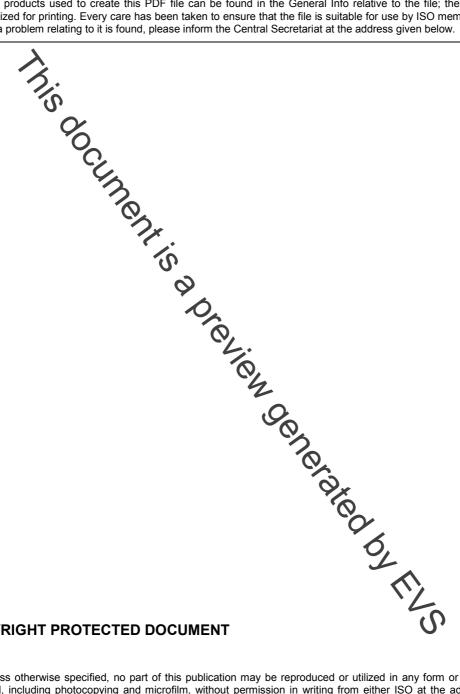

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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 11026 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 9, *Vehicle dynamics and road-holding ability*.

Introduction

The main purpose of this International Standard is to provide repeatable and discriminatory test results.

The dynamic behaviour of a road vehicle is a very important aspect of active vehicle safety. Any given vehicle, together with its driver and the prevailing environment, constitutes a closed-loop system that is unique. The task of evaluating the dynamic behaviour is therefore very difficult since the significant interaction of these driver–vehicle–environment elements are each complex in themselves. A complete and accurate description of the behaviour of the road vehicle must necessarily involve information obtained from a number of different tests.

Since this test method quantifies only one small part of the complete vehicle handling characteristics, the results of these tests can only be considered significant for a correspondingly small part of the overall dynamic behaviour.

Moreover, insufficient knowledge is available concerning the relationship between overall vehicle dynamic properties and accident avoidance. A substantial amount of work is necessary to acquire sufficient and reliable data on the correlation between accident avoidance and vehicle dynamic properties in general and the results of these tests in particular. Consequently, any application of this test method for regulation purposes will require proven correlation between test results and accident statistics.

Heavy commercial vehicles and buses — Test method for roll stability — Closing-curve test

1 Scope

This International Standard specifies an open-loop test method for determining the roll stability of a vehicle negotiating a curve on dry surface.

It applies to heavy vehicles, that is commercial vehicles, commercial vehicle combinations, buses and articulated buses as defined in ISO 3833 (trucks and trailers with maximum weight above 3,5 t and buses and articulated buses with maximum weight above 5 t, according to ECE and EC vehicle classification, categories M3, N2, N3, O3 and O4).

The method is intended for vehicles equipped with electronic roll stability control systems.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3833, *Road vehicles — Types — Terms and definitions*

ISO 8855, *Road vehicles — Vehicle dynamics and road-holding ability — Vocabulary*

ISO 15037-2:2002, *Road vehicles — Vehicle dynamics test methods — Part 2: General conditions for heavy vehicles and buses*

3 Terms, definitions and symbols

For the purposes of this document, the terms, definitions and symbols given in ISO 15037-2, ISO 8855 and the following apply.

3.1
jerk
rate of change of lateral acceleration

3.2
steady-state rollover threshold
maximum magnitude of lateral acceleration that a vehicle can sustain during steady-state cornering on a flat and level surface without rolling over

4 Principle

The objective of this test method is to determine the effect of roll stability control on the roll stability of a vehicle travelling at constant longitudinal velocity on a path with a constantly increasing curvature, a closing curve. Also, effects on the yaw stability will be considered. The initial state for the test is driving in a straight line at constant longitudinal velocity.