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**Passenger cars — Stopping distance at  
straight-line braking with ABS — Open-  
loop test method**

*Voitures particulières — Distance d'arrêt de freinage en ligne droite  
avec ABS — Méthode d'essai en boucle ouverte*



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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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 21994 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 9, *Vehicle dynamics and road-holding ability*.

## Introduction

The stopping distance of a road vehicle is an important part of vehicle performance and active vehicle safety. Any given vehicle, together with its driver and the prevailing environment, constitutes a unique closed-loop system. The task of determining the stopping distance is therefore very difficult, since there is a significant interaction between these driver-vehicle-environment elements, each of which is complex in itself.

Test conditions and tyres have a strong influence on test results. Therefore, only vehicle stopping distances obtained under comparable test and tyre conditions are comparable to one another.

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# Passenger cars — Stopping distance at straight-line braking with ABS — Open-loop test method

## 1 Scope

This International Standard specifies an open-loop test method to determine the stopping distance of a vehicle during a straight-line braking manoeuvre, with the Anti-lock Braking System (ABS) fully engaged. This International Standard applies to passenger cars as defined in ISO 3833 and light trucks.

This International Standard specifies a reference method and is especially designed to ensure high repeatability.

## 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/TR 8349, *Road vehicles — Measurement of road surface friction*

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

ISO 15037-1:2006, *Road vehicles — Vehicle dynamics test methods — Part 1: General conditions for passenger cars*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 8855 and the general conditions given in ISO 15037-1 shall apply. For specific terms see Annex C.

## 4 Principle

This International Standard specifies a method to determine the braking distances characterizing the deceleration build-up phase at the beginning of a braking manoeuvre and at full braking until the vehicle comes to a standstill.

The driving situation represents an emergency or panic braking phase (pushing the brake pedal with a very high activation speed) during straight-ahead driving on an even and dry road surface with a high coefficient of friction.