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**Road vehicles — Light alloy wheels —  
Lateral impact test**

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# Contents

|                                                                           | Page |
|---------------------------------------------------------------------------|------|
| Foreword.....                                                             | iv   |
| Introduction.....                                                         | v    |
| 1 Scope.....                                                              | 1    |
| 2 Normative references.....                                               | 1    |
| 3 Terms and definitions.....                                              | 1    |
| 4 Test equipment.....                                                     | 1    |
| 5 Calibration.....                                                        | 1    |
| 6 Test procedure.....                                                     | 2    |
| 7 Failure criteria.....                                                   | 2    |
| Annex A (informative) Velocity sensor set-up and measuring procedure..... | 8    |

## 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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 33, *Vehicle dynamics and chassis components*.

This fourth edition cancels and replaces the third edition (ISO 7141:2005), which has been technically revised.

The main changes are as follows:

- editorial modifications;
- addition of subclause 5.1 and corresponding [Annex A](#);
- [Clause 7](#) failure criteria, clarification and insertion of examples in [Figure 3](#).

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

## Introduction

The purpose of this document is to improve the repetitious accuracy and the application for increasing wheel diameters and static wheel loads.

Therefore, it is necessary to describe the test rig in more details and include additional descriptions for failure criteria.



# Road vehicles — Light alloy wheels — Lateral impact test

## 1 Scope

This document specifies a laboratory test procedure to evaluate the axial (lateral) kerb impact collision properties of a wheel manufactured either wholly or partly of light alloys. It is intended for passenger car applications, and special vehicle applications where there is a possibility of the wheel impacting the kerb, with the purpose of screening and/or quality control of the wheel.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 3911, *Wheels and rims for pneumatic tyres — Vocabulary, designation and marking*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 3911 apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

## 4 Test equipment

**4.1** New wheels, fully processed, representative of wheels intended for vehicle application, fitted with a tyre. Tyres and wheels used in the tests should not be used subsequently on a vehicle.

**4.2** Impact loading test machine with a vertically acting steel striker having an impacting face, in accordance with [Figure 1](#). The striker mass,  $m$ , within a tolerance of  $\pm 2\%$ , expressed in kilograms, shall be as follows:

$$m = 0,6W + 180$$

where  $W$  is the maximum vertical static load which is specified by the wheel or the vehicle manufacturer, expressed in kilograms. In the absence of such specification, the largest value of the load rating of the tyre which can be applied to the wheel for the application.

**4.3** Mass of 1 000 kg.

## 5 Calibration

Ensure, by means of a test calibration adapter, that the 1 000 kg mass ([4.3](#)) applied vertically to the centre of the wheel fixing as shown in [Figure 2](#) causes a deflection of  $(7,5 \pm 0,75)$  mm when measured at the centre of the beam.