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BSI Standards Publication

**Road vehicles — Wheels and rims — Use,
general maintenance and safety requirements
and out-of-service conditions**

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National foreword

This British Standard is the UK implementation of ISO 14400:2021. It supersedes BS ISO 14400:2005, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee AUE/15, Safety related to vehicles.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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2021-10-12

Road vehicles — Wheels and rims — Use, general maintenance and safety requirements and out-of- service conditions

*Véhicules routiers — Roues et jantes — Exigences en matière
d'utilisation, de maintenance générale et de sécurité, et conditions de
mise hors service*



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ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
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Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Use and general maintenance requirements	1
4.1 Wheel and wheel components	1
4.2 Wheel mounting and removal.....	2
4.3 Studs and nuts	2
5 General safety requirements	3
6 Out-of-service conditions	3
Bibliography	19

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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.

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).

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).

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.

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

This second edition cancels and replaces the first edition (ISO 14400:2005), which has been technically revised.

The main changes are as follows:

- added off-road vehicles to the scope since the sections apply equally to that as well as road vehicles.

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.

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Introduction

The purpose of this document is to ensure the safe operation of vehicles. The wheel is a highly stressed component of the vehicle that in service may be subject to extreme forces. Therefore, it is absolutely necessary to handle these parts with care and to pay particular attention to their mounting, removal and maintenance in order to ensure safe operations and to prevent servicing accidents.

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Road vehicles — Wheels and rims — Use, general maintenance and safety requirements and out-of-service conditions

1 Scope

This document specifies requirements for the use, general maintenance and safety of wheels and rims including multi-piece wheels and rims. This document defines their out-of-service conditions, such as cracked, worn and bent wheels and rim components. It is applicable to wheels intended for use on road as defined in ISO 3833 and off road vehicles. This document does not include mopeds and motorcycles.

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 Use and general maintenance requirements

WARNING — On multi-piece rims, the use of the wrong ring components can result in catastrophic wheel failure.

4.1 Wheel and wheel components

Wheels or parts of wheels which cannot be identified shall not be used even if they seem to have the correct functions and the identical dimensions. The characteristics of the wheel centre shall correspond exactly to vehicle parts, especially the axle hub and the brake, in order to guarantee a proper fitting and an effective load transmission.

A neutral non-aggressive mounting paste or liquid shall be used to lubricate the tyre beads. The hub, studs, nuts and the wheel attachment face shall be carefully cleaned. In the case of multi-piece wheels, all contact surfaces shall be cleaned.

Inspect parts for out-of-service conditions, see [Clause 6](#). If cleaning does not restore the original condition for the mating surfaces or if the parts have any of the conditions described in [Clause 6](#), the parts shall be replaced.