
Passenger car tyres and rims —

**Part 1:
Tyres (metric series)**

Pneumatiques et jantes pour voitures particulières —

Partie 1: Pneumatiques (série millimétrique)



This document is a preview generated by EUS



COPYRIGHT PROTECTED DOCUMENT

© ISO 2021

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Designation	1
4.1 Size and construction	1
4.1.1 Characteristics	1
4.1.2 Nominal section width	2
4.1.3 Nominal aspect ratio	2
4.1.4 Tyre construction code	2
4.1.5 Nominal rim diameter code	2
4.2 Service description	3
4.2.1 General	3
4.2.2 Load index	3
4.2.3 Speed symbol	3
4.2.4 Speed category	4
4.3 Other service characteristics	4
5 Marking	6
6 Tyre dimensions	6
6.1 Rounding values	6
6.2 Calculation of design tyre dimensions	7
6.2.1 Theoretical rim width, R_{th}	7
6.2.2 Measuring rim width code, R_{mc}	7
6.2.3 Design tyre section width, S	7
6.2.4 Design tyre section height, H	8
6.2.5 Design tyre overall diameter, D_0	8
6.2.6 Guidelines	8
6.3 Calculation of maximum overall (grown) tyre dimensions in service tyre mounted on their measuring rims	8
6.3.1 General	8
6.3.2 Maximum overall (grown) width in service, W_{max}	8
6.3.3 Maximum overall (grown) diameter in service, $D_{0,max}$	9
6.4 Calculation of minimum tyre dimensions for radial tyres mounted on their measuring rims	9
6.4.1 Minimum tyre section width, S_{min}	9
6.4.2 Minimum tyre overall diameter, $D_{0,min}$	9
6.5 Range of approved rims	9
7 Tyre dimension measurement procedure	10
8 Inflation pressures	10
9 Load carrying-capacities	11
10 Choice of tyre sizes	11
11 Camber angle	12
Annex A (informative) Guideline values for metric-series tyres	14
Annex B (normative) Load indices for passenger car tyres	22
Annex C (normative) Minimum inflation pressure for intermediate load	42
Annex D (informative) Other existing size markings	50
Bibliography	52

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 31, *Tyres, rims and valves*, Subcommittee SC 3, *Passenger car tyres and rims*.

This twelfth edition of ISO 4000-1 cancels and replaces the eleventh edition (ISO 4000-1:2015), which has been technically revised.

The main changes compared to the previous edition are as follows:

- some definitions have been aligned with ISO 4223-1;
- the text on inflation pressures in [Clause 8](#) has been reworded;
- new internationally harmonized load indices has been added in [Annex B](#).

A list of all parts in the ISO 4000 series can be found on the ISO website.

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.

Passenger car tyres and rims —

Part 1: Tyres (metric series)

1 Scope

This document specifies the designation, dimensions, and load ratings of metric-series tyres primarily intended for passenger cars.

2 Normative references

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

ISO 3877-1, *Tyres, valves and tubes — List of equivalent terms — Part 1: Tyres*

ISO 4223-1, *Definitions of some terms used in the tyre industry — Part 1: Pneumatic tyres*

ISO 16992, *Passenger car tyres — Spare unit substitutive equipment (SUSE)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 3877-1, ISO 4223-1 and the following apply.

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

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

3.1

rim protector

feature incorporated into the lower sidewall area of the tyre which is intended to protect the rim flange from damage

EXAMPLE Protruding circumferential rubber rib.

4 Designation

4.1 Size and construction

4.1.1 Characteristics

The tyre characteristics shall be designated:

Nominal section width / Nominal aspect ratio Tyre construction code Nominal rim diameter code

EXAMPLE 235/45 R 17.