INTERNATIONAL STANDARD

ISO 4000-2

Fifth edition
2013-12-15

Passenger car tyres and rims —

Part 2: **Rims**

Pneumatiques et jantes pour voitures particulières —
Partie 2: Jantes

Reference number
ISO 4000-2:2013(E)

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

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 on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 31, *Tyres, rims and valves*, Subcommittee SC 3, *Passenger car tyres and rims*.

This fifth edition cancels and replaces the fourth edition (ISO 4000-2:2007), which has been technically revised.

ISO 4000 consists of the following parts, under the general title *Passenger car tyres and rims*:

— *Part 1: Tyres (metric series)*

— *Part 2: Rims*

Passenger car tyres and rims —

Part 2:
Rims

1 Scope

This part of ISO 4000 specifies the designation, contour and dimensions of 5° tapered (drop-centre) rims 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 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.

4 Designation and marking

The rim shall be designated by its nominal rim-diameter code, nominal rim-width code and rim flange type (e.g. 15 × 6 J or 13 × 5,50 B).

5 5° tapered (drop-centre) rims

5.1 Rim flanges

Recommended rim flange contours are given in Table 1 for the nominal rim diameter codes.

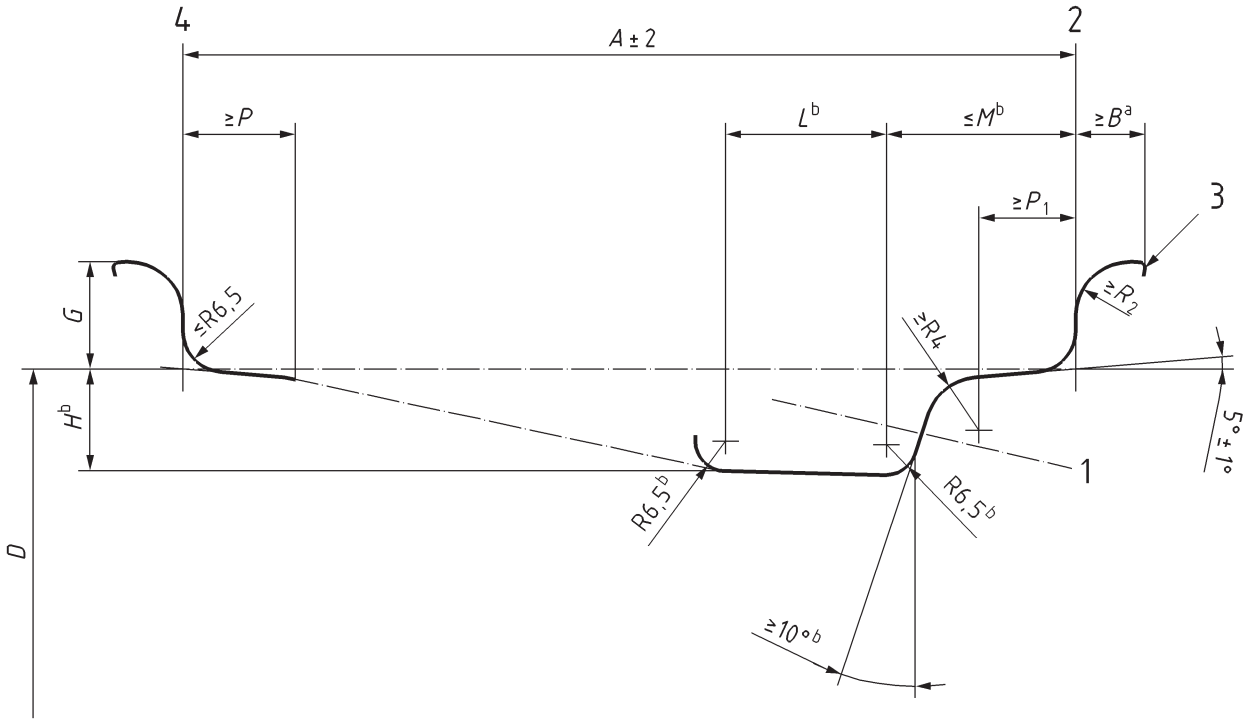
Table 1 — Recommended rim flanges

Nominal rim-diameter code	Rim flange
10	B
12	
13	
14	J
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
28	
30	

5.2 Rim contours

Dimensions and tolerances of the rims shall be as given in Figure 1 and Table 2. Optional bead seat contours and their dimensions are given in Figure 2 and Table 3.

Dimensions in millimetres



Key

1 valve hole (see Clause 6)

2 tyre mounting side

3 break corner equivalent to 0,5 minimum *R*

4 tyre non-mounting side

a Flange width includes edge radius. The portion of a flange beyond the minimum width shall *not be higher* than the highest point of the flange

b These dimensions comprise the minimum well envelope for tyre mounting purposes at *M* max. or less, except for localized areas at the weld or valve hole

C Optional groove in rim flange for wheel weight retention is permissible

NOTE For use with tubeless tyres, humps are necessary on the mounting side and preferred on the non-mounting side.

Figure 1 — Contour of 5° tapered (drop-centre) rims

Table 2 — Dimensions of 5° tapered (drop-centre) rims

Dimensions in millimetres

Diameter code	**Rim width code and flange type** [c]	*B* min.	*G* ±1,0	*P* min.	P_1 min.	*H* [a] gauge	*L* gauge	*M* max.	R_2 min.
10 12 13	3.00 B	10,0	14,5	13,0	15,0	15,0	16,0	28,0	7,5
	3.50 B	10,0	14,5	15,0	17,0	15,0	19,0	34,0	7,5
	4.00 B	10,0	14,5	15,0	17,0	15,0	19,0	45,0	7,5
	4.50 B and wider	10,0	14,5	19,5	19,5	15,0	22,0	45,0	7,5
14 through 21	3J	11,0	17,5	13,0	13,0	17,3 [b]	16,0	28,0	9,5
	31/2 J	11,0	17,5	15,0	17,0	17,3 [b]	19,0	34,0	9,5
	4 J	11,0	17,5	15,0	17,0	17,3 [b]	19,0	45,0	9,5
	41/2 J and wider	11,0	17,5	19,5	19,5	17,3 [b]	22,0	45,0	9,5
22 and greater	4 1/2 J and wider	11,0	17,5	19,5	19,5	22,0 [d]	22,0	45,0	9,5

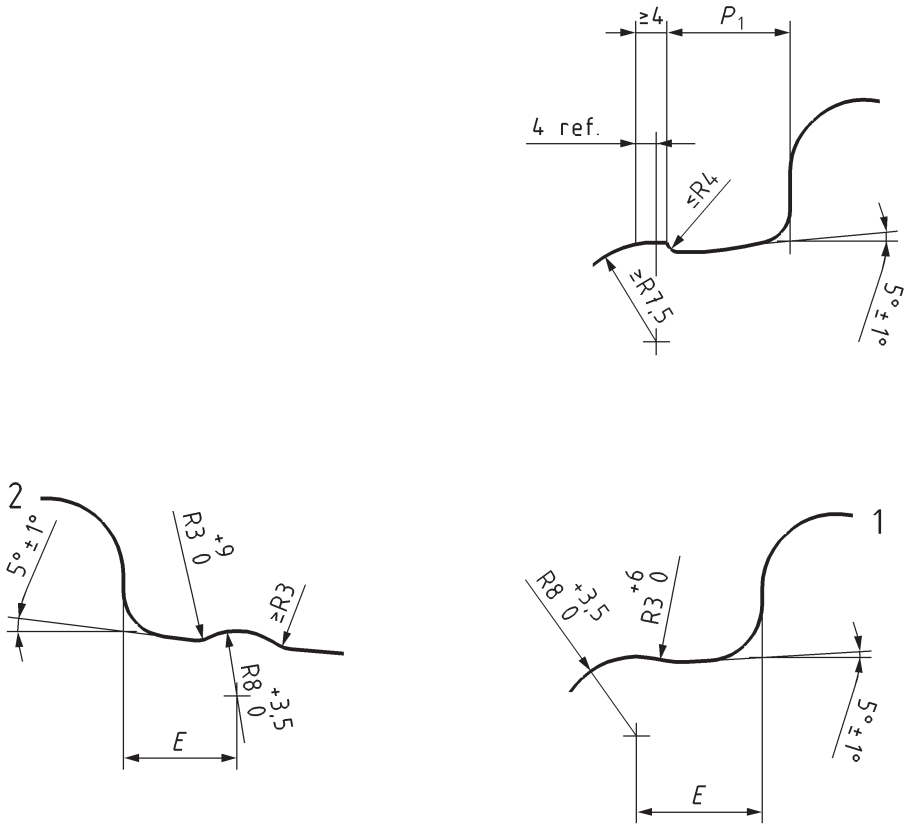
[a] Minimum dimensions for well depth (*H*) and well angle are required for tyre mounting. Larger values may be required to ensure sufficient space for tubeless tyre valve seating.

[b] For J-type rims, a deviation to *H* gauge of 17 mm is permitted with a corresponding *M* max. of 43 mm.

[c] Dimension *A* = rim width code × 25,4 (rounded to 0,5 mm) (increments of code = 0.5).

[d] Some existing designs may follow minimum value of 17,3 well depth.

Dimensions in millimetres



Key

1 tyre mounting side

2 tyre non-mounting side

Figure 2 — Optional bead seat contours

Table 3 — *E* dimension for round humps (see Figure 2)

Dimensions in millimetres

Rim width code and flange type	*E*
3.00 B and 3 J	13 min.
3.50 B, 31/2 J, 4.00 B, 4 J	16 min.
4.50 B, 41/2 J and wider	$21{,}0^{+2{,}0}_{0}$ [a]
[a] $19{,}5^{+2{,}0}_{0}$ mm permitted for rim widths 4.50 B (41/2 J) to 7.00 B (7 J).	

5.3 Rim diameter and hump circumference

The specified rim diameter, *D*, for nominal rim-diameter codes and hump circumferences is given in Table 4.

Table 4 — Specified rim diameter and hump circumference of 5° tapered (drop-centre) rims

Dimensions in millimetres

Nominal rim-diameter code	Specified rim diameter	Circumference	
	$D \pm 0{,}4$[a]	Flat hump $^{0}_{-3{,}5}$	Round hump $^{0}_{-3{,}5}$[b]
10	253,2	795,4	797,6
12	304,0	955,0	957,6
13	329,4	1 034,8	1 037,0
14	354,8	1 114,6	1 116,8
15	380,2	1 194,4	1 196,6
16	405,6	1 274,2	1 276,4
17	436,6	1 371,6	1 373,8
18	462,0	1 451,4	1 453,6
19	487,4	1 531,2	1 533,4
20	512,8	1 611,0	1 613,2
21	538,2	1 690,8	1 693,0
22	563,6	1 770,6	1 772,8
23	589,0	1 850,4	1 852,6
24	614,4	1 930,2	1 932,4
25	639,8	2 010,0	2 012,2
26	665,2	2 089,8	2 092,0
28	716,0	2 249,4	2 251,6
30	766,8	2 409,0	2 411,2

[a] Tolerance is for tyre design purpose only. The rim measurement is by a circumference-measuring tape related to a mandrel.

[b] A tolerance of $^{0}_{-5{,}0}$ mm is permitted on the vehicle inboard side only.

6 Valve holes

6.1 General

Valve hole edges on the tyre side of rims shall be rounded or chamfered; valve hole edges on the weather side of rims shall be free from burrs that could damage the valve.

6.2 Snap-in

To provide for adequate sealing, an unbroken smooth inside surface having at least 0,75 mm or 25 % of rim thickness, whichever is greater, shall be maintained. Suitable valves shall be used. Valve hole details for snap-in valves shall be as shown in Figure 3 or 4 for rims with 17,3 mm minimum well depth.

6.3 Other valves

Holes for other valves are under consideration.

Dimensions in millimetres

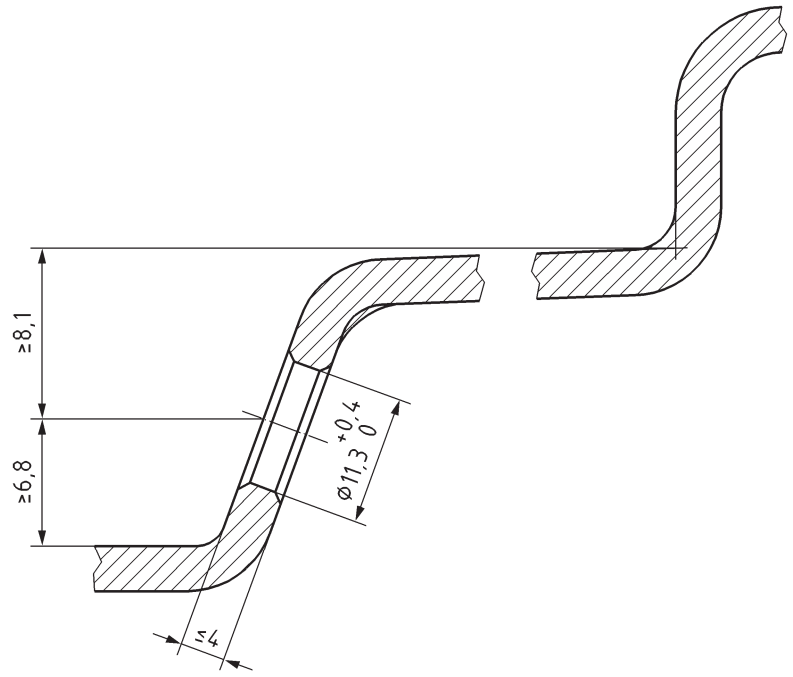
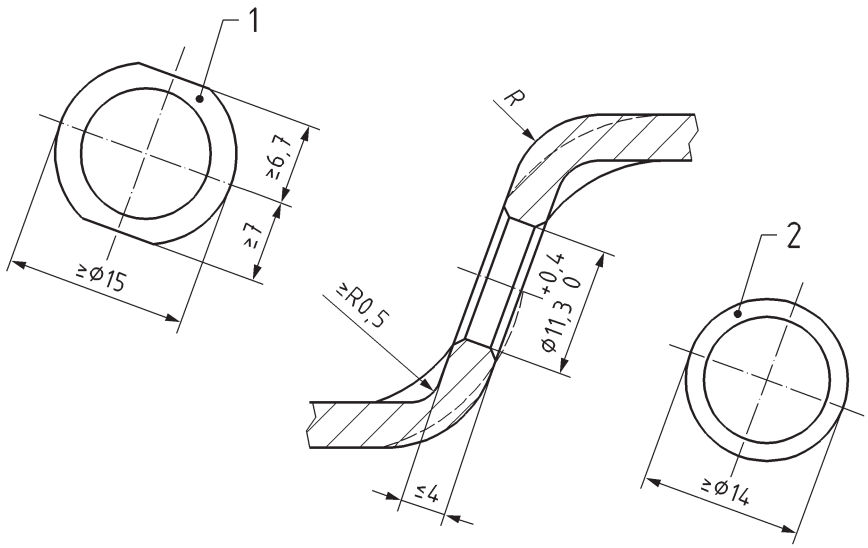


Figure 3 — Valve hole dimensions for snap-in valves

Dimensions in millimetres



Key

1 flat surface with no radial striations

2 flat surface for clamp-in valves

Figure 4 — Valve hole dimensions around valve hole

ICS 43.040.50

Price based on 7 pages