

BS ISO 4000-2:2013



BSI Standards Publication

Passenger car tyres and rims

Part 2: Rims

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National foreword

This British Standard is the UK implementation of ISO 4000-2:2013. It supersedes BS ISO 4000-2:2007 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee AUE/4, Tyres and wheels for motor vehicles.

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

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Passenger car tyres and rims —

Part 2:
Rims

Pneumatiques et jantes pour voitures particulières —
Partie 2: Jantes



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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).

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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.

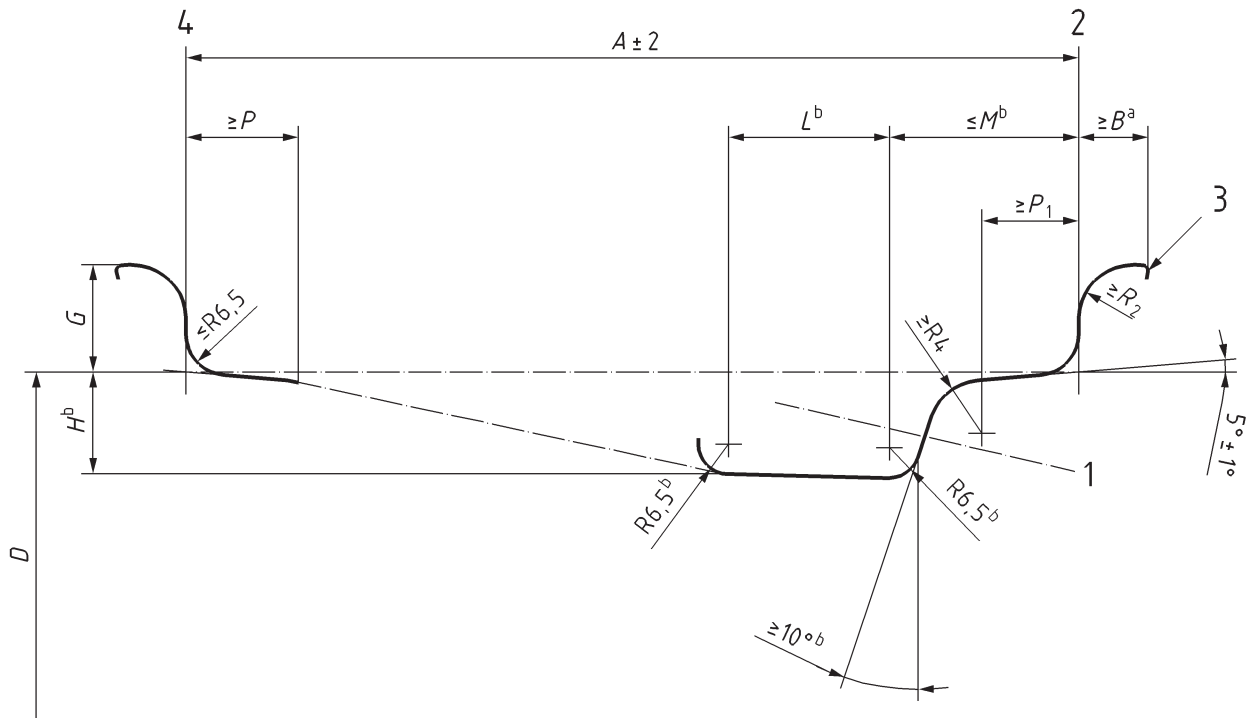
Table 1 — Recommended rim flanges

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	<i>B</i>	<i>G</i>	<i>P</i>	<i>P</i> ₁	<i>H</i> ^a	<i>L</i>	<i>M</i>	<i>R</i> ₂
		min.	±1,0	min.	min.	gauge	gauge	max.	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
	3 1/2 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
	4 1/2 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

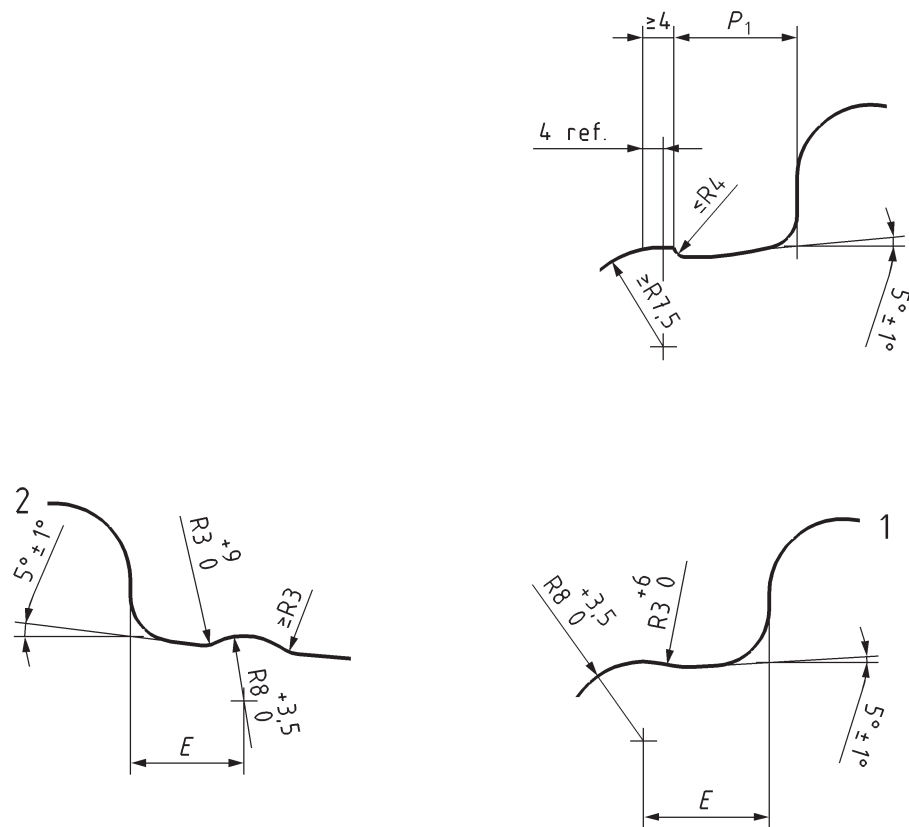
^a Minimum dimensions for well depth (*H*) and well angle are required for tyre mounting. Larger values may be required to ensure sufficient space for tubeless tyre valve seating.

^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, 3 1/2 J, 4.00 B, 4 J	16 min.
4.50 B, 4 1/2 J and wider	21,0 ^{+2,0} ₀ ^a
^a 19,5 ^{+2,0} ₀ mm permitted for rim widths 4.50 B (4 1/2 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 $D \pm 0,4^a$	Circumference	
		Flat hump $\begin{smallmatrix} 0 \\ -3,5 \end{smallmatrix}$	Round hump $\begin{smallmatrix} 0 \\ -3,5 \end{smallmatrix}^b$
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 $\begin{smallmatrix} 0 \\ -5,0 \end{smallmatrix}$ 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

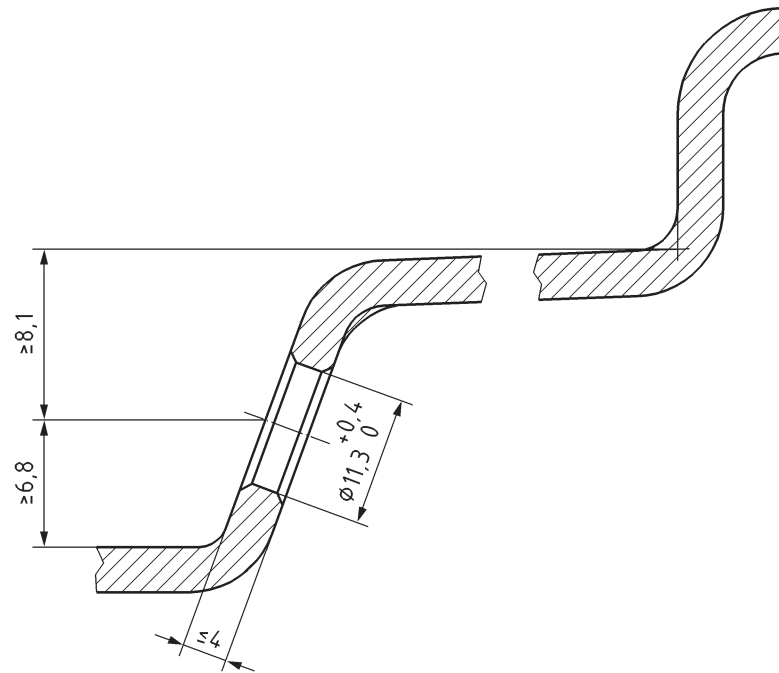
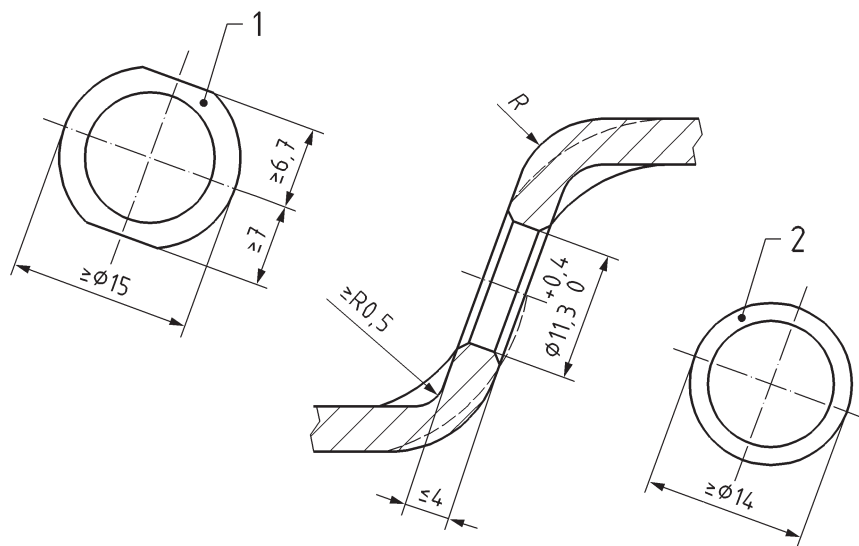


Figure 3 — Valve hole dimensions for snap-in valves

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

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