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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

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this part of ISO 4000 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 4000-2 was prepared by Technical Committee ISO/TC 31, *Tyres, rims and valves*, Subcommittee SC 3, *Passenger car tyres and rims*.

This third edition cancels and replaces the second edition (ISO 4000-2:1994), 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 reference

The following normative document contains provisions which, through reference in this text, constitute provisions of this part of ISO 4000. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 4000 are encouraged to investigate the possibility of applying the most recent edition of the normative document indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 3911, *Wheels and rims for pneumatic tyres — Vocabulary, designation and marking*

3 Terms and definitions

For the purposes of this part of ISO 4000, 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

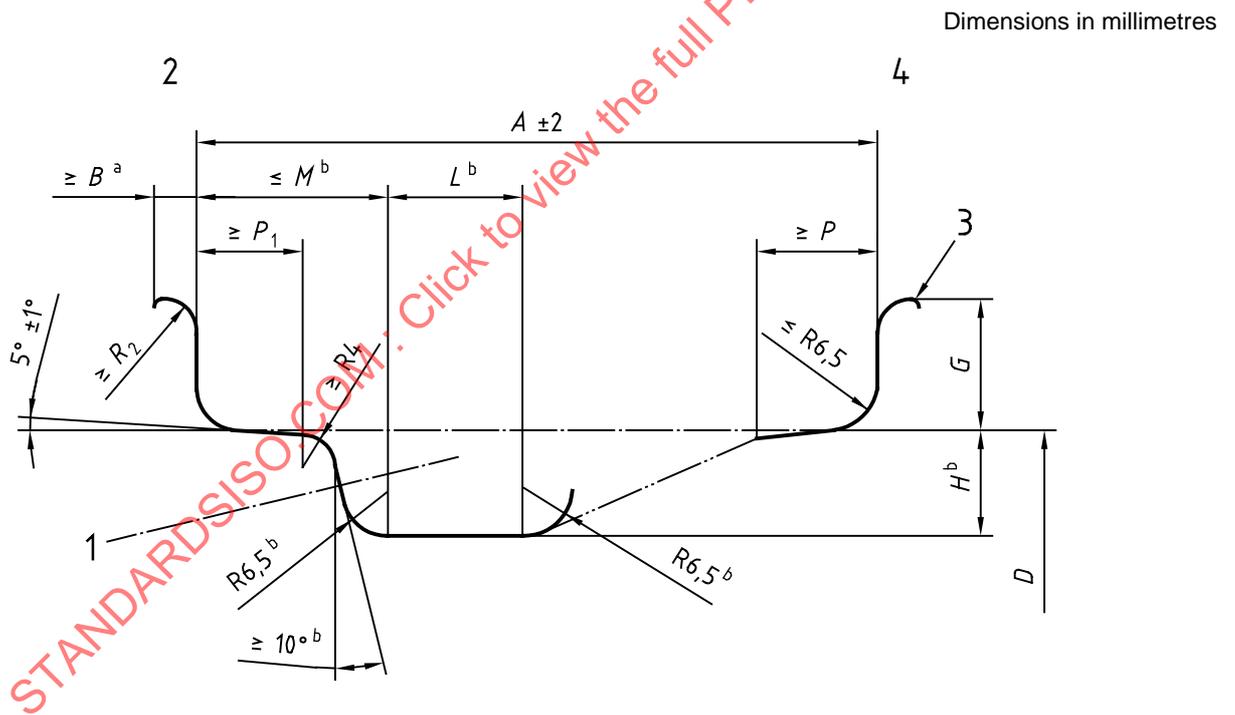
Recommended rim flange contours are given in Table 1 for the nominal rim diameter codes.

Table 1 — Recommended rim flanges

Nominal rim diameter code	Rim flange
10	
12	B
13	
14	J
15	
16	
17	
18	
19	
20	
21	
22	

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.



NOTE For use with tubeless tyres, humps are necessary on the outboard side and preferred on the inboard side.

Key

- 1 Valve hole (see clause 6)
- 2 Vehicle outboard side
- 3 Break corner equivalent to 0,5 minimum R
- 4 Vehicle inboard side

^a Flange width includes edge radius. The portion of a flange beyond the minimum width shall be lower 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 weld or valve hole.

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

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

Dimensions in millimetres

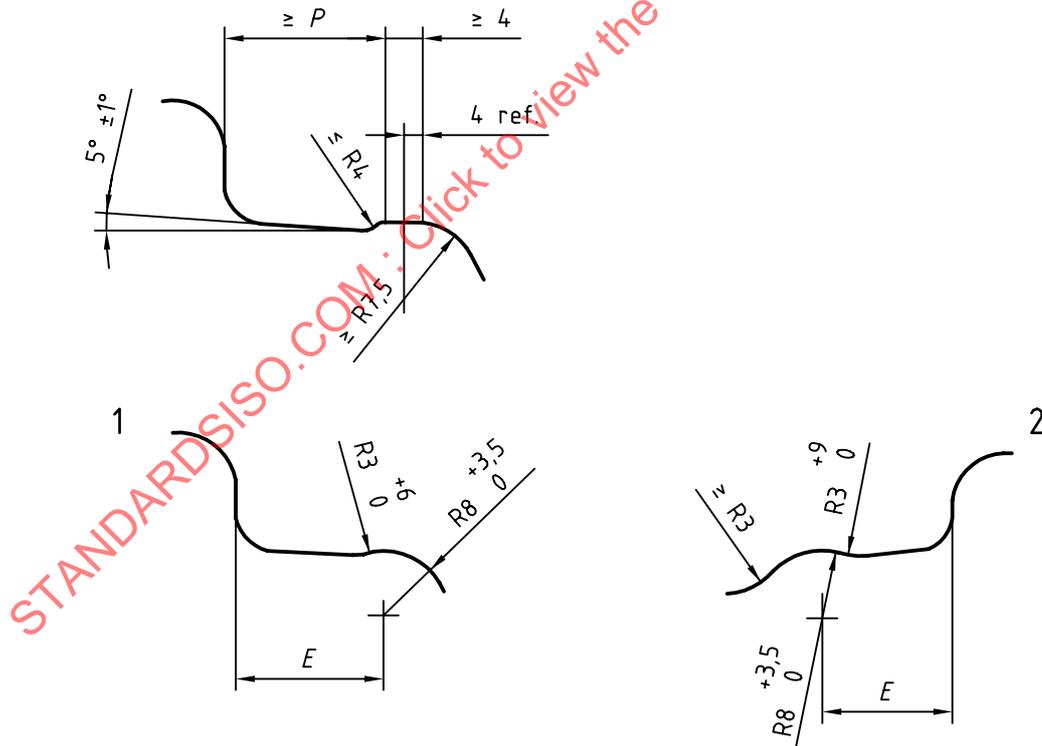
Diameter code	Width code ^c	<i>B</i> min.	<i>G</i> +1,0 -1,0	<i>P</i> min.	<i>P</i> ₁ min.	<i>H</i> ^a gauge	<i>L</i> gauge	<i>M</i> max.	<i>R</i> ₂ min.
10	3.00 B	10	14,5	13	15	15	16	28	7,5
	3.50 B	10	14,5	15	17	15	19	34	7,5
12	4.00 B	10	14,5	15	17	15	19	45	7,5
13	4.50 B and wider	10	14,5	19,5	19,5	15	22	45	7,5
14 and greater	3 1/2 J	11	17,5	15	17	17,3 ^b	19	34	9,5
	4 J	11	17,5	15	17	17,3 ^b	19	45	9,5
	4 1/2 J and wider	11	17,5	19,5	19,5	17,3 ^b	22	45	9,5

^a Minimum dimensions for well depth (*H*) and well angle are required for tire 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).

Dimensions in millimetres



Key

- 1 Outboard
- 2 Inboard

Figure 2 — Optional bead seat contours

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

Dimensions in millimetres

Rim width code	<i>E</i>
3.00 B and 3 J	13
3.50 B, 3 1/2 J, 4.00 B, 4 J	16
4.50 B, 4 1/2 J and wider	21 ⁺² ₀ ^a
a 19,5 mm permitted for rim widths 4 1/2 to 7.	

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 $D \begin{smallmatrix} +0,4 \\ -0,4 \end{smallmatrix}^a$	Circumference	
		Flat hump $\begin{smallmatrix} 0 \\ -3,5 \end{smallmatrix}$	Round hump $\begin{smallmatrix} 0 \\ -3 \end{smallmatrix}^b$
10	253,2	795,4	797,6
12	304	955	957,6
13	329,4	1 034,8	1 037
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	1 451,4	1 453,6
19	487,4	1 531,2	1 533,4
20	512,8	1 611	1 613,2
21	538,2	1 690,8	1 693
22	563,6	1 770,6	1 772,8

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 $\begin{smallmatrix} 0 \\ -5 \end{smallmatrix}$ mm is permitted on the 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.