INTERNATIONAL STANDARD

**ISO 4000-2**

Fourth edition
2007-06-15

# Passenger car tyres and rims —

# Part 2: Rims

*Pneumatiques et jantes pour voitures particulières —*

*Partie 2: Jantes*



Reference number
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# Contents

Page

# Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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 document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

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

This fourth edition cancels and replaces the third edition (ISO 4000-2:2001), 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 referenced documents are indispensable for the application 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.

## 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**

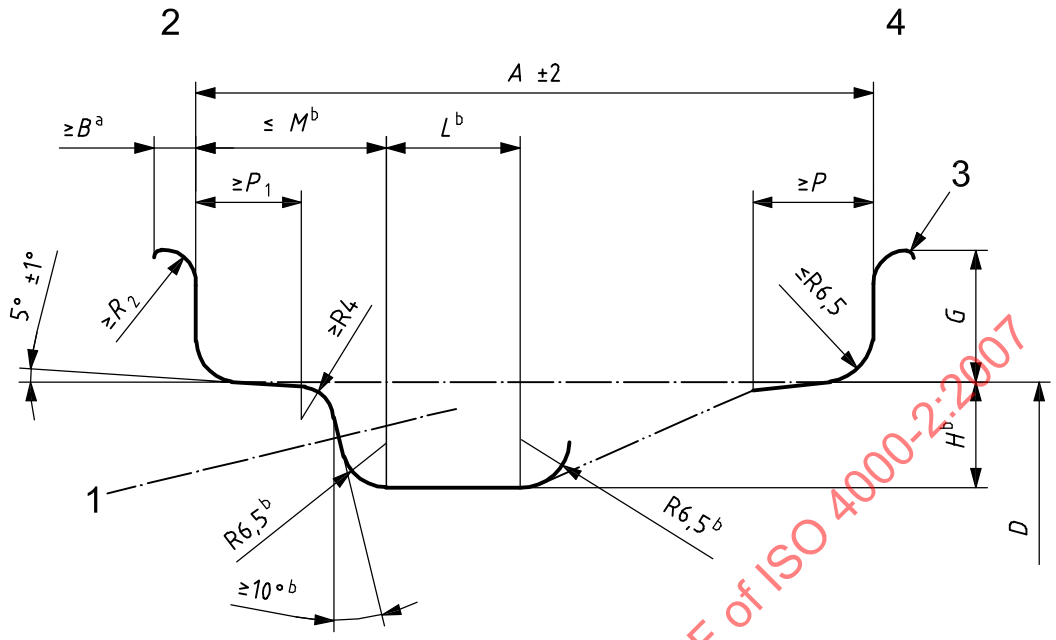
| Nominal rim-diameter code | Rim flange |
|---|---|
| 10<br>12<br>13 | B |
| 14<br>15<br>16<br>17<br>18<br>19<br>20<br>21<br>22<br>23<br>24<br>25<br>26<br>28<br>30 | J |



## 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




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

**Key**

1 valve hole (see Clause 6)

2 vehicle mounting side

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

4 vehicle non-mounting 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 the 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

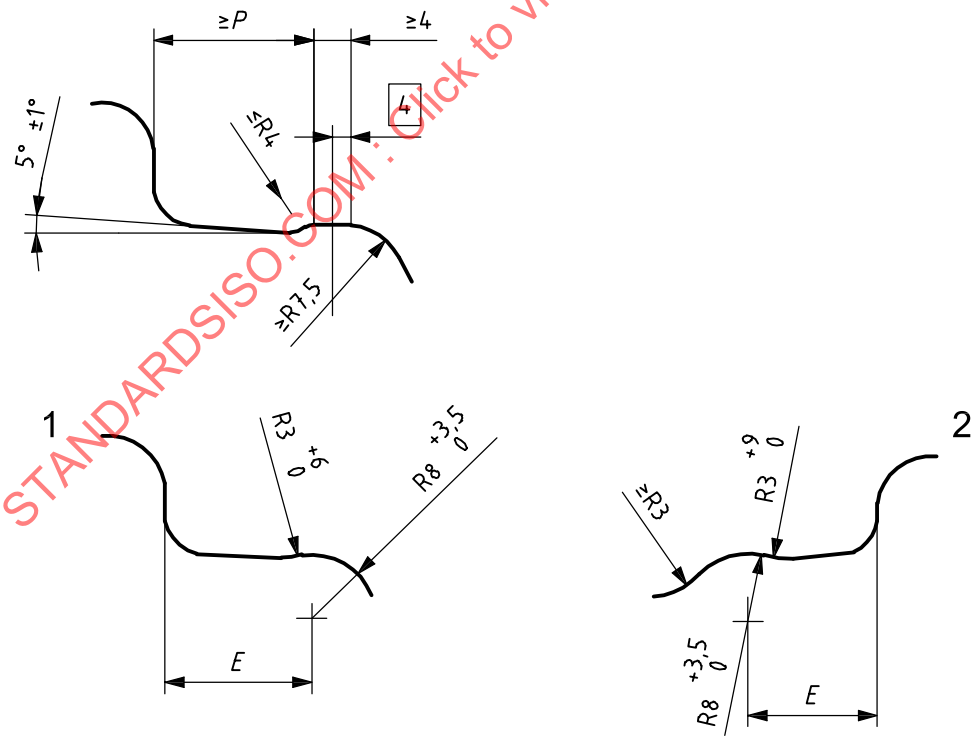
| Diameter code | Rim width code and flange type [c] | $B$ min. | $G$ ± 1,0 | $P$ min. | $P_1$ min. | $H$ [a] gauge | $L$ gauge | $M$ max. | $R_2$ min. |
|---|---|---|---|---|---|---|---|---|---|
| 10<br>12<br>13 | 3.00 B | 10 | 14,5 | 13 | 15 | 15 | 16 | 28 | 7,5 |
| | 3.50 B | 10 | 14,5 | 15 | 17 | 15 | 19 | 34 | 7,5 |
| | 4.00 B | 10 | 14,5 | 15 | 17 | 15 | 19 | 45 | 7,5 |
| | 4.50 B and wider | 10 | 14,5 | 19,5 | 19,5 | 15 | 22 | 45 | 7,5 |
| 14 and greater | 31/2 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 |
| | 41/2 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 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).

Dimensions in millimetres




**Key**

1 mounting side

2 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, 3½ J, 4.00 B, 4 J | 16 min. |
| 4.50 B, 4½ J and wider | $21{,}0\ ^{+2{,}0}_{-0{,}0}$ [a] |
| [a] $19{,}5\ ^{+2{,}0}_{-0{,}0}$ mm permitted for rim widths 4.50 B (4½ 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 $^{0,0}_{-3,5}$ | Round hump $^{0,0}_{-3,0}$ [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 $^{0,0}_{-5,0}$ mm is permitted on the non-mounting 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

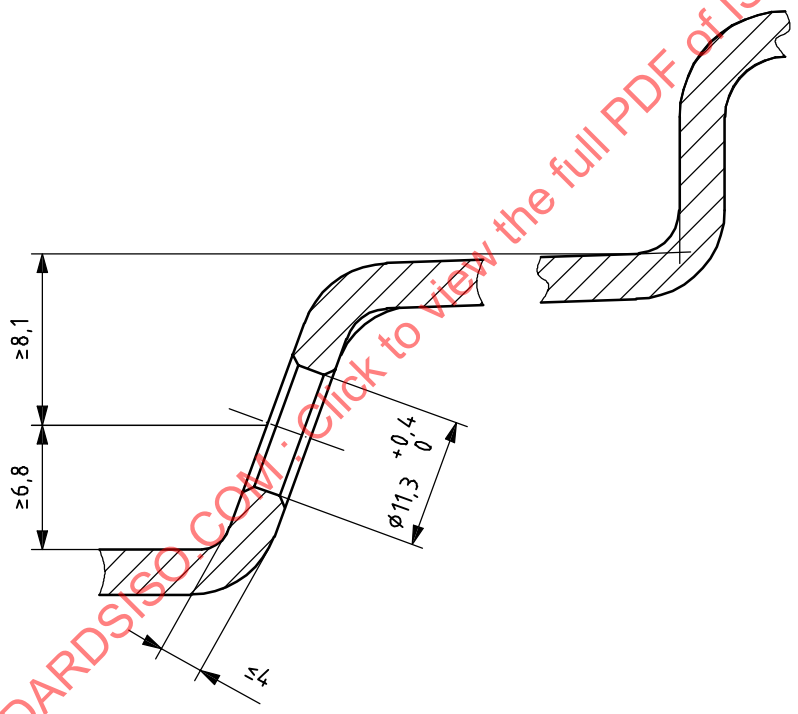
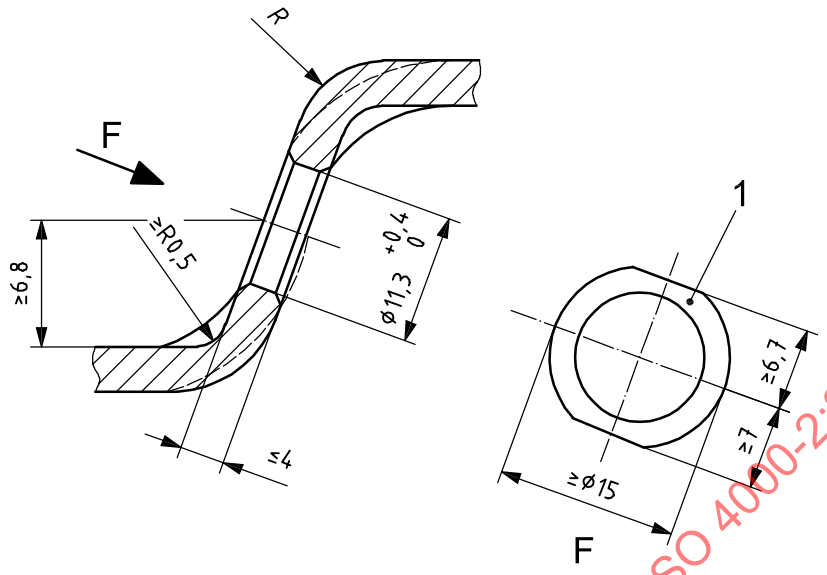



**Figure 3 — Valve hole dimensions for snap-in valves**

Dimensions in millimetres




**Key**

1 flat surface with no radial striations

**Figure 4 — Valve hole dimensions around valve hole**