

Fifth edition
2020-07

Corrected version
2021-01

Truck and bus tyres and rims (metric series) —

**Part 2:
Rims**

Pneumatiques et jantes (séries millimétriques) pour camions et autobus —

Partie 2: Jantes

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Reference number
ISO 4209-2:2020(E)

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Published in Switzerland

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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).

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 4, *Truck and bus tyres and rims*.

This fifth edition cancels and replaces the fourth edition (ISO 4209-2:2012), which has been technically revised.

The main change compared to the previous edition is as follows: figures and 5.2, Note have been corrected.

A list of all parts in the ISO 4209 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.

This corrected version of ISO 4209-2:2020 incorporates the following correction: the arrow position of the *H* dimension in [Figure 5](#) has been corrected to start from the rim contour line to the well configuration.

Truck and bus tyres and rims (metric series) —

Part 2: Rims

1 Scope

This document specifies the designations, contours and dimensions of drop-centre (one-piece) rims for use on trucks and buses.

The rim dimensions are those rim contour dimensions necessary for mounting and fitment of the tyre to the rim.

Tyre designations, dimensions and load ratings are given in ISO 4209-1.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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*

ISO 4000-2, *Passenger car tyres and rims — Part 2: Rims*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 3911 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/>

4 Designation and marking

The rim shall be designated by its nominal rim diameter code and nominal rim width code (e.g. 17.5 × 5,25), and rim flange type when specified (for example: 16 × 6 K).

5 5° tapered (drop-centre) rims

5.1 Rim flange

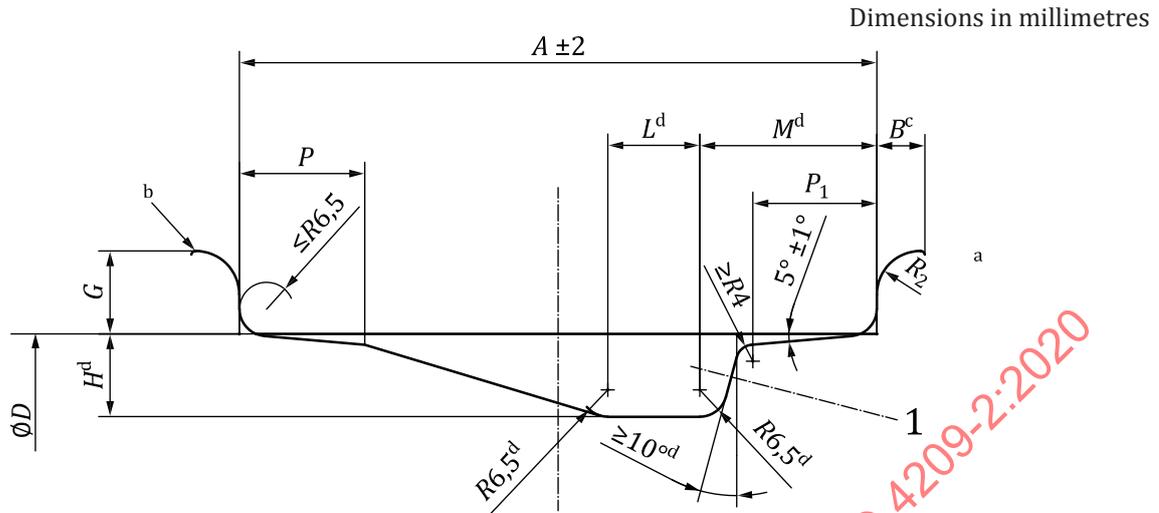
Recommended rim flange contours for K rims are given in [Table 1](#).

Refer to ISO 4000-2 for B and J contour rims.

5.2 Rim contours

The dimensions and tolerances of the rims shall be as given in [Figure 1](#) and [Tables 1, 2, and 4](#).

Optional bead seat contours and their dimensions are given in Figure 2 and Table 3 and 4.



Key

- 1 valve hole (see 5.4)
- a Tyre-mounting side.
- b The break corner is equivalent to a radius R of minimum 0,5 mm.
- c 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.
- d These dimensions comprise the minimum well envelope for tyre-mounting purposes, except for localized areas at the weld or the valve hole.

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

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

Table 1 — Dimensions of 5° tapered (drop-centre) rim contours

Dimensions in millimetres

Nominal rim diameter code	Nominal rim width code and flange type	B	G	P	P_1	H^a	L	M	R_2
		min.	±1,0	min.	min.	gauge	gauge	max.	min.
16	6 K and wider	11,5	20	19,5	19,5	20	22	47	10,5

^a Minimum dimensions for the well depth, H , and the well angle are required for tyre-mounting. Larger values can be required to ensure sufficient space for tubeless tyre valve seating.

Table 2 — Nominal rim width code

Nominal rim width code ^a	A mm
6	152,5
6 1/2	165
7	178
7 1/2	190,5
8	203

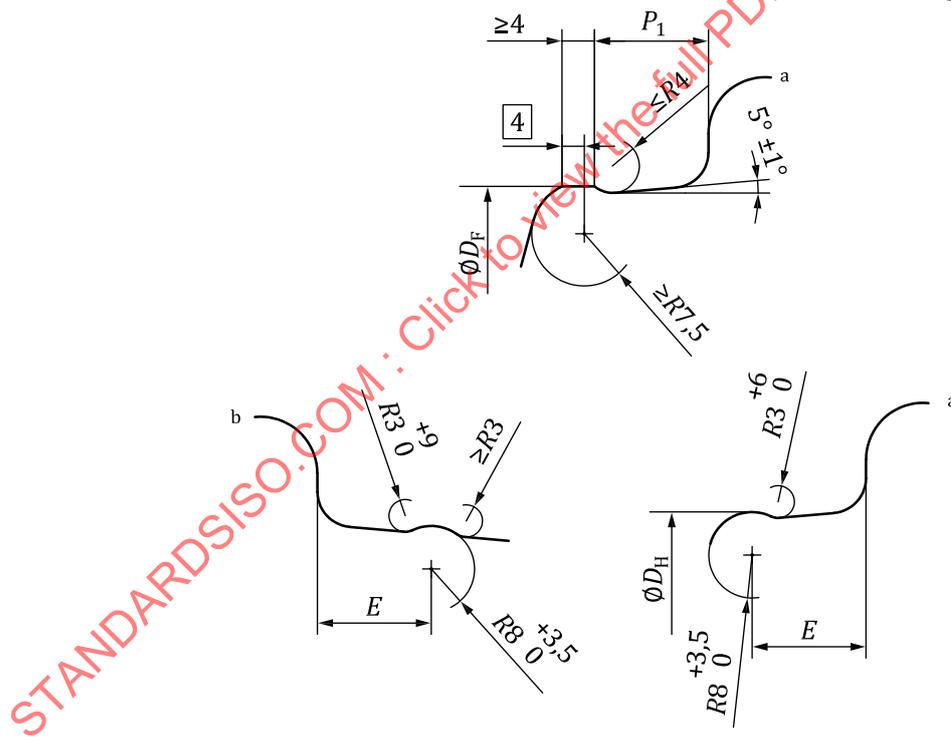
^a In case of exceeding the nominal rim width code 15, dimension “ A ” follows the next formula. $A = \text{nominal rim width code} \times 25,4$ (rounded to 0,5 mm) (increments of code = 0,5).

Table 2 (continued)

Nominal rim width code ^a	A mm
8 1/2	216
9	228,5
9 1/2	241,5
10	254
10 1/2	266,5
11	279,5
12	305
13	330
14	355,5
15	381

^a In case of exceeding the nominal rim width code 15, dimension "A" follows the next formula.
 $A = \text{nominal rim width code} \times 25,4$ (rounded to 0,5 mm) (increments of code = 0,5).

Dimensions in millimetres



- a Tyre-mounting side.
- b Tyre non-mounting side.

Figure 2 — Optional bead seat contours

Table 3 — *E* dimension for round humps

Nominal rim width code and flange type	<i>E</i> mm
6 K and wider	$21^{+2,0}_0$
For <i>E</i> , $19,5^{+2,0}_0$ is also permitted.	

5.3 Rim diameter and hump circumference

The specified rim diameter, *D*, for the appropriate nominal rim diameter code and the hump circumferences are 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 ^a	Hump circumference	
	$D \pm 0,4$	Flat hump	Round hump ^b
16	405,6	0 $-3,5$	0 $-3,0$
		1 274,2	1 276,4

^a The tolerance for the specified rim diameter is for tyre design purposes only. The rim measurement is by a circumference-measuring tape related to a mandrel.

^b For round humps on the vehicle inboard side only, a tolerance of 0
 $-5,0$ is also permitted.

5.4 Valve holes

5.4.1 Valve hole edges on the tyre side of rim shall be rounded or chamfered.

5.4.2 Valve hole edges on the weather (external) side of the rim shall be free from any burrs that could damage the valve.

5.4.3 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.

5.4.4 Suitable valves shall be used. Valve hole details for snap-in valves shall be as shown in [Figures 3](#) and [4](#) for rims with 17,3 mm minimum well depth.

Dimensions in millimetres

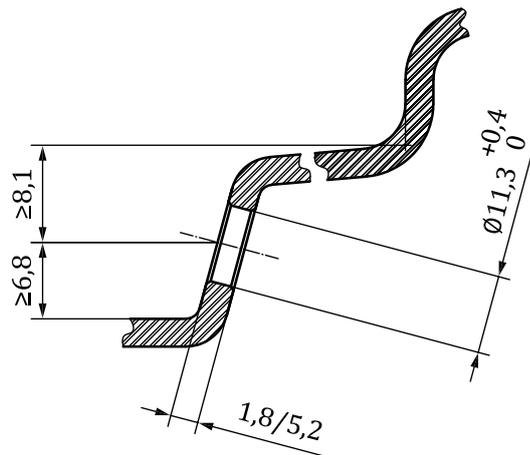
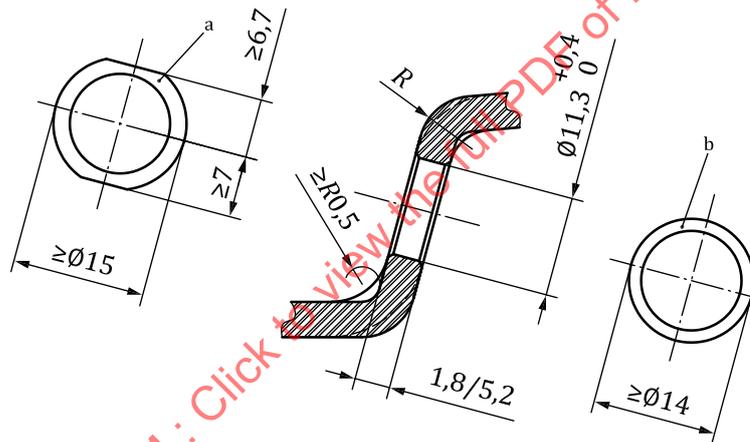


Figure 3 — Valve hole dimensions

Dimensions in millimetres



- a Flat surface with no radial striations.
- b Flat surface for clamp-in valves.

Figure 4 — Optional flat surface around valve hole

6 15° tapered (drop-centre) rims

6.1 Rim contours

The dimensions and tolerances of rims shall be as given in [Figure 5](#) and [Tables 5](#) and [6](#).

Table 5 — Dimensions of 15° tapered (drop-centre) rim contours for nominal rim width codes ≤ 9.75

Dimensions in millimetres

Rim size designation	A ±3,5	H^a min.	h min.	L^a min.	M^a max.	P min.
17.5 × 5.25	133,5	24	7	4	55	25
19.5 × 5.25		27			56	
22.5 × 5.25		30			57	
17.5 × 6.00	152,5	24	8,5	11	60	30
17.5 × 6.00 HC		30			63	
19.5 × 6.00		27			62	
19.5 × 6.00 RW		24	9	19	56	25
22.5 × 6.00		30	8,5	11	63	30
17.5 × 6.75		24	9		14	62 ^c
17.5 × 6.75 HC	30	70		32		
19.5 × 6.75	27	19		64	30 ^b	
19.5 × 6.75 RW	24	14		56	25	
22.5 × 6.75	30			66 ^c	32	
17.5 × 7.50	190,5	24		9,5	21	65 ^c
17.5 × 7.50 HC		30	10	74		34
19.5 × 7.50		27	9,5	67		30
19.5 × 7.50 RW		25		58		
22.5 × 7.50		30	10	68 ^c	34	
24.5 × 7.50		30	10	70 ^c		
17.5 × 8.25	209,5	24	9,5	14	55 ^c	26
17.5 × 8.25 HC		30	10	28	74	36
19.5 × 8.25		27	9,5		67	30
19.5 × 8.25 RW		25		21	58	
22.5 × 8.25		30	10	28	70 ^c	36
24.5 × 8.25					72 ^c	
19.5 × 9.00	9,5				68	30
22.5 × 9.00	228,5	10	28	70 ^c	36	
24.5 × 9.00				72 ^c		
22.5 × 9.75				70 ^c		
24.5 × 9.75	247,5					

^a These dimensions comprise the minimum well envelope for tyre-mounting purposes.

^b For light truck application (load index ≤ 121 in single mounting), 25 mm may be used. These rims shall be appropriately identified.

^c Larger dimensions may be used subject to confirmation by tyre-mounting trials.

Table 6 — Dimensions of 15° tapered (drop-centre) rim contours for nominal rim width codes ≥10.50

Dimensions in millimetres

Rim size designation	A ±5,0	H ^a min.	h min.	L ^a min.	M ^a max.	P min.
17.5 × 10.50	266,5	24	9,5	13	55	26
19.5 × 10.50					68 ^b	
22.5 × 10.50					68 ^b	
19.5 × 11.75	298,5	30	10	30	68 ^b	34 ^c
22.5 × 11.75					70 ^b	
19.5 × 12.25	311				30	10
22.5 × 12.25		70 ^b				
19.5 × 13.00	330	30	10	30		
22.5 × 13.00					70 ^b	
19.5 × 14.00	355,5				30	10
22.5 × 14.00		70 ^b				
19.5 × 15.00	381	30	10	30		
22.5 × 15.00					70 ^b	
20.5 × 16.00	406,5				30	11
22.5 × 16.00		70 ^b				
20.5 × 18.00	457	30	11	30		
22.5 × 18.00					70 ^b	

^a These dimensions comprise the minimum well envelope for tyre-mounting purposes.

^b Larger dimensions may be used subject to confirmation by tyre-mounting trials.

^c For 19.5 × 11.75 rim size designation, P min. of 30 may be used subject to confirmation with tire manufacturer.

6.2 Rim diameters

The nominal rim diameter codes and the specified rim diameters for 15° tapered (drop-centre) rim contours are given in [Table 7](#).

Table 7 — Nominal rim diameter code and specified rim diameter

Nominal rim diameter code	Specified rim diameter ^a
	∅D ± 0,4 mm
17.5	444,5
19.5	495,3
20.5	520,7
22.5	571,5
24.5	622,3

^a Tolerance is for tyre design purposes only. Rim measurement is by circumference-measuring tape related to a mandrel.

6.3 Valve holes

6.3.1 General

The dimensions, locations and tolerances of rim holes are given in [Figure 6](#) and [Table 8](#).