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**Bicycle tyres and rims —**

**Part 2:**

**Rims**

*Pneumatiques et jantes pour cycles —  
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](http://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](http://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](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 31, *Tyres, rims and valves*, Subcommittee SC 10, *Cycle, moped, motorcycle tyres and rims*.

This fourth edition cancels and replaces the third edition (ISO 5775-2:2015), which has been technically revised.

The main changes compared to the previous edition are as follows:

- the normative references clause has been added ([Clause 2](#));
- new definitions have been added for clarification in [Clause 3](#);
- new requirements have been added for clarification in [Clause 4](#);
- the symbols and abbreviated terms have been revised in [Clause 5](#);
- a new clause on tubeless straight-side type rims, with or without humps has been added ([Clause 7](#));
- a new clause on tubeless crotchet type rims, with or without humps has been added ([Clause 10](#));
- [Annex A](#) has been simplified to remove redundancies and add a precision for rim measurements with new tools.

A list of all parts in the ISO 5775 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](http://www.iso.org/members.html).

# Bicycle tyres and rims —

## Part 2: Rims

### 1 Scope

This document specifies tyre fitting relevant geometrical dimensions and designations for straight-side (SS, TSS) type, hooked bead (HB) type and crotchet (C, TC) type bicycle rims.

ISO 5775-1 specifies designations and dimensions for bicycle tyres.

### 2 Normative references

There are no normative references in this document.

### 3 Terms and definitions

For the purposes of this document, the following terms and definitions 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/>

#### 3.1

##### **rim base**

tyre side portion of the rim profile which comes into contact with tyre beads during mounting, inflation and use

#### 3.2

##### **weather side of the rim**

portion of the rim profile exposed to ambient weather conditions

#### 3.3

##### **tyre side of the rim**

portion of the rim profile used for tyre mounting and retention

### 4 Symbols and abbreviated terms

The following symbols are used in this document:

|       |                                                                     |
|-------|---------------------------------------------------------------------|
| $A$   | Rim width                                                           |
| $D$   | Specified rim diameter                                              |
| $D_1$ | Measured rim diameter, corresponding to the tyre bead seat diameter |
| $D_2$ | External diameter                                                   |
| $D_m$ | Measuring mandrel diameter                                          |

|          |                                                              |
|----------|--------------------------------------------------------------|
| $G$      | Flange height                                                |
| $H, H_1$ | Unobstructed maximum well depth inclusive of base protection |
| $L$      | Theoretical measuring tape length                            |
| $L_1$    | Well width inclusive of base protection                      |
| $P$      | Bead seat width                                              |
| $R_4$    | Well top radius                                              |
| $W$      | Measuring tape width                                         |
| $C$      | Crotchet type rim                                            |
| SS       | Straight-side type rim                                       |
| TC       | Tubeless crotchet type rim                                   |
| TSS      | Tubeless straight-side type rim                              |

## 5 General requirements

### 5.1 Rim contour

The rim shall have a smooth contour, free of sharp edges. The internal surface of the bottom well and the flange edge shall guarantee a smooth surface in order to not damage the tyre.

### 5.2 Rim valve hole

The rim valve hole shall be placed such that a rim base protection may be applied, an inner tube may be used, and a tyre safely installed or removed. On the tyre side of the rim, the edges shall be rounded or chamfered. On the weather side of the rim (area of the rim which is not covered by the tyre), the edges shall be free from burrs which could damage the valve or the inner tube.

### 5.3 Rim base protection

The rim base protection is required for rims featuring through-drilled spoke holes on the tyre side.

Width and thickness of the rim base protection shall be chosen in a way to guarantee the complete covering of the spoke nipple heads and spoke holes during use, as well as a stable lateral fit, and to permit satisfactory fitting of the tyre and the inner tube.

For tubeless applications with through-drilled spoke holes, the rim base protection must provide an air-tight seal adequate for the maximum allowable pressure as recommended by the rim manufacturer.

### 5.4 Other requirements

All rim dimensions refer to a built wheel with rim base protection, ready to mount a tyre. The rim manufacturer shall therefore specify a rim base protection, considering all the rim profile dimensions relating to tyre mounting, inflating and use.

The dimension  $H$  or  $H_1$ , in conjunction with dimension  $L_1$ , defines a minimum unobstructed space above the rim base or the rim base protection, if used, designed to permit satisfactory tyre fitment. The dimension  $H$  or  $H_1$  must be varied at the discretion of rim manufacturers to achieve the above objective.

It is recommended that rims having a measured rim diameter  $D_1$ , below 400 mm should have a well depth  $H$  of 1 mm deeper.

## 6 Straight-side type rims

### 6.1 Rim profile

Dimensions and tolerances of straight-side (SS) type rims are specified in [Figure 1](#) and [Table 1](#).

Straight-side type rims shall be used with non-foldable tyres (rigid bead tyres) only.

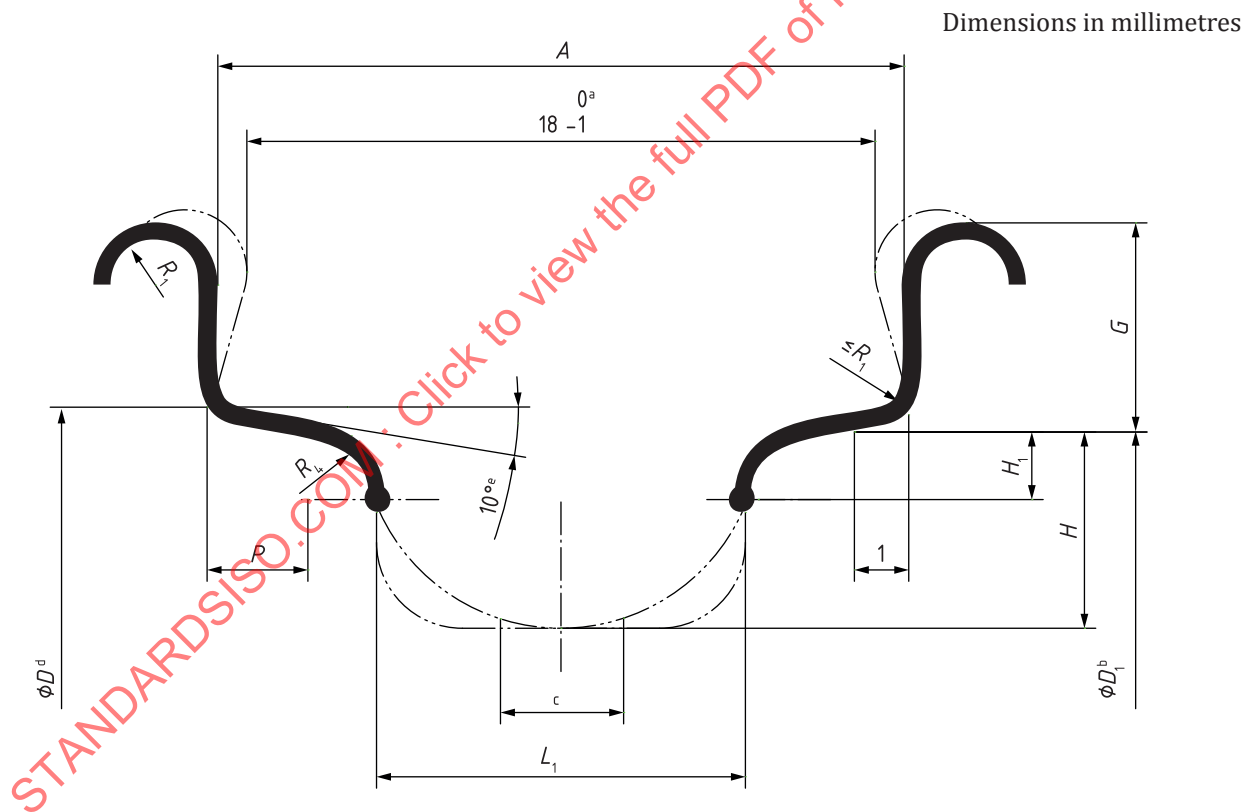
### 6.2 Rim diameters

The nominal rim diameter code specified rim diameters and measured rim diameters (detailed in [Annex A](#)) for straight-side (SS) type rims are specified in [Figure 1](#) and [Table 2](#).

### 6.3 Designation and marking

A straight-side (SS) type rim shall be designated by its nominal rim diameter code and its nominal width code, followed by "SS" for straight-side and the reference to this document.

EXAMPLE 400 × 20SS (ISO 5775-2)



- a 18<sup>0</sup><sub>-1</sub> (Rim 18 only).
- b Measured rim diameter.
- c Valve holes 6,2<sup>+0,3</sup>/<sub>+0</sub>; 8,3<sup>+0,3</sup>/<sub>+0</sub>.
- d Specified rim diameter.
- e Allowed 5° to 15° (5° to 25° in case of rolled rims with nominal rim diameter 400 and smaller).

Figure 1 — Straight-side type rims

**Table 1 — Dimensions of straight-side type rims**

Dimensions in millimetres

| Width code | $A$<br>$\pm 1$ | $G$<br>$\pm 0,5$ | $H_1$ |     | $L_1$<br>min | $P$<br>min | $R_1$<br>min | $R_4$<br>min |
|------------|----------------|------------------|-------|-----|--------------|------------|--------------|--------------|
|            |                |                  | min   | max |              |            |              |              |
| 16         | 16             | 5,5              | 1,8   | 6   | 9            | 1,5        | 1            | 1,5          |
| 18         | 18             | 6,5              | 1,8   | 6   | 10           | 1,8        | 1,5          | 1,5          |
| 20         | 20             | 6,5              | 2     | 6,5 | 11           | 2          | 1,8          | 1,5          |
| 22         | 22             | 6,5              | 3     | 7,5 | 11           | 2,2        | 1,8          | 2            |
| 24         | 24             | 7                | 3     | 7,5 | 11           | 3          | 2            | 2,5          |
| 27         | 27             | 7,5              | 3,5   | 8   | 14           | 3,5        | 2,5          | 2,5          |
| 30,5       | 30,5           | 8                | 3,5   | 8   | 14           | 3,5        | 2,5          | 2,5          |

**Table 2 — Specified and measured rim diameters for straight-side type rims and crotchet type rims**

Dimensions in millimetres

| Nominal diameter code | Specified rim diameter $D$ | Measured rim diameter $D_1 \pm 0,5$ |
|-----------------------|----------------------------|-------------------------------------|
| 194                   | 194,2                      | 193,85                              |
| 203                   | 203,2                      | 202,85                              |
| 222                   | 222,2                      | 221,85                              |
| 239                   | 239,4                      | 239,05                              |
| 248                   | 247,6                      | 247,25                              |
| 251                   | 250,8                      | 250,45                              |
| 254                   | 254,35                     | 254,00                              |
| 279                   | 279,2                      | 278,85                              |
| 288                   | 287,8                      | 287,45                              |
| 298                   | 298,4                      | 298,05                              |
| 305                   | 304,7                      | 304,35                              |
| 317                   | 317,0                      | 316,65                              |
| 330                   | 329,8                      | 329,45                              |
| 337                   | 336,6                      | 336,25                              |
| 340                   | 339,6                      | 339,25                              |
| 349                   | 349,2                      | 348,85                              |
| 355                   | 355,0                      | 354,65                              |
| 357                   | 357,1                      | 356,75                              |
| 369                   | 368,6                      | 368,25                              |
| 381                   | 380,9                      | 380,55                              |
| 387                   | 386,6                      | 386,25                              |
| 390                   | 389,6                      | 389,25                              |
| 400                   | 400,1                      | 399,75                              |
| 406                   | 405,6                      | 405,25                              |
| 419                   | 418,6                      | 418,25                              |
| 428                   | 428,1                      | 427,75                              |
| 432                   | 431,6                      | 431,25                              |
| 438                   | 437,9                      | 437,55                              |
| 440                   | 439,9                      | 439,55                              |

The tolerance on the measured bead seat circumference ( $\pi \times$  measured rim diameter) is  $\pm 1,57$  mm.

Table 2 (continued)

| Nominal diameter code | Specified rim diameter $D$ | Measured rim diameter $D_1 \pm 0,5$ |
|-----------------------|----------------------------|-------------------------------------|
| 451                   | 450,8                      | 450,45                              |
| 457                   | 457,0                      | 456,65                              |
| 484                   | 484,0                      | 483,65                              |
| 489                   | 488,6                      | 488,25                              |
| 490                   | 490,2                      | 489,85                              |
| 498                   | 497,5                      | 497,15                              |
| 501                   | 501,3                      | 500,95                              |
| 507                   | 507,3                      | 506,95                              |
| 520                   | 520,2                      | 519,85                              |
| 531                   | 530,6                      | 530,25                              |
| 534                   | 533,5                      | 533,15                              |
| 540                   | 539,6                      | 539,25                              |
| 541                   | 540,8                      | 540,45                              |
| 547                   | 546,5                      | 546,15                              |
| 559                   | 558,8                      | 558,45                              |
| 565                   | 564,9                      | 564,55                              |
| 571                   | 571,0                      | 570,65                              |
| 584                   | 583,9                      | 583,55                              |
| 590                   | 590,2                      | 589,85                              |
| 597                   | 597,2                      | 596,85                              |
| 609                   | 609,2                      | 608,85                              |
| 622                   | 622,3                      | 621,95                              |
| 630                   | 629,7                      | 629,35                              |
| 635                   | 634,7                      | 634,35                              |
| 642                   | 641,7                      | 641,35                              |

The tolerance on the measured bead seat circumference ( $\pi \times$  measured rim diameter) is  $\pm 1,57$  mm.

## 7 Tubeless straight-side type rims

### 7.1 Rim profile

Dimensions and tolerances of tubeless straight-side (TSS) type rims are specified in [Figure 2](#) and [Table 3](#).

Tyres that are labelled with “tubeless” or “tubeless ready” can be used without inner tube. Tyres that are not labelled accordingly shall be used with an inner tube.

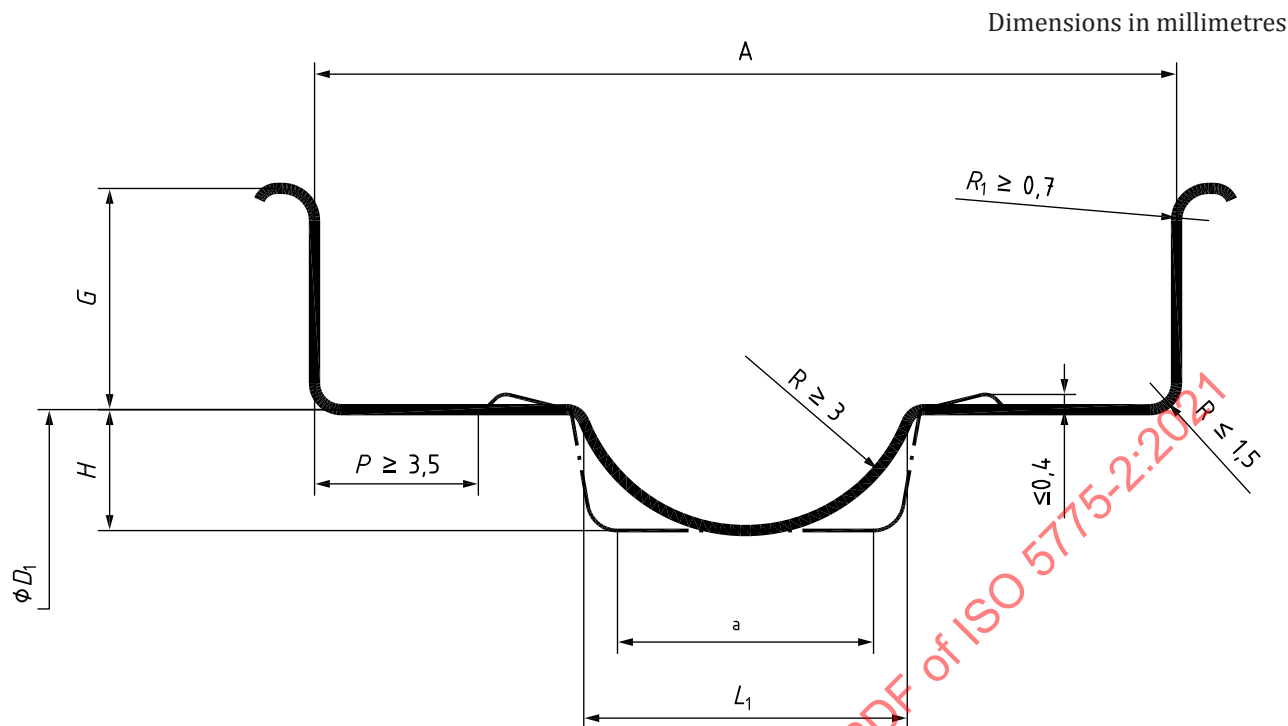
### 7.2 Rim diameters

The nominal rim diameter code and measured rim diameters (detailed in [Annex A](#)) for tubeless straight-side (TSS) type rims are specified in [Table 4](#). Measured rim diameter,  $D_1$ , is depicted in [Figure 2](#).

### 7.3 Designation and marking

Tubeless straight-side (TSS) type rims shall be designated by its nominal rim diameter code and its nominal width code, followed by “TSS” and the reference to this document.

EXAMPLE 622  $\times$  25TSS (ISO 5775-2). 25TSS  $\times$  622 is also accepted.



The tyre bead seat must be parallel to the rotational axis of the wheel.

NOTE Multiple rim wells to accommodate each tyre bead and positioned out of the rim centre, are allowed.

**Figure 2 — Tubeless straight-side type rims**

**Table 3 — Dimensions of tubeless straight-side type rims**

Dimensions in millimetres

| Rim profile | Dimensions       |                  |         |         |           |
|-------------|------------------|------------------|---------|---------|-----------|
|             | $A$<br>$\pm 0,5$ | $G$<br>$\pm 0,5$ | $H$     |         | $L_1$ min |
| 19 TSS      | 19               | 6                | min 2,9 | max 3,5 | 7         |
| 20 TSS      | 20               | 6                | min 2,9 | max 3,5 | 7         |
| ...         | ...              | 6                | min 2,9 | max 3,5 | 7         |
| 100 TSS     | 100              | 6                | min 2,9 | max 3,5 | 7         |

It is recommended that the ratio  $G/H < 1,9$ .

**Table 4 — Measured rim diameters for tubeless straight-side type rims and tubeless crotchet type rims**

Dimensions in millimetres

| Nominal diameter code | Measured rim diameter $D_1 \pm 0,5$ |
|-----------------------|-------------------------------------|
| 559                   | 559                                 |
| 584                   | 584,1                               |
| 622                   | 621,95                              |

8 Hooked bead rims

8.1 Rim profile

Dimensions and tolerances of hooked bead (HB) type rims are specified in [Figure 3](#) and [Table 5](#).

8.2 Rim diameters and circumferences

The nominal rim diameter code specified rim diameters and measuring circumferences (detailed in [Annex A](#)) for hooked bead (HB) type rims are specified in [Figure 3](#) and [Table 6](#).

8.3 Designation and marking

A hooked bead (HB) type rim shall be designated by its nominal rim diameter code and its nominal width code, preceded by “HB” for hooked bead and followed by the reference to this document.

EXAMPLE HB 422 × 25 (ISO 5775-2).

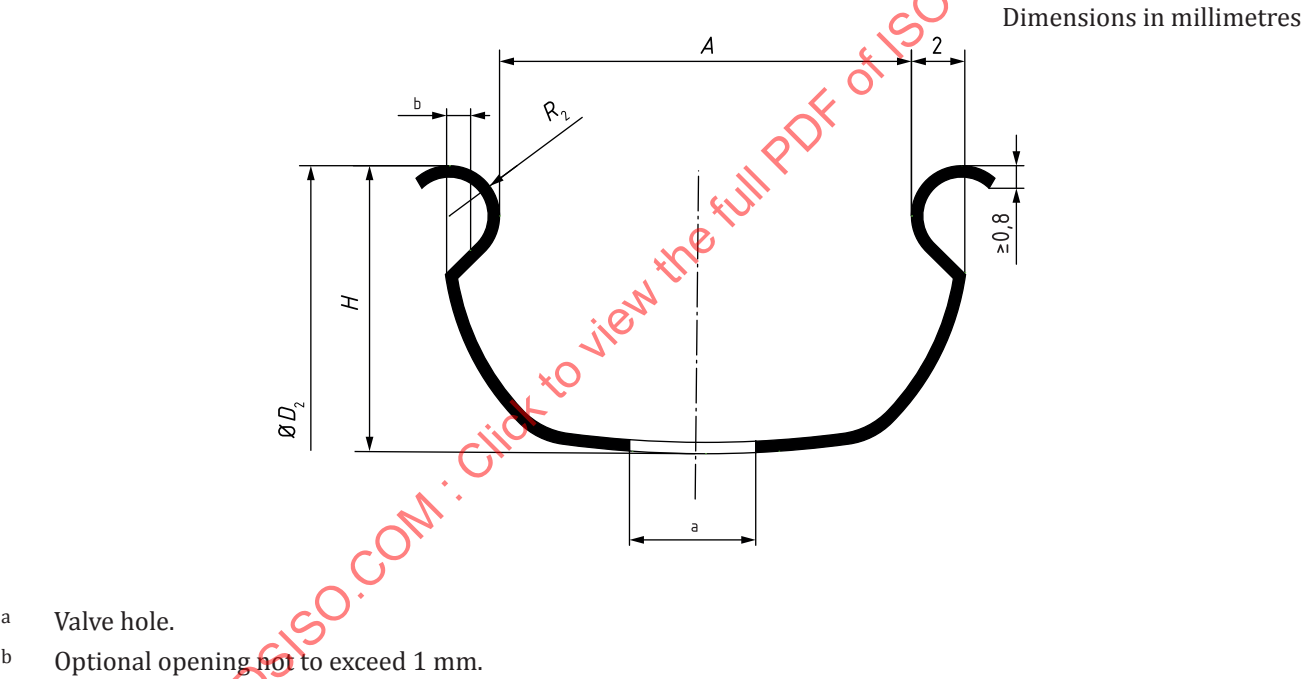


Figure 3 — Hooked bead rims

Table 5 — Dimensions of hooked bead rims

Dimensions in millimetres

| Nominal rim width | $A$<br>$\pm 1$ | $H$<br>min | $R_2$<br>$\pm 0,5$ | $R_7$<br>min |
|-------------------|----------------|------------|--------------------|--------------|
| 20                | 20             | 13         | 2                  | 30           |
| 25                | 25             | 14         | 2                  | 50           |
| 27                | 27             | 15         | 2                  | 70           |

**Table 6 — Specified rim diameters and circumferences for hooked bead rims**

Dimensions in millimetres

| Nominal rim diameter code | Specified rim diameter<br><i>D</i> | Specified rim circumference, $\pi D$<br>$\pm 2,5$ |
|---------------------------|------------------------------------|---------------------------------------------------|
| HB270                     | 269,9                              | 847,9                                             |
| HB321                     | 320,7                              | 1 007,5                                           |
| HB372                     | 371,5                              | 1 167,1                                           |
| HB422                     | 422,3                              | 1 326,7                                           |
| HB459                     | 458,8                              | 1 441,4                                           |
| HB473                     | 473,1                              | 1 486,3                                           |
| HB510                     | 509,6                              | 1 601                                             |
| HB524                     | 523,9                              | 1 645,9                                           |
| HB560                     | 560,4                              | 1 760,6                                           |
| HB575                     | 574,7                              | 1 805,5                                           |
| HB611                     | 611,2                              | 1 920,1                                           |

HB denotes hooked bead rim; the number following HB is the rim code.

## 9 Crotchet type rims

### 9.1 Rim profile

Dimensions and tolerances of crotchet (C) type rims are specified in [Figure 4](#) and [Table 7](#).

### 9.2 Rim diameters

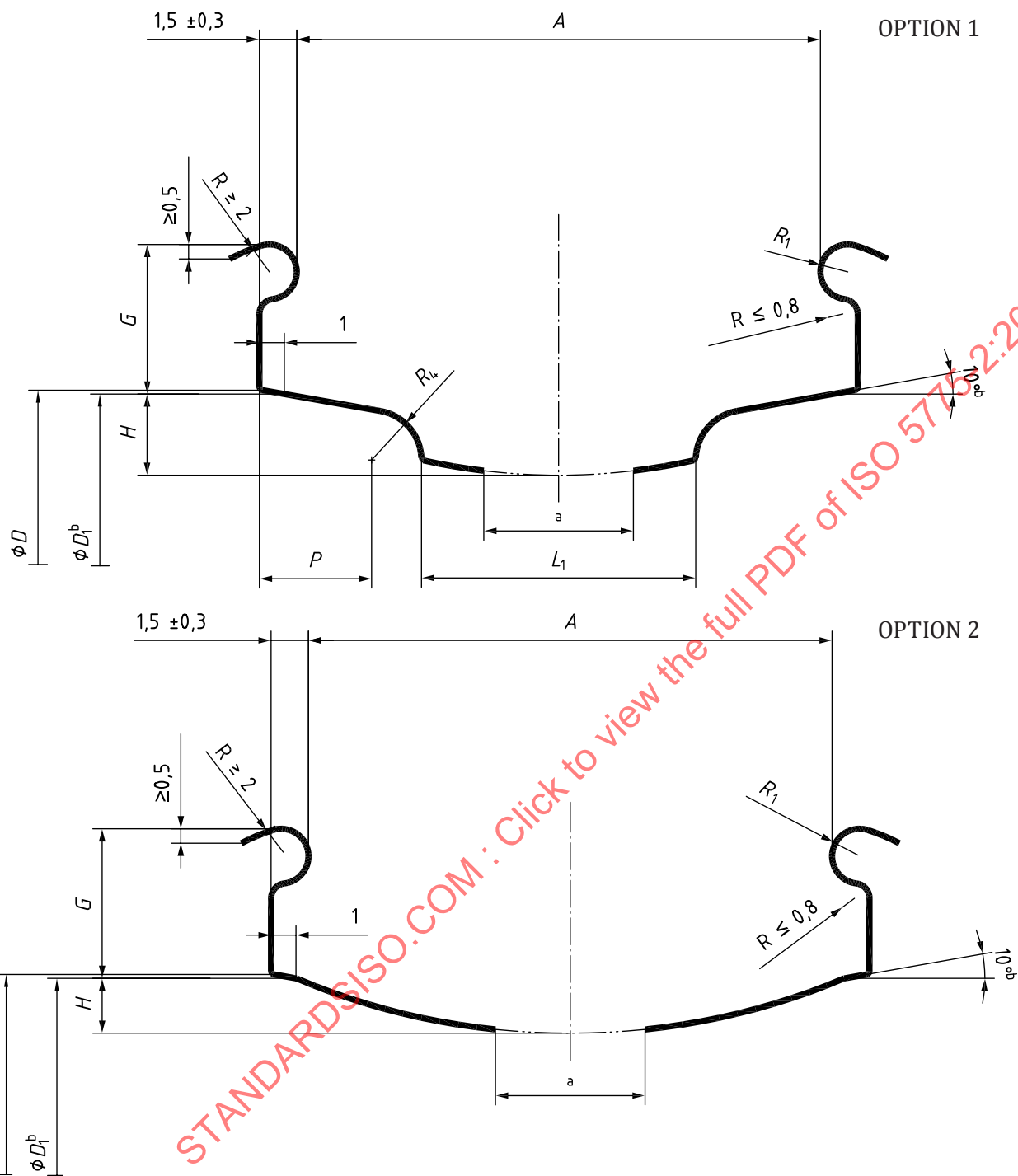
The nominal rim diameter code specified rim diameters and measured rim diameters (detailed in [Annex A](#)) for crotchet (C) type rims are specified in [Figure 4](#) and [Table 2](#).

### 9.3 Designation and marking

A crotchet (C) type rim shall be designated by its nominal rim diameter code and its nominal width code, followed by "C" for crotchet type and the reference to this document.

EXAMPLE 622 × 13C (ISO 5775-2).

Dimensions in millimetres



a Valve holes  $6,2^{+0,3}/_{+0}$ . For rim codes 17C and above, valve holes  $8,3^{+0,3}/_{+0}$  are permitted.

b For reference purposes only, dimension  $D_1$  on [Table 2](#) is to be respected.

**Figure 4 — Crotchet type rims**

Table 7 — Dimensions of crotchet type rims

Dimensions in millimetres

| Rim profile | A<br>±0,5 | G<br>±0,5 | H   |     | L <sub>1</sub><br>min | P<br>min | R <sub>1</sub> |       | R <sub>4</sub><br>min |
|-------------|-----------|-----------|-----|-----|-----------------------|----------|----------------|-------|-----------------------|
|             |           |           | min | max |                       |          |                |       |                       |
| 13C         | 13        | 5,5       | 2,2 | 5,5 | —                     | 2,5      | 0,9            | ±0,1  | —                     |
| 15C         | 15        | 5,5       | 2,2 | 5,5 | 9                     | 2,5      | 0,9            | ±0,1  | 1,5                   |
| 17C         | 17        | 6         | 2,2 | 6   | 10                    | 2,5      | 1,1            | ±0,25 | 1,5                   |
| 19C         | 19        | 6         | 2,2 | 6   | 11                    | 3        | 1,1            | ±0,25 | 1,5                   |
| 21C         | 21        | 6         | 2,2 | 6   | 11                    | 3        | 1,1            | ±0,25 | 2                     |
| 23C         | 23        | 6,5       | 3,5 | 6,5 | 11                    | 3        | 1,1            | ±0,25 | 2,5                   |
| 25C         | 25        | 6,5       | 3,5 | 6,5 | 14                    | 3        | 1,1            | ±0,25 | 2,5                   |
| 27C         | 27        | 6,5       | 3,5 | 6,5 | 14                    | 3        | 1,1            | ±0,25 | 2,5                   |
| 29C         | 29        | 6,5       | 3,5 | 6,5 | 14                    | 3        | 1,1            | ±0,25 | 2,5                   |

## 10 Tubeless crotchet type rims

### 10.1 Rim profile

Dimensions and tolerances of tubeless crotchet (TC) type rims are specified in [Figure 5](#) and [Table 8](#).

Tyres that are labelled with “tubeless” or “tubeless ready” can be used without inner tube. Tyres that are not labelled accordingly shall be used with an inner tube.

### 10.2 Rim diameters

The nominal rim diameter code and measured rim diameters (detailed in [Annex A](#)) for tubeless crotchet (TC) type rims are specified in [Figure 5](#) and [Table 4](#).

### 10.3 Designation and marking

Tubeless crotchet (TC) type rims shall be designated by its nominal rim diameter code and its nominal width code, followed by “TC” and the reference to this document.

EXAMPLE 622 × 25TC (ISO 5775-2).

**NOTE** Multiple rim wells to accommodate each tyre bead and positioned out of the rim centre, are allowed.

### Figure 5 — Tubeless crotchet type rims

**Table 8 — Dimensions of tubeless crotchet type rims**

| Rim profile | Dimensions       |                  |                   |     |           |
|-------------|------------------|------------------|-------------------|-----|-----------|
|             | $A$<br>$\pm 0,5$ | $G$<br>$\pm 0,5$ | $H$<br>min    max |     | $L_1$ min |
| 17 TC       | 17               | 5,5              | 2,6               | 3,4 | 7         |
| 18 TC       | 18               | 5,5              | 2,6               | 3,4 | 7         |
| ...         | ...              | 5,5              | 2,6               | 3,4 | 7         |
| 100 TC      | 100              | 5,5              | 2,6               | 3,4 | 7         |

It is recommended that the ratio  $G/H < 1,9$ .

It is recommended that the ratio  $G/H < 1,9$ .

## Annex A (informative)

### Methods for measuring and gauging bicycle rim dimensions

#### A.1 Purpose

[Annex A](#) specifies methods for measuring and gauging dimensions of straight-side rims, tubeless straight-side rims, hooked bead rims, crotchet type rims and tubeless crotchet type rims.

#### A.2 General

All rim measurements shall be made on a complete wheel at manufacturer's recommended spoke tension with the manufacturer's recommended rim base protection, ready for tyre mounting. For accurate measurements, gauges shall always be set perpendicular to the rim flanges on both bead seats and tapes shall always contact both bead seats and bead bumps.

If a rim requires a rim base protection and it is not defined by the manufacturer, it is assumed to encompass the tyre side profile from bead seat to bead seat with a thickness of 0,15 mm.

#### A.3 Main rim dimensions to be measured and gauged

The main rim dimensions which are measured and gauged are indicated in [Figures 1, 2, 3, 4](#) and [5](#).

#### A.4 Methods for measuring bead seat circumference and calculating bead seat diameter

##### A.4.1 Method 1

Recommended inspection gauges, tapes and procedures for measuring bead seat circumference and calculating bead seat diameter of straight-side and crotchet type rims are described as follows.

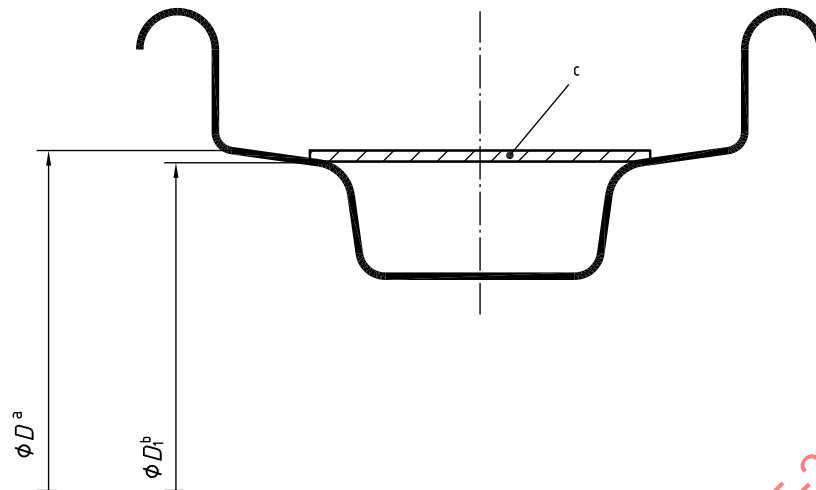
##### A.4.1.1 Procedure

Use a spring steel measuring tape as illustrated in [Figure A.2](#) with the corresponding measuring tape width  $W$ , for the rim to be measured.

Check the measuring tape on the appropriate mandrel (see [Figure A.3](#)), and on surface plate (the tape shall be flat).

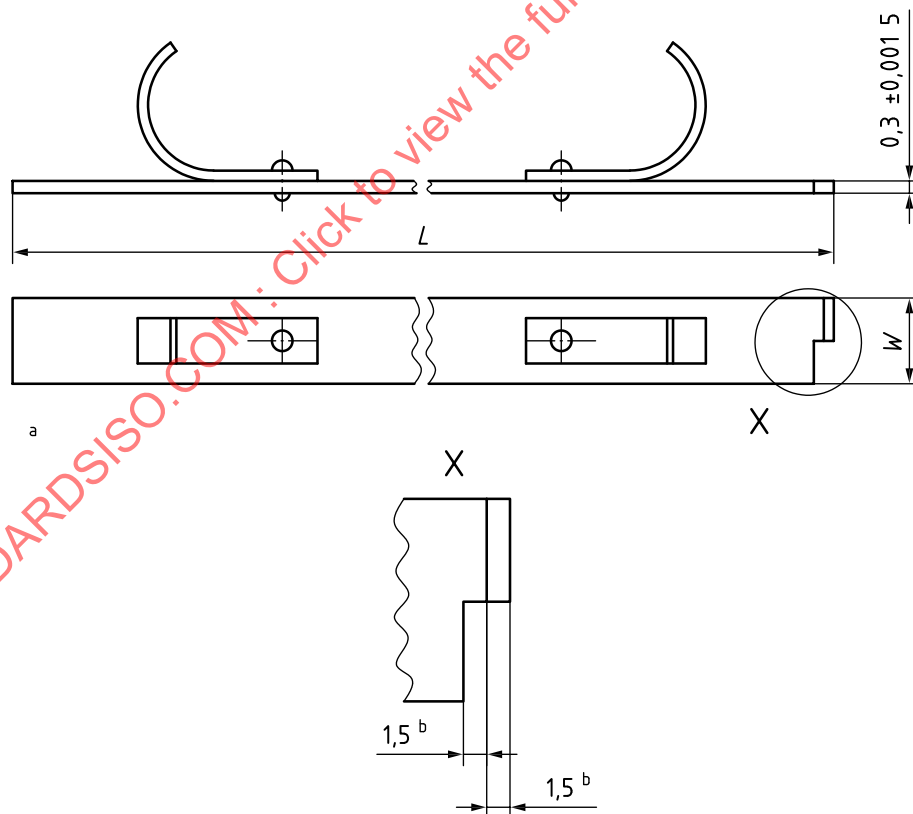
The measuring tape must contact the rim on both bead seats or bead bumps equally (see [Figure A.1](#)). It is recommended that two persons make the measurement: one holding the measuring tape in position and applying not more than 5 kg pull on the ends, the other taking the readings.

The straight end of the measuring tape is to contact the other end within the notch.



- a Specified rim diameter.
- b Measured rim diameter.
- c Measuring tape.

**Figure A.1 — Rim diameter measurement**



- a Reference temperature 20 °C.
- b 1,5 for straight-side and crotchet type rims.

**Figure A.2 — Tape dimensions**