

INTERNATIONAL  
STANDARD

**ISO**  
**5775-2**

Second edition  
1996-12-01

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**Bicycle tyres and rims —**

**Part 2:**  
Rims

*Pneumatiques et jantes pour cycles —*  
*Partie 2: Jantes*



Reference number  
ISO 5775-2:1996(E)

## Foreword

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International Standard ISO 5775-2 was prepared by Technical Committee ISO/TC 31, *Tyres, rims and valves*, Subcommittee SC 10, *Cycle, moped, motorcycle tyres and rims*.

This second edition cancels and replaces the first edition (ISO 5775-2:1989), which has been technically revised.

ISO 5775 consists of the following parts, under the general title *Bicycle tyres and rims*.

- *Part 1: Tyre designations and dimensions*
- *Part 2: Rims*

Annex A of this part of ISO 5775 is for information only.

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International Organization for Standardization  
Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

## Bicycle tyres and rims —

### Part 2: Rims

#### 1 Scope

This part of ISO 5775 specifies rim dimensions for bicycle tyres: it gives only those rim contour dimensions necessary for tyre mounting and to fit the tyre on the rim.

ISO 5775-1 covers designations and dimensions for tyres.

ISO 5775 covers straight side (SS) rims, hooked bead (HB) rims and crotchet type (C) rims.

Annex A presents methods for checking dimensions of straight side rims and hooked bead rims.

#### 2 Symbols

The following symbols are used in this part of ISO 5775.

- A* Specified rim width
- A*<sub>1</sub> Rim width at the tyre bead seat
- D* Specified rim diameter
- D*<sub>1</sub> Measuring rim diameter
- D*<sub>2</sub> Outer diameter
- G* Flange height
- H*<sub>1</sub> Unobstructed minimum depth above rim base with rim tape fitted to permit tyre fitment
- L*<sub>1</sub> Well width above rim tape
- P* Bead seat width
- R*<sub>2</sub> Flange radius
- R*<sub>3</sub> Bead seat radius
- R*<sub>4</sub> Well top radius
- W* Measuring tape width
- β* Bead seat angle

### 3 General requirements

#### 3.1 Rim contour

The rim shall have a smooth contour, free of sharp edges, on the side of the tyre.

#### 3.2 Rim valve hole

The rim valve hole shall be centred on the bottom of the rim well. On the tyre side, the edges shall be rounded or chamfered. On the hub side, the edges shall be free from burrs which could damage the valve.

#### 3.3 Specific requirements

Designation and dimensions for straight side rims, hooked bead rims and crotchet type rims are given in clauses 4, 5 and 6, respectively.

### 4 Straight side rims

#### 4.1 Rim contours

Dimensions and tolerances of straight side (SS) rims shall be as given in figure 1 and table 1.

#### 4.2 Rim diameters

The nominal rim diameter code, specified rim diameters and measuring rim diameters for straight side (SS) rims shall be as given in figure 1 and table 2.

#### 4.3 Designation and marking

A straight side (SS) rim shall be designated by its nominal rim diameter and its nominal width, optionally preceded by "SS" for straight side.

EXAMPLE

**SS 400 × 20**

Dimensions in millimetres

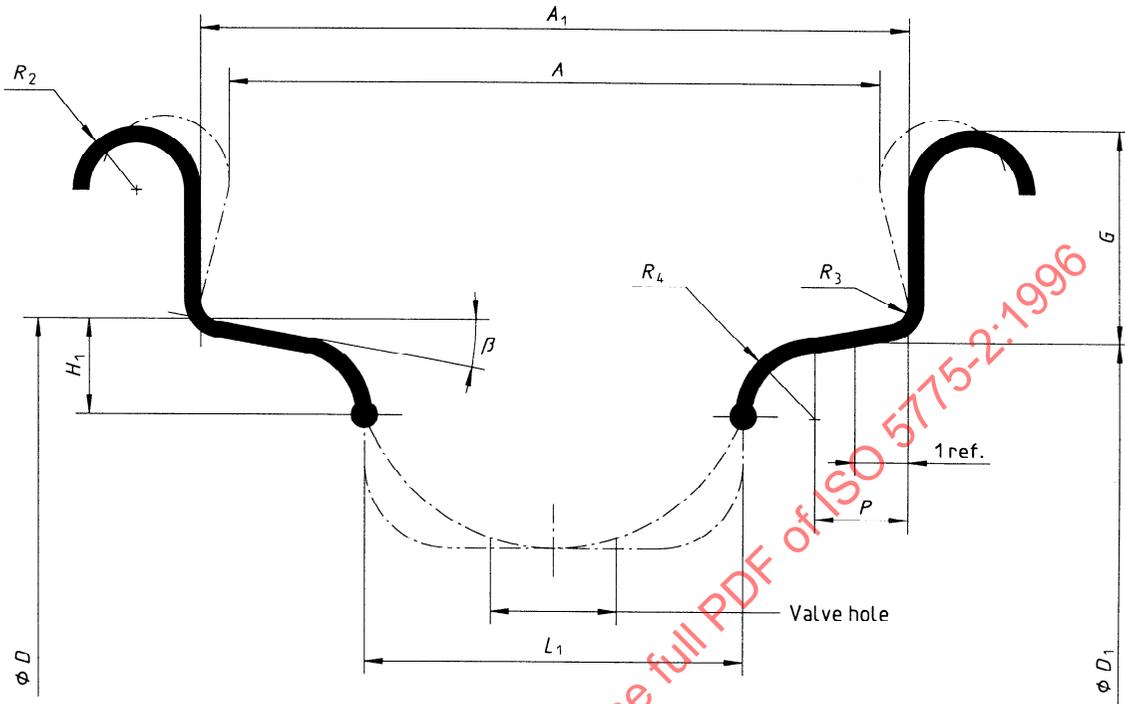


Figure 1 — Straight side rims

Table 1 — Dimensions of straight side rims

Dimensions in millimetres

| Nominal rim width | A    | A <sub>1</sub>               | G     | P    | H <sub>1</sub> <sup>1), 2)</sup> | L <sub>1</sub> <sup>2)</sup> | R <sub>2</sub> | R <sub>3</sub> | R <sub>4</sub> | β <sup>3)</sup> |
|-------------------|------|------------------------------|-------|------|----------------------------------|------------------------------|----------------|----------------|----------------|-----------------|
|                   | ± 1  | <sup>0</sup> / <sub>-1</sub> | ± 0,5 | min. | min.                             | min.                         | min.           | max.           | min.           | ± 5°            |
| 18 <sup>4)</sup>  | 18   | 18                           | 6,5   | 1,8  | 1,8                              | 10                           | 1,5            | 1              | 1,5            | 10°             |
| 20                | 20   | —                            | 6,5   | 2    | 2                                | 11                           | 1,8            | 1              | 1,5            | 10°             |
| 22                | 22   | —                            | 6,5   | 2,2  | 3                                | 11                           | 1,8            | 1              | 2              | 10°             |
| 24                | 24   | —                            | 7     | 3    | 3                                | 11                           | 2              | 1              | 2,5            | 10°             |
| 27                | 27   | —                            | 7,5   | 3,5  | 3,5                              | 14                           | 2,5            | 1              | 2,5            | 10°             |
| 30,5              | 30,5 | —                            | 8     | 3,5  | 3,5                              | 14                           | 2,5            | 1              | 2,5            | 10°             |

- 1) For 400 mm diameter and smaller, increase depth  $H_1$  by 1 mm.
- 2) The dimension  $H_1$  in conjunction with dimension  $L_1$  defines the unobstructed space above the rim base and the nipple heads, with the rim tape fitted, to permit satisfactory tyre fitment. The actual well depth of the rim shall be defined at the discretion of rim manufacturers to achieve this objective.
- 3) For rolled rims with nominal rim diameter of 400 mm and smaller,  $\beta = 15^\circ \pm 10^\circ$ .
- 4) Previously known as rim with code 17.

Table 2 — Specified and measuring rim diameters for straight side rims

Dimensions in millimetres

| Nominal rim diameter code | Specified rim diameter | Measuring rim diameter <sup>1)</sup> |
|---------------------------|------------------------|--------------------------------------|
|                           | $D$                    | $D_1$                                |
| 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                               |
| 279                       | 279,2                  | 278,85                               |
| 288                       | 287,8                  | 287,45                               |
| 298                       | 298,4                  | 298,05                               |
| 305                       | 304,7                  | 304,35                               |
| 317                       | 317                    | 316,65                               |
| 330                       | 329,8                  | 329,45                               |
| 337                       | 336,6                  | 336,25                               |
| 340                       | 339,6                  | 339,25                               |
| 349                       | 349,2                  | 348,85                               |
| 355                       | 355                    | 354,65                               |
| 357                       | 357,1                  | 356,75                               |
| 369                       | 368,6                  | 368,25                               |
| 381                       | 380,9                  | 380,55                               |
| 387                       | 387,1                  | 386,75                               |
| 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                       | 437,7                  | 437,35                               |
| 440                       | 439,9                  | 439,55                               |
| 451                       | 450,8                  | 450,45                               |
| 484                       | 484                    | 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                    | 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                               |

1) The tolerance on the measured bead seat circumference ( $\pi \times$  measuring rim diameter) is  $\pm 1,5$  mm.

## 5 Hooked bead rims

### 5.1 Rim contours

Dimensions and tolerances of hooked bead (HB) rims shall be as given in figure 2 and table 3.

### 5.2 Rim diameters and circumferences

The nominal rim diameter code, specified rim diameters and measuring circumferences for hooked bead (HB) rims shall be as given in figure 2 and table 4.

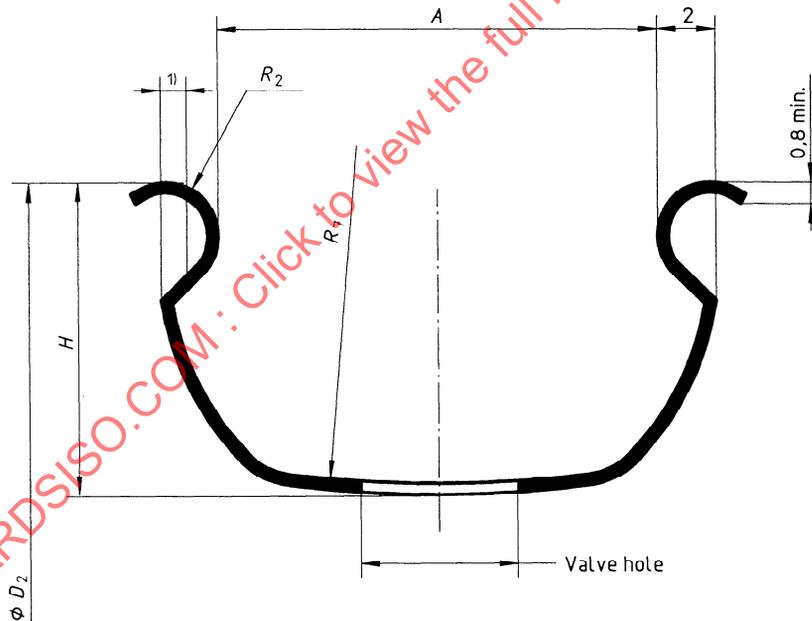
### 5.3 Designation and marking

A hooked bead (HB) rim shall be designated by its nominal rim diameter and its nominal width, preceded by "HB" for hooked bead.

EXAMPLE

**HB 422 × 25**

Dimensions in millimetres



1) Optional opening not to exceed 1 mm.

**Figure 2 — Hooked bead rims**

**Table 3 — Dimensions of hooked bead rims**

Dimensions in millimetres

| Nominal rim width | A   | H    | R <sub>2</sub> | R <sub>7</sub> |
|-------------------|-----|------|----------------|----------------|
|                   | ± 1 | min. | ± 0,5          | min.           |
| 20                | 20  | 13   | 2              | 30             |
| 25                | 25  | 14   | 2              | 50             |
| 27                | 27  | 15   | 2              | 70             |

Table 4 — Specified rim diameters and circumferences for hooked bead rims

Dimensions in millimetres

| Nominal rim diameter code <sup>1)</sup> | Specified rim diameter<br><i>D</i> | Specified rim circumference, $\pi D$<br>$\pm 2,5$ |
|---|------------------------------------|---|
| HB 270                                  | 269,9                              | 847,9   |
| HB 321                                  | 320,7                              | 1 007,5   |
| HB 372                                  | 371,5                              | 1 167,1   |
| HB 422                                  | 422,3                              | 1 326,7   |
| HB 459                                  | 458,8                              | 1 441,4   |
| HB 473                                  | 473,1                              | 1 486,3   |
| HB 510                                  | 509,6                              | 1 601   |
| HB 524                                  | 523,9                              | 1 645,9   |
| HB 560                                  | 560,4                              | 1 760,6   |
| HB 575                                  | 574,7                              | 1 805,5   |
| HB 611                                  | 611,2                              | 1 920,1   |

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

## 6 Crotchet type rims

### 6.1 Rim contours

Dimensions and tolerances of crotchet type (C) rims shall be as given in figure 3 and table 5.

### 6.2 Rim diameters

The nominal rim diameter code, specified rim diameters and measuring rim diameters for crotchet type (C) rims shall be as given in figure 3 and table 2.

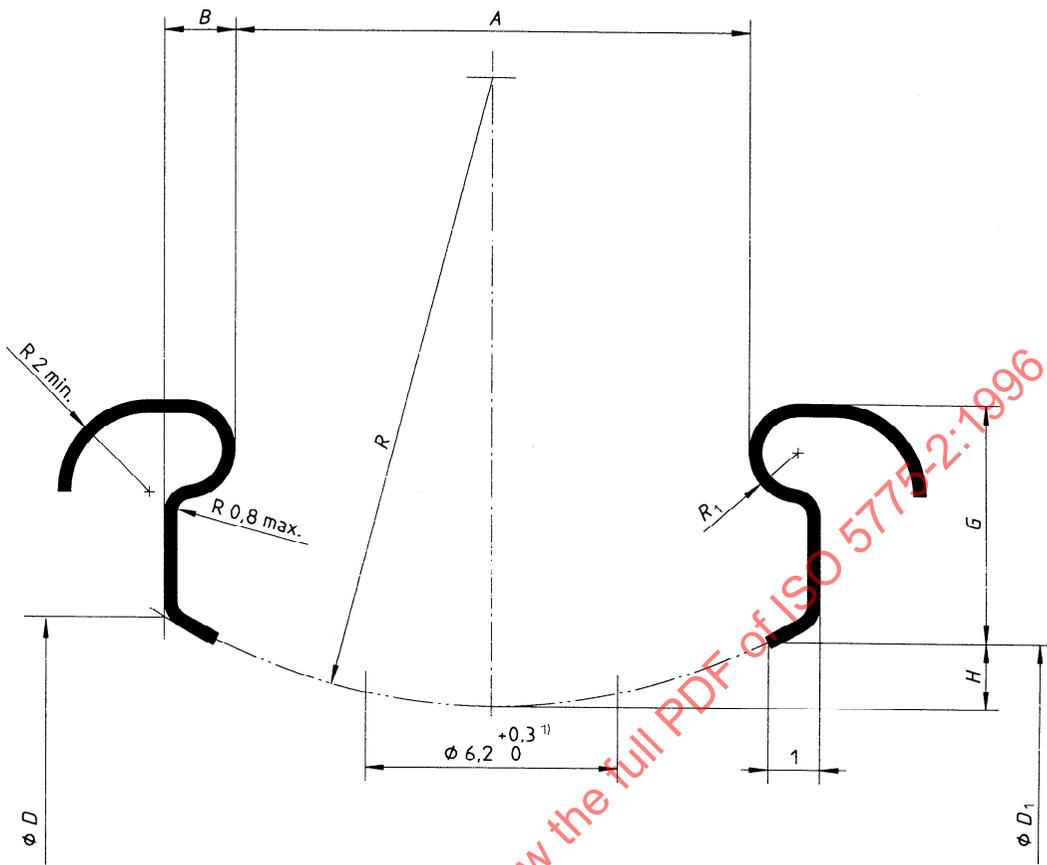
### 6.3 Designation and marking

A crotchet type (C) rim shall be designated by its nominal rim diameter and its nominal width, followed by "C" for crotchet type.

EXAMPLE

**622 × 13C**

Dimensions in millimetres



1) Valve hole  $8,3$   $+0,3 / 0$  permitted for rim widths  $\geq 19C$ .

Figure 3 — Crotchet type rims

Table 5 — Dimensions of crotchet type rims

Dimensions in millimetres

| Nominal rim width code | A<br>$\pm 0,5$ | B<br>$\pm 0,5$ | G<br>$\pm 0,5$ | H <sup>1)</sup><br>min. | R <sub>1</sub> <sup>1)</sup> |
|------------------------|----------------|----------------|----------------|-------------------------|------------------------------|
| 13C                    | 13             | 1,5            | 5              | 2                       | 1,1 $+0,2 / -0,1$            |
| 15C                    | 15             |                |                |                         |                              |
| 16C                    | 16             |                | 5,5            | 2,2                     |                              |
| 17C                    | 17             |                |                |                         |                              |
| 19C                    | 19             |                | 6,5            | 2,5                     |                              |
| 21C                    | 21             |                |                |                         |                              |
| 23C                    | 23             |                | 7,5            | 4,5                     |                              |
| 25C                    | 25             |                |                |                         |                              |

1) Dimensions  $H$  and  $R$  define the minimum unobstructed space above the rim base and nipple heads to permit satisfactory tyre fitment on a crotchet type rim.

**Annex A**  
(informative)

**Methods for measuring and gauging bicycle rim dimensions**

**A.1 Purpose**

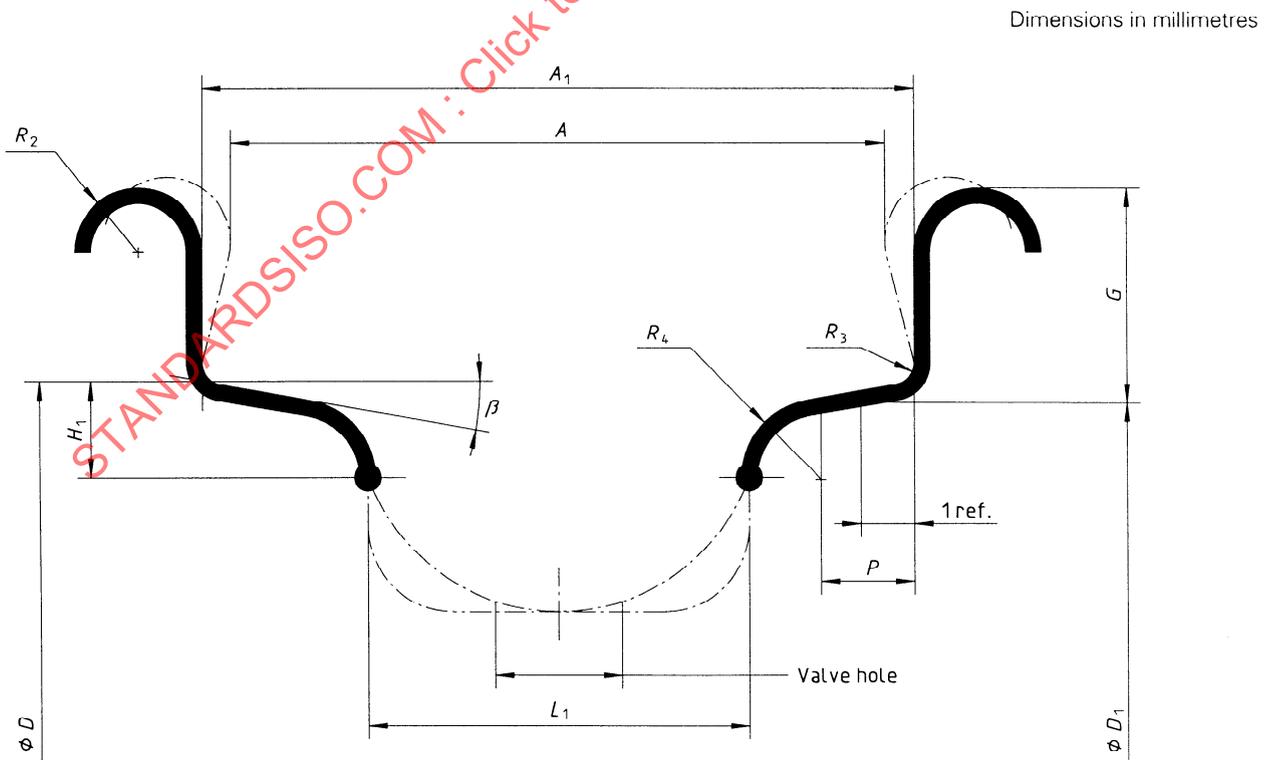
This annex gives methods for measuring and gauging dimensions of straight side rims, hooked bead rims and crotchet type rims.

**A.2 General**

All measurements shall be made on rims ready for tyre mounting and placed on flat surfaces. For accurate measurements, gauges and tapes shall always be set perpendicular to the rim flanges on both bead seats.

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

The main rim dimensions which shall be measured and gauged are indicated in figures A.1, A.2 and A.3.



**Figure A.1 — Straight side rims**

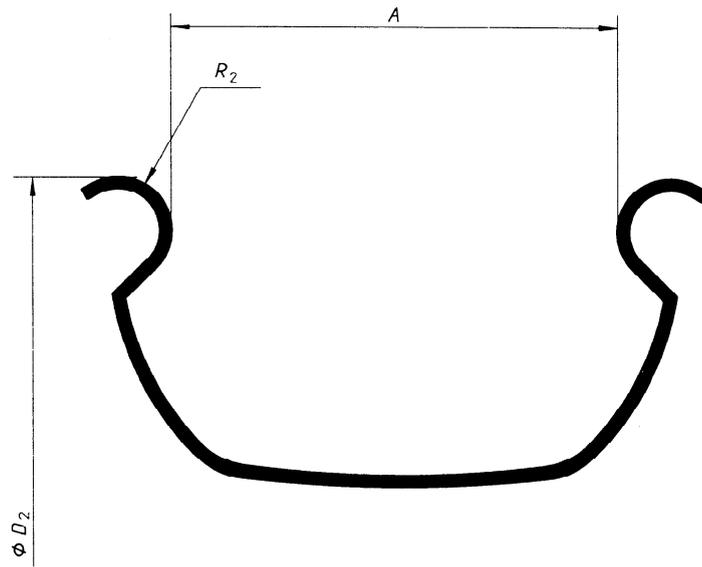


Figure A.2 — Hooked bead rims

Dimensions in millimetres

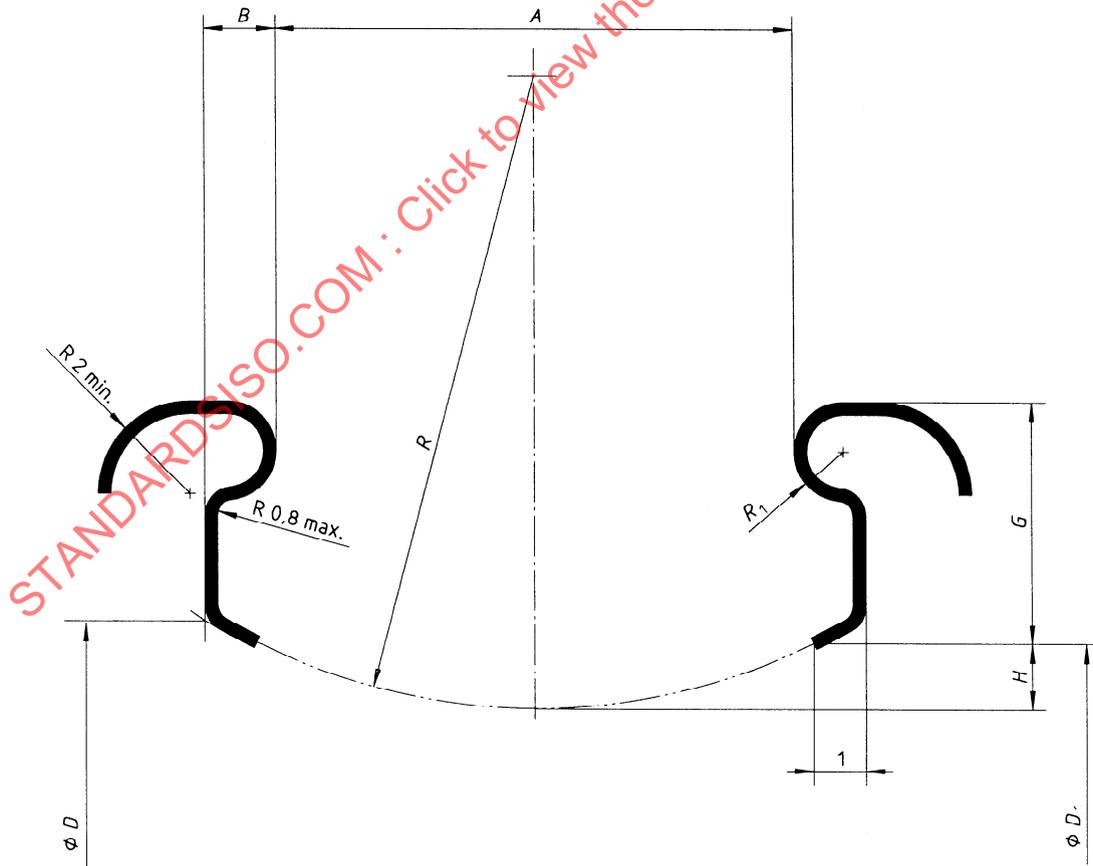


Figure A.3 — Crotchet type rims

## A.4 Methods of measuring specified diameter and bead seat circumference

The first method (A.4.1) is applicable for straight side rims only. The second method (A.4.2) is applicable for straight side and crotchet type rims.

### A.4.1 First method

The rim measurement is made around a standard level circumference related to the mandrel circumference.

A tape as illustrated in figure A.4 is used, care being taken to choose an appropriate tape for the rim to be measured. The tape shall be made of spring steel and contact the rim on both bead seats equally; it shall be flat, and marked with details of the rim width code and nominal rim diameter. The tape shall also be checked on an appropriate mandrel and on a flat surface: the straight end of the tape shall contact the other end within the notch. (See table A.1 and figures A.4, A.5 and A.6.)

The reference temperature for the measurement shall be 20 °C.

It is recommended that, except for experienced rim inspectors, two persons make the measurement — one holding the tape in position and applying not more than 50 N pull on the ends, and the other taking the readings.

### A.4.2 Second method

The circumference of the upper part of both flanges is measured by means of an inextensible steel tape-line (10 mm width and 0,3 mm thickness, with 0,5 mm graduations), care being taken that it contacts the rim. The two outer circumference measurements  $U_{0A}$  and  $U_{0B}$  are recorded.

Using an appropriate vernier gauge (see figures A.7 and A.9), measure the height of both flanges at least at four points equally spaced around the circumference taking care that the correct protrusion (1 mm for cycle rims) is used. Calculate the average of the height for the two flanges,  $G_A$  and  $G_B$ .

Calculate the measured circumferences,  $U_{1A}$  and  $U_{1B}$ , using the equations:

$$U_{1A} = U_{0A} - 2\pi G_A$$

$$U_{1B} = U_{0B} - 2\pi G_B$$

Compare both circumferences with the product of  $D_1$  values shown in table 2 by  $\pi$ .

NOTE — When rims have a difference of more than 2 mm between the two outer circumferences  $U_{0A}$  and  $U_{0B}$ , the vernier gauge should be appropriately applied and a spacer with a thickness  $\delta$ , catering for the difference in circumference, inserted (see figure A.8).

$$\delta = \frac{|U_{0A} - U_{0B}|}{2\pi}$$

The spacer should be interposed between the top of the shorter flange and the vernier gauge as shown in figure A.8.

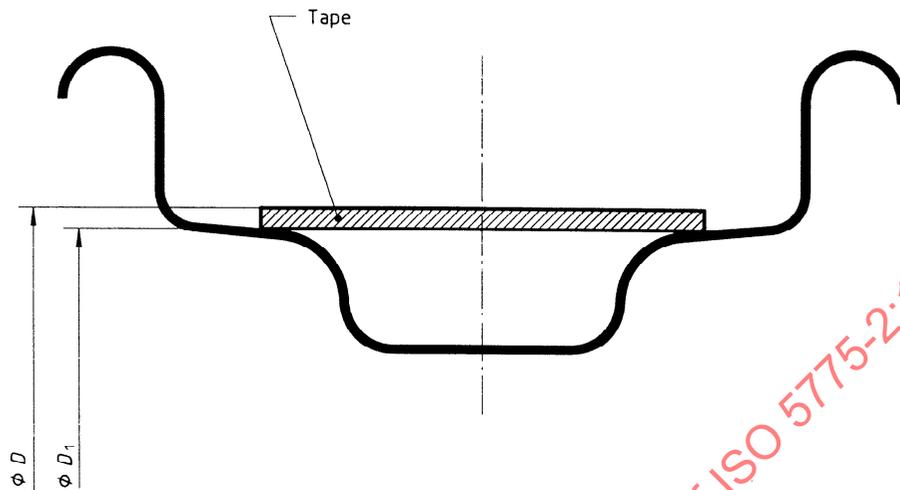


Figure A.4 — Rim diameter measurement

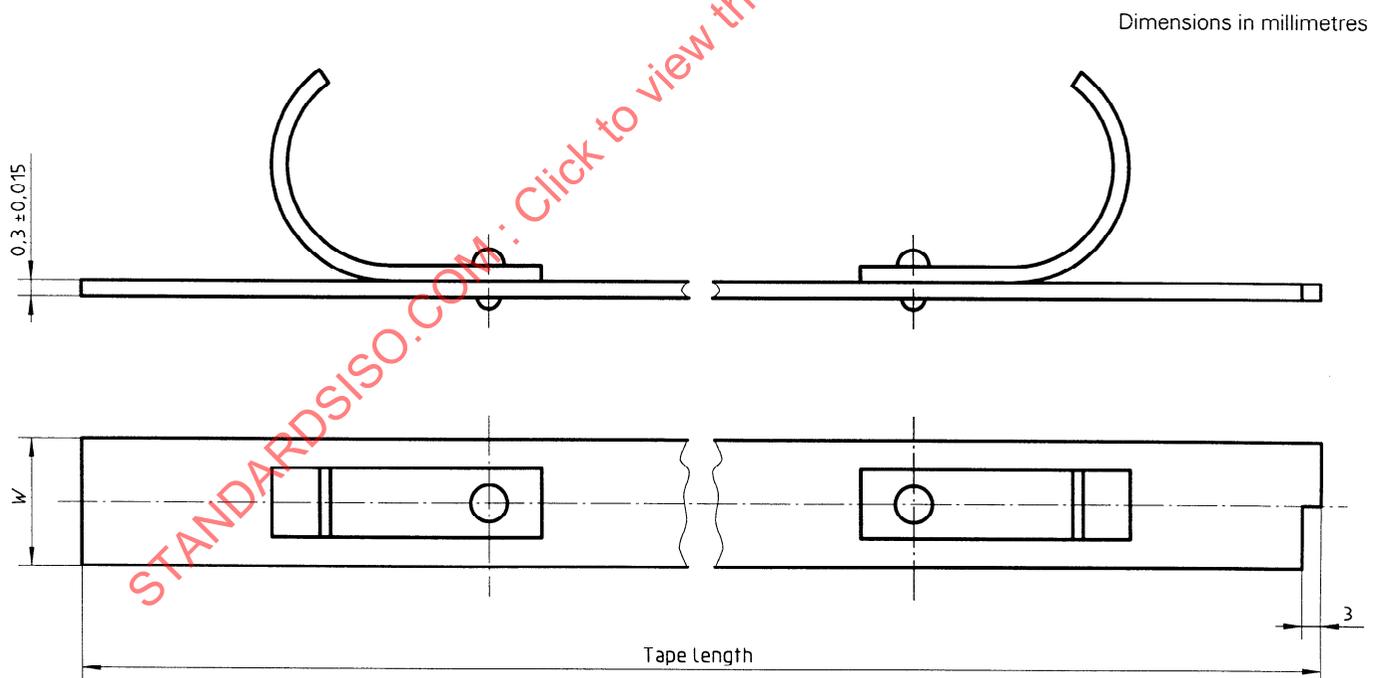
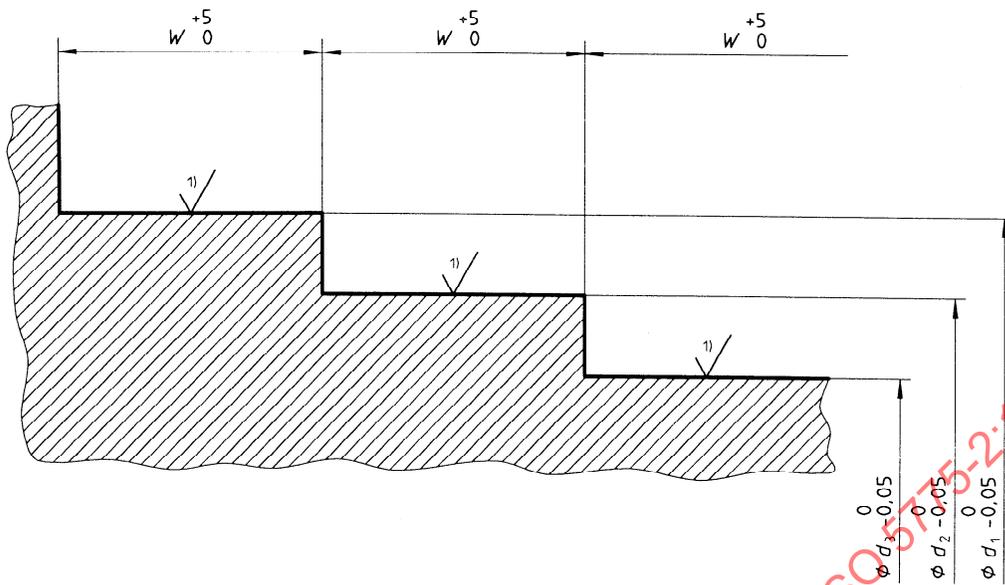


Figure A.5 — Tape dimensions

Dimensions in millimetres



1) Surface roughness value at the discretion of the person checking.

Figure A.6 — Tape mandrel

Table A.1 — Rim and tape widths

Dimensions in millimetres

| Rim width | Tape width, $W$                                   |
|-----------|---|
|           | $\begin{smallmatrix} 0 \\ -0,1 \end{smallmatrix}$ |
| 18        | 16  |
| 20        | 18  |
| 22        | 20  |
| 24        | 22  |
| 27        | 25  |
| 30,5      | 28,5  |

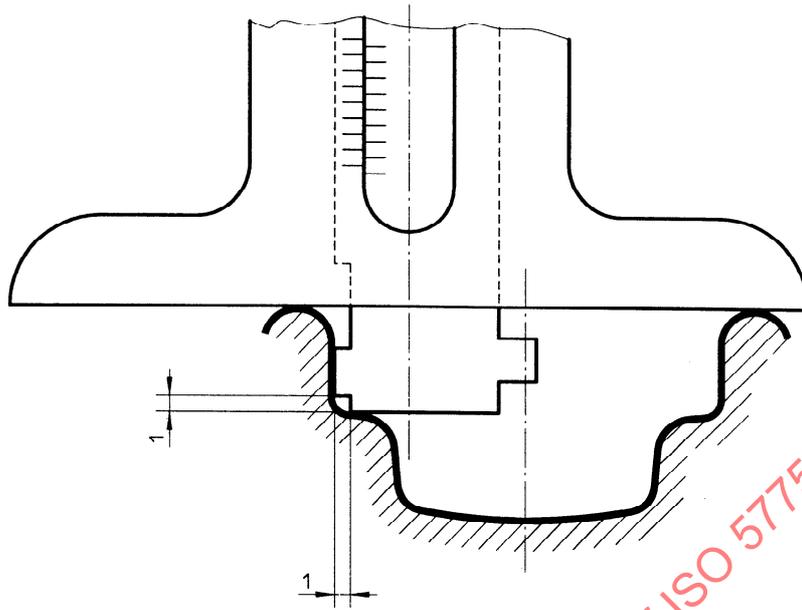


Figure A.7 — Vernier gauge with 1/20 mm graduations

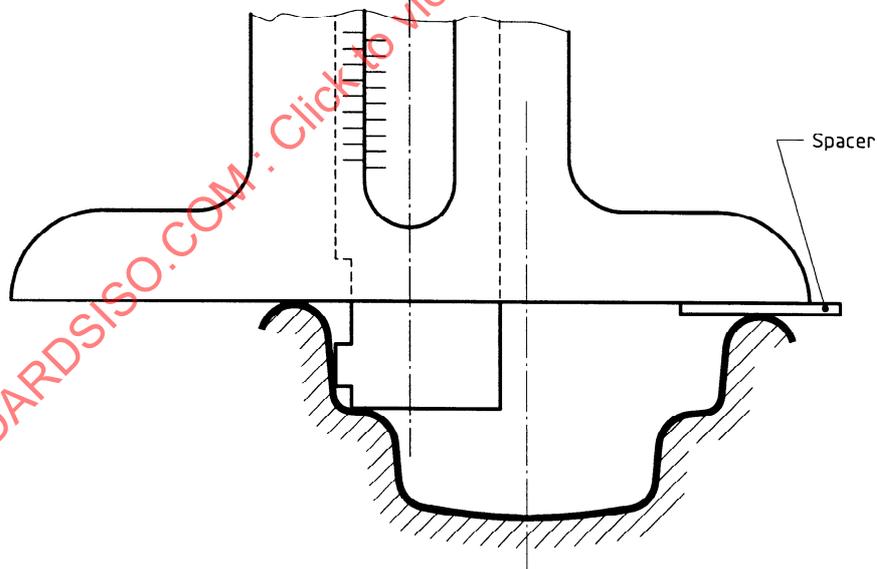


Figure A.8 — Use of vernier gauge with spacer

Dimensions in millimetres

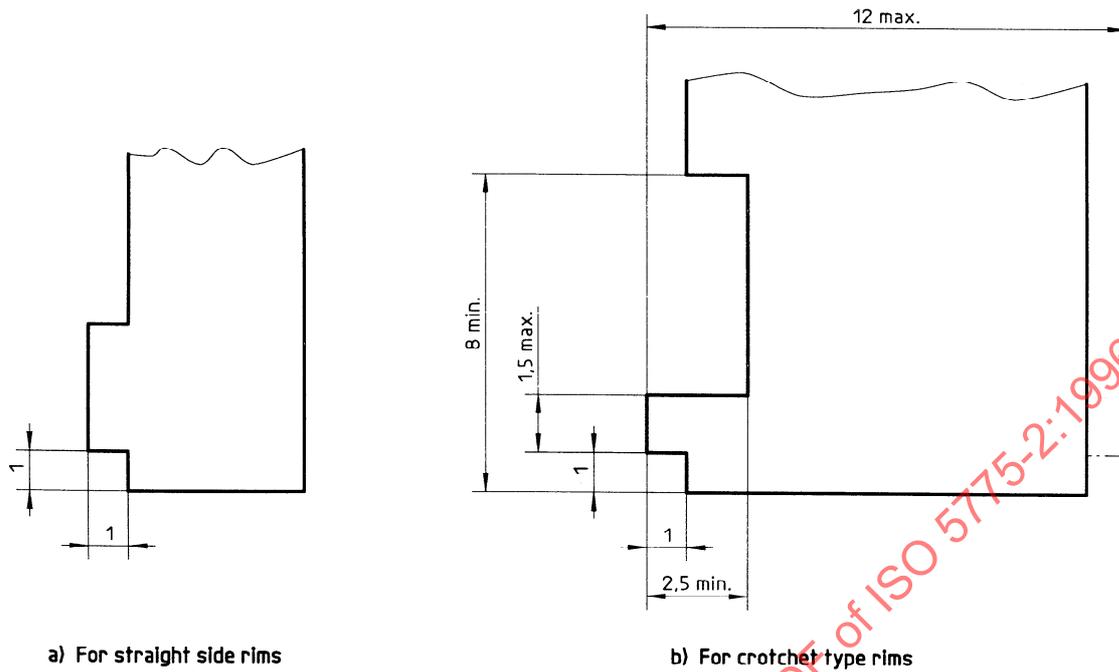


Figure A.9 — Vernier gauge details for measuring flange height  $G$

### A.5 Measuring well width above rim tape

See figures A.10 and A.11.

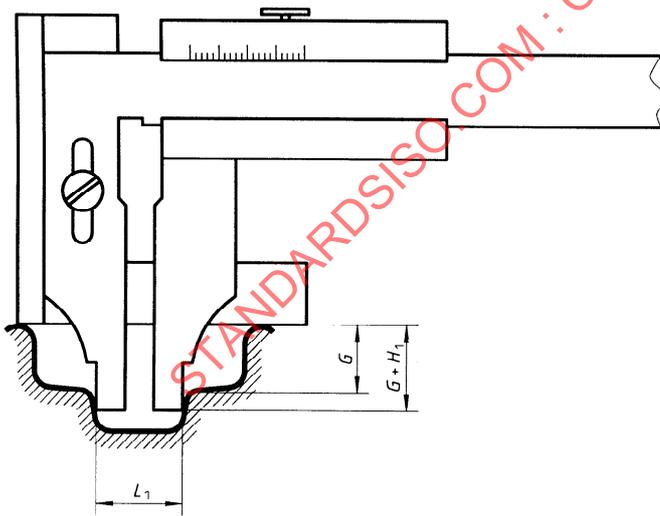


Figure A.10 — Measuring principle of well width above rim tape  $L_1$

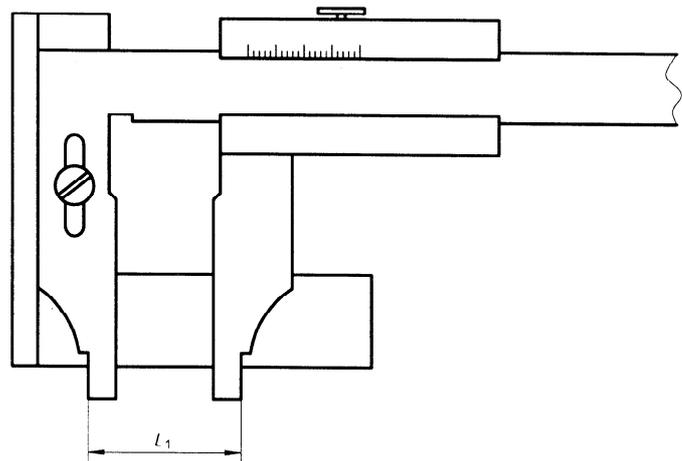


Figure A.11 — Calliper vernier for measuring dimension  $L_1$