
Bicycle tyres and rims —
Part 1:
Tyre designations and dimensions

Pneumatiques et jantes pour bicyclettes —
Partie 1: Désignation et cotes des pneumatiques

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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

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 on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 34, *Tyres, rims, and valves*, Subcommittee SC 10, *Cycle, moped, motorcycle tyres, and rims*.

This sixth edition cancels and replaces the fifth edition (ISO 5775-1:1997), 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*

Bicycle tyres and rims —

Part 1: Tyre designations and dimensions

1 Scope

This part of ISO 5775 specifies the designations and dimensions for the following pneumatic bicycle tyres:

- “wired edge” tyres mounted on straight side or crotchet type rims;
- “beaded edge” tyres mounted on hooked bead rims.

Tubular sew-up tyres and non-pneumatic tyres are not covered by this part of ISO 5775.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

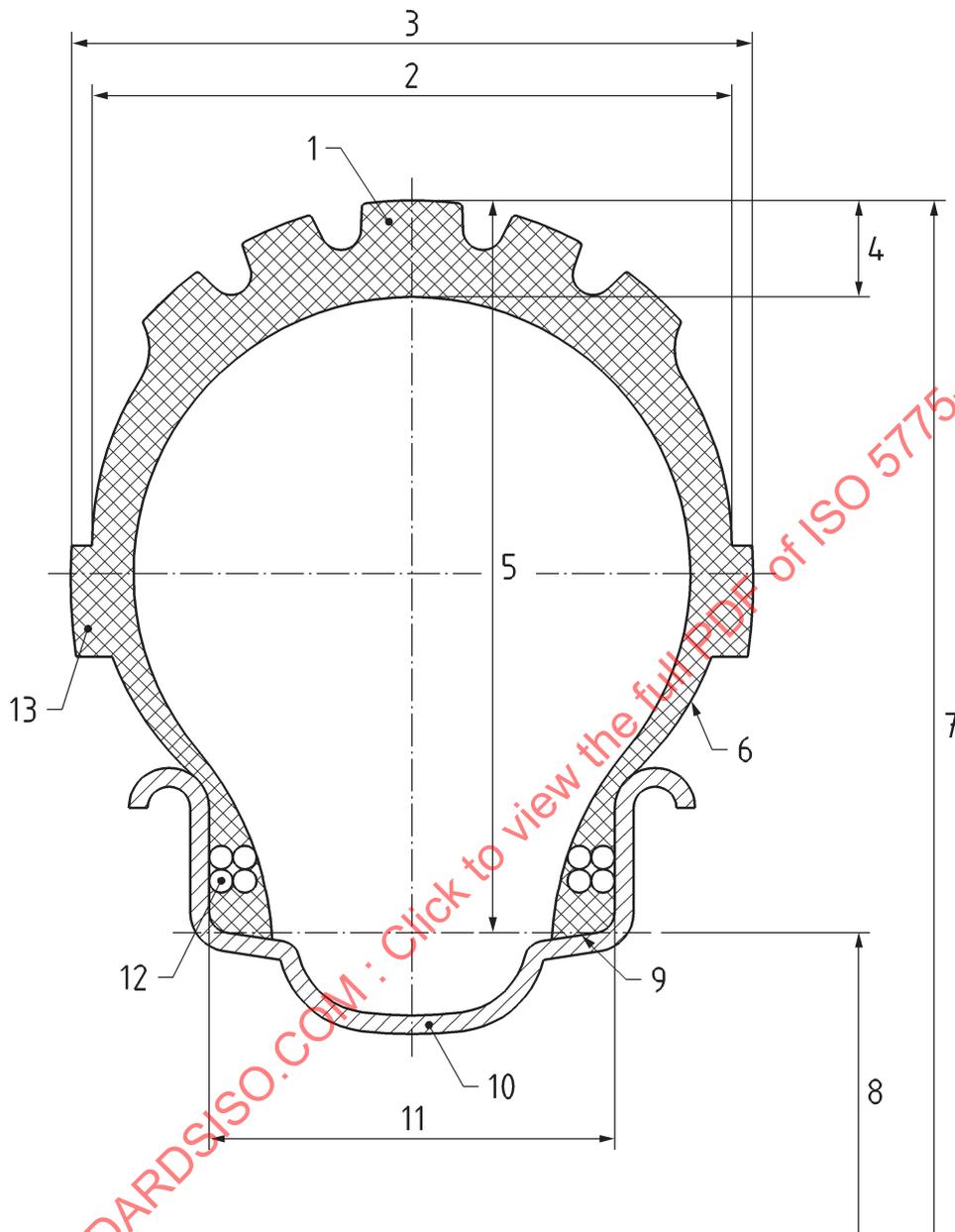
ISO 4223-1, *Definitions of some terms used in the tyre industry — Part 1: Pneumatic tyres*

ISO 5775-2, *Bicycle tyres and rims — Part 2: Rims*

3 Terms and definitions

For the purposes of this part of ISO 5775, the terms and definitions given in ISO 4223-1 apply.

4 “Wired edge” tyres mounted on straight side or crotchet type rims



Key

- | | |
|--------------------------------------|--|
| 1 tread | 8 specified rim diameter (D) |
| 2 section width (S) | 9 bead base |
| 3 maximum overall width (W) | 10 rim |
| 4 crown thickness | 11 measuring rim width (R_m) |
| 5 section height (H) | 12 steel bead wire |
| 6 side wall | 13 side wall engraving or decorative pattern |
| 7 maximum overall diameter (D_o) | |

Figure 1 — Typical section of a cycle tyre showing components and nomenclature

NOTE For tyres that could be mounted on both straight side and hooked bead rims, see 5.4.

4.1 Tyre designation

The tyre designation for straight side and crotchet type rims shall be shown on the sidewall of the tyre and shall include the marking given in [4.1.1](#) to [4.1.4](#).

4.1.1 Tyre size designation

The characteristics shall be indicated as follows:

| | | |
|-----------------------|------------------------|----------------------|
| Nominal section width | Tyre construction code | Nominal rim diameter |
|-----------------------|------------------------|----------------------|

4.1.1.1 Nominal section width

The nominal section width of the tyre shall be expressed in millimetres.

4.1.1.2 Tyre construction code

The tyre construction code shall be a separated dash.

NOTE Other codes will be established for new concepts of tyres.

4.1.1.3 Nominal rim diameter

The nominal rim diameter shall be expressed in millimetres.

4.1.2 Old marking

To help customers in those countries where other systems of marking were used, the old marking(s) may be added in parentheses before or after the tyre size designation.

It is suggested that characters smaller than those used for the designation specified in [4.1.1](#) be adopted. See [Annex A](#) for correspondence between “tyre size designation” and “old markings”. Sizes not included in [Annex A](#) shall bear the tyre size designation only.

4.1.3 Other service characteristics

4.1.3.1 In the case of tubeless tyres, the marking “TUBELESS” shall be shown on the tyre.

4.1.3.2 In the case of a preferred direction of rotation of the tyre, an arrow shall be used to indicate that direction.

4.1.3.3 Specific indications, if required, may be added to indicate the following:

- a) the recommended or the maximum inflation pressure, in kilopascals;
- b) other characteristics.

4.1.4 Example

A tyre having nominal section width 32 mm, nominal rim diameter 597 mm, and recommended inflation pressure of 400 kPa shall be marked as follows:

32 – 597 inflate to 400 kPa

4.2 Tyre dimensions

See [Figure 1](#) for tread and tyre dimensions.

4.2.1 Calculation of “design tyre” dimensions

4.2.1.1 Theoretical rim width, R_{th}

The theoretical rim width, R_{th} , is equal to the product of the nominal section width, S_N , by the rim/section ratio, K_1 , as shown in Formula (1):

$$R_{th} = K_1 S_N \quad (1)$$

NOTE For tyres with $S_N \leq 30$, $K_1 = 0,65$. For tyres with $S_N > 30$, $K_1 = 0,55$.

4.2.1.2 Measuring rim width, R_m

The measuring rim width, R_m , is the width of the existing rim nearest to the theoretical rim width, R_{th} . See ISO 5775-2 for existing rim widths.

4.2.1.3 Design tyre section width, S

The design tyre section width, S , is the nominal section width, S_N , transferred from the theoretical rim width, R_{th} , to the measuring rim width, R_m , as shown in Formula (2):

$$S = S_n + K_2 (R_m - R_{th}) \quad (2)$$

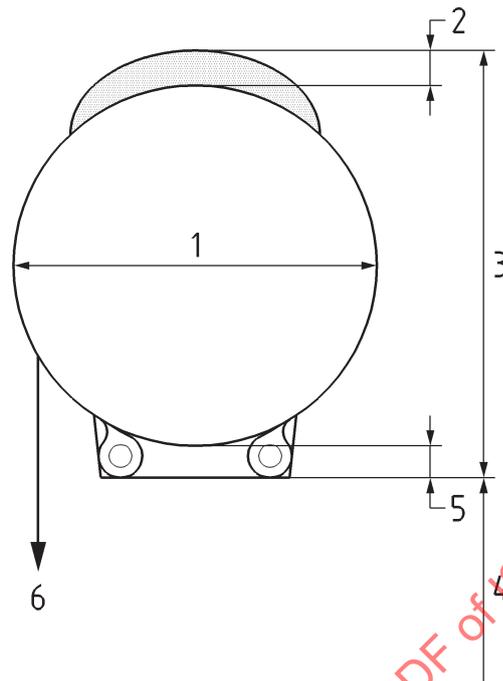
rounded to the nearest whole number.

NOTE For tyres existing concepts, $K_2 = 0,4$.

4.2.1.4 Design tyre section height, H

The design tyre section, H , is equal to the following:

- the nominal section width +4 mm when $S_N < 28$ mm;
- the nominal section width +5,5 mm when $S_N \geq 28$ mm;
- the nominal section width +6,5 mm for off-road (type D) ($S_N \geq 35$ mm).

**Key**

- 1 section width
- 2 additional tread thickness
- 3 section height = section width + shift + additional tread thickness
- 4 seat diameter
- 5 shift
- 6 round shape of the carcass

Figure 2 — Definition of the terms**4.2.1.5 Design tyre overall diameter, D_o**

The design tyre overall diameter, D_o , is the sum of the nominal rim diameter, D_r , plus twice the design tyre section height, H , as shown in Formula (3):

$$D_o = D_r + 2H \quad (3)$$

Existing values of the nominal rim diameter, D_r , are given in ISO 5775-2.

4.2.2 Calculation of maximum tyre dimensions in service

The calculation is for use by vehicle manufacturers in designing for tyre clearance.

4.2.2.1 Maximum overall width in service, W_{max}

The maximum overall width in service, W_{max} , is equal to the design tyre section width, S , plus a value, as shown in [Table 1](#).

Table 1 — Maximum overall width in service

Dimensions in millimetres

| Tyre type (see 4.3) | Nominal section width | Maximum overall width in service |
|------------------------|-----------------------|----------------------------------|
| | S_N | W_{max} |
| A | ≤ 25 | $S + 1$ |
| | $25 < S_N \leq 35$ | $S + 2$ |
| | > 35 | $S + 3$ |
| D | all S_N | $S + 8$ |

This includes protective ribs, lettering, embellishments, manufacturing tolerances, and growth due to service.

4.2.2.2 Maximum overall diameter in service, $D_{o,max}$

The maximum overall diameter in service, $D_{o,max}$, is equal to the nominal rim diameter, D_r , plus twice the design tyre section height, H , plus a value as follows:

- $D_{o,max} = D_r + 2 H + 6$ mm for type A tyres;
- $D_{o,max} = D_r + 2 H + 10$ mm for type D tyres.

This includes manufacturing tolerances and growth due to service.

4.2.2.3 Minimum overall width, S_{min}

The minimum overall width, S_{min} , is equal to the design tyre section width, S , plus a value, as shown in [Table 2](#).

Table 2 — Minimum overall width

Dimensions in millimetres

| Nominal section width | Minimum overall width |
|-----------------------|-----------------------|
| S_N | S_{min} |
| ≤ 28 | $S - 2$ |
| > 28 | $S - 3$ |

4.2.3 Values

[Table 3](#) shows the dimensions for measuring rim width, design section width, and design section height according to [4.2.1](#) for nominal section widths to be used.

Table 3 — “Wired edge” tyres mounted on crotchet type rims — Design tyre dimensions

Dimensions in millimetres

| Nominal section width | Measuring rim width ^a | Design tyre | |
|-----------------------|----------------------------------|---------------|----------------|
| | | Section width | Section height |
| | | S | H |
| 16 | 13C | 16 | 20 |
| 18 | 13C | 18 | 22 |
| 20 | 13C | 20 | 24 |

^a For dimensions of measuring rims, see ISO 5775-2.

Table 3 (continued)

| Nominal section width S_N | Measuring rim width ^a R_m | Design tyre | |
|--------------------------------|---|----------------------|-----------------------|
| | | Section width S | Section height H |
| 23 | 15C | 23 | 27 |
| 25 | 15C | 25 | 29 |
| 28 | 17C | 28 | 33,5 |
| 30 | 17C | 30 | 35,5 |
| 32 | 17C | 32 | 37,5 |
| 35 | 19C | 35 | 40,5 |
| 37 | 19C | 37 | 42,5 |
| 40 | 19C | 40 | 45,5 |
| 42 | 19C | 42 | 47,5 |
| 44 | 19C | 44 | 49,5 |
| 47 | 19C | 47 | 52,5 |
| 50 | 19C | 50 | 55,5 |
| 52 | 19C | 52 | 57,5 |
| 54 | 19C | 54 | 59,5 |
| 57 | 19C | 57 | 62,5 |
| 60 | 21C | 60 | 65,5 |
| 62 | 21C | 62 | 67,5 |

^a For dimensions of measuring rims, see ISO 5775-2.

Table 4 — “Wired edge” tyres mounted on straight side and crotchet type rims — Recommended rims

Dimensions in millimetres

| Nominal section width S_N | Recommended rims ^a | |
|--------------------------------|---------------------------------|---------------------------------|
| | Straight side rims ^b | Crotchet type rims ^c |
| 16 | — | 13C |
| 18 | — | 13C |
| 20 | — | 13C |
| 23 | 16 | 13C; 15C |
| 25 | 16; 18 | 13C; 15C; 17C |
| 28 | 16; 18; 20 | 15C; 17C; 19C |
| 32 | 16; 18; 20 | 15C; 17C; 19C |
| 35 | 18; 20; 22 | 17C; 19C; 21C |
| 37 | | 17C; 19C; 21C; 23C |

^a Crotchet type rims shall be used when tyre inflation pressures over 500 kPa are recommended. When inflation pressure over 500 kPa is recommended, an appropriate rim base protective flap must be used when spoke ends are apparent.

^b Straight side rims are to be used only for non-foldable tyres.

^c Crotchet type rims can be used with rigid and foldable tyres.

^d In case of tubeless application with a tubeless tyre, a special airtight tape shall be used with crotchet type rim, or a special tubeless rim shall be fitted to the bicycle.

Table 4 (continued)

| Nominal section width S_N | Recommended rims ^a | |
|--------------------------------|---------------------------------|-----------------------------------|
| | Straight side rims ^b | Crochet type rims ^c |
| 40 | 20; 22; 24 | 17C; 19C; 21C; 23C |
| 42 | | 17C; 19C; 21C; 23C; 25C |
| 44 | 20; 22; 24; 27 | 17C; 19C; 21C; 23C; 25C |
| 47 | | |
| 50 | 22; 24; 27; 30,5 | 17C; 19C; 21C; 23C; 25C; 27C |
| 52 | 24; 27; 30,5 | 17C; 19C; 21C; 23C; 25C; 27C; 29C |
| 54 | 27; 30,5 | 17C; 19C; 21C; 23C; 25C; 27C; 29C |
| 57 | | |
| 60 | | |
| 62 | | |

^a Crochet type rims shall be used when tyre inflation pressures over 500 kPa are recommended.

When inflation pressure over 500 kPa is recommended, an appropriate rim base protective flap must be used when spoke ends are apparent.

^b Straight side rims are to be used only for non-foldable tyres.

^c Crochet type rims can be used with rigid and foldable tyres.

^d In case of tubeless application with a tubeless tyre, a special airtight tape shall be used with crochet type rim, or a special tubeless rim shall be fitted to the bicycle.

Tables 5 to 7 show the dimensions for the measuring rim width, measuring overall diameter, design section width, design overall diameter, and maximum overall width in service for sizes of interest.

Table 5 — “Wired edge” sizes for section width for $S_N < 28$

| Tyre size designation | Measuring rim width code ^a | Tyre dimensions (mm) | | | | | | | |
|-----------------------|---------------------------------------|----------------------|--------|------------------|--------|--------------------|--------|------------------|--------|
| | | Design | | | | Maximum in service | | | |
| | | Section width | | Overall diameter | | Overall width | | Overall diameter | |
| | | Min | Design | Min | Design | Type A | Type D | Type A | Type D |
| 18-622 | 13C | 16 | 18 | 660 | 666 | 19 | — | 672 | |
| 20-571 | 13C | 18 | 20 | 613 | 619 | 21 | — | 625 | |
| 20-622 | | | | 664 | 670 | | — | 676 | |
| 23-571 | 15C | 21 | 23 | 619 | 625 | 24 | — | 631 | |
| 23-622 | | | | 670 | 676 | | — | 682 | |
| 23-630 | | | | 678 | 684 | | — | 690 | |
| 25-540 | 15C | 23 | 25 | 587 | 593 | 26 | — | 599 | |
| 25-622 | | | | 674 | 680 | | — | 686 | |
| 25-630 | | | | 682 | 688 | | — | 694 | |

^a For dimensions of measuring rims, see ISO 5775-2.

Table 6 — “Wired edge” sizes for section width for $S_N \geq 28$

| Tyre size designation | Measuring rim width code ^a | Tyre dimensions (mm) | | | | | | | | | |
|-----------------------|---------------------------------------|----------------------|--------|------------------|--------|--------------------|--------|------------------|--------|-----|-----|
| | | Design | | | | Maximum in service | | | | | |
| | | Section width | | Overall diameter | | Overall width | | Overall diameter | | | |
| | | Min | Design | Min | Design | Type A | Type D | Type A | Type D | | |
| 28-622 | 17C | 26 | 28 | 683 | 689 | 30 | 36 | 695 | 699 | | |
| 30-622 | 17C | 28 | 30 | 687 | 693 | 32 | 38 | 699 | 703 | | |
| 32-622 | 17C | 29 | 32 | 691 | 697 | 34 | 40 | 703 | 707 | | |
| 32-630 | | 29 | 32 | 699 | 705 | | 40 | 711 | 715 | | |
| 35-406 | 19C | 32 | 35 | 481 | 487 | 37 | 43 | 493 | 497 | | |
| 35-622 | | 32 | 35 | 697 | 703 | | 43 | 709 | 713 | | |
| 37-305 | 19C | 34 | 37 | 384 | 390 | 40 | — | 396 | — | | |
| 37-387 | | 34 | 37 | 466 | 472 | | — | 478 | — | | |
| 37-406 | | 34 | 37 | 485 | 491 | | 45 | 497 | 501 | | |
| 37-438 | | 34 | 37 | 517 | 523 | | — | 529 | — | | |
| 37-489 | | 34 | 37 | 568 | 574 | | 45 | 580 | 584 | | |
| 37-540 | | 34 | 37 | 619 | 625 | | 45 | 631 | 635 | | |
| 37-584 | | 34 | 37 | 663 | 669 | | 45 | 675 | 679 | | |
| 37-590 | | 34 | 37 | 669 | 675 | | 45 | 681 | 685 | | |
| 37-622 | | 34 | 37 | 701 | 707 | | 45 | 713 | 717 | | |
| 37-635 | | 34 | 37 | 714 | 720 | | 45 | 726 | 730 | | |
| 40-590 | | 19C | 37 | 40 | 675 | | 681 | 43 | 48 | 687 | 691 |
| 40-622 | | | 37 | 40 | 707 | | 713 | | 48 | 719 | 723 |
| 40-635 | | | 37 | 40 | 720 | | 726 | | 48 | 732 | 736 |
| 42-590 | | 19C | 39 | 42 | 679 | | 685 | 45 | 50 | 691 | 696 |
| 42-622 | | 19C | 39 | 42 | 711 | | 717 | 45 | 50 | 723 | 727 |
| 44-622 | 19C | 41 | 44 | 715 | 721 | 47 | 52 | 727 | 731 | | |
| 47-305 | 19C | 44 | 47 | 404 | 410 | 50 | — | 416 | — | | |
| 47-355 | 19C | 44 | 47 | 454 | 460 | | — | 466 | — | | |
| 47-406 | 19C | 44 | 47 | 505 | 511 | | 55 | 517 | 521 | | |
| 47-457 | 19C | 44 | 47 | 556 | 562 | | 55 | 568 | 572 | | |
| 47-507 | 19C | 44 | 47 | 606 | 612 | | 55 | 618 | 622 | | |
| 47-571 | 19C | 44 | 47 | 670 | 676 | | 55 | 682 | 686 | | |
| 47-622 | 19C | 44 | 47 | 721 | 727 | | 55 | 733 | 737 | | |
| 50-406 | 19C | 47 | 50 | 511 | 517 | | 53 | 58 | 523 | 527 | |
| 50-407 | 19C | 47 | 50 | 612 | 618 | 53 | 58 | 624 | 628 | | |
| 50-622 | 19C | 47 | 50 | 727 | 733 | 53 | 58 | 739 | 743 | | |
| 54-406 | 19C | 51 | 54 | 519 | 525 | 57 | 62 | 531 | 535 | | |
| 57-203 | 19C | 54 | 57 | 322 | 328 | 60 | " | 334 | " | | |
| 57-406 | 19C | 54 | 57 | 525 | 531 | 60 | 62 | 537 | 541 | | |
| 62-203 | 21C | 58 | 61 | 332 | 338 | 64 | " | 344 | " | | |

^a For dimensions of measuring rims, see ISO 5775-2.

Table 7 — “Wired edge” sizes for section width for off-road (Type D)

| Tyre size designation | Measuring rim width code ^a | Tyre dimensions (mm) | | | | | | | |
|-----------------------|---------------------------------------|----------------------|--------|------------------|------------------|--------------------|--------|------------------|--------|
| | | Design | | | | Maximum in service | | | |
| | | Section width | | Overall diameter | | Overall width | | Overall diameter | |
| | | Min | Design | Min | Design | Type A | Type D | Type A | Type D |
| 25-559 | 15C | 23 | 25 | 611 | 617 ^b | 26 | — | 623 | |
| 35-559 | 19C | 32 | 35 | 636 | 642 | 37 | 43 | 648 | 652 |
| 37-559 | 19C | 34 | 37 | 640 | 646 | 40 | — | 652 | — |
| 40-559 | 19C | 37 | 40 | 646 | 652 | 43 | 48 | 658 | 662 |
| 44-559 | 19C | 41 | 44 | 654 | 660 | 47 | 52 | 666 | 670 |
| 47-559 | 19C | 44 | 47 | 660 | 666 | 50 | 55 | 672 | 676 |
| 50-559 | 19C | 47 | 50 | 666 | 672 | 53 | 58 | 678 | 682 |
| 52-559 | 19C | 49 | 52 | 670 | 676 | 55 | 60 | 682 | 686 |
| 54-559 | 19C | 51 | 54 | 674 | 680 | 57 | 62 | 686 | 690 |
| 57-559 | 19C | 54 | 57 | 680 | 686 | 60 | 62 | 692 | 696 |
| 60-559 | 21C | 57 | 60 | 686 | 692 | 63 | 65 | 698 | 702 |
| 62-559 | 21C | 59 | 62 | 690 | 696 | 65 | 67 | 702 | 706 |
| 52-622 | 19C | 49 | 52 | 731 | 737 | 55 | 60 | 743 | 747 |
| 57-622 | 19C | 54 | 57 | 741 | 747 | 60 | 65 | 753 | 757 |

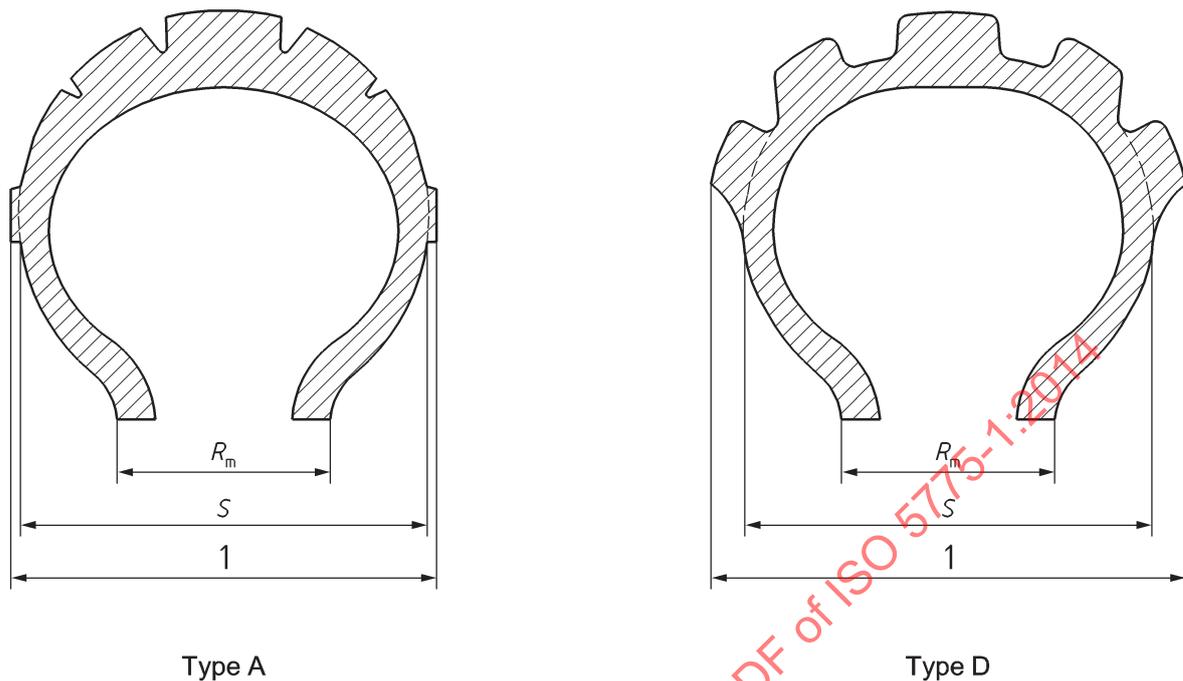
^a For dimensions of measuring rims, see ISO 5775-2.

^b Tyre size 25-559 has a narrow section width <28 so section height = section width + 2,5 mm + 1,5 mm

4.3 Tread configurations

Figure 3 shows the following two principal tread configurations which apply to bicycle tyres:

- Tread type A corresponds to highway service tyres;
- Tread type D corresponds to tyres for on-and-off road service tyres (e.g. mountain bikes).

**Key**

1 overall width

Figure 3 — Tread configurations**4.4 Tyre dimension measurement method**

Before measuring, tyres shall be mounted on the measuring rim, inflated to the recommended inflation pressure, and allowed to stand for a minimum of 24 h at normal room temperature, after which the inflation pressure shall be readjusted to the original value.

4.5 Recommended rim contours

The recommended straight side and crotchet type rim contours correlated to nominal tyre section widths, S_N , are presented in [Table 4](#).

When inflation pressures over 500 kPa are used, appropriate rim tapes shall be fitted.

When mounting the tyre on a permitted rim, the section width of the tyre varies by 0,4 times the difference between the recommended and permitted rim widths.

NOTE 1 For tyres for foldable bicycles, consult the tyre manufacturer for the types of rims permitted.

NOTE 2 Rim dimensions and bead seat characteristics are given in ISO 5775-2.

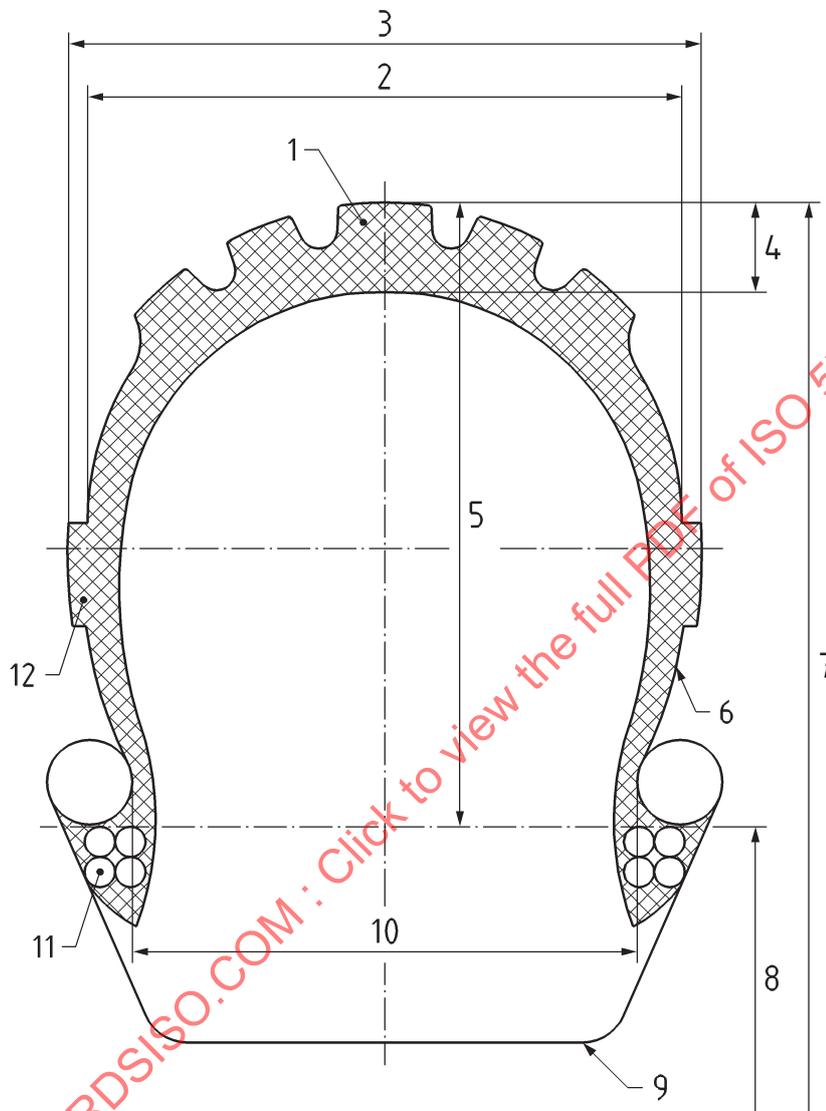
4.6 Minimum inflation pressure

The deflection of the tyre in use shall not exceed 30 % of the tyre section height. The tyre inflation pressure shall not be less than the following:

- 300 kPa for narrow tyres (i.e. with nominal section width 25 and below);
- 200 kPa for other sizes in normal highway service;

— 150 kPa for off-the-road service.

5 “Beaded edge” tyres mounted on hooked bead rims



Key

- | | |
|--------------------------------------|--|
| 1 tread | 8 specified rim diameter (D) |
| 2 section width (S) | 9 rim |
| 3 maximum overall width (W) | 10 measuring rim width (R_m) |
| 4 crown thickness | 11 steel bead wire |
| 5 section height (H) | 12 side wall engraving or decorative pattern |
| 6 side wall | |
| 7 maximum overall diameter (D_o) | |

Figure 4 — Typical section of a cycle tyre showing components and nomenclature

5.1 Tyre designation

The tyre designation for hooked bead rims shall be shown on the sidewall of the tyre and shall include the marking given in [5.1.1](#) to [5.1.3](#).

5.1.1 Tyre size designation

The characteristics shall be indicated as follows:

Overall diameter code × Nominal section width code

5.1.1.1 Overall diameter code

The overall diameter code shall be in whole even numbers.

5.1.1.2 Symbol “×”

The symbol “×” shall be included between the code corresponding to the overall diameter and the code corresponding to the nominal section.

5.1.1.3 Nominal section width code

The nominal section width code shall be expressed in hundredths or thousandths, ending in 5 (for example, 1,375).

5.1.2 Preferred direction of rotation

In the case of a preferred direction of rotation of the tyre, an arrow shall be used to indicate that direction.

5.1.3 Example

A tyre having overall diameter code 20 and nominal section width code 1,375 shall be marked as follows:

20 × 1,375

5.2 Tyre dimensions

See [Figure 4](#) for tread and tyre dimensions.

5.2.1 “Design tyre” dimensions

5.2.1.1 Measuring rim width, R_m , and design dimensions

[Table 8](#) gives the measuring rim width, R_m , the design tyre section width, S , and the design tyre section height, H , for a given nominal section width code.

Table 8 — “Beaded edge” tyres mounted on hooked bead rims — Measuring rim width and design dimensions

Dimensions in millimetres

| Nominal section width code | Measuring rim width R_m | Design tyre | |
|----------------------------|------------------------------|----------------------|------------------------------------|
| | | Section width S | Section height ^a H |
| 1,25 | 20 | 32 | 28 |
| 1,375 | 20 | 35 | 31 |
| 1,75 | 25 | 44 | 39 |
| 2,125 | 27 | 54 | 48 |

^a The design section height is equal to $0,88 \times$ design section width rounded to whole numbers.

5.2.1.2 Design tyre overall diameter, D_o

The design tyre overall diameter, D_o , is equal to the sum of the nominal outside rim diameter, D_2 , plus twice the design section height, H , as shown in Formula (4):

$$D_o = D_2 + 2H \tag{4}$$

See ISO 5775-2 for existing values of nominal outside rim diameter.

5.2.2 Calculation of maximum tyre dimensions in service

This calculation is for use by vehicle manufacturers in designing for tyre clearance.

5.2.2.1 Maximum overall width in service, W_{max}

The maximum overall width service, W_{max} , is equal to the design tyre section width, S , plus 3 mm as shown in Formula (5):

$$W_{max} = S + 3 \text{ mm} \tag{5}$$

This includes protective ribs, lettering, embellishments, manufacturing tolerances, and growth due to service.

5.2.2.2 Maximum overall diameter in service, $D_{o,max}$

The maximum overall diameter in service, $D_{o,max}$, is equal to the nominal outside rim diameter, D_2 , plus twice the design tyre section height, H , plus 6 mm as shown in Formula (6):

$$D_{o,max} = D_2 + 2H + 6 \text{ mm} \tag{6}$$

This includes manufacturing tolerances and growth due to service.

5.2.3 Determination of nominal overall diameter code

The nominal overall diameter code expresses the value of the design tyre overall diameter, D_o , as in Formula (4), multiplied by 0,04 and rounded to the nearest even number. (For example, if $D_o = 450$, nominal overall diameter code = 18.)

5.2.4 Values

Table 9 shows the dimensions for measuring rim width, measuring rim overall diameter, design section width, design overall diameter, maximum overall width in service, and maximum overall diameter in service according to 5.2.1 and 5.2.2 for sizes of interest.

Table 9 — “Beaded edge” tyres mounted on hooked bead rims — Measuring rim, design tyre and in service dimensions

Dimensions in millimetres

| Tyre size designation | Measuring rim | | Design tyre | | In-service | |
|-----------------------|---------------|------------------|---------------|------------------|-----------------------|--------------------------|
| | Width | Overall diameter | Section width | Overall diameter | Maximum overall width | Maximum overall diameter |
| 20 × 1,25 | 20 | 458,8 | 32 | 515 | 35 | 521 |
| 24 × 1,25 | | 560,4 | | 616 | | 622 |
| 26 × 1,25 | | 611,2 | | 667 | | 673 |
| 20 × 1,375 | 20 | 458,8 | 35 | 521 | 38 | 527 |
| 24 × 1,375 | | 560,4 | | 622 | | 628 |
| 26 × 1,375 | | 611,2 | | 673 | | 679 |
| 16 × 1,75 | 25 | 320,7 | 44 | 399 | 47 | 405 |
| 18 × 1,75 | | 371,5 | | 449 | | 455 |
| 20 × 1,75 | | 422,3 | | 500 | | 506 |
| 22 × 1,75 | | 473,1 | | 551 | | 557 |
| 24 × 1,75 | | 523,9 | | 602 | | 608 |
| 26 × 1,75 | | 574,7 | | 653 | | 659 |
| 16 × 2,125 | 27 | 320,7 | 54 | 417 | 57 | 423 |
| 20 × 2,125 | | 422,3 | | 518 | | 524 |
| 24 × 2,125 | | 523,9 | | 620 | | 626 |
| 26 × 2,125 | | 574,7 | | 671 | | 677 |

5.3 Tyre dimension measurement method

Before measuring, tyres shall be mounted on the measuring rim, inflated to the recommended inflation pressure, and allowed to stand for a minimum of 24 h at normal room temperature, after which the inflation pressure shall be readjusted to the original value.

5.4 Tyres that can be mounted on both hooked bead and straight side rims

5.4.1 Tyre designation

Tyres of special construction can be designed in such a way as to permit their mounting both on hooked bead and straight side rims of similar diameters. In this case, the tyre shall be marked with the tyre designations of both categories, the designations being separated by a solidus, for example:

20 × 1,375 / 47 – 406

5.4.2 Maximum tyre dimensions in service

The maximum tyre dimensions in service of the tyre shall conform to those of each tyre designation when fitted on the proper rim.