
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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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).

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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.

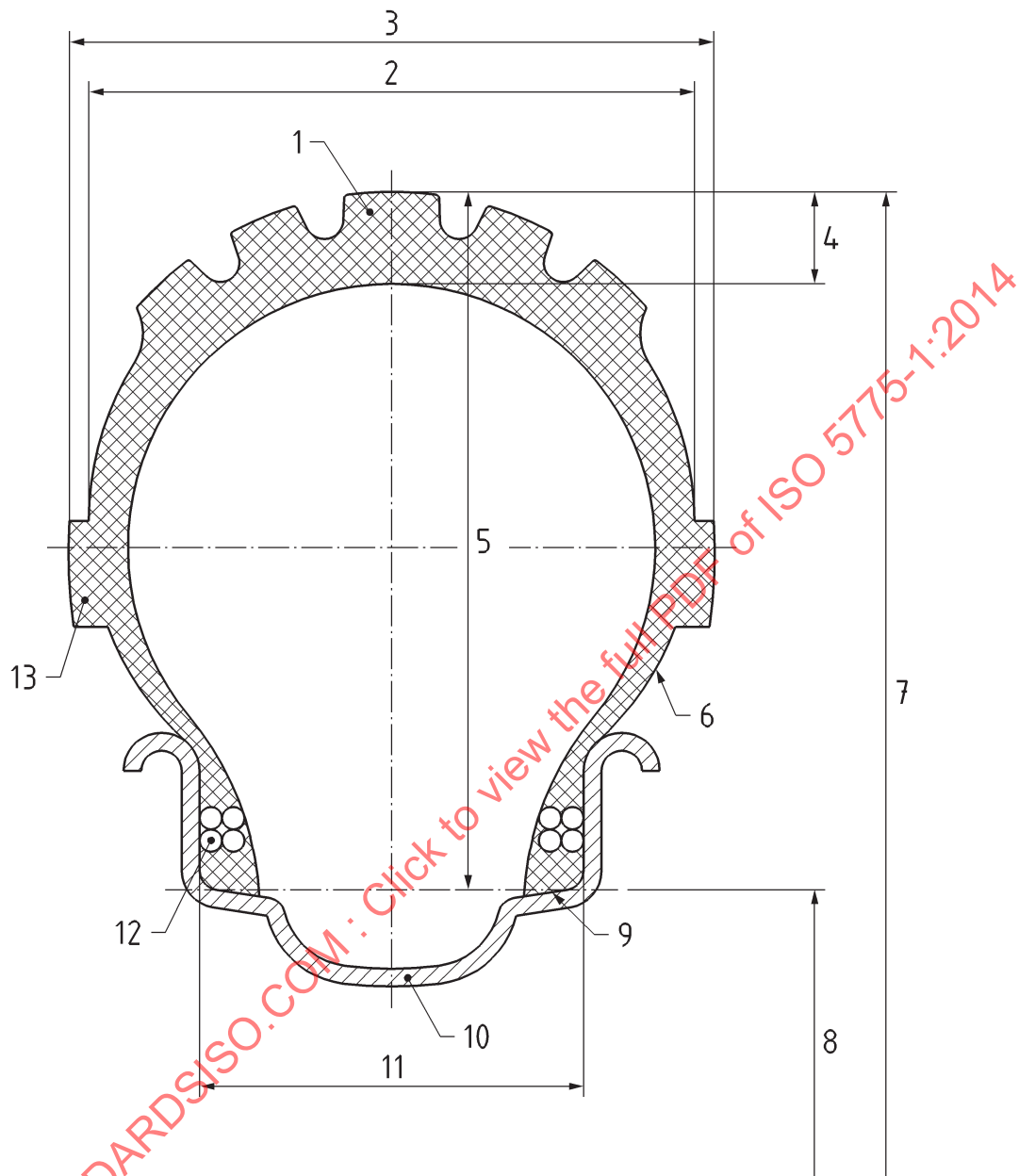
ISO 4223-1, *Definitions of some terms used in the tyre industry — Part 1: Pneumatic tyres*

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):

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

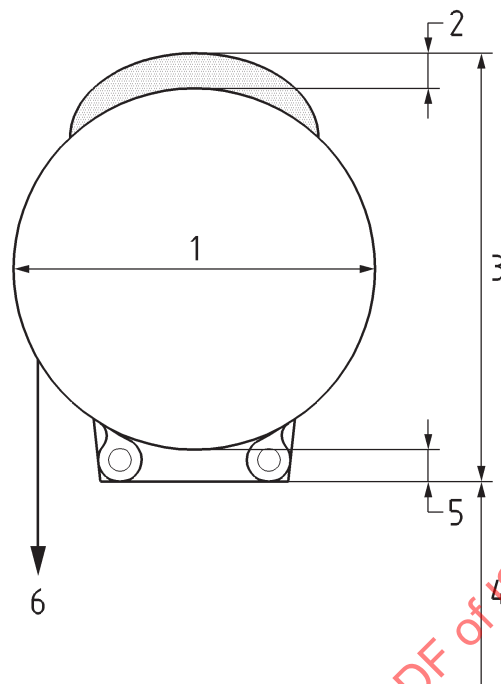
rounded to the nearest whole number.

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 S_N	Maximum overall width in service $W_{\max}$
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:

- $D_{o,\max} = D_r + 2H + 6$ mm for type A tyres;
- $D_{o,\max} = D_r + 2H + 10$ 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 S_N	Minimum overall width $S_{\min}$
≤ 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 S_N	Measuring rim width ^a R_m	Design tyre	
		Section width S	Section height 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	19C	37	40	720	726	45	48	732	736
42-590	19C	39	42	679	685		50	691	696
42-622	19C	39	42	711	717	47	50	723	727
44-622	19C	41	44	715	721		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

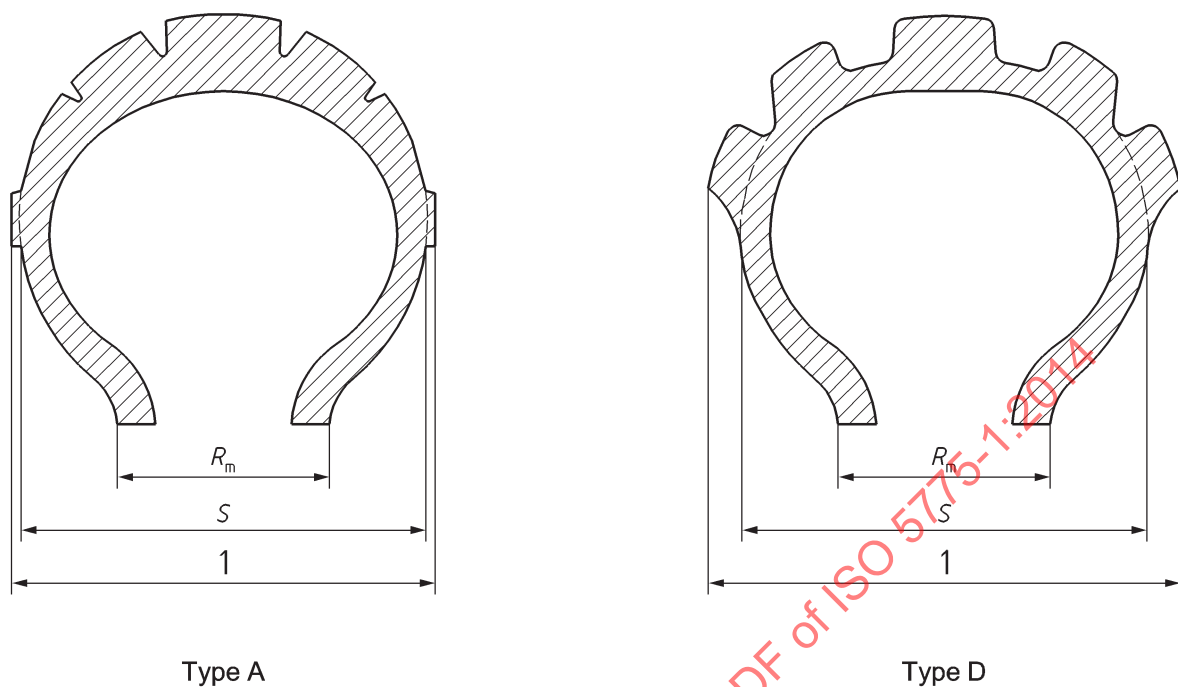
^a For dimensions of measuring rims, see ISO 5775-2.

^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.

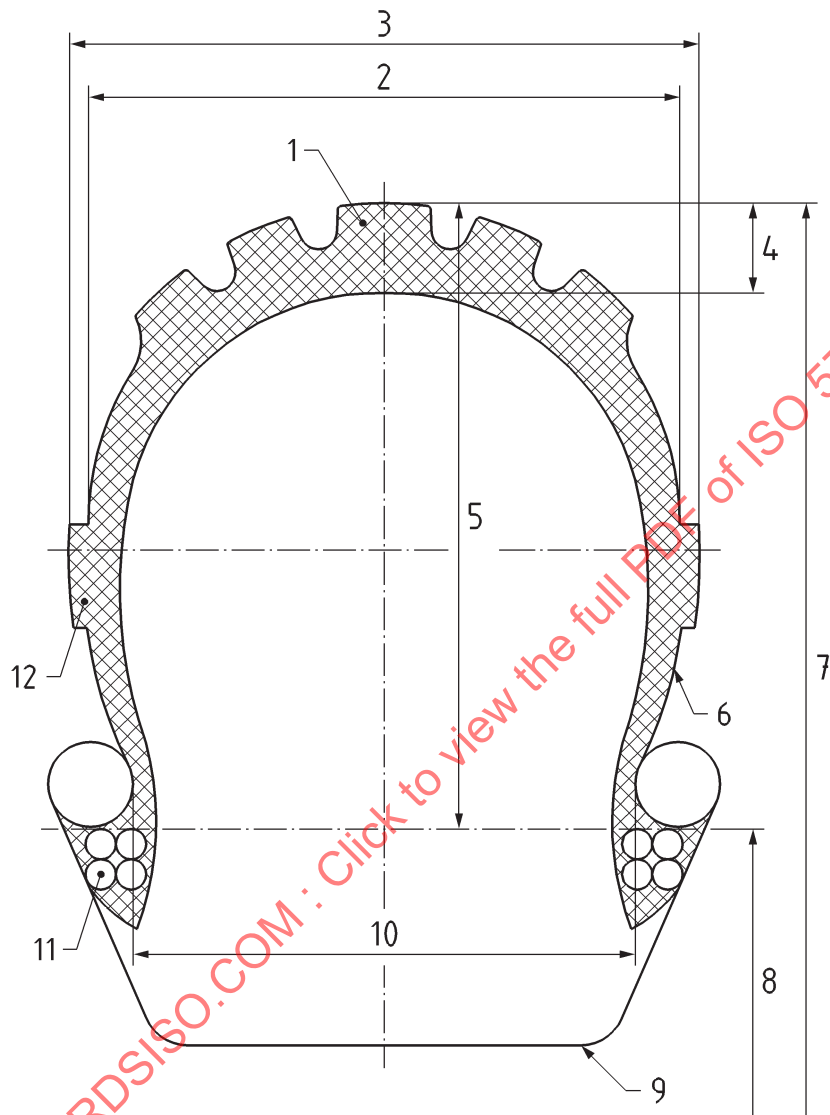
4.6 Minimum inflation pressure

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):

$$D_o = D_2 + 2H \quad (4)$$

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):

$$W_{\max} = S + 3 \text{ mm} \quad (5)$$

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):

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

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 is 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.