
**Tyres (ply rating marked series) and
rims for agricultural tractors and
machines —**

**Part 1:
Tyre designation and dimensions, and
approved rim contours**

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*Pneumatiques (série à marquage "PR") et jantes pour tracteurs et
machines agricoles —*

*Partie 1: Désignation et cotes des pneumatiques et profils de jantes
approuvés*

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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 World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by ISO/TC 31, *Tyres, rim and valves*, Subcommittee SC 5, *Agricultural tyres and rims*.

This seventh edition cancels and replaces the sixth edition (ISO 4251-1:2005) which has been technically revised. It also replaces ISO 4251-1:2005/Amendment 1:2012.

The seventh edition contains the following main changes:

- pictogram for maximum tyre bead seating pressure;
- tyre dimension parameters for vehicle speed reference;
- tables updated incorporating Amendment 1;
- Annex A updated adding tyres for small tractors;
- new Annex B with the comparison values for rolling circumference (RC), rolling circumference index (RCI), speed radius index (SRI).

Tyres (ply rating marked series) and rims for agricultural tractors and machines —

Part 1:

Tyre designation and dimensions, and approved rim contours

1 Scope

This document establishes the designation in use and the dimensions of the ply rating marked series of tyres for agricultural tractors and machines.

Tyre load ratings are given in ISO 4251-2.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

ISO 18805¹⁾, *Tyre classification — Agricultural, forestry and construction machines*

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3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

4 Marking

The marking of the ply rating marked series of tyres consists of the designation of tyre size and load rating, and any additional information. See 4.1 to 4.4.

4.1 Tyre size designation

The present size marking for the identification of tyres consists of the nominal tyre width code and the nominal rim diameter code.

EXAMPLE 1

Tyre 13.6 – 28

Tyre 6.50 – 16

1) To be published.

For tyres of radial construction, the letter R replaces the dash.

EXAMPLE 2

Tyre 8.3 R 44

For low section height tyres, the letter L is added to the nominal tyre width code.

EXAMPLE 3

Tyre 9.5L – 15

For low section height tractor steering wheel tyres of diagonal construction, an optional marking may be used in the following manner:

Nominal tyre width code/nominal aspect ratio – nominal rim diameter

EXAMPLE 4

Tyre 9.5/85 – 15

4.2 Load rating

The present marking of load rating comprises the ply rating.

EXAMPLE

Tyre 13.6 – 28 8PR

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4.3 Categories of use

4.3.1 Agricultural drive wheels — Tractor tyres

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The classification code R, as specified in ISO 18805, may be optionally marked at the tyre sidewall.

4.3.2 Agricultural steering wheels — Tractor tyres

The classification code F, as specified in ISO 18805, may be optionally marked on the tyre sidewall. In addition, the letters “FRONT” or “SL” may be marked after the nominal rim diameter code on the tyre.

4.3.3 Agricultural implement tyres

The classification code I, as specified in ISO 18805, shall be marked on the tyre sidewall, along with an optional marking “IMPLEMENT” or “IMP” or “SL” suffix.

EXAMPLE

4.00–12	IMP	
4.00–12		IMPLEMENT
4.00–12	SL	IMPLEMENT

4.4 Additional information

Tubeless tyres shall be marked with the word “TUBELESS”.

Additionally, classification code markings including tyre classifications may be used as described in ISO 18805, but they are not part of the type size designation of the tyre.

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

4.5 Pictogram for maximum tyre bead seating pressure (optional)

The inscription “XXX kPa MAX” inside the pictogram ([Figure 1](#)) indicates the maximum cold inflation pressure that shall not be exceeded for bead seating during tyre mounting. The value of the tyre bead seating pressure is determined by the tyre manufacturer.

[Figure 1](#) shows an example of the pictogram to be marked on both sidewalls of the tyre.

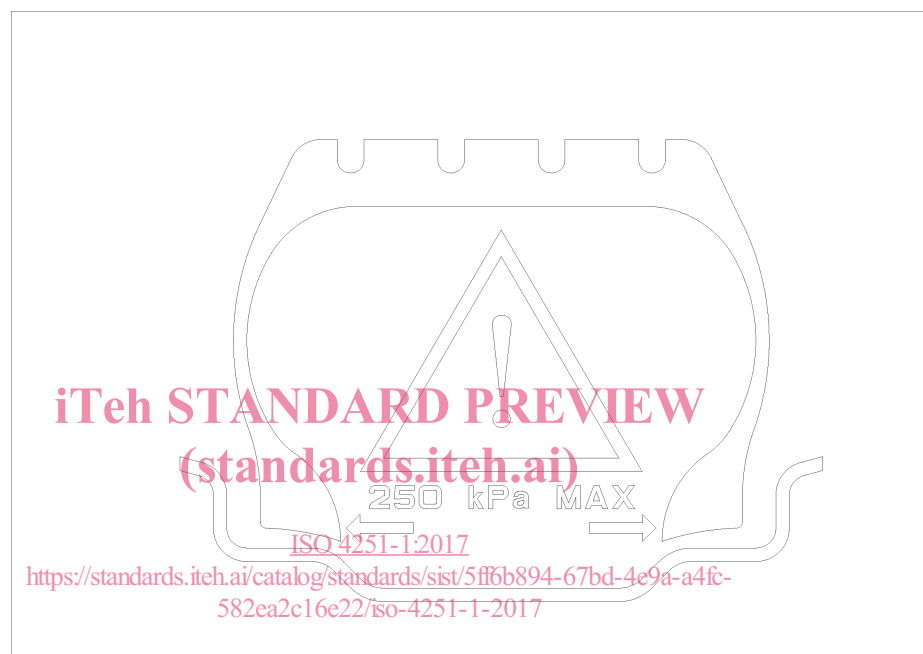


Figure 1 — Pictogram for the maximum bead seating inflation pressure

5 Dimensions and tolerances

5.1 Agricultural drive wheels — Tractor tyres

Tyre size designations, measurement rims, design dimensions of new tyres, and maximum tyre dimensions in service are given in

- [Table 1](#) for tyres of diagonal construction with normal section height;
- [Table 2](#) for tyres of diagonal construction with low section height;
- [Table 3](#) for tyres of radial construction for special cultivation work.

5.2 Agricultural steering wheels — Tractor tyres

Tyre size designations, measurement rims, design dimensions of new tyres, and maximum tyre dimensions in service are given in

- a) [Table 4](#) for tyres of diagonal construction with normal section height;
- b) [Table 5](#) for tyres of diagonal construction with low section height.

5.3 Agricultural implement tyres

Tyre size designations, measurement rims, design dimensions of new tyres and maximum tyre dimensions in service are given in

- a) [Table 6](#) for tyres of diagonal construction with normal section height;
- b) [Table 7](#) for tyres of diagonal construction with low section height.

6 Tyre dimension parameters for vehicle speed reference

6.1 Speed radius index

Speed Radius Indices (SRI) given in Annex B are parameters which are used exclusively for the calculation of forward ground speed during homologation procedures (further information see ISO 3965).

6.2 Rolling circumference index

Values are given in [Annex B](#) for tyres of diagonal and radial constructions with normal section height and for agricultural tractor drive wheel tyres of diagonal construction with low section height.

7 Tyre and rim coordination

Approved rim contours are given in

- a) [Table 8](#) for agricultural drive wheel tractor tyres;
- b) [Table 9](#) for agricultural steering wheel tractor tyres;
- c) [Table 10](#) for agricultural implement tyres with normal section height;
- d) [Table 11](#) for agricultural implement tyres with low section height.

8 Tubes

Whenever a tube is required it should be identified by the same designation as the tyre size in which it is to be mounted.

Table 1 — Agricultural drive wheels — Tractor tyres (diagonal construction, normal section height) — Tyre size designations, measurement rims and dimensions

Dimensions in millimetres

Tyre size designation	Measurement rim width code	Design dimensions of new tyres		Dimensions in service	
		Section width	Overall diameter ^a	Maximum overall width	Maximum overall diameter ^b
8.3 – 16	7.00	211	790	228	813
8.3 – 24			995		1 019
8.3 – 36			1 300		1 323
8.3 – 38			1 351		1 374
8.3 – 42			1 452		1 475
8.3 – 44			1 503		1 526
9.5 – 16	8.00	241	845	260	871
9.5 – 22			997		1 024
9.5 – 24			1 050		1 076
9.5 – 32			1 250		1 276
9.5 – 36			1 355		1 381
9.5 – 38			1 404		1 430
9.5 – 42			1 505		1 532
9.5 – 44			1 556		1 582
9.5 – 48			1 658		1 684
11.2 – 20	10.00	284	1 002	307	1 032
11.2 – 24			1 105		1 135
11.2 – 28			1 205		1 235
11.2 – 36			1 410		1 438
11.2 – 38			1 460		1 488
11.2 – 42			1 561		1 591
12.4 – 16	11.00	215	955	340	988
12.4 – 24			1 160		1 192
12.4 – 28			1 260		1 292
12.4 – 32			1 360		1 392
12.4 – 36			1 465		1 497
12.4 – 38	11-00	315	1 515	340	1 547
12.4 – 42			1 616		1 649
12.4 – 46			1 718		1 751
13.6 – 16	12.00	345	1 005	373	1 042
13.6 – 24			1 210		1 246
13.6 – 26			1 285		1 311
13.6 – 28			1 310		1 346
13.6 – 36			1 515		1 551
13.6 – 38			1 565		1 601
13.6 – 46			1 770		1 804
13.6 – 48			1 819		1 855

^a Minimum new tyre overall shall be calculated on the basis of tolerance of –3 % on design section height.^b Figures are based on tyres with classification code R-1. The tractor manufacturer shall recognize that tyres with deep tread and related increased overall diameter may be used.

Table 1 (continued)

Tyre size designation	Measurement rim width code	Design dimensions of new tyres		Dimensions in service	
		Section width	Overall diameter ^a	Maximum overall width	Maximum overall diameter ^b
14.9 – 24	13.00	378	1 265	408	1 305
14.9 – 26			1 315		1 355
14.9 – 28			1 365		1 405
14.9 – 30			1 415		1 455
14.9 – 38			1 615		1 655
15.5 – 38	14.00	394	1 570	426	1 606
16.9 – 24	15.00	429	1 335	463	1 379
16.9 – 26			1 385		1 429
16.9 – 28			1 435		1 479
16.9 – 30			1 485		1 529
16.9 – 34			1 585		1 629
16.9 – 38			1 690		1 734
18.4 – 24	16.00	467	1 400	504	1 447
18.4 – 26			1 450		1 498
18.4 – 28			1 500		1 548
18.4 – 30			1 550		1 598
18.4 – 34			1 650		1 698
18.4 – 38			1 750		1 798
18.4 – 42			1 850		1 898
18.4 – 46			1 958		2 006
20.8 – 34	18.00	528	1 732	570	1 785
20.8 – 38			1 834		1 886
20.8 – 42			1 935		1 988
23.1 – 26	20.00	587	1 605	634	1 661
23.1 – 30			1 705		1 761
23.1 – 34			1 805		1 861
24.5 – 32	21.00	622	1 805	672	1 865

^a Minimum new tyre overall shall be calculated on the basis of tolerance of –3 % on design section height.

^b Figures are based on tyres with classification code R-1. The tractor manufacturer shall recognize that tyres with deep tread and related increased overall diameter may be used.

Table 2 — Agricultural drive wheels — Tractor tyres (diagonal construction, low section height) — Tyre size designations, measurement rims and dimensions

Dimensions in millimetres

Tyre size designation	Measurement rim width code	Design dimensions of new tyres		Dimensions in service	
		Section width	Overall diameter ^a	Maximum overall width	Maximum over-all diameter ^b
17.5L – 24	15.00	445	1 265	480	1 304
19.5L – 24	17.00	495	1 340	535	1 382
21L – 24	18.00	533	1 400	576	1 450
28L – 26 ^c	25.00	714	1 615	771	1 673
30.5L – 32 ^d	27.00	775	1 820	837	1 881
VA 30.5L – 32 ^d					
DH 35.5L – 32 ^d	31.00	902	1 980	974	2 051
VA 35.5L – 32 ^d					
^a Minimum new tyre overall shall be calculated on the basis of tolerance of –3 % on design section height.					
^b Figures are based on tyres with classification code R-1. The tractor manufacturer shall recognize that tyres with deep tread and related increased overall diameter may be used.					
^c Optional size designation 28.1 – 26.					
^d VA rims are not interchangeable with DH or DH-H, DH-B, DH-HB or DWM rims.					

Table 3 — Agricultural drive wheels — Tractor tyres for special cultivation work (radial construction) — Tyre size designations, measurement rims and dimensions

Dimensions in millimetres

Tyre size designation	Measurement rim width code	Design dimensions of new tyres		Dimensions in service	
		Section width	Overall diameter	Maximum over-all width	Maximum over-all diameter
8.3 R 36	7.00	211	1 290	228	1 315
8.3 R 38			1 340		1 365
8.3 R 42			1 440		1 465
8.3 R 44			1 495		1 520
9.5 R 36	8.00	241	1 345	260	1 365
9.5 R 44			1 550		1 575
9.5 R 48			1 650		1 675
11.2 R 42	10.00	284	1 557	307	1 577
12.4 R 46	11.00	315	1 705	340	1 730
13.6 R 48	12.00	345	1 804	373	1 827