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

Part 1:

Tyre designation and dimensions, and
approved rim contours

*Pneumatiques (série à marquage «équivalent nappes») et jantes pour
tracteurs et machines agricoles —*

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



Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 4251-1 was prepared by Technical Committee ISO/TC 31, *Tyres, rims and valves*, Subcommittee SC 5, *Agricultural tyres and rims*.

This fifth edition cancels and replaces the fourth edition (ISO 4251-1:1992), which has been revised to include approved rim contours.

ISO 4251 consists of the following parts, under the general title *Tyres (ply rating marked series) and rims for agricultural tractors and machines*:

- *Part 1: Tyre designation and dimensions, and approved rim contours*
- *Part 2: Tyre load ratings*
- *Part 3: Rims*
- *Part 4: Tyre classification and nomenclature*
- *Part 5: Logging and forestry service tyres [previously "Log skidder tyres"]*

Annexes A and B of this part of ISO 4251 are for information only.

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Printed in Switzerland

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 part of ISO 4251 established the designation in use and the dimensions of the ply rating marked series of tyres for agricultural tractors and machines.

Tyre load ratings, rim dimensions, and tyre classification and nomenclature are given in ISO 4251-2, ISO 4251-3 and ISO 4251-4 respectively.

Service description (load index and speed symbol) marking for existing series of agricultural tractor drive-wheel tyres of radial construction is given in ISO 8664.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this part of ISO 4251. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this part of ISO 4251 are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

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

3 Definitions

For the purposes of this part of ISO 4251, the definitions given in ISO 4223-1 apply.

4 Marking

The marking of the ply rating marked series of tyres consists of designations of the tyre size and load rating, and any additional information. See 4.1 to 4.3.

1) To be published. (Revision of ISO 4223-1:1989)

4.1 Tyre size

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

EXAMPLES

Tyre 13.6 — 28

Tyre 6.50 — 16

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

EXAMPLE

Tyre 8.3 R 44

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

EXAMPLE

Tyre 9.5 L — 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

Tyre 9.5/85 — 15

4.2 Load rating

The present marking of load rating comprises the ply rating

EXAMPLE

Tyre 13.6 — 28 8 PR

4.3 Implement tyres

The classification code “I”, as specified in ISO 4251-4, shall be marked on the tyre sidewall, along with an optional marking of “IMP” or “IMPLEMENT”.

4.4 Additional information

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

Additionally, classification code markings indicating tyre classifications may be used as described in ISO 4251-4, but they are not part of the size marking of the tyre.

5 Dimensions and tolerances

5.1 Agricultural drive wheels — Tractor tyres

Standard sizes, measurement rims, design dimensions of new tyres, and maximum tyre dimensions in service are given in

- a) table 1 for tyres of diagonal construction with normal section height;
- b) table 2 for tyres of diagonal construction with low section height;
- c) table 3 for tyres of diagonal construction for special cultivation work;
- d) table 4 for tyres of radial construction for special cultivation work.

5.2 Agricultural steering wheels — Tractor tyres

Standard sizes, measurement rims, design dimensions of new tyres, and maximum tyre dimensions in service are given in

- a) table 5 for tyres of diagonal construction with normal section height;
- b) table 6 for tyres of diagonal construction with low section height.

5.3 Agricultural implement tyres

Standard sizes, measurement rims, design dimensions of new tyres, and maximum tyre dimensions in service are given in

- a) table 8 for tyres of diagonal construction with normal section height;
- b) table 9 for tyres of diagonal construction with low section height.

6 Dynamic radius indices

Dynamic radius indices are parameters used exclusively for the calculation of forward ground speed during homologation procedures (see ISO 3965).

Values are given in table 7 for agricultural drive wheel tractor tyres of diagonal and radial construction with normal section height and of diagonal construction with low section height.

They apply to tyres inflated to the inflation pressures given in ISO 4251-2 and having tyre loads corresponding to 50 % of the maximum values at 30 km/h.

7 Tyre and rim coordination

Approved rim contours are given in

- a) table 10 for tyres for agricultural tractor drive wheels;
- b) table 11 for tyres for agricultural tractor steering wheels;
- c) table 12 for tyres with normal section height for agricultural implement wheels;
- d) table 13 for tyres with low section height for agricultural implement wheels.

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) — Standard sizes, measurement rims, and dimensions

Dimensions in millimetres

Tyre size designation	Measurement rim width code	Design new tyre		In service	
		Section width	Overall diameter ¹⁾	Maximum overall width	Maximum overall diameter ²⁾
8.3 — 24	7	211	995	228	1 019
9.5 — 24	8	241	1 050	260	1 076
9.5 — 32			1 250		1 276
9.5 — 36			1 355		1 381
11.2 — 24	10	284	1 105	307	1 135
11.2 — 28			1 205		1 235
12.4 — 24	11	315	1 160	340	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			1 515		1 547
13.6 — 24	12	345	1 210	373	1 246
13.6 — 28			1 310		1 346
13.6 — 36			1 515		1 551
13.6 — 38			1 565		1 601
14.9 — 24	13	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	394	1 570	426	1 606
16.9 — 24	15	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 — 26	16	467	1 450	504	1 498
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
20.8 — 34	18	528	1 735	570	1 787
20.8 — 38			1 835		1 887
20.8 — 42			1 935		1 987
23.1 — 26	20	587	1 605	634	1 661
23.1 — 30			1 705		1 761
23.1 — 34			1 805		1 861
24.5 — 32	21	622	1 805	672	1 865

1) Minimum new tyre overall diameter shall be calculated on the basis of a tolerance of - 3 % on design section height.

2) Figures are based on tyres with classification code R — 1. The tractor manufacturer must 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) — Standard sizes, measurement rims, and dimensions

Dimensions in millimetres

Tyre size designation	Measurement rim width code	Design new tyre		In service	
		Section width	Overall diameter ¹⁾	Maximum overall width	Maximum overall diameter ²⁾
28 L — 26 ³⁾	25	714	1 615	771	1 673
30.5 L — 32	27	775	1 820	837	1 881

1) Minimum new tyre overall diameter shall be calculated on the basis of a tolerance of – 3 % on design section height.
 2) Figures are based on tyres with classification code R — 1. The tractor manufacturer must recognize that tyres with deep tread and related increased overall diameter may be used.
 3) Optional size designation 28.1 — 26.

Table 3 — Agricultural drive wheels — Tractor tyres for special cultivation work (diagonal construction) — Standard sizes, measurement rims, and dimensions

Dimensions in millimetres

Tyre size designation	Measurement rim width code	Design new tyre		In service	
		Section width	Overall diameter	Maximum overall width	Maximum overall diameter
7.2 — 36	6.0	183	1 250	198	1 270
7.2 — 40			1 350		1 370
8.3 — 36	7.0	211	1 300	228	1 320
8.3 — 42			1 450		1 475
8.3 — 44			1 500		1 525
9.5 — 36	8.0	241	1 355	260	1 380
9.5 — 44			1 555		1 580
9.5 — 48			1 655		1 680

Table 4 — Agricultural drive wheels — Tractor tyres for special cultivation work (radial construction) — Standard sizes, measurement rims, and dimensions

Dimensions in millimetres

Tyre size designation	Measurement rim width code	Design new tyre		In service	
		Section width	Overall diameter	Maximum overall width	Maximum overall diameter
8.3 R 36	7.0	211	1 290	228	1 315
8.3 R 42			1 440		1 465
8.3 R 44			1 495		1 520
9.5 R 36	8.0	241	1 345	260	1 365
9.5 R 44			1 550		1 575
9.5 R 48			1 650		1 675

Table 5 — Agricultural steering wheels — Tractor tyres (diagonal construction — normal section height) — Standard sizes, measurement rims, and dimensions

Dimensions in millimetres

Tyre size designation	Measurement rim width code	Design new tyre		In service	
		Section width	Overall diameter ¹⁾	Maximum overall width	Maximum overall diameter ²⁾
4.00 — 12	3	112	535	122	553
4.00 — 15			610		628
5.00 — 15	4	140	655	153	677
5.50 — 16	4	150	710	164	734
6.00 — 16	4.5	165	735	180	761
6.50 — 16	4.5	175	760	191	788
6.50 — 20			865		894
7.50 — 16	5.5	205	805	223	837
7.50 — 18			860		892
7.50 — 20			915		948
9.00 — 16	6	234	855	255	891
10.00 — 16	8	274	895	299	934
11.00 — 16	10	315	965	343	1 010

1) Minimum new tyre overall diameter shall be calculated on the basis of a tolerance of – 3 % on design section height.
2) Figures are based on tyres with classification code F — 2.

Table 6 — Agricultural steering wheels — Tractor tyres (diagonal construction — low section height) — Standard sizes, measurement rims, and dimensions

Dimensions in millimetres

Tyre size designation	Optional size marking	Measurement rim width code	Design new tyre		In service	
			Section width	Overall diameter ¹⁾	Maximum overall width	Maximum overall diameter ²⁾
7.5 L — 15	8.25/85 — 15	6	210	745	229	774
9.5 L — 15	9.5/85 — 15	8	240	785	262	817
11 L — 15	11.5/75 — 15	8	280	815	305	850

1) Minimum new tyre overall diameter shall be calculated on the basis of a tolerance of – 3 % on design section height.
2) Figures are based on tyres with classification code F — 2.

Table 7 — Dynamic radius indices for calculation of the forward ground speed

Tyre size designation	Dynamic radius indices ¹⁾
	mm
8.3 — 24	470
9.5 — 24	495
9.5 — 32	595
9.5 — 36	645
11.2 — 24	515
11.2 — 28	565
12.4 — 24	540
12.4 — 28	590
12.4 — 32	640
12.4 — 36	690
12.4 — 38	720
13.6 — 24	560
13.6 — 28	610
13.6 — 36	715
13.6 — 38	740
14.9 — 24	590
14.9 — 26	615
14.9 — 28	640
14.9 — 30	665
14.9 — 38	765
15.5 — 38	745

Tyre size designation	Dynamic radius indices ¹⁾
	mm
16.9 — 24	620
16.9 — 26	645
16.9 — 28	670
16.9 — 30	695
16.9 — 34	745
16.9 — 38	795
18.4 — 26	670
18.4 — 30	720
18.4 — 34	770
18.4 — 38	820
20.8 — 34	810
20.8 — 38	855
23.1 — 26	730
23.1 — 30	790
23.1 — 34	840
24.5 — 32	835
28 L — 26	730
30.5 L — 32	845

NOTE — Designers are reminded that practical speed limits may be imposed by appropriate legislative bodies..

1) The values listed do not include the manufacturing tolerances of the tyres.

Table 8 — Agricultural implement tyres (diagonal construction — normal section height) — Standard sizes, measurement rims, and dimensions

Dimensions in millimetres

Tyre size designation	Measurement rim width code	Design new tyre		In service	
		Section width	Overall diameter ¹⁾	Maximum overall width	Maximum overall diameter
4.00 — 8	3	112	418	122	429
4.00 — 12	3	112	519	122	536
4.00 — 15	3	112	595	122	612
5.00 — 15	3	130	639	142	658
5.50 — 16	4	150	685	162	707
5.90 — 15	4	150	665	163	688
6.00 — 16	4	158	712	172	736
6.40 — 15	4.5	163	684	178	708
6.50 — 16	4.5	173	735	188	761
7.00 — 12	5	187	652	204	680
7.50 — 16	5.5	202	785	220	809
7.50 — 18	5.5	202	836	220	866
7.50 — 20	5.5	202	887	220	917
7.50 — 24	5.5	202	989	220	1 020
9.00 — 16	6	234	848	254	883
10.00 — 15	8	274	853	299	891
11.25 — 24	10	325	1 171	354	1 216
11.25 — 28	10	325	1 273	354	1 318

1) Minimum new tyre overall diameter shall be calculated on the basis of a tolerance of - 3 % on design section height.

Table 9 — Agricultural implement tyres (diagonal construction — low section height) — Standard sizes, measurement rims and dimensions

Dimensions in millimetres

Tyre size designation	Measurement rim width code	Design new tyre			In service		
		Section width	Overall diameter ¹⁾		Maximum overall width	Maximum overall diameter	
			Non-traction pattern	Traction pattern		Non-traction pattern	Traction pattern
5.5/85 — 9	4	145	475	493	152	495	506
10.0/80 — 12	9	264	710	730	277	730	751
10.5/80 — 18	9	274	885	907	288	906	930
12.0/75 — 18	9	299	915	937	314	938	961
12.5/80 — 18	9	308	965	987	323	990	1 014
13.0/65 — 18	11	336	890	912	353	912	935
14.0/65 — 16	11	353	870	892	371	893	916
14.5/75 — 20	12	372	1 060	1 082	390	1 087	1 111
15.0/70 — 18	13	391	990	1 012	411	1 017	1 040
16.0/70 — 20	14	418	1 075	1 097	439	1 105	1 126
9.5 L — 15	7	241	767	782	263	786	802
11 L — 15	8	279	777	796	305	797	816
11 L — 16	8	279	803	821	305	822	842

1) Minimum new tyre overall diameter shall be calculated on the basis of a tolerance of -3% on design section height.

Table 10 — Agricultural drive wheels — Tractor tyres — Approved rim contours

Tyre section code	Rim diameter code	Approved rim contours ¹⁾
7.2	36, 40	W 6
8.3	24, 36, 42	W 6, W 7
9.5	24, 32, 36, 44, 48	W 7, W 8
11.2	20 24, 28, 36, 38	9, W 9, W 10 W 9, W 10, W 10 H
12.4	20 24, 28, 32, 36, 38, 46	9, W 9, W 10, 11 W 11 W 9, W 10, W 10 H, W 11
13.6	24, 28, 36, 38	W 11, W 12
14.9	24, 26, 28, 30, 38	W 11, W 12, W 13
15.5	38	W 14 L
16.9	24, 26, 28, 30, 34, 38, 42	W 14 L, W 15 L
18.4	24, 26, 28, 30, 34, 38, 42	W 15 L, W 16 L, W 16 A
20.8	34, 38, 42	W 16 L, W 17 L, W 18 L, W 18 A
23.1	26, 30, 34	DW 20 A, DW 18
24.5	32	DW 20 A, DW 21 A, DH 21
28 L	26	DW 23 A, DW 25 A
30.5 L	32	DW 27 A, DH 27

1) DW rims with equivalent flanges also permitted where W rim are shown. Consult the tyre manufacturer for the preferred rim contours.

Table 11 — Agricultural steering wheels — Tractor tyres — Approved rim contours

Tyre size designation	Approved rim contours
4.00 — 12	2.50 C, 3.00 D
4.00 — 15	3.00 D
5.00 — 15	3.00 D, 4.00 E, 4 J
5.50 — 16	4.00 E, 4.25 KA, 4.50 E
6.00 — 16	4.00 E, 4.25 KA, 4.50 E, 5.00 F, 5 K
6.50 — 16	4.00 E, 4.25 KA, 4.50 E, 5.00 F, 5 K, 5.50 F
6.50 — 20	5.00 F, 5.50 F
7.50 — 16	5.00 F, 5 K, 5.50 F, 6.00 F, 6 LB
7.50 — 18	5.00 F, 5.50 F
7.50 — 20	5.00 F, 5.50 F
9.00 — 16	6.00 F, 6 LB, W 7, W 8, W 8 L, 8 LB
10.00 — 16	W 8 L, 8 LB, W 8
11.00 — 16	8 LB, W 8, W 8 L, W 10 L, 10 LB
7.5 L — 15 (8.25/85 — 15)	5 K, 5 KB, 5 1/2 J, 5 1/2 K, 6 L, 6 LB
9.5 L — 15 (9.5/85 — 15)	8 LB
11 L — 15 (11.5/75 — 15)	W 8 L, 8 LB, 10 LB

Table 12 — Agricultural implement tyres (normal section height) — Approved rim contours

Tyre size designation	Approved rim contours
4.00 — 8	2.50 A, 3.00 D, 3.75 I
4.00 — 12	2.50 C, 3.00 B, 3.00 D
4.00 — 15	3.00 D, 4 J
5.00 — 15	3.00 D, 4.00 E, 4 J, 4 1/2 J
5.50 — 16	3.50 D, 4.00 E, 4.25 KA, 4.50 E
5.90 — 15	4 1/2 K, 4 1/2 KB, 5 K, 5 KB
6.00 — 16	4.00 E, 4.25 KA, 4.50 E, 5.00 F, 5 K
6.40 — 15	4.00 E, 4 1/2 K, 4 1/2 KB, 5 K, 5 KB, 5.50 F
6.50 — 16	4.00 E, 4.25 KA, 4.50 E, 5.00 F, 5 K, 5.50 F
7.00 — 12	5.00 F, 5 JA, 5.50 F
7.50 — 16	5.00 F, 5 K, 5.50 F, 6.00 F, 6 LB
7.50 — 18	5.00 F, 5.50 F
7.50 — 20	5.00 F, 5.50 F
7.50 — 24	W 7
9.00 — 16	5.50 F, 6.00 F, 6 LB, 8 LB, W 8 L
10.00 — 15	8 LB
11.25 — 24	W 8, W 8 H, W 10, W 10 H
11.25 — 28	W 10, W 10 H

Table 13 — Agricultural implement tyres (low section height) — Approved rim contours

Tyre size designation	Approved rim contours
5.5/85 — 9	4.00 E
10.0/80 — 12	7.00, 9.00
10.5/80 — 18	9, 9.00, W 9
12.0/75 — 18	9 ¹⁾ , W 9, 11
12.5/80 — 18	9 ¹⁾ , W 9, 11
13.0/65 — 18	9 ²⁾ , 11
14.5/75 — 20	11, 11 SDC, 12 SDC, 13, 13 SDC
15.0/70 — 18	13.00, W 13
16.0/70 — 20	12 SDC, 13, 13 SDC, 14
9.5 L — 15	8 LB
11 L — 15	8 LB, 10 LB
11 L — 16	8 LB, W 8 L, 10 LB, W 10 L
1) For tyres up to 8 PR only. 2) For tyres up to 10 PR only.	

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