INTERNATIONAL STANDARD

ISO 4250-1

Sixth edition
2017-10

Earth-mover tyres and rims —

Part 1: Tyre designation and dimensions

Pneumatiques et jantes pour engins de terrassement —
Partie 1: Désignation et cotes des pneumatiques

Reference number
ISO 4250-1:2017(E)

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

Page

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 voluntary nature of standards, 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 Technical Committee ISO/TC 31, *Tyres, rims and valves*, Subcommittee SC 6, *Off-the-road tyres and rims*.

This sixth edition cancels and replaces the fifth edition (ISO 4250-1:2014), which has been technically revised.

A list of all the parts in the ISO 4250 series, can be found on the ISO website.

Earth-mover tyres and rims —

Part 1:
Tyre designation and dimensions

1 Scope

This document specifies designations and dimensions for earth-mover tyres and gives the recommended rims primarily intended for earth-moving machinery as defined in ISO 6165.

The ISO 4250 series consists of three parts which specify the technical elements relating to designation and dimensions of tyres and rims for earth-movers; it also gives load tables for these tyres.

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 4250-2, *Earth-mover tyres and rims — Part 2: Loads and inflation pressures*

ISO 4250-3:2011, *Earth-mover tyres and rims — Part 3: Rims*

3 Terms and definitions

For the purposes of this document, the definitions given in ISO 4223-1 and ISO 4250-2 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

NOTE For a list of equivalent terms, see ISO 3877-1.

4 Tyre designation

4.1 General

The designation of the tyre shall be shown on its sidewall and shall include the following details:

— size and construction characteristics (see 4.2);

— index of tyre strength (see 4.3).

The designation can include:

— operating condition (see 4.4).

The designation can also include the various use characteristics given in 4.5, as necessary.

4.2 Tyre size and construction

4.2.1 General

The tyre size and construction shall be indicated as specified in 4.2.2 to 4.2.6.

4.2.2 Nominal section width

The nominal section width shall be expressed by a code (see Table 3). In the case of 65, 70, 75, 80, and 90 series tyres, this is followed, separated by a slash (/), by the nominal aspect ratio.

4.2.3 Nominal aspect ratio

The nominal aspect ratio can be expressed as a percentage as a multiple of 5.

4.2.4 Tyre construction code

The type construction code shall be as follows:

— – (dash), for diagonal/bias construction;

— R, for radial construction.

In addition, the word "RADIAL" can also appear on the tyre.

4.2.5 Nominal rim diameter code

The nominal rim diameter shall be expressed by a code as given in ISO 4250-3:2011, Table 7. The suffix "TG" shall be used to identify tyres mounted on rims with a rim diameter code of 24 but having a specified diameter (*D*) of 614,4 mm. The suffix "K" shall be used to identify tyres mounted on rims with a rim diameter code of 15 but having a specified diameter (*D*) of 380,2 mm.

4.2.6 Tubeless tyres

Tubeless tyres shall be marked "TUBELESS".

4.3 Index of tyre strength

4.3.1 General

The index of tyre strength is used to identify a given tyre with its maximum recommended load when used in a specific type of service. It shall be as specified in 4.3.2 or 4.3.3.

4.3.2 Diagonal tyres

The index of tyre strength of diagonal/bias tyres shall be expressed by a numerical code in conjunction with the letter "PR" (ply rating), e.g. "16 PR", or by operating condition as given in 4.4, or by both the numerical code and operating condition.

4.3.3 Radial tyres

The index of tyre strength of radial tyres shall be expressed by a symbol in the form of a number of stars (symbol marking), e.g. "⋆", or by operating condition as given in 4.4, or by the symbol and operating condition.

4.4 Operating condition

4.4.1 General

The operating condition can be indicated as follows:

— load index;

— speed symbol;

— usage (optional).

For the specific types of service, earth-mover tyres can be marked with several operating conditions, for example, those for earth-moving haulage service at 50 km/h, for low speed service at 10 km/h (loading cycle), or for grader service at 40 km/h.

NOTE Definitions of operating conditions are given in ISO 4250-2.

4.4.2 Load index

The load index is a numerical code associated with a maximum load a tyre can carry at the speed indicated by its speed symbol under service conditions specified by the tyre manufacturer.

The correlation between load indices and tyre load-carrying capacities shall be as given in Table 1.

Table 1 — Correlation between load index (LI) and tyre load-carrying capacity (TLCC)

LI	TLCC kg	LI	TLCC kg	LI	TLCC kg	LI	TLCC kg	LI	TLCC kg
120	1 400	160	4 500	200	14 000	240	45 000	280	140 000
121	1 450	161	4 625	201	14 500	241	46 250	281	145 000
122	1 500	162	4 750	202	15 000	242	47 500	282	150 000
123	1 550	163	4 875	203	15 500	243	48 750	283	155 000
124	1 600	164	5 000	204	16 000	244	50 000	284	160 000
125	1 650	165	5 150	205	16 500	245	51 500	285	165 000
126	1 700	166	5 300	206	17 000	246	53 000	286	170 000
127	1 750	167	5 450	207	17 500	247	54 500	287	175 000
128	1 800	168	5 600	208	18 000	248	56 000	288	180 000
129	1 850	169	5 800	209	18 500	249	58 000	289	185 000
130	1 900	170	6 000	210	19 000	250	60 000	290	190 000
131	1 950	171	6 150	211	19 500	251	61 500	291	195 000
132	2 000	172	6 300	212	20 000	252	63 000	292	200 000
133	2 060	173	6 500	213	20 600	253	65 000	293	206 000
134	2 120	174	6 700	214	21 200	254	67 000	294	212 000
135	2 180	175	6 900	215	21 800	255	69 000	295	218 000
136	2 240	176	7 100	216	22 400	256	71 000	296	224 000
137	2 300	177	7 300	217	23 000	257	73 000	297	230 000
138	2 360	178	7 500	218	23 600	258	75 000	298	236 000
139	2 430	179	7 750	219	24 300	259	77 500	299	243 000
140	2 500	180	8 000	220	25 000	260	80 000	300	250 000
141	2 575	181	8 250	221	25 750	261	82 500	301	257 500
142	2 650	182	8 500	222	26 500	262	85 000	302	265 000
143	2 725	183	8 750	223	27 250	263	87 500	303	272 500

Table 1 *(continued)*

LI	TLCC kg	LI	TLCC kg	LI	TLCC kg	LI	TLCC kg	LI	TLCC kg
144	2 800	184	9 000	224	28 000	264	90 000		
145	2 900	185	9 250	225	29 000	265	92 500		
146	3 000	186	9 500	226	30 000	266	95 000		
147	3 075	187	9 750	227	30 750	267	97 500		
148	3 150	188	10 000	228	31 500	268	100 000		
149	3 250	189	10 300	229	32 500	269	103 000		
150	3 350	190	10 600	230	33 500	270	106 000		
151	3 450	191	10 900	231	34 500	271	109 000		
152	3 550	192	11 200	232	35 500	272	112 000		
153	3 650	193	11 500	233	36 500	273	115 000		
154	3 750	194	11 800	234	37 500	274	118 000		
155	3 875	195	12 150	235	38 750	275	121 500		
156	4 000	196	12 500	236	40 000	276	125 000		
157	4 125	197	12 850	237	41 250	277	128 500		
158	4 250	198	13 200	238	42 500	278	132 000		
159	4 375	199	13 600	239	43 750	279	136 000		

4.4.3 Speed symbol

The speed symbol is a symbol indicating the speed at which the tyre can carry a load corresponding to its load index under service conditions specified by the tyre manufacturer.

The correlation between speed symbols and reference speeds shall be as given in Table 2.

The speed symbol(s) marked on earth-mover tyres also indicate(s) the type of operating condition(s) for which the tyre is designed.

Table 2 — Correlation between speed symbol, operating condition, and reference speed

Speed symbol	Reference speed km/h	Operating condition
A2	10	Slow speed service (loading), loader, dozer, industrial application, etc.
A8	40	Grader service
B	50	Earth-mover service (transport), haulage truck, dumper, scraper, etc.
D	65	Earth-mover service (transport)

4.4.4 Usage

The word “CYCLIC” can be used to indicate that a tyre cannot be used continuously at the load indicated by its load index and at the speed indicated by its speed symbol.

Examples of tyre designation/markings are given in Table 3.

Table 3 — Examples of tyre designation/marking

Nominal section width code[a]	Construction code	Nominal rim diameter code[b]	Index of tyre strength	Load index	Speed symbol	Usage
a) Symbol-marked radial tyres						
30.00	R	51	⋆⋆	230	B	CYCLIC
				248	A2	CYCLIC
17.5	R	25	⋆	176	A2	CYCLIC
17.5	R	25	⋆⋆	167	B	CYCLIC
40/65	R	39	⋆	228	A2	CYCLIC
b) Ply-rating-marked diagonal tyres						
20.5	—	25	20 PR	160	A8	—
				170	B	CYCLIC
37.5	—	51	44 PR	238	A2	CYCLIC
				223	B	CYCLIC
16.00	—	24 TG	16 PR	160	A8	
21.00	—	49	40 PR	206	B	CYCLIC

[a] Includes, as necessary, the nominal aspect ratio (see 4.2.2 and 4.2.3).

[b] Includes, as necessary, the suffix code (see 4.2.5).

4.5 Other service characteristics

4.5.1 Preferred direction of rotation

In the case of a preferred direction of rotation, this direction shall be indicated by an arrow.

4.5.2 Code for usage

Tyres can be identified by a code for usage indicating their type of service and tread design as shown in Tables 4 and 5, respectively.

The use of these identification codes is at the discretion of the individual tyre manufacturer.

Table 4 — Type of service

Code	Type of service
C	Compactor
E	Earth-mover (dumper and tractor-scraper)
G	Grader
L	Loader and dozer

Table 5 — Tread design

Code[ab]	Type of service	Tread type
C-1	Compactor	Smooth
C-2	Compactor	Grooved
E-1	Earthmover	Rib regular
E-2	Earthmover	Traction regular

[a] Where smooth treads are used in the "L" series, this should be denoted by the suffix "S" (for example, L-5S).

[b] Code types 1, 2, and 3 are designated as regular tread depth.

Table 5 *(continued)*

Code[ab]	Type of service	Tread type
E-3	Earthmover	Regular
E-4	Earthmover	Deep
E-7	Earthmover	Flotation
G-1	Grader	Rib regular
G-2	Grader	Traction regular
G-3	Grader	Regular
G-4	Grader	Deep
L-2	Loader and dozer	Traction regular
L-3	Loader and dozer	Regular
L-4	Loader and dozer	Deep
L-5	Loader and dozer	Extra deep

[a] Where smooth treads are used in the "L" series, this should be denoted by the suffix "S" (for example, L-5S).

[b] Code types 1, 2, and 3 are designated as regular tread depth.

4.5.3 In-service dimensions

In-service dimensions are the maximum dimensions for grown tyres in-service for use by machine manufacturers in designing for tyre clearances.

The maximum overall width in-service, W_{max}, is given by Formula (1):

$$W_{max} = S\,(1 + a) \tag{1}$$

where

S is the design new tyre section width;

a is equal to 0,08 for S <380 mm;

a is equal to 0,11 for S ≥380 mm.

The maximum overall diameter in-service, $D_{o,\,max}$, is given by Formula (2):

$$D_{o,\,max} = (D_o - D)\,(1 + b) + D \tag{2}$$

where

D is the rim diameter specified in ISO 4250-3;

b is equal to 0,06 for S <380 mm;

b is equal to 0,08 for S ≥380 mm

5 Tyre dimensions

The designation of dimension, measuring rim, design tyre dimension, and maximum overall dimensions in-service are given in the following tables:

a) Table 6;

b) Table 7;

c) Table 8;

d) Table 9;

e) Table 10;

f) Table 11;

g) Table 12;

h) Table 13;

i) Table 14;

j) Table 15;

k) Table 16;

l) Table 17;

m) Table 18;

n) Table 19;

o) Table 20.

6 Dual spacing

Recommended minimum dual spacing should be section width × 1,2.

7 Approved rims

Approved rims are given in the following tables:

a) Table 21;

b) Table 22;

c) Table 23;

d) Table 24;

e) Table 25;

f) Table 26;

g) Table 27;

h) Table 28;

i) Table 29;

j) Table 30.

8 Method of measurement of tyre dimensions

Before measuring, the tyre shall be mounted on a measuring rim, inflated to the recommended 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.

Table 6 — Tyre dimensions for narrow-base diagonal tyres

Dimensions in millimetres

		Design new tyre[a]			In-service[b]		
Tyre size designations	**Measuring rim width code**	**Section width** S	**Overall diameter regular tread**[c] D_o	**Overall diameter deep and extra deep tread**[c] D_o	**Maximum overall width** W_{max}	**Maximum overall diameter regular tread**[c] $D_{o,max}$	**Maximum overall diameter deep and extra deep tread**[c] $D_{o,max}$
12.00–20	8.50	315	1 146	1 173	340	1 184	1 214
12.00–24	8.50	315	1 247	1 275	340	1 285	1 315
12.00–25	8.50	315	1 247	1 275	340	1 285	1 315
13.00–24	10.00	351	1 301	1 350	379	1 342	1 394
13.00–25	10.00	351	1 301	1 350	379	1 342	1 394
14.00–20	10.00	375	1 266	1 317	405	1 311	1 366
14.00–24	10.00	375	1 368	1 418	405	1 414	1 467
14.00–25	10.00	375	1 368	1 418	405	1 414	1 467
16.00–21	11.25	432	1 391	1 447	480	1 460	1 520
16.00–24	11.25	432	1 493	1 548	480	1 561	1 623
16.00–25	11.25	432	1 493	1 548	480	1 561	1 623
18.00–24	13.00	498	1 615	1 673	553	1 693	1 758
18.00–25	13.00	498	1 615	1 673	553	1 693	1 758
18.00–33	13.00	498	1 818	1 877	553	1 896	1 960
18.00–49	13.00	498	2 227	2 283	553	2 306	2 366
21.00–24	15.00	571	1 750	1 798	634	1 839	1 891
21.00–25	15.00	571	1 750	1 798	634	1 839	1 891
21.00–35	15.00	571	2 004	2 052	634	2 093	2 145
21.00–49	15.00	571	2 360	2 407	634	2 449	2 500
24.00–25	17.00	653	1 875	1 921	725	1 974	2 024
24.00–29	17.00	653	1 975	2 023	725	2 074	2 126
24.00–35	17.00	653	2 127	2 175	725	2 226	2 278
24.00–43	17.00	653	2 331	2 378	725	2 430	2 482
24.00–49	17.00	653	2 483	2 531	725	2 582	2 634
27.00–33	22.00	762	2 242	2 295	846	2 354	2 412
27.00–49	19.50	737	2 649	2 702	818	2 761	2 819
30.00–51	22.00	823	2 846	2 904	914	2 970	3 033
33.00–51	24.00	894	2 997	3 061	992	3 133	3 202
36.00–51	26.00	988	3 165	3 223	1 097	3 315	3 388
40.00–57	29.00	1 097	3 526	3 594	1 218	3 692	3 766

[a] Design new tyre dimensions quoted are used for tyre design purposes only.

[b] In-service dimensions are the maximum dimensions for grown tyres in-service for use by machine manufacturers in designing for tyre clearances.

[c] Figures are based on tyres with regular tread depth. The machine manufacturer should recognize that tyres with deep or extra deep tread and corresponding increased overall diameter may be used.

Table 7 — Tyre dimensions for narrow-base diagonal tyres on SDC rims

Dimensions in millimetres

		Design new tyre[b]		In-service[c]	
Tyre size designations[a]	**Measuring rim width code**	**Section width** S	**Overall diameter**[d] D_o	**Maximum overall width** W_{max}	**Maximum overall diameter**[d] $D_{o,max}$
10.00–24TG	8.00	283	1 151	306	1 184
12.00–24TG	8.00	312	1 226	337	1 263
13.00–20TG	8.00	333	1 176	360	1 216
13.00–24TG	8.00	333	1 278	360	1 318
14.00–20TG	8.00	362	1 247	391	1 291
14.00–24TG	8.00	362	1 348	391	1 392
16.00–24TG	10.00	427	1 459	474	1 527
18.00–25	13.00	498	1 617	553	1 696

a "TG" is a designation to be used to identify tyres mounted on rims with a specified diameter, D, of 614,4 mm.

b Design new tyre dimensions quoted are used for tyre design purposes only.

c In-service dimensions are the maximum dimensions for grown tyres in-service for use by machine manufacturers in designing for tyre clearances.

d Figures are based on tyres with regular tread depth. The machine manufacturer should recognize that tyres with deep or extra deep tread and corresponding increased overall diameter may be used.

Table 8 — Dimensions for diagonal narrow-base diagonal tyres on 15° rim contours

Dimensions in millimetres

		Design new tyre[a]			In-service[b]		
Tyre size designations	**Measuring rim width code**	**Section width** S	**Overall diameter regular tread**[c] D_o	**Overall diameter deep and extra deep tread**[c] D_o	**Maximum overall width** W_{max}	**Maximum overall diameter regular tread**[cd] $D_{o,max}$	**Maximum overall diameter deep and extra deep tread**[cd] $D_{o,max}$
27–56.5	20.00	653	2 483	2 531	705	2 582	2 634
30–56.5	22.00	737	2 649	2 702	796	2 761	2 819
33–59.5	23.50	808	2 846	2 904	873	2 970	3 033
36–59.5	27.00	899	2 997	3 061	971	3 133	3 202
39–59.5	27.00	973	3 165	3 223	1 051	3 315	3 377

a Design new tyre dimensions quoted are used for tyre design purposes only.

b In-service dimensions are the maximum dimensions for grown tyres in-service for use by machine manufacturers in designing for tyre clearances.

c The maximum overall diameter in-service is the same as the equivalent 5° rim designed tyre.

d Figures are based on tyres with regular tread depth. The machine manufacturer should recognize that tyres with deep or extra deep tread and corresponding increased overall diameter may be used.

Table 9 — Tyre dimensions for wide-base, 75, 80 and 85 series diagonal tyres

Dimensions in millimetres

		Design new tyre[a]			In-service[b]		
Tyre size designations	**Measuring rim width code**	**Section width** S	**Overall diameter regular tread**[c] D_o	**Overall diameter deep and extra deep tread**[c] D_o	**Maximum overall width** W_{max}	**Maximum overall diameter regular tread**[c] $D_{o,max}$	**Maximum overall diameter deep and extra deep tread**[c] $D_{o,max}$
15.5–25	12.00	394	1 277	1 326	437	1 328	1 381
17.5–25	14.00	445	1 348	1 399	494	1 405	1 460
20.5–25	17.00	520	1 492	1 548	577	1 561	1 621
23.5–25	19.50	597	1 617	1 673	663	1 696	1 756
26.5–25	22.00	673	1 750	1 798	747	1 839	1 891
26.5–29	22.00	673	1 851	1 899	747	1 940	1 992
29.5–25	25.00	750	1 873	1 921	833	1 972	2 024
29.5–29	25.00	750	1 975	2 023	833	2 074	2 126
29.5–35	25.00	750	2 127	2 175	833	2 226	2 278
33.25–29	27.00	845	2 090	2 143	938	2 198	2 256
33.25–35	27.00	845	2 242	2 295	938	2 350	2 407
33.5–33	28.00	850	2 242	2 295	944	2 354	2 412
33.5–39	28.00	850	2 395	2 448	944	2 507	2 565
37.25–35	31.00	946	2 389	2 447	1 050	2 509	2 572
37.5–33	32.00	952	2 389	2 447	1 057	2 513	2 576
37.5–39	32.00	952	2 541	2 599	1 057	2 665	2 728
37.5–51	32.00	952	2 846	2 904	1 057	2 970	3 033
40.5/75–39	32.00	1 029	2 581	2 627	1 142	2 708	2 758
49.5–57 (50/80–57)[d]	36.00	1 257	3 526	3 594	1 358	3 650	3 722
52/80–57	36.00	1 321	3 526	3 594	1 427	3 650	3 722
53.5/85–57	44.00	1 366	3 833	3 933	1 475	3 977	4 062

[a] Design new tyre dimensions quoted are used for tyre design purposes only.

[b] In-service dimensions are the maximum dimensions for grown tyres in-service for use by machine manufacturers in designing for tyre clearances.

[c] Figures are based on tyres with regular tread depth. The machine manufacturer should recognize that tyres with deep or extra deep tread and corresponding increased overall diameter may be used.

[d] Alternative size marking.

Table 10 — Tyre dimensions for 65 and 70 series diagonal tyres

Dimensions in millimetres

		Design new tyre[a]			In-service[b]		
Tyre size designations	**Measuring rim width code**	**Section width** S	**Overall diameter regular tread**[c] D_o	**Overall diameter deep and extra deep tread**[c] D_o	**Maximum overall width** W_{max}	**Maximum overall diameter regular tread**[c] $D_{o,max}$	**Maximum overall diameter deep and extra deep tread**[c] $D_{o,max}$
25/65–25	20.00	635	1 486	1 526	705	1 554	1 597
30/65–25	24.00	762	1 656	1 700	846	1 738	1 785
30/65–29	24.00	762	1 758	1 801	846	1 840	1 886
35/65–33[d]	28.00	889	2 029	2 077	987[d]	2 124	2 176
40/65–39	32.00	1 016	2 352	2 405	1 128	2 461	2 518
45/65–45[d]	36.00	1 143	2 675	2 733	1 269[d]	2 798	2 860
50/65–51	40.00	1 270	2 997	3 061	1 410	3 133	3 202
65/65–57	52.00	1 651	3 660	3 738	1 833	3 837	3 921
41.25/70–39	32.00	1 048	2 452	2 512	1 163	2 569	2 634

a Design new tyre dimensions quoted are used for tyre design purposes only.

b In-service dimensions are the maximum dimensions for grown tyres in-service for use by machine manufacturers in designing for tyre clearances.

c Figures are based on tyres with regular tread depth. The machine manufacturer should recognize that tyres with deep or extra deep tread and corresponding increased overall diameter may be used.

d If the grown tyre overall width of the 35/65-33 exceeds 914 mm or the grown tyre overall width of the 45/65–45 exceeds 1 168 mm, the tyres may not fit on certain existing equipment.

Table 11 — Tyre dimensions for diagonal compactor tyres

Dimensions in millimetres

		Design new tyre[a]		In-service[b]	
Tyre size designations	**Measuring rim width code**	**Section width** S	**Overall diameter**[c] D_o	**Maximum overall width** W_{max}	**Maximum overall diameter**[c] $D_{o,max}$
8.5/90–15K[d]	6.00	220	782	237	806
7.50–15	6.00	215	782	232	806
7.50–16	6.00	215	808	232	832
8.25–15	6.50	236	845	255	873
8.25–20	6.50	236	972	255	1 000
9.00–20	7.00	259	1 016	280	1 046
10.00–20	7.50	278	1 051	300	1 083
11.00–20	8.00	293	1 083	316	1 117
12.00–16	8.50	315	1 021	340	1 058

a Design new tyre dimensions quoted are used for tyre design purposes only.

b In-service dimensions are the maximum dimensions for grown tyres in-service for use by machine manufacturers in designing for tyre clearances.

c Figures are based on tyres with regular tread depth. The machine manufacturer should recognize that tyres with deep or extra deep tread and corresponding increased overall diameter may be used.

d The suffix "K" shall be used to identify tyres mounted on rims with a rim diameter code of 15 but having special diameter (D) of 380,2 mm.

Table 11 *(continued)*

		Design new tyre[a]		In-service[b]	
Tyre size designations	**Measuring rim width code**	**Section width** S	**Overall diameter**[c] D_o	**Maximum overall width** W_{max}	**Maximum overall diameter**[c] $D_{o,max}$
12.00–20	8.50	315	1 122	340	1 159
13.00–24	10.00	351	1 276	379	1 316
14.00–24	10.00	375	1 340	405	1 383
10.5/80–16	8.00	263	812	284	836

[a] Design new tyre dimensions quoted are used for tyre design purposes only.

[b] In-service dimensions are the maximum dimensions for grown tyres in-service for use by machine manufacturers in designing for tyre clearances.

[c] Figures are based on tyres with regular tread depth. The machine manufacturer should recognize that tyres with deep or extra deep tread and corresponding increased overall diameter may be used.

[d] The suffix "K" shall be used to identify tyres mounted on rims with a rim diameter code of 15 but having special diameter (D) of 380,2 mm.

Table 12 — Tyre dimensions for narrow-base radial tyres

Dimensions in millimetres

		Design new tyre[a]			In-service[b]		
Tyre size designations	**Measuring rim width code**	**Section width** S	**Overall diameter regular tread**[c] D_o	**Overall diameter deep and extra deep tread**[c] D_o	**Maximum overall width** W_{max}	**Maximum overall diameter regular tread**[c] $D_{o,max}$	**Maximum overall diameter deep and extra deep tread**[c] $D_{o,max}$
12.00R20	8.50	315	1 146	1 173	340	1 184	1 214
12.00R24	8.50	315	1 247	1 275	340	1 285	1 315
12.00R25	8.50	315	1 247	1 275	340	1 285	1 315
13.00R24	10.00	351	1 301	1 350	379	1 342	1 394
13.00R25	10.00	351	1 301	1 350	379	1 342	1 394
14.00R20	10.00	375	1 266	1 317	405	1 311	1 366
14.00R21	10.00	375	1 266	1 317	405	1 311	1 366
14.00R24	10.00	375	1 368	1 418	405	1 414	1 467
14.00R25	10.00	375	1 368	1 418	405	1 414	1 467
16.00R20	11.25	432	1 391	1 447	480	1 460	1 520
16.00R21	11.25	432	1 391	1 447	480	1 460	1 520
16.00R25	11.25	432	1 493	1 548	480	1 561	1 623
18.00R25	13.00	498	1 615	1 673	553	1 693	1 758
18.00R33	13.00	498	1 818	1 877	553	1 896	1 960
21.00R25	15.00	571	1 750	1 798	634	1 839	1 891
21.00R33	15.00	571	1 953	2 001	634	2 042	2 094
21.00R35	15.00	571	2 004	2 052	634	2 093	2 145

[a] Design new tyre dimensions quoted are used for tyre design purposes only.

[b] In-service dimensions are the maximum dimensions for grown tyres in-service for use by machine manufacturers in designing for tyre clearances.

[c] Figures are based on tyres with regular tread depth. The machine manufacturer should recognize that tyres with deep or extra deep tread and corresponding increased overall diameter may be used.

Table 12 *(continued)*

		Design new tyre[a]			In-service[b]		
Tyre size designations	**Measuring rim width code**	**Section width** S	**Overall diameter regular tread**[c] D_o	**Overall diameter deep and extra deep tread**[c] D_o	**Maximum overall width** W_{max}	**Maximum overall diameter regular tread**[c] $D_{o,max}$	**Maximum overall diameter deep and extra deep tread**[c] $D_{o,max}$
21.00R49	15.00	571	2 360	2 407	634	2 449	2 500
24.00R35	17.00	653	2 127	2 175	725	2 226	2 278
24.00R49	17.00	653	2 483	2 531	725	2 582	2 634
27.00R49	19.50	737	2 649	2 702	818	2 761	2 819
30.00R51	22.00	823	2 846	2 904	914	2 970	3 033
33.00R51	24.00	894	2 997	3 061	992	3 133	3 202
36.00R51	26.00	988	3 165	3 223	1 097	3 315	3 388
37.00R57	27.00	1 016	3 370	3 438	1 118	3 524	3 597
40.00R57	29.00	1 097	3 526	3 594	1 218	3 692	3 766

[a] Design new tyre dimensions quoted are used for tyre design purposes only.

[b] In-service dimensions are the maximum dimensions for grown tyres in-service for use by machine manufacturers in designing for tyre clearances.

[c] Figures are based on tyres with regular tread depth. The machine manufacturer should recognize that tyres with deep or extra deep tread and corresponding increased overall diameter may be used.

Table 13 — Tyre dimensions for narrow-base radial tyres on SDC rims

Dimensions in millimetres

		Design new tyre[b]		In-service[c]	
Tyre size designations[a]	**Measuring rim width code**	**Section width** S	**Overall diameter**[d] D_o	**Maximum overall width** W_{max}	**Maximum overall diameter**[d] $D_{o,max}$
10.00R24TG	8.00	283	1 151	306	1 184
12.00R24TG	8.00	312	1 226	337	1 263
13.00R24TG	8.00	333	1 278	360	1 318
14.00R24TG	8.00	362	1 348	391	1 392
16.00R24TG	10.00	427	1 459	474	1 527
18.00R25	13.00	498	1 617	553	1 696

[a] "TG" is a designation to be used to identify tyres mounted on rims with a specified diameter, D, of 614,4 mm.

[b] Design new tyre dimensions quoted are used for tyre design purposes only.

[c] In-service dimensions are the maximum dimensions for grown tyres in-service for use by machine manufacturers in designing for tyre clearances.

[d] Figures are based on tyres with regular tread depth. The machine manufacturer should recognize that tyres with deep or extra deep tread and corresponding increased overall diameter may be used.

Table 14 — Dimensions for narrow-base radial tyres on 15° rim contours

Dimensions in millimetres

		Design new tyre[a]			In-service[b]		
Tyre size designations	**Measuring rim width code**	**Section width** S	**Overall diameter regular tread**[c] D_o	**Overall diameter deep and extra deep tread**[c] D_o	**Maximum overall width** W_{max}	**Maximum overall diameter regular tread**[cd] $D_{o,max}$	**Maximum overall diameter deep and extra deep tread**[cd] $D_{o,max}$
27R56.5	20.00	653	2 483	2 531	705	2 582	2 634
30R56.5	22.00	737	2 649	2 702	796	2 761	2 819
33R59.5	23.50	808	2 846	2 904	873	2 970	3 033
36R59.5	27.00	899	2 997	3 061	971	3 133	3 202
39R59.5	27.00	973	3 165	3 223	1 051	3 315	3 388

[a] Design new tyre dimensions quoted are used for tyre design purposes only.

[b] In-service dimensions are the maximum dimensions for grown tyres in-service for use by machine manufacturers in designing for tyre clearances.

[c] The maximum overall diameter in-service is the same as the equivalent 5° rim designed tyre.

[d] Figures are based on tyres with regular tread depth. The machine manufacturer should recognize that tyres with deep or extra deep tread and corresponding increased overall diameter may be used.

Table 15 — Tyre dimensions for wide-base and 75 series radial tyres

Dimensions in millimetres

		Design new tyre[a]			In-service[b]		
Tyre size designations	**Measuring rim width code**	**Section width** S	**Overall diameter regular tread**[c] D_o	**Overall diameter deep and extra deep tread**[c] D_o	**Maximum overall width** W_{max}	**Maximum overall diameter regular tread**[c] $D_{o,max}$	**Maximum overall diameter deep and extra deep tread**[c] $D_{o,max}$
15.5R25	12.00	394	1 277	1 326	437	1 328	1 381
17.5R25	14.00	445	1 348	1 399	494	1 405	1 460
20.5R25	17.00	520	1 492	1 548	577	1 561	1 621
23.5R25	19.50	597	1 617	1 673	663	1 696	1 756
26.5R25	22.00	673	1 750	1 798	747	1 839	1 891
26.5R29	22.00	673	1 851	1 899	747	1 940	1 992
29.5R25	25.00	750	1 873	1 921	833	1 972	2 024
29.5R29	25.00	750	1 975	2 023	833	2 074	2 126
29.5R35	25.00	750	2 127	2 175	833	2 226	2 278
33.25R29	27.00	845	2 090	2 143	938	2 198	2 256
33.25R35	27.00	845	2 242	2 295	938	2 350	2 407
33.5R33	28.00	850	2 242	2 295	944	2 354	2 412
33.5R39	28.00	850	2 395	2 448	944	2 507	2 565

[a] Design new tyre dimensions quoted are used for tyre design purposes only.

[b] In-service dimensions are the maximum dimensions for grown tyres in-service for use by machine manufacturers in designing for tyre clearances.

[c] Figures are based on tyres with regular tread depth. The machine manufacturer should recognize that tyres with deep or extra deep tread and corresponding increased overall diameter may be used.

Table 15 *(continued)*

		Design new tyre[a]			In-service[b]		
Tyre size designations	**Measuring rim width code**	**Section width** S	**Overall diameter regular tread**[c] D_o	**Overall diameter deep and extra deep tread**[c] D_o	**Maximum overall width** W_{max}	**Maximum overall diameter regular tread**[c] $D_{o,max}$	**Maximum overall diameter deep and extra deep tread**[c] $D_{o,max}$
37.25R35	31.00	946	2 389	2 447	1 050	2 509	2 572
37.5R33	32.00	952	2 389	2 447	1 057	2 513	2 576
37.5R39	32.00	952	2 541	2 599	1 057	2 665	2 728
37.5R51	32.00	952	2 846	2 904	1 057	2 970	3 033
40.5/75R39	32.00	1 029	2 581	2 627	1 142	2 708	2 758

[a] Design new tyre dimensions quoted are used for tyre design purposes only.

[b] In-service dimensions are the maximum dimensions for grown tyres in-service for use by machine manufacturers in designing for tyre clearances.

[c] Figures are based on tyres with regular tread depth. The machine manufacturer should recognize that tyres with deep or extra deep tread and corresponding increased overall diameter may be used.

Table 16 — Tyre dimensions for 65 and 70 series radial tyres

Dimensions in millimetres

		Design new tyre[a]			In-service[b]		
Tyre size designations	**Measuring rim width code**	**Section width** S	**Overall diameter regular tread**[c] D_o	**Overall diameter deep and extra deep tread**[c] D_o	**Maximum overall width** W_{max}	**Maximum overall diameter regular tread**[c] $D_{o,max}$	**Maximum overall diameter deep and extra deep tread**[c] $D_{o,max}$
22/65R25	14.00	546	1 384		606	1 444	
25/65R25	20.00	635	1 486	1 526	705	1 554	1 597
30/65R25	24.00	762	1 656	1 700	846	1 738	1 785
30/65R29	24.00	762	1 758	1 801	846	1 840	1 886
35/65R33[d]	28.00	889	2 029	2 077	987d	2 124	2 176
40/65R39	32.00	1 016	2 352	2 405	1 128	2 461	2 518
45/65R39	36.00	1 143	2 522	2 580	1 269	2 645	2 707
45/65R45[d]	36.00	1 143	2 675	2 733	1 269d	2 798	2 860
50/65R51	40.00	1 270	2 997	3 061	1 410	3 133	3 202

[a] Design new tyre dimensions quoted are used for tyre design purposes only.

[b] In-service dimensions are the maximum dimensions for grown tyres in-service for use by machine manufacturers in designing for tyre clearances.

[c] Figures are based on tyres with regular tread depth. The machine manufacturer should recognize that tyres with deep or extra deep tread and corresponding increased overall diameter may be used.

[d] If the grown tyre overall width of size 35/65R33 exceeds 914 mm or the grown tyre overall width of size 45/65R45 exceeds 1168 mm, the tyres may not fit on certain existing equipment.

Table 17 — Tyre dimensions for 80 series radial tyres

Dimensions in millimetres

		Design new tyre[a]			In-service[b]		
Tyre size designations	**Measuring rim width code**	**Section width** S	**Overall diameter regular tread**[c] D_o	**Overall diameter deep and extra deep tread**[c] D_o	**Maximum overall width** W_{max}	**Maximum overall diameter regular tread**[c] $D_{o,max}$	**Maximum overall diameter deep and extra deep tread**[c] $D_{o,max}$
50/80R57	34.00	1 270	3 480	3 556	1 342	3 541	3 619
55/80R57	44.00	1 397	3 663	3 716	1 537	3 729	3 784
60/80R57	47.00	1 524	3 886	3 940	1 676	3 959	4 014
53/80R63	36.00	1 346	3 713	3 780	1 481	3 780	3 846
56/80R63	41.00	1 422	3 876	3 956	1 565	3 944	4 026
59/80R63	44.00	1 499	3 998	4 069[d]	1 648	4 070 [d]	4 143[d]

[a] Design new tyre dimensions quoted are used for tyre design purposes only.

[b] In-service dimensions are the maximum dimensions for grown tyres in-service for use by machine manufacturers in designing for tyre clearances.

[c] Figures are based on tyres with regular tread depth. The machine manufacturer should recognize that tyres with deep or extra deep tread and corresponding increased overall diameter may be used.

[d] If the grown tyre overall diameter exceeds 4 028 mm, the tyre may not fit on certain existing vehicles.

Table 18 — Tyre dimensions for 90 series radial tyres

Dimensions in millimetres

		Design new tyre[a]			In-service[b]		
Tyre size designations	**Measuring rim width code**	**Section width** S	**Overall diameter regular tread**[c] D_o	**Overall diameter deep and extra deep tread**[c] D_o	**Maximum overall width** W_{max}	**Maximum overall diameter regular tread**[c] $D_{o,max}$	**Maximum overall diameter deep and extra deep tread**[c] $D_{o,max}$
21/90R33	13.00	533	1 798	1 854	587	1 826	1 885
31/90R49	19.50	787	2 662	2 715	866	2 705	2 758
42/90R57	27.00	1 067	3 368	3 436	1 173	3 426	3 495
46/90R57	29.00	1 168	3 526	3 594	1 285	3 588	3 658
50/90R57	32.00	1 270	3 761	3 837	1 397	3 831	3 909

[a] Design new tyre dimensions quoted are used for tyre design purposes only.

[b] In-service dimensions are the maximum dimensions for grown tyres in-service for use by machine manufacturers in designing for tyre clearances.

[c] Figures are based on tyres with regular tread depth. The machine manufacturer should recognize that tyres with deep or extra deep tread and corresponding increased overall diameter may be used.

Table 19 — Tyre dimensions for radial compactor tyres

Dimensions in millimetres

		Design new tyre[a]		In-service[b]	
Tyre size designations	**Measuring rim width code**	**Section width** S	**Overall diameter**[c] D_o	**Maximum overall width** W_{max}	**Maximum overall diameter**[c] $D_{o,max}$
7.50R16	6.00	215	808	232	832
8.25R15	6.50	236	845	255	873
10.00R20	7.50	278	1 051	300	1 083
14.00R24	10.00	375	1 340	405	1 383
11/80R20	8.00	282	922	305	982
13/80R20	9.00	326	1 048	352	1 080
17/80R24	10.00	412	1 340	457	1 406

a Design new tyre dimensions quoted are used for tyre design purposes only.

b In-service dimensions are the maximum dimensions for grown tyres in-service for use by machine manufacturers in designing for tyre clearances.

c Figures are based on tyres with regular tread depth. The machine manufacturer should recognize that tyres with deep or extra deep tread and corresponding increased overall diameter may be used.

Table 20 — Tyre dimensions for metric 65 series radial tyres

Dimensions in millimetres

		Design new tyre[a]			In-service[b]		
Tyre size designations	**Measuring rim width code**	**Section width** S	**Overall diameter regular tread**[c] D_o	**Overall diameter deep and extra deep tread**[c] D_o	**Maximum overall width** W_{max}	**Maximum overall diameter regular tread**[c] $D_{o,max}$	**Maximum overall diameter deep and extra deep tread**[c] $D_{o,max}$
550/65R25	17.00	547	1 351	1 401	602	1 372	1 424
600/65R25	19.50	606	1 415	1 468	667	1 438	1 491
650/65R25	19.50	640	1 480	1 536	710	1 506	1 563
750/65R25	24.00	754	1 611	1 666	829	1 640	1 697
850/65R25	27.00	852	1 741	1 788	937	1 774	1 823
775/65R29	24.00	771	1 745	1 792	848	1 775	1 824
800/65R29	25.00	798	1 777	1 824	878	1 808	1 857
875/65R29	28.00	879	1 875	1 922	967	1 909	1 958
875/65R33[d]	28.00	879	1 976	2 023	967	2 010	2 059
900/65R33[d]	28.00	896	2 008	2 055	986	2 043	2 092
1150/65R45[d]	36.00	1 148	2 639	2 703	1 263	2 684	2 750

a Design new tyre dimensions quoted are used for tyre design purposes only.

b In-service dimensions are the maximum dimensions for grown tyres in-service for use by machine manufacturers in designing for tyre clearances.

c Figures are based on tyres with regular tread depth. The machine manufacturer should recognize that tyres with deep or extra deep tread and corresponding increased overall diameter may be used.

d If the grown tyre overall width of size 875/65R33 or 900/65R33 exceeds 914 mm or the grown tyre overall width of size1150/65R45 exceeds 1168 mm, the tyres may not fit on certain existing equipment.

Table 21 — Approved rims for diagonal and radial narrow-base tyres for earth-movers, mobile cranes, shovels, mining cars, loaders, and dozers

Tyre size designation[ab]	Approved rims[c]
12.00–20	8.00V, 8.5, 8.50V, 8.5V5°, 9.00V
12.00–24	8.00V, 8.5, 8.50V, 8.5V5°, 9.00V
12.00–25	8.50/1.3
13.00–24	8.50V, 9.00V, 10.00W, 10.00WI
13.00–25	10.00/1.5
14.00–20	9.00V, 10.00W, 10.00WI
14.00–21	10.00/1.5
14.00–24	9.00V, 10.00W, 10.00WI
14.00–25	10.00/1.5
16.00–20	11.25/2.0
16.00–21	11.25/2.0
16.00–24	11.25/2.0
16.00–25	11.25/2.0
18.00–24	13.00/2.5
18.00–25	13.00/2.5
18.00–33	13.00/2.5
18.00–49	13.00/2.75
21.00–24	15.00/3.0
21.00–25	15.00/3.0
21.00–33	15.00/3.0
21.00–35	15.00/3.0
21.00–49	15.00/3.0
24.00–25	17.00/3.5
24.00–29	17.00/3.5
24.00–35	17.00/3.5
24.00–43	17.00/3.5
24.00–49	17.00/3.5
27.00–33	22.00/4.0
27.00–49	19.50/4.0
30.00–33	22.00/4.5
30.00–51	22.00/4.5
33.00–51	24.00/5.0
36.00–51	26.00/5.0
37.00–57	27.00/6.0
40.00–57	29.00/6.0, 32.00/6.0

[a] The tyre and rim/wheel manufacturers shall however be consulted for confirmation of the suitability of the tyre/wheel assembly for the intended service.

[b] For radial tyres, replace the dash (–) in the size designation with "R".

[c] See ISO 4250-3 for rim contours.