



**International
Standard**

ISO 10571

**Tyres for mobile cranes and similar
specialized machines**

Pneumatiques pour grues mobiles et engins spéciaux similaires

**Fourth edition
2024-08**

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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).

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For an explanation of 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 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 fourth edition cancels and replaces the third edition (ISO 10571:2016), which has been technically revised.

The main changes are as follows:

- reference to ISO 17253 was added to the Introduction;
- definitions of road (3.1), driving on the road (3.2), off the road use (3.3), creep (3.4), and stationary (3.5) were added;
- 4.3: 'road use' was replaced by 'driving on the road';
- Table 10 and Table 12 were added; all following tables were renumbered accordingly;
- in Tables 3, 5, and 13, 325/95R24 was added;
- in Table 5, 505/95R25 183E Load Range M was added;
- Table 13 (rims) was revised; rim 15.00/3.5 was replaced by 15.00/3.0 for 575/95R25.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Tyre designations found within this document are intended for use on machinery found in ISO 17253.

Tyres for vehicles such as two axle, off-the-road cranes that only have incidental use on public roads are not included in this document.

NOTE Equivalent terms commonly used in the tyre industry are given in ISO 3877-1.

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Tyres for mobile cranes and similar specialized machines

1 Scope

This document specifies the designation, dimensions, load ratings and reference speed for tyres and rims fitted to vehicles, such as all-terrain equipment, mobile cranes, crash tenders, likely to operate on highway over long distances at reference speed and under constant load.

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 4209-1:2001, *Truck and bus tyres and rims (metric series) — Part 1: Tyres*

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

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

3 Terms and definitions

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

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

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

3.1

road

public traffic area for use by automotive vehicles for travel or transportation

Note 1 to entry: A public traffic area does not include the sites of temporary road works (e.g. for repairs, maintenance, alterations, improvements, installations, or any other works to, above or under a road, including works to road equipment lighting, barriers, walls) or roads not open to the public (e.g. on new housing and industrial developments), or on which public traffic is not permitted.

3.2

driving on the road

use of machines on the *road* (3.1) (e.g. driving between work sites, to and from the site of normal storage, or driving for refuelling of the machine) for purposes other than intended operation

3.3

off the road use

use on any improved or unimproved surface that is not a *road* (3.1)

3.4

creep

movement of the vehicle at a very slow speed, not over 60 m in 30 min

Note 1 to entry: During creep motion, loads are very high. Consideration must be given to the type of surface over which the vehicle is travelling on any improved or unimproved surface that is not a road.

3.5**stationary**

vehicle is lifting a load with only the tyres for support

Note 1 to entry: Supplemental vehicle support, such as outriggers or vehicle jacks are not in use. Fore, aft, or sideways movement of the vehicle is prohibited.

4 Tyre designation and marking**4.1 General**

The designation of the tyre shall be shown on its sidewall and shall include the details in 4.2. Additional markings as shown in 4.3, 4.4 and 4.5 may also be included (refer to regional regulations or practices).

4.2 Tyre size designation and service description**4.2.1 General**

Tyres for mobile cranes in accordance with this document shall be indicated as follows:

Nominal section width	/	Nominal aspect ratio	Tyre construction code	Nominal rim diameter code	Service description
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4.2.2 Nominal section width

The nominal section width shall be expressed in millimetres, ending in “5” in accordance with [Annex A](#) for nominal section width steps.

4.2.3 Nominal aspect ratio

The nominal aspect ratio shall be expressed as a percentage and shall be a multiple of five.

4.2.4 Tyre construction code

The tyre construction code shall be as follows:

— (dash) for diagonal/bias construction

“R” for radial ply construction.

In addition, the word “RADIAL” may also appear on the tyre.

4.2.5 Nominal rim diameter code

The nominal rim diameter shall be expressed by a code, in accordance with ISO 4250-3.

4.2.6 Service description**4.2.6.1 General**

The service description shall be indicated as follows:

Load index Speed symbol

4.2.6.2 Load index

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

The correlation between load indices and tyre load-carrying capacity (TLCC) is as given in [Table 1](#).

4.2.6.3 Speed symbol

The speed symbol indicates the speed category at which the tyre can carry the load corresponding to its load index.

Tyres for mobile cranes in accordance with this document have speed symbol “E” or “F”, which correspond to 70 km/h and 80 km/h, respectively.

4.3 Service identification (regional option)

The word “road” may be used to identify tyres with E speed symbol that can be used for driving on the road over long distances at reference speed and under constant load.

4.4 Load range (regional option)

The tyre load range shall be as shown in [Table 2](#). Refer to regional regulations.

4.5 Other service characteristics

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

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

4.6 Example

A mobile crane tyre having the following characteristics shall be marked as “605/80R25 188E ROAD Load Range L”:

- a) a size and construction of
 - nominal section width 605 mm,
 - nominal aspect ratio 80,
 - radial construction, and
 - nominal rim diameter code 25;
- b) a service description of
 - load-carrying capacity 10 000 kg “Load Index 188”,
 - reference speed 70 km/h “Speed Symbol E”, and
 - reference inflation pressure of 700 kPa “Load Range L”;
- c) other characteristics:
 - service identification “ROAD”.

5 Tyre dimensions

[Table 3](#) and [Table 4](#) show the following, for 95 series and 80 series tyres, respectively:

- a) tyre designation as indicated in [Clause 4](#);
- b) measuring rim width code;
- c) design tyre dimensions, i.e. section width and overall diameter;
- d) maximum tyre dimensions in-service.

6 Tyre load capacities

6.1 Basic tyre loads

Basic tyre load ratings at 70 km/h (speed symbol E) reference speed are given in [Table 5](#) and [Table 6](#) for 95 series and 80 series tyres, respectively, and at 80 km/h (speed symbol F) reference speed, in [Table 7](#) and [Table 8](#), for the 95 series and 80 series tyres, respectively.

6.2 Tyre selection and limitations

In some countries, there can be load/speed/inflation pressure limitations because of national requirements.

Speed symbol E tyres are used primarily for cranes with low speed capability (rough terrain applications). Cranes with higher speed capability (all-terrain applications) can require a speed symbol F tyre. Speed symbol E and speed symbol F tyres are not interchangeable on a given application because of the difference in their load carrying capability at the same speed (refer to [Table 5](#), [Table 6](#), [Table 7](#) and [Table 8](#)).

6.3 Tyre loads at speeds other than reference speed

When a tyre is fitted on a vehicle with a maximum speed capability different from the tyre reference speed, load capacities shall be modified as shown in [Table 9](#), [Table 10](#), [Table 11](#) and [Table 12](#).

7 Approved rim contours

Approved rim contours are given in [Table 13](#) and [Table 14](#) for 95 series and 80 series tyres, respectively. For rim dimensions, see ISO 4250-3.

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

Load index	TLCC kg	Load index	TLCC kg	Load index	TLCC kg	Load index	TLCC kg
130	1 900	150	3 350	170	6 000	190	10 600
131	1 950	151	3 450	171	6 150	191	10 900
132	2 000	152	3 550	172	6 300	192	11 200
133	2 060	153	3 650	173	6 500	193	11 500
134	2 120	154	3 750	174	6 700	194	11 800
135	2 180	155	3 875	175	6 900	195	12 150
136	2 240	156	4 000	176	7 100	196	12 500
137	2 300	157	4 125	177	7 300	197	12 850
138	2 360	158	4 250	178	7 500	198	13 200
139	2 430	159	4 375	179	7 750	199	13 600
140	2 500	160	4 500	180	8 000	200	14 000
141	2 575	161	4 625	181	8 250		
142	2 650	162	4 750	182	8 500		
143	2 725	163	4 875	183	8 750		
144	2 800	164	5 000	184	9 000		
145	2 900	165	5 150	185	9 250		
146	3 000	166	5 300	186	9 500		
147	3 075	167	5 450	187	9 750		
148	3 150	168	5 600	188	10 000		
149	3 250	169	5 800	189	10 300		

Table 2 — Correlation between load range and reference inflation pressure

Reference inflation pressure kPa	Tyre load range
700	L
900	N

Table 3 — 95 series tyre dimensions

Dimensions in millimetres

Tyre size designation	Measuring rim width code	Design tyre		In-service tyre	
		Section width	Overall diameter	Maximum overall width	Maximum overall diameter
325/95 R 24	8.50	327	1 228	353	1 265
385/95 R 24	10.00	379	1 369	409	1 415
385/95 R 25	10.00	379	1 369	409	1 415
445/95 R 25	11.25	435	1 481	483	1 549
505/95 R 25	13.00	496	1 595	551	1 672
575/95 R 25	15.00	566	1 727	628	1 814

Table 4 — 80 series tyre dimensions

Dimensions in millimetres

Tyre size designation	Measuring rim width code	Design tyre		In-service tyre	
		Section width	Overall diameter	Maximum overall width	Maximum overall diameter
395/80 R 25	12.00	391	1 267	434	1 317
445/80 R 25	14.00	445	1 347	494	1 404
525/80 R 25	17.00	530	1 475	588	1 542
605/80 R 25	19.50	610	1 603	677	1 680
685/80 R 25	22.00	689	1 731	765	1 819

Table 5 — Basic tyre load ratings for 95 series speed symbol E tyres

Tyre size designation	Load index	Basic tyre load	Reference inflation pressure	Optional load range
		kg	kPa	
325/95 R 24	161	4 625	900	N
385/95 R 24	170	6 000	900	N
385/95 R 25	170	6 000	900	N
445/95 R 25	177	7 300	900	N
505/95 R 25	183	8 750	800	M
505/95 R 25	186	9 500	900	N
575/95 R 25	193	11 500	900	N

Table 6 — Basic tyre load ratings for 80 series speed symbol E tyres

Tyre size designation	Load index	Basic tyre load	Reference inflation pressure	Optional load range
		kg	kPa	
395/80 R 25	165	5 150	700	L
445/80 R 25	170	6 000	700	L
525/80 R 25	179	7 750	700	L
605/80 R 25	188	10 000	700	L
685/80 R 25	195	12 150	700	L

Table 7 — Basic tyre load ratings for 95 series speed symbol F tyres

Tyre size designation	Load index	Basic tyre load	Reference inflation pressure	Optional load range
		kg	kPa	
385/95 R 24	170	6 000	900	N
385/95 R 25	170	6 000	900	N
445/95 R 25	174	6 700	900	N

Table 8 — Basic tyre load ratings for 80 series speed symbol F tyres

Tyre size designation	Load index	Basic tyre load	Reference inflation pressure	Optional load range
		kg	kPa	
445/80 R 25	170	6 000	700	L
525/80 R 25	176	7 100	700	L

Table 9 — Variation in load carrying capacity with speed for speed symbol E tyres for driving on the road

Operating speed km/h	Tyre load capacity expressed as a percentage of load capacity at reference speed
30	130
40	124
50	118
60	112
70 (reference speed)	100
80	82
90	70
100	60

Table 10 — Variation in load carrying capacity with speed for speed symbol E tyres at slow speed for off the road use

Operating speed km/h	Tyre load capacity expressed as a percentage of load capacity at reference speed
Stationary	303
Creep	246
5	218
10	189

Table 11 — Variation in load carrying capacity with speed for speed symbol F tyres for driving on the road

Operating speed km/h	Tyre load capacity expressed as a percentage of load capacity at reference speed
30	125
40	115
50	112
60	110
70	105
80 (reference speed)	100
90	94
100	85

Table 12 — Variation in load carrying capacity with speed for speed symbol F tyres at slow speed for off the road use

Operating speed km/h	385/95 R 24 385/95 R 25	445/95 R 25	445/80 R 25	525/80 R 25
Stationary	295	321	295	302
Creep	266	300	266	282
3	240	263	240	248
5	212	231	212	218
10	183	201	183	189

Table 13 — Approved rim contours for 95 series tyres

Tyre size designation^a	Approved rims
325/95 R 24	8.00V, 8.50V, 9.00V
385/95 R 24	10.00W
385/95 R 25	10.00/1.5, 9.50/1.7CR, 9.50/1.7CRL, 11.25/1.3
445/95 R 25	11.25/2.0, 11.00/1.7CR, 11.00/1.7CRL, 13.00/2.0, 635x280-CR
505/95 R 25	13.00/2.5, 15.00/2.5
575/95 R 25	15.00/3.0, 17.00/3.0
^a The tyre and rim wheel manufacturer should be consulted for confirmation of the suitability of the tyre/wheel assembly for the intended service or for use of alternative rims.	

Table 14 — Approved rim contours for 80 series tyres

Tyre size designation^a	Approved rims
395/80 R 25	11.25/1.3, 12.00/1.3
445/80 R 25	14.00/1.3, 14.00/1.5, 14.00/1.7CR, 14.00/1.7CRL
525/80 R 25	17.00/2.0, 17.00/1.7CR, 17.00/1.7CRL
605/80 R 25	19.50/2.5
685/80 R 25	22.00/3.0
^a The tyre and rim wheel manufacturer should be consulted for confirmation of the suitability of the tyre/wheel assembly for the intended service or for use of alternative rims.	