INTERNATIONAL STANDARD

ISO 10499-2

First edition
1998-07-01

Industrial tyres and rims — Rubber solid tyres (metric series) for pneumatic tyre rims —

Part 2:
Load ratings

Pneumatiques et jantes pour matériel de manutention — Bandages pleins en caoutchouc (série millimétrique) pour jantes de pneumatiques —

Partie 2: Capacités de charge

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.

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 10499-2 was prepared by Technical Committee ISO/TC 31, *Tyres, rims and valves*, Subcommittee SC 7, *Industrial tyres and rims*.

ISO 10499 consists of the following parts, under the general title *Industrial tyres and rims — Rubber solid tyres (metric series) for pneumatic tyre rims:*

— *Part 1: Designation, dimensions and marking*

— *Part 2: Load ratings*

International Organization for Standardization
Case postale 56 • CH-1211 Genève 20 • Switzerland
Internet central@iso.ch
X.400 c=ch; a=400net; p=iso; o=isocs; s=central

Printed in Switzerland

Industrial tyres and rims — Rubber solid tyres (metric series) for pneumatic tyre rims —

Part 2:
Load ratings

1 Scope

This part of ISO 10499 specifies the load ratings of the metric series of rubber solid tyres for pneumatic tyre rims primarily intended for industrial vehicles for use on prepared surfaces.

Designation, dimensions and marking are covered in ISO 10499-1; rim contours fitting these tyres are specified in ISO 3739-3.

2 Normative references

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

ISO 3739-3:1995, *Industrial tyres and rims — Part 3: Rims*.

ISO 3877-4:1984, *Tyres, valves and tubes — List of equivalent terms — Part 4: Solid tyres.*

ISO 4223-2:1991, *Definitions of some terms used in the tyre industry — Part 2: Solid tyres.*

ISO 5053:1987, *Powered industrial trucks — Terminology.*

ISO 10499-1:1991, *Industrial tyres and rims — Rubber solid tyres (metric series) for pneumatic tyre rims — Part 1: Designation, dimensions and marking.*

3 Definitions

For the purposes of this part of ISO 10499, the definitions given in ISO 3877-4, ISO 4223-2 and ISO 5053 apply.

4 Tyre designations

4.1 Dimensional and constructional characteristics

See ISO 10499-1.

4.2 Service descriptions

The service description shall be indicated as follows:

Load index Speed symbol

4.2.1 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, under the service conditions specified by the tyre manufacturer.

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

4.2.2 Speed symbol

The speed symbol shall be as given in table 2. The speed symbol or speed category indicates the reference speed, defined as the speed at which the tyre can carry the load corresponding to its load index under the specified service conditions.

5 Marking

The marking shall consist of

a) the designation of the dimensional and constructional characteristics according to ISO 10499-1;

b) the designation of the service description (load index and speed symbol).

The location of the marking of the service description (load index and speed symbol) shall be distinct but in the vicinity of the marking of the dimensional and constructional characteristics.

EXAMPLE

225/70 — 10/6.5 139 A5

The characteristics of a tyre with the above markings are as follows:

225: nominal section width equal to 225 mm;

70: nominal aspect ratio equal to 70;

10: nominal rim diameter code, corresponding to 254 mm;

6.5: nominal rim width code;

139: load index (LI) corresponding to a tyre load of 2 430 kg;

A5: speed symbol corresponding to a speed category of 25 km/h.

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

LI	TLCC kg	LI	TLCC kg	LI	TLCC kg	LI	TLCC kg	LI	TLCC kg
40	140	80	450	120	1 400	160	4 500	200	14 000
41	145	81	462	121	1 450	161	4 625	201	14 500
42	150	82	475	122	1 500	162	4 750	202	15 000
43	155	83	487	123	1 550	163	4 875	203	15 500
44	160	84	500	124	1 600	164	5 000	204	16 000
45	165	85	515	125	1 650	165	5 150	205	16 500
46	170	86	530	126	1 700	166	5 300	206	17 000
47	175	87	545	127	1 750	167	5 450	207	17 500
48	180	88	560	128	1 800	168	5 600	208	18 000
49	185	89	580	129	1 850	169	5 800	209	18 500
50	190	90	600	130	1 900	170	6 000	210	19 000
51	195	91	615	131	1 950	171	6 150	211	19 500
52	200	92	630	132	2 000	172	6 300	212	20 000
53	206	93	650	133	2 060	173	6 500	213	20 600
54	212	94	670	134	2 120	174	6 700	214	21 200
55	218	95	690	135	2 180	175	6 900	215	21 800
56	224	96	710	136	2 240	176	7 100	216	22 400
57	230	97	730	137	2 300	177	7 300	217	23 000
58	236	98	750	138	2 350	178	7 500	218	23 600
59	243	99	775	139	2 430	179	7 750	219	24 300
60	250	100	800	140	2 500	180	8 000	220	25 000
61	257	101	825	141	2 575	181	8 250	221	25 750
62	265	102	850	142	2 650	182	8 500	222	26 500
63	272	103	875	143	2 725	183	8 750	223	27 250
64	280	104	900	144	2 800	184	9 000	224	28 000
65	290	105	925	145	2 900	185	9 250	225	29 000
66	300	106	950	146	3 000	186	9 500	226	30 000
67	307	107	975	147	3 075	187	9 750	227	30 750
68	315	108	1 000	148	3 150	188	10 000	228	31 500
69	325	109	1 030	149	3 250	189	10 300	229	32 500
70	335	110	1 060	150	3 350	190	10 600	230	33 500
71	345	111	1 090	151	3 450	191	10 900	231	34 500
72	355	112	1 120	152	3 550	192	11 200	232	35 500
73	365	113	1 150	153	3 650	193	11 500	233	36 500
74	375	114	1 180	154	3 750	194	11 800	234	37 500
75	387	115	1 215	155	3 875	195	12 150	235	38 750
76	400	116	1 250	156	4 000	196	12 500	236	40 000
77	412	117	1 285	157	4 125	197	12 850	237	41 250
78	425	118	1 320	158	4 250	198	13 200	238	42 500

Table 2 — Correlation between speed symbols and speed category

Speed symbol	Speed category km/h
A2	10
A3	15
A4	20
A5[1)]	25[1)]
1) See clause 6.	

6 Reference speed

The reference speed for tyre load identification of rubber solid tyres for pneumatic tyre rims shall be 25 km/h, i.e. speed symbol A5.

For tyres with a maximum speed below 25 km/h the speed symbol and associated load index shall correspond to the maximum speed of the tyre.

7 Tyre load-carrying capacities

7.1 General

7.1.1 If possible, the reference loads or load indices respectively of rubber solid tyres for pneumatic tyre rims should be adjusted to those of the pneumatic tyres of the same size designation and the highest existing load index number in order to assure equivalence or interchangeability.

NOTE — The additional weight of rubber solid tyres for pneumatic tyre rims is not taken into account when converting industrial vehicles from pneumatic tyres to solid tyres.

7.1.2 The load capacities of rubber solid tyres for pneumatic tyre rims of the same size designation are independent of the wheel design.

7.1.3 ult the tyre/rim manufacturers for confirmation of the suitability of tyre/rim combinations, particularly with regard to rim profile and strength.

7.2 Load ratings

7.2.1 The permissible loads for rubber solid tyres for pneumatic tyre rims are based on their application according to vehicle type and speed capability. For tyre sizes on rims with diameter code up to and including 15 (ISO 10499-1), they shall be as given in tables 3 and 4.

NOTE — The data given in tables 3 and 4 may be reconsidered in the light of additional field experience.

7.2.2 The 100 % reference load-carrying capacity is the load corresponding to the load index marked on the tyre.

7.2.3 Calculated loads shall be rounded up to the nearest 5 kg.

7.2.4 When fitted in dual formation, the load for the two tyres is twice that for a single tyre.

Table 3 — Tyre load capacity ratings for A5 tyres on rims with diameter codes up to and including 15 on counterbalanced lift trucks

Speed capability of unloaded lift trucks up to 25 km/h	
Load wheels	**Steering wheels**
130 % 100 %	

Table 4 — Tyre load capacity ratings for A5 tyres on rims with diameter codes up to and including on other vehicles in intermittent service

Speed capability of other vehicles[1)]		
⩽ 6 km/h	**⩽ 10 km/h**	**⩽ 25 km/h**
130 %	118 %	100 %
1) This category includes: Drives and steer wheels of other lift trucks, mobile cranes and free-rolling wheels on other vehicles (trailers) up to a maximum distance of 2 000 m per journey.		

ICS 83.160.99

Descriptors: machinery, self-propelled machines, tyres, rubber products, solid tyres, specifications, load capacity, designation, marking, metric system.

Price based on 5 pages