

---

---

**Tyres for agricultural tractors and  
machines — Code-designated and  
service-description marked radial  
drive-wheel tyres**

*Pneumatiques pour tracteurs et machines agricoles — Pneumatiques  
radiaux pour roues motrices portant une désignation de dimension  
par code et une description d'utilisation*

iTeh STANDARD PREVIEW  
(standards.iteh.ai)

[ISO 8664:2018](https://standards.iteh.ai/catalog/standards/sist/e6363639-3e1c-4325-908a-0bbd4e123aae/iso-8664-2018)

<https://standards.iteh.ai/catalog/standards/sist/e6363639-3e1c-4325-908a-0bbd4e123aae/iso-8664-2018>



**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

ISO 8664:2018

<https://standards.iteh.ai/catalog/standards/sist/e6363639-3e1c-4325-908a-0bbd4e123aae/iso-8664-2018>



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2018

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
Fax: +41 22 749 09 47  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

Published in Switzerland

# Contents

	Page
Foreword .....	iv
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 Tyre marking</b> .....	<b>2</b>
4.1 General .....	2
4.2 Supplementary service description .....	2
4.3 Additional information .....	2
4.4 Tyre classification and nomenclature .....	3
4.5 Tyre maximum pressure for bead seating pictogram .....	3
<b>5 Tyre dimensions</b> .....	<b>3</b>
<b>6 Tyre load ratings</b> .....	<b>3</b>
<b>7 Tyre applications other than at reference speed</b> .....	<b>4</b>
7.1 General .....	4
7.2 Field applications with high and sustained torque .....	4
7.3 Tyres marked with additional service description .....	4
<b>8 Tyre application on combine harvesters</b> .....	<b>5</b>
<b>9 Tyre parameters for vehicle speed reference</b> .....	<b>5</b>
<b>Annex A (normative) Tyre size designations, measurement rims and tyre dimensions</b> .....	<b>6</b>
<b>Annex B (normative) Load index and basic tyre load with reference inflation pressures 120 kPa, 160 kPa, 210 kPa and 250 kPa</b> .....	<b>8</b>
<b>Annex C (normative) Approved rim contours</b> .....	<b>10</b>
<b>Annex D (normative) Rolling circumference (RC), rolling circumference index (RCI) and speed radius index (SRI)</b> .....	<b>12</b>
<b>Bibliography</b> .....	<b>14</b>

## 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](http://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](http://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](http://www.iso.org/iso/foreword.html). (standards.iteh.ai)

This document was prepared by Technical Committee ISO/TC 31, *Tyres, rims and valves*, Subcommittee SC 5, *Agricultural tyres and rims*.  
ISO 8664:2018

<https://standards.iteh.ai/catalog/standards/sist/e6363639-3e1c-4325-908a-6b644122d10e/iso-8664-2018>

This third edition cancels and replaces the second edition (ISO 8664:2005), which has been technically revised. It also incorporates the Amendment ISO 8664:2005/Amd1:2010. The main changes compared to the previous edition are as follows:

- information already contained in other International standards has been removed and replaced with normative references to these standards;
- A6 speed symbol for radial code designated tyres has been deleted;
- the document has been aligned with other standards developed by SC 5 and with existing regulations;
- the values of SRI have been updated to the most recent data as given by ETRTO;
- approved rim contours have been added (Table C.1).

# Tyres for agricultural tractors and machines — Code-designated and service-description marked radial drive-wheel tyres

## 1 Scope

This document specifies the marking, dimensions, load ratings and reference speeds for code-designated agricultural tractor drive-wheel tyres with service description (load index and speed symbol).

It applies to tyres of radial construction in the speed categories 40 km/h (speed symbol A8), and 50 km/h (speed symbol B).

NOTE Code designated series of:

- diagonal (ply rating marked) tyres for agricultural tractors and machines are specified in ISO 4251-1 and ISO 4251-2;
- tyres for logging and forestry machines are specified in ISO 18807<sup>1)</sup>;
- tyres for construction/industrial tractors are specified in ISO 13442.

iTeh STANDARD PREVIEW

## 2 Normative references (standards.iteh.ai)

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*

## 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 terminological 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

#### **cyclic loading**

gradual increase of payload to maximum allowable load with unloading before off-field transport

### 3.2

#### **basic tyre load**

tyre load-carrying capacity indicated by the tyre's load index at the reference speed indicated by the tyre's speed symbol

Note 1 to entry: When used as dual tyres, the load per tyre shall be reduced to 88 % of the single tyre load.

1) To be published.

**3.3 high and sustained torque**

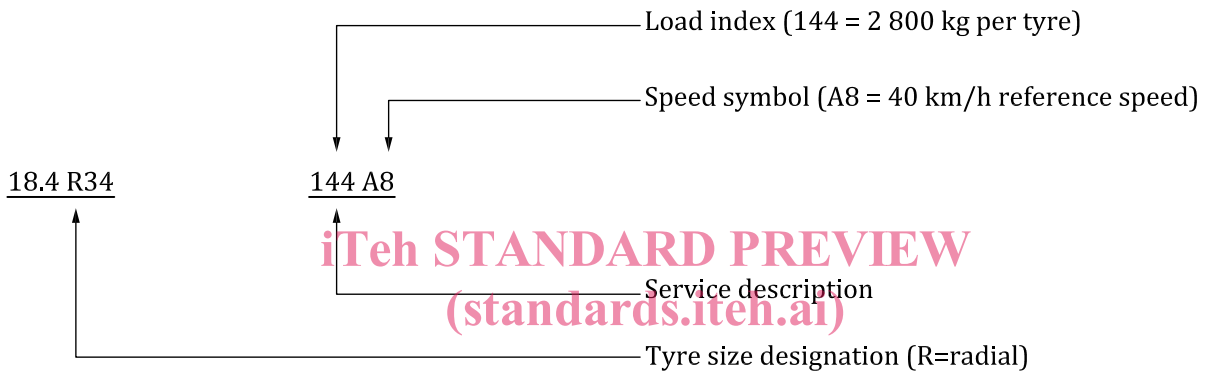
condition that occurs when high continuous tractive effort is applied to the drawbar or hitch

Note 1 to entry: Vehicles equipped with injectors or any other ground engaging attachment (e.g. ploughing) or dragging objects are considered to be operating in a high and sustained torque mode. Vehicles pulling carts or trailers are also considered to be operating in a high torque mode when operating on slopes greater than 11° (20 %) lateral slope.

**4 Tyre marking**

**4.1 General**

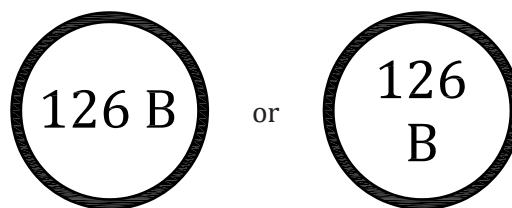
The tyre marking shall consist of the designation of the dimensional and constructional characteristics (tyre size designation), the service description (load index and speed symbol) and any other additional markings (see example in [Figure 1](#)).



ISO 8664:2018  
<https://standards.iteh.ai/catalog/standards/sist/e6363639-3e1c-4325-908a-0bbd4e123aac/iso-8664-2018>  
**Figure 1 — Example of tyre marking**

**4.2 Supplementary service description**

Tyres may also be marked with an additional service description, indicated within a circle, to identify a special type of service (load rating and speed category) for which the tyre size is also allowed in addition to the applicable load variation with speed (see example in [Figure 2](#)).



**Figure 2 — Example of additional service description**

Load variations of [Table 1](#) are not applicable to the supplementary service description. See examples of load ratings in [7.3](#).

**4.3 Additional information**

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

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

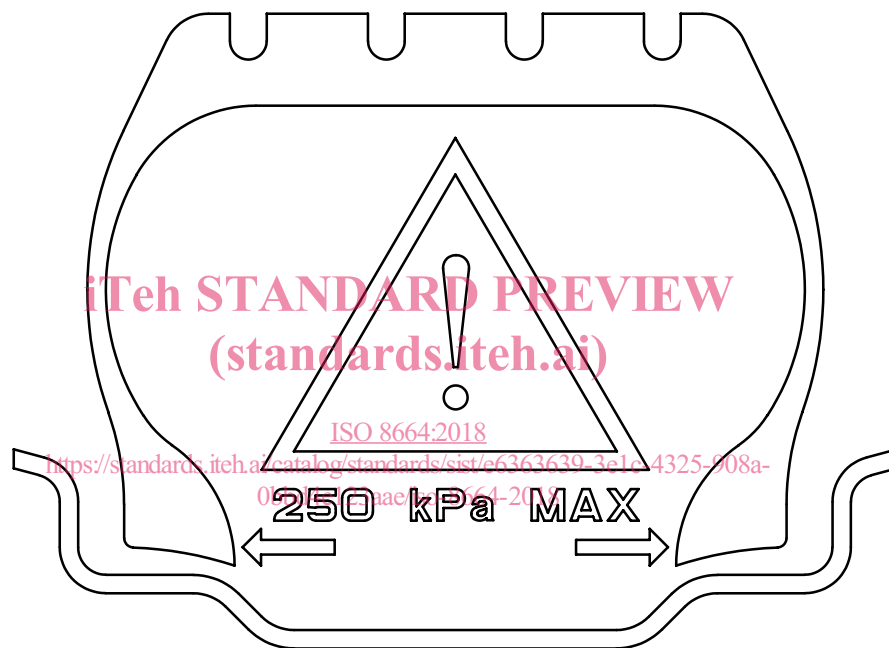
#### 4.4 Tyre classification and nomenclature

A tyre classification code may be used to describe the primary field of application of the tyre as detailed in ISO 18805.

#### 4.5 Tyre maximum pressure for bead seating pictogram

Conformity to some regional regulations requires the inscription “xxx kPa MAX” or “xxx bar MAX” inside a pictogram (see [Figure 3](#)) to indicate the cold inflation pressure that shall not be exceeded for bead seating during tyre mounting.

The level of the seating pressure is determined by the tyre manufacturer.



**Figure 3 — Pictogram**

## 5 Tyre dimensions

Standard sizes, measurement rims, tyre design dimensions and maximum tyre dimensions in service shall be as given in [Annex A](#) (see [Table A.1](#)).

New tyre design dimensions are used for tyre design purposes only.

Maximum dimensions in service are for use by vehicle manufacturers in designing for tyre clearance.

Approved rim contours shall be as given in [Annex C](#) (see [Table C.1](#)).

## 6 Tyre load ratings

Load indices, basic tyre loads and reference inflation pressures shall be as given in [Annex B](#).

## 7 Tyre applications other than at reference speed

### 7.1 General

For applications without high and sustained torques, including road transport, the load/speed relationship is given in [Table 1](#).

The tyre manufacturer concerned shall be consulted for the actual pressure to be used when applying the load/speed relationship given in [Table 1](#).

The rim/wheel manufacturer shall be consulted for confirmation of the strength of the rim/wheel for the intended service.

**Table 1 — Load/speed relationship**

Service speed km/h	Maximum tyre load % <sup>a</sup> Speed symbol	
	A8	B
10	150	150
15	134	134
20	123	123
25	111	111
30	107	107
35	103	103
40	100	100
45	96	100
50	91	100

<sup>a</sup> Expressed as a percentage of the basic tyre loads given in [Annex B](#).

### 7.2 Field applications with high and sustained torque

For applications with high and sustained torque, loads in [Annex B](#) can be increased up to 7 %.

### 7.3 Tyres marked with additional service description

Examples of tyre load carrying capacities at various service speeds for tyres marked with a supplementary service description are given in [Table 2](#).

**Table 2 — Load carrying capacity of tyre with supplementary service description — Example of tyre size 16.9R38**

Service speed km/h	Service description	
	145 A8	145 A8 (145 B)
Tyre load carrying capacities (kg)		
25	3 220	3 220
30	3 105	3 105
35	2 985	2 985
40	2 900	2 900
45	2 785	2 900
50	2 640	2 900



## 8 Tyre application on combine harvesters

On combine harvesters in cyclic loading application, except hillside combines, a load of up to 170 % of the basic tyre loads given in [Annex B](#) is permitted for speeds up to 10 km/h with an inflation pressure increase of approximately 30 % (consult the tyre manufacturer). This load increase shall include all possible field and user modifications that increase the vehicle mass and shall apply only to load increases which occur during the harvesting process.

When not in cyclic application (e.g. grain tanks are empty during transport), the loads in [Table 1](#) apply.

For hillside operations over 11° (20 %) slope (see [Figure 4](#)), only the basic tyre loads are permitted.

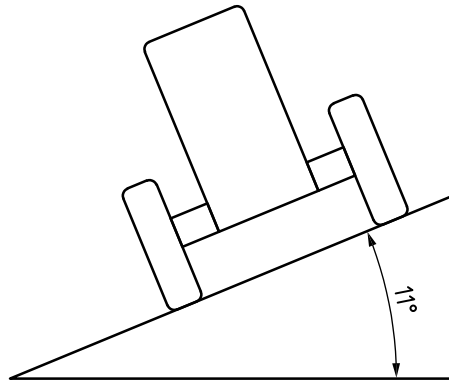


Figure 4 — Hillside operations over 11° (20 %) slope

(standards.iteh.ai)

The rim and wheel manufacturer shall be consulted concerning the strength of the wheels.

ISO 8664:2018

## 9 Tyre parameters for vehicle speed reference

Rolling circumference (RC), rolling circumference index (RCI) and speed radius index (SRI) are parameters which are used exclusively for the calculation of forward ground speed during homologation procedures (for further information, see ISO 3965 and ISO 11795).

Values shall be as given in [Annex D](#) (see [Table D.1](#)).

## Annex A (normative)

### Tyre size designations, measurement rims and tyre dimensions

**Table A.1 — Standard sizes, measurement rims, tyre design dimensions and maximum tyre dimensions in service**

Dimensions in millimetres

Tyre size designation	Measurement rim width code	Design tyre		In service				
		Section width	Overall diameter <sup>a</sup>	Maximum overall width	Maximum overall diameter <sup>a</sup>			
<b>Normal section height tyres</b>								
8.3R24	7.00	211	985	228	1 000			
9.5R24	8.00	241	1 040	260	1 080			
9.5R28			1 140		1 155			
11.2R20	10.00	284	995	307	1 015			
11.2R24			1 095		1 115			
11.2R28			1 200		1 220			
11.2R36			1 400		1 420			
11.2R38			1 455		1 475			
12.4R20			11.00		315	1 045	340	1 070
12.4R24						1 145		1 170
12.4R28	1 250	1 275						
12.4R32	1 350	1 375						
12.4R36	1 450	1 475						
12.4R38	1 500	1 525						
12.4R54	1 921	1 943						
13.6R24	12.00	345	1 190	373	1 215			
13.6R28			1 295		1 320			
13.6R36			1 500		1 525			
13.6R38			1 550		1 575			
14.9R24	13.00	378	1 245	408	1 275			
14.9R26			1 295		1 325			
14.9R28			1 350		1 380			
14.9R30			1 400		1 425			
14.9R34			1 519		1 545			
14.9R38			1 600		1 630			
14.9R46			1 824		1 851			
15.5R38	14.00	394	1 570	426	1 595			

<sup>a</sup> Figures are based on regular service tyres. The tyre manufacturer shall be consulted if tyres with deviating profiles are used.

Table A.1 (continued)

Tyre size designation	Measurement rim width code	Design tyre		In service	
		Section width	Overall diameter <sup>a</sup>	Maximum overall width	Maximum overall diameter <sup>a</sup>
16.9R24	15.00	429	1 320	463	1 350
16.9R26			1 370		1 400
16.9R28			1 420		1 450
16.9R30			1 475		1 505
16.9R34			1 575		1 605
16.9R38			1 675		1 705
16.9R42			1 775		1 805
18.4R24	16.00	467	1 395	504	1 425
18.4R26			1 440		1 475
18.4R28			1 490		1 520
18.4R30			1 545		1 575
18.4R34			1 645		1 680
18.4R38			1 750		1 780
18.4R42			1 850		1 880
18.4R46		1 958	1 990		
20.8R34	18.00	528	1 735	570	1 770
20.8R38			1 835		1 870
20.8R42			1 935		1 970
23.1R26	20.00	587	1 605	637	1 645
23.1R30			1 700		1 740
23.1R34			1 800		1 840
24.5R32	21.00	622	1 800	672	1 840
<b>Low section height</b>					
28LR26	25.00	719	1 607	777	1 645
30.5LR32	27.00	775	1 820	837	1 860

<sup>a</sup> Figures are based on regular service tyres. The tyre manufacturer shall be consulted if tyres with deviating profiles are used.