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Definition av termer som används inom däckindustrin – Del 1: Luftfyllda däck (ISO 4223-1:2017, IDT)

Definitions of some terms used in the tyre industry – Part 1: Pneumatic tyres (ISO 4223-1:2017, IDT)

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Denna standard ersätter SS-ISO 4223-1:2007, utgåva 3.

The International Standard ISO 4223-1:2017 has the status of a Swedish Standard. This document contains the official version of ISO 4223-1:2017.

This standard supersedes the Swedish Standard SS-ISO 4223-1:2007, edition 3.

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Denna standard är framtagen av kommittén för Däck och hjul, SIS/TK 218.

Har du synpunkter på innehållet i den här standarden, vill du delta i ett kommande revideringsarbete eller vara med och ta fram andra standarder inom området? Gå in på www.sis.se - där hittar du mer information.

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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).

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).

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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*.

This fifth edition cancels and replaces the fourth edition (ISO 4223-1:2002), which has been technically revised. It also incorporates the Amendment ISO 4223-1:2002/Amd 1:2011.

A list of all parts in the ISO 4223 series can be found on the ISO website.

Definitions of some terms used in the tyre industry —

Part 1: Pneumatic tyres

1 Scope

This document defines a number of significant terms related to pneumatic tyres used in the tyre industry, together with corresponding codes, symbols and values.

NOTE 1 For other terms used in this field and their equivalents in other languages, see ISO 3877 (all parts). For terms and definitions relating to wheels/rims, see ISO 3911.

NOTE 2 [Annex A](#) forms a normative part of this document.

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 4251-4, *Tyres (ply rating marked series) and rims for agricultural tractors and machines — Part 4: Tyre classification and nomenclature*

3 Terms, definitions and symbols

For the purposes of this document, the terms, definitions and symbols given in ISO 4251-4 and the following 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>

3.1 Terms relating to category of use

3.1.1

normal tyre

tyre intended for highway (or public highway) use which does not require “M+S” (or other variations) or severe snow or *special use* (3.1.2) tyre designations

Note 1 to entry: Examples of special use tyre designations are MPT, ML (3.7.1.1.16), POR.

3.1.2

special use

tyre intended for mixed use both on- and off-road or for other special duty and primarily designed to initiate and maintain the vehicle in motion in off-road conditions

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3.1.3

snow tyre

tyre whose *tread* (3.5.4) pattern, tread compound or *structure* (3.4.1) is primarily designed to achieve in winter conditions, e.g. snow, a performance better than that of a *normal tyre* (3.1.1) with regard to its ability to initiate or maintain vehicle motion

Note 1 to entry: It is identified by a combination of the letters “M” and “S”, e.g. M+S, M&S.

3.1.4

temporary-use spare tyre

tyre different from a tyre intended to be fitted to any vehicle for normal driving conditions but intended only for temporary use under restricted driving conditions

3.1.5

severe snow use tyre

tyre whose *tread* (3.5.4) pattern, tread compound or *structure* (3.4.1) is specifically designed based on performance testing using ISO 18106 and which is identified by an “Alpine” or “3 Peak Mountain Snow Flake (3PMSF)” symbol

Note 1 to entry: Refer to regional standards and regulatory requirements for dimensions and performance criteria, placement adjacent to “M+S” and characterized by the 3 Peak Mountain Snow Flake (3PMSF) symbol (see [Figure 1](#)).



Figure 1 — 3 Peak Mountain Snow Flake (3PMSF) symbol

3.1.6

professional off-road

POR

special use (3.1.2) tyre primarily used for service in severe off-road conditions

3.1.7

not for highway service

NHS

tyre primarily designed for use outside of public roads, but suitable for temporary/incidental use on public roads and identified with the letters “NHS” (3.7.1.1.8)

3.1.8

traction tyre

tyre that may have the inscription “TRACTION” and intended to be fitted primarily to the drive axle(s) of a vehicle to maximize force transmission in various circumstances

3.2 Terms relating to service description

3.2.1

service description

tyre identification, in addition to the *tyre size designation* (3.7.1), which consists of a *load index* (LI) (3.2.1.1) (or two load indices in the case of single/dual fitments) and a *speed symbol* (SS) (3.2.1.2)

EXAMPLE 91H or 121/119S.

3.2.1.1
load index
LI

numerical code which indicates a reference load used to define the load carrying capacity of the tyre, which can depend on operating conditions and tyre type

Note 1 to entry: See [Table A.1](#).

3.2.1.2
speed symbol

alpha or alpha-numeric code which indicates the *speed category* ([3.2.1.3](#)) of the tyre, which can depend on operating conditions and tyre type

Note 1 to entry: See [Table A.2](#).

3.2.1.3
speed category

maximum speed which the tyre can sustain, expressed by the speed symbol, and which is part of the *service description* ([3.2.1](#))

Note 1 to entry: See [Table A.2](#) for speed symbols.

3.3 Other general terms and definitions

3.3.1
cold inflation pressure

internal pressure of the tyre at ambient temperature and not including any pressure build-up due to tyre usage

Note 1 to entry: It is expressed in kilopascals (kPa).

3.3.2
grown tyre

tyre that has undergone expansion due to use in service

3.3.3
new tyre

tyre that has not been used and is not a *retread tyre* ([3.3.11](#))

3.3.4
rolling circumference

C_r
distance the centre of the tyre (axle) moves in one revolution of the tyre under specified conditions

3.3.5
rolling resistance

F_r
loss of energy (or energy consumed) per unit of distance

Note 1 to entry: The SI unit conventionally used for the rolling resistance is the newton metre per metre (N·m/m). This is equivalent to the drag force in newtons (N).

3.3.6
tyre contact area

A_c
area of the flat surface contained within the *virtual perimeter* ([3.3.8](#)) of the tyre footprint

Note 1 to entry: It is expressed in square metres (m²).

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3.3.7

tyre ground pressure

F/A_c

average unit load transmitted by the tyre through its contact area to the road surface, expressed, in kilonewtons per square metre (kN/m^2), as the ratio between the vertical force, F , in static conditions on the axis of the *wheel* (3.8.14) and the *tyre contact area* (3.3.6), A_c , and measured with the tyre inflated at the *cold inflation pressure* (3.3.1) recommended for the intended type of service

3.3.8

virtual perimeter

<tyre footprint> convex polygonal curve circumscribing the smallest area containing all points of contact between the tyre and ground

3.3.9

capped inflation

process of inflating the tyre to the required cold pressure and allowing the inflation pressure to build up, as the tyre is warmed up while running

3.3.10

regulated inflation

process of inflating the tyre to the required cold pressure and allowing the inflation pressure to change to the required level as the tyre runs under load

Note 1 to entry: This is most commonly done by using a regulated pressure source attached to the tyre through a rotating union.

3.3.11

retread tyre

used tyre that has been reconditioned to extend the useful life of the tyre with the replacement of the tread rubber only or replacement of *tread* (3.5.4) and *sidewall rubbers* (3.5.3)

Note 1 to entry: It covers the following process methods.

- “Top capping” – replacement of the tread.
- “Re-capping” – replacement of the tread and with the new material extending over part of the *sidewall* (3.5.2).
- “Bead to bead” – replacement of the tread and sidewall rubber including all or part of the lower area of the tyre.

3.3.12

rolling resistance coefficient

ratio of the *rolling resistance* (3.3.5), in newtons, to the load on the tyre, in kilonewtons

Note 1 to entry: This quantity is dimensionless.

3.3.13

tyre strength indicator

star marking (one, two, three, etc.), *ply* (3.5.6) rating (number), or load range (letter) used as an indication of tyre strength

3.3.14

test pressure

pressure to which the mounted pneumatic tyre is measured subject to a specific test

3.3.15

mud and snow tyre

type of tyre designed to achieve snow traction and mud and sand performance better than that of a *normal tyre* (3.1.1) with regard to its ability to initiate or maintain vehicle motion

Note 1 to entry: It is identified by a combination of the letters “M” and “S”, e.g. M+S, M&S.

3.3.16

T-type temporary-use spare tyre

temporary-use spare tyre (3.1.4) designed for use at an inflation pressure higher than those established for standard and *reinforced tyres* (3.3.17)

Note 1 to entry: It is designated with the “T” prefix.

3.3.17

reinforced tyre extra load tyre

description of passenger car and motorcycle tyres designed for loads and minimum reference inflation pressures higher than those of the standard version

3.3.18

run flat tyre

tyre designed to operate in an inflated mode and capable of running at least a specified distance under prescribed conditions in the event that the tyre does not hold air

3.4 Terms relating to structure

3.4.1

structure

technical characteristics of the tyre's *carcass* (3.5.8)

EXAMPLE *Diagonal* (3.4.1.1) (bias-ply), *bias-belted* (3.4.1.2), *radial* (3.4.1.3).

3.4.1.1

diagonal

bias-ply
cross-ply

structure (3.4.1) in which the *ply cords* (3.5.5) extend to the *bead* (3.5.1) and are laid at alternate angles of substantially less than 90° to the centreline of the *tread* (3.5.4)

3.4.1.2

bias-belted

structure (3.4.1) of *diagonal* (3.4.1.1) (bias-ply) type in which the *carcass* (3.5.8) is restricted by a *belt* (3.5.10) comprising one or more layers of substantially inextensible *cord* (3.5.5) material

3.4.1.3

radial

structure (3.4.1) in which the *ply cords* (3.5.5) that extend to the *beads* (3.5.1) are laid at substantially 90° to the centreline of the *tread* (3.5.4), the *carcass* (3.5.8) being restrained by circumferential *belts* (3.5.10) of two or more layers of substantially inextensible cord material

3.5 Terms relating to main components

3.5.1

bead

part of the tyre shaped to fit the *rim* (3.8.12) and having a core made of one or several essentially inextensible strands with the plies wrapped around the core

3.5.2

sidewall

portion of the tyre between the *tread* (3.5.4) and the *bead* (3.5.1)

3.5.3

sidewall rubber

rubber layer on the *sidewall* (3.5.2) of the tyre and over the *carcass* (3.5.8), which may include ornamental or protective ribs, tire labelling and markings, and moulded fitting lines