
**All terrain (AT) tyres and rims — Symbol
marked pneumatic tyres on 5 degrees
tapered rims — Designation, dimension,
marking and load ratings**

*Pneumatiques et jantes tout terrain — Pneumatiques marqués par un
symbole pour jantes à repos de talon conique à 5 degrés —
Désignation, dimensions, marquage et coefficients de charge*

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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

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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.

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The main task of technical committees is to prepare International Standards. 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.

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.

ISO 29802 was prepared by Technical Committee ISO/TC 31, *Tyres, rims and valves*, Subcommittee SC 10, *Cycle, moped, motorcycle tyres and rims*.

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All terrain (AT) tyres and rims — Symbol marked pneumatic tyres on 5 degrees tapered rims — Designation, dimension, marking and load ratings

1 Scope

This International Standard specifies the designations, dimensions, markings and load ratings of pneumatic tyres primarily intended for all terrain vehicles (ATV). It also specifies the designation, marking and contours of rims.

The tyres are based on the following parameters:

- a) speeds not exceeding 130 km/h (speed symbol M);
- b) fitted to (AT) 5° tapered drop centre rims;
- c) nominal rim diameter codes of 7 to 14 inclusive.

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2 Normative references

ISO 29802:2009

The following referenced documents are indispensable for the application 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 31-0:1992, *Quantities and units — Part 0: General principles*

ISO 3877-1, *Tyres, valves and tubes — List of equivalent terms — Part 1: Tyres*

ISO 4223-1:2002, *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, ISO 3877-1 and the following apply.

3.1

NHS

not for highway service

marking that identifies tyres for off-road applications

4 Tyre size designations

4.1 Dimensional and constructional characteristics

4.1.1 General

The characteristics shall be indicated as follows:

	Prefix	Nominal overall diameter code		Nominal section width code	Tyre construction code	Nominal rim diameter code
Example	AT	23	×	10	-	10

4.1.2 Prefix

AT (all terrain) identifies tyres and rims designated for service on all terrain vehicles (ATV).

4.1.3 Nominal overall diameter code

The code shall be as given in Table 1.

Table 1 — Nominal overall diameter code

Nominal overall diameter code	Design tyre overall diameter, D_o , mm
16	406
18	457
19	483
20	508
21	533
22	559
23	584
24	610
25	635
26	660
27	686

4.1.4 Nominal section width code

The nominal section width of the tyre shall be indicated by means of a code with steps of 1 unit starting from 6.

4.1.5 Tyre construction code

The tyre construction code shall be as follows:

- *D* or “-” (a dash) for diagonal ply construction;
- *R* for radial ply construction.

4.1.6 Nominal rim diameter code

The code shall be as given in Table 2.

Table 2 — Nominal rim diameter code

Nominal rim diameter code	Nominal rim diameter, D_r mm
7	178
8	203
9	229
10	254
11	279
12	305
13	330
14	356

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4.2 Service condition

4.2.1 General

The tyre shall be marked with a symbol and a service condition description. In the case of tyres restricted to off-road service and marked “NHS”, the marking of the service condition description is optional.

4.2.2 Symbol of reference inflation pressure

Symbols shall be used to identify the reference inflation pressure given in Table 3.

Table 3 — Reference inflation pressures

Symbol	Inflation pressure kPa
☆	25
☆☆	35
☆☆☆	45

4.2.3 Service condition description

4.2.3.1 General

The service condition description shall be indicated as follows:

Load index Speed symbol (example 35 F)

4.2.3.2 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 under service conditions specified by the tyre manufacturer.

The correlation between load indices and tyre load carrying capacities shall be as given in Annex A of ISO 4223-1:2002.

4.2.3.3 Speed symbol

The speed symbol shall be as given in Table 4. 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 description.

Table 4 — Correlation between speed symbol and speed category

Speed symbol	Speed category
F ^a	80 ^a km/h

^a The reference speed for tyre load identification of all terrain tyres shall be 80 km/h, i.e. speed symbol F.

4.3 Other service characteristics

4.3.1 The word “TUBELESS” shall be used to characterize tyres that can be used without a tube.

4.3.2 Specific indications, if required, may be added to show, for example, the preferred direction of rotation, indicated by an arrow.

5 Marking

The marking shall consist of:

- a) the designation of the dimensional and constructional characteristics;
- b) service condition description;
- c) other service characteristics.

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

No location is specified for the markings related to other service characteristics (see 4.3).

EXAMPLE AT 20 × 10 – 9 ☆☆ 34 F

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

- AT: tyre designated for service intended for service on all terrain vehicles (ATV);
- 20: nominal overall diameter code;
- 10: nominal section width code;
- - : diagonal ply construction;
- 9 : nominal rim diameter code;
- ☆☆: symbol to identify a reference inflation pressure of 35 kPa;
- 34: load index (LI) corresponding to a tyre load capacity of 118 kg;
- F: speed symbol corresponding to a speed category of 80 km/h.

6 Tyre dimensions

6.1 General

The formula-derived values for design tyre dimensions shall be rounded to the nearest millimetre. For rounding of values, see ISO 31-0:1992, Annex B.

6.2 Calculation of design tyre dimensions

6.2.1 Theoretical rim width, R_{th}

The theoretical rim width, R_{th} , is equal to the product of the nominal section width, S_n , (see Table 8) and to the rim/section ratio, K_1 , where the value of K_1 is 0,8 rounded to the nearest standardized rim width code.

$$R_{th} = K_1 \times S_n$$

6.2.2 Measuring rim width, R_m

Measuring rim width, R_m , enables one to select the nearest standardized rim width code from R_{th} (see Table 8).

6.2.3 Design tyre section width, S

The design tyre section width, S , is given in Table 8.

$$S = S_n + 0,4 \times (R_m - R_{th})$$

6.2.4 Design tyre overall diameter, D_o

The design tyre overall diameter, D_o , is given in Table 1.

6.2.5 Design tyre section height, H

The design tyre section height, H , is equal to half the value given by the design tyre overall diameter, D_o , minus the nominal rim diameter, D_r .