

INTERNATIONAL STANDARD



4249 / I

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Motorcycle tyres and rims (Existing series) — Part I : Tyres

Pneumatiques et jantes pour motocycles (Séries actuelles) — Partie I : Pneumatiques

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FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 4249/1 was developed by Technical Committee ISO/TC 31, *Tyres, rims and valves*, and was circulated to the member bodies in March 1977.

It has been approved by the member bodies of the following countries :

Australia	India	Romania
Austria	Ireland	South Africa, Rep. of
Brazil	Israel	Spain
Canada	Japan	Sweden
Chile	Korea, Rep. of	Switzerland
Czechoslovakia	Mexico	United Kingdom
France	Netherlands	U.S.A.
Germany	Poland	U.S.S.R.

The member body of the following country expressed disapproval of the document on technical grounds :

Italy

Motorcycle tyres and rims (Existing series) — Part I : Tyres

1 SCOPE

This International Standard sets out the designation in use and the dimensions of existing series of motorcycle tyres.¹⁾

ISO 4249/II will deal with requirements for rims.

NOTE — ISO 5751 deals with requirements for future series.

2 FIELD OF APPLICATION

This International Standard applies to tyres used in high way service with a maximum speed of 150 km/h and fitted on rims with a nominal diameter corresponding to the codes 14 — 15 — 16 — 17 — 18 — 19 and 21.

It does not apply to tyres used at speeds above 150 km/h or in special conditions (on-and-off-the road service, for example).

3 REFERENCE

ISO 4223, *Definitions of some terms used in the tyre industry.*

4 DEFINITIONS

For definitions of terms relating to tyres, see ISO 4223.

5 TYRE DESIGNATION

The tyre designation used in current practice is maintained for these tyres. This designation shall be shown on the sidewall of the tyre and shall include the following markings for dimensional characteristics, which shall be close to each other :

Nominal section width Nominal rim diameter

5.1 Nominal section width

The nominal section width shall be expressed in inches.

5.2 Nominal rim diameter

The nominal rim diameter shall be expressed by a code (see table 1).

6 TYRE DIMENSIONS

6.1 Calculation of "design new tyre" dimensions

6.1.1 Design new tyre overall diameter (D_o)

The design new tyre overall diameter is the sum of the nominal rim diameter (D_r) plus twice the design new tyre section height (H) :

$$D_o = D_r + 2 H$$

For the values of D_r to be used, see table 1.

TABLE 1 — Nominal rim diameter code

Code	Nominal rim diameter, (D_r) mm
14	356
15	381
16	406
17	432
18	457
19	483
21	533

1) Load ratings are under study and will be included in a later edition of this International Standard.

6.1.2 Design new tyre section height (H)

See table 2.

TABLE 2 — Design new tyre section height (H) corresponding to nominal section width (S_N)

Nominal section width (S _N) in	Section height (H) mm
2.00	55
2.25	62
2.50	68
2.75	78
3.00	85
3.25	91
3.50	96
3.75	102
4.00	107
4.25	113
4.50	117
5.00	130

6.2 Calculation of maximum overall tyre dimensions in service

The dimensions shall include : protective ribs, lettering, embellishments, manufacturing tolerances, special tread configurations and growth due to service.

6.2.1 Maximum overall width in service (W_{max})

The maximum overall width in service is equal to the product of the design new tyre section width (S) and the coefficient 1,1 :

$W_{max} = 1,1 S$

6.2.2 Maximum overall diameter in service (D_{o max})

The maximum overall diameter in service is equal to the nominal rim diameter (D_r) plus twice the product of the design new tyre section height (H) and the coefficient "b" :

$D_{o max} = D_r + 2 H b$

b = 1,1 for the section widths 2.00, 2.25, 2.50;

b = 1,08 for the section widths 2.75 and greater.

6.3 Values

Table 3 gives design new tyre dimensions and overall tyre dimensions in service for tyres of which the designation is as indicated in clause 5.

7 METHOD OF MEASUREMENT OF TYRE DIMENSIONS

Before measuring, tyres shall be mounted on the measuring rim inflated to the recommended inflation pressure, and allowed to stand for a minimum of 24 h at normal room temperature, after which the inflation pressure shall be readjusted to the original value.

TABLE 3 — Tyre dimensions — Design and in service

Tyre designation	Measuring rim width (R_M) in	Design new tyre		In service	
		Section width (S) mm	Overall diameter (D_o) mm	Maximum overall width (W_{max}) mm	Maximum overall diameter ($D_{o max}$) mm
2.00 — 14 2.00 — 17 2.00 — 19	1.20	52	466 542 593	57	478 554 605
2.25 — 14 2.25 — 15 2.25 — 16 2.25 — 17 2.25 — 18 2.25 — 19	1.60	61	480 505 530 556 581 607	67	492 517 542 568 593 619
2.50 — 14 2.50 — 15 2.50 — 16 2.50 — 17 2.50 — 18 2.50 — 19 2.50 — 21	1.60	65	492 517 542 568 593 619 669	72	506 531 556 582 607 633 683
2.75 — 14 2.75 — 15 2.75 — 16 2.75 — 17 2.75 — 18 2.75 — 19 2.75 — 21	1.85	75	512 537 562 588 613 639 689	83	524 549 574 600 625 651 701
3.00 — 14 3.00 — 15 3.00 — 16 3.00 — 17 3.00 — 18 3.00 — 19 3.00 — 21	1.85	80	526 551 576 602 627 653 703	88	540 565 590 616 641 667 717
3.25 — 14 3.25 — 15 3.25 — 16 3.25 — 17 3.25 — 18 3.25 — 19 3.25 — 21	2.15	89	538 563 588 614 639 665 715	98	552 577 602 628 653 679 729
3.50 — 14 3.50 — 15 3.50 — 16 3.50 — 17 3.50 — 18 3.50 — 19 3.50 — 21	2.15	93	548 573 598 624 649 675 725	102	564 589 614 640 665 691 741
3.75 — 18 3.75 — 19	2.15	99	661 687	109	677 703

TABLE 3 (concluded)

Tyre designation	Measuring rim width (R_M) in	Design new tyre		In service	
		Section width (S) mm	Overall diameter (D_o) mm	Maximum overall width (W_{max}) mm	Maximum overall diameter ($D_{o max}$) mm
4.00 – 16 4.00 – 18 4.00 – 19	2.15	104	620 671 697	114	638 689 715
4.25 – 17 4.25 – 18 4.25 – 19	2.15	108	658 683 709	119	676 701 727
4.50 – 17 4.50 – 18	2.15	111	666 691	122	684 709
5.00 – 16	3.00	129	666	142	686

ANNEX (for information)

Certain series of tyres are currently being marketed which, while having the designation defined in this International Standard, present larger maximum overall diameters.

These values are indicated in the following table for information.

Tyre designation	Maximum overall diameter — Other existing values mm
3.25 – 16 3.25 – 17 3.25 – 18 3.25 – 19	615 640 665 690
3.50 – 14 3.50 – 16 3.50 – 17 3.50 – 18 3.50 – 19 3.50 – 21	575 626 651 677 702 753
3.75 – 19 T	699
4.00 – 18 4.00 – 19	711 736
4.25 – 18 T	711
4.50 – 18	740
5.00 – 16 T	703