INTERNATIONAL STANDARD ISO 4249/I

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

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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/I 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

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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 highway 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) :

$$D_o = D_r + 2H$$

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	1.20	52	466	57	478
2.00 – 17			542		554
2.00 – 19			593		605
2.25 – 14	1.60	61	480	67	492
2.25 – 15			505		517
2.25 – 16			530		542
2.25 – 17			556		568
2.25 – 18			581		593
2.25 – 19			607		619
2.50 – 14	1.60	65	492	72	506
2.50 – 15			517		531
2.50 – 16			542		556
2.50 – 17			568		582
2.50 – 18			593		607
2.50 – 19			619		633
2.50 – 21			669		683
2.75 – 14	1.85	75	512	83	524
2.75 – 15			537		549
2.75 – 16			562		574
2.75 – 17			588		600
2.75 – 18			613		625
2.75 – 19			639		651
2.75 – 21			689		701
3.00 – 14	1.85	80	526	88	540
3.00 – 15			551		565
3.00 – 16			576		590
3.00 – 17			602		616
3.00 – 18			627		641
3.00 – 19			653		667
3.00 – 21			703		717
3.25 – 14	2.15	89	538	98	552
3.25 – 15			563		577
3.25 – 16			588		602
3.25 – 17			614		628
3.25 – 18			639		653
3.25 – 19			665		679
3.25 – 21			715		729
3.50 – 14	2.15	93	548	102	564
3.50 – 15			573		589
3.50 – 16			598		614
3.50 – 17			624		640
3.50 – 18			649		665
3.50 – 19			675		691
3.50 – 21			725		741
3.75 – 18	2.15	99	661	109	677
3.75 – 19			687		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