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# International Standard



# 6054/1

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

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## Motorcycle tyres and rims (diameter codes 4 to 12) — Scooter type — Part 1 : Tyres

*Pneumatiques et jantes pour motocycles (codes de diamètre 4 à 12) — Type scooter — Partie 1 : Pneumatiques*

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**Descriptors** : road vehicles, motorcycles, pneumatic tyres, rims, tyres, designation, dimensions, dimensional measurement, load capacity.

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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 6054/1 was developed by Technical Committee ISO/TC 31, *Tyres, rims and valves*, and was circulated to the member bodies in April 1980.

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

Austria	Germany, F.R.	Romania
Bulgaria	Israel	South Africa, Rep. of
Canada	Italy	Spain
China	Japan	Sweden
Czechoslovakia	Korea, Rep. of	United Kingdom
Egypt, Arab Rep. of	Netherlands	USA
France	Poland	USSR

No member body expressed disapproval of the document.

# Motorcycle tyres and rims (diameter codes 4 to 12) — Scooter type — Part 1 : Tyres

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## 1 Scope

This part of ISO 6054 establishes the designation, dimensions, ISO 4223/1, *Definitions of some terms used in the tyre industry* and load ratings of existing scooter tyres. <https://standards.iteh.ai/catalog/standards/sist/6131770c-4131-4131-8131-16c5c77610c4/iso-6054-1-1981> Part 1: Pneumatic tyres.

ISO 6054/2<sup>2)</sup> deals with the requirements for rims.

## 2 Field of application

This part of ISO 6054 applies to motorcycle tyres fitted on rims with a nominal diameter corresponding to the codes 4-5-6-7-8-9-10 and 12 (scooter tyres).

## 3 Reference

## 4 Definitions

For definitions of terms relating to tyres, see ISO 4223/1.

1) The term "scooter" is not defined by the International Organization for Standardization or by the 1968 Vienna Convention on Road Traffic. This type of vehicle is included in the category "motorcycle". The distinction between scooter tyres and motorcycle tyres is based on the diameters of the rims on which they are fitted, those corresponding to code 12 and below being scooter tyres and those corresponding to code 13 and above being motorcycle tyres.

2) At present at the stage of draft.

## Section one : Tyre designation and dimensions

### 5 Tyre designation

The 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 and nominal rim diameter.

#### 5.1 Nominal section width

The nominal section width shall be expressed by a code (see table 2 for code correlations).

#### 5.2 Nominal rim diameter

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

### 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 tyres marked with a nominal rim diameter code, see table 1 for the value of  $D_r$  to be used.

Table 1 — Nominal rim diameter code

Code	Nominal rim diameter ( $D_r$ ) mm
4	102
5	127
6	152
7	178
8	203
9	229
10	254
12	305

##### 6.1.2 Design new tyre section height ( $H$ )

For the design new tyre section height ( $H$ ) corresponding to nominal section width ( $S_N$ ), see table 2.

Table 2 — Section height

Nominal section width ( $S_N$ ) Code	Section height ( $H$ ), mm for rim codes	
	4-5-6-7	8-9-10-12
2.50	—	67,5
2.75	—	72,5
3.00	74,5	79,5
3.25	—	85
3.50	86	91,5
4.00	99,5	106
4.50	112	119,5
6.00	142	151,5

#### 6.2 Calculation of "maximum overall tyre dimensions in service"

These dimensions include : protective ribs, lettering, embellishments, manufacturing tolerances, special tread configuration 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 1,08 :

$$W_{max} = 1,08 S$$

##### 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 1,10 :

$$D_{o max} = D_r + 2,20 H$$

#### 6.3 Design new tyre and overall tyre dimensions

Table 3 gives design new tyre dimensions and overall tyre dimensions in service for the 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 pressure, and allowed to stand for a minimum of 24 h at normal room temperature, after which the inflation pressure shall be reajusted to the original value.

If rims of other widths are used, the values of design new tyre section width,  $S$ , and maximum overall section in service,  $W_{max}$  shall be changed by 40 % of the difference in rim width.

Table 3 — Tyre dimensions — Design, and in service

Dimensions in millimetres

Tyre designation	Measuring rim width ( $R_M$ )	Design new tyre		In service	
		Section width ( $S$ )	Overall diameter ( $D_o$ )	Maximum overall section width ( $W_{max}$ )	Maximum overall diameter ( $D_{o max}$ )
Rim diameter code 4-5-6-7					
3.00-5 3.00-7	63,5	84	276 327	91	291 342
3.50-4 3.50-5 3.50-6 3.50-7	63,5	92	274 299 324 350	99	291 316 341 367
4.00-5 4.00-7	63,5	105	326 377	113	346 397
4.50-6	76	120	376	130	398
6.00-6	101,5	154	436	166	464
Rim diameter code 8-9-10-12					
2.50-8 2.50-9	38	65	338 364	70	352 378
2.75-9	44,5	71	374	77	389
3.00-8 3.00-10 3.00-12	63,5	84	362 413 464	91	378 429 480
3.25-12	63,5	88	475	95	492
3.50-8 3.50-9 3.50-10 3.50-12	63,5	92	386 412 437 488	99	404 430 455 506
4.00-8 4.00-10 4.00-12	63,5	105	415 466 517	113	436 487 538
4.50-12	76	120	544	130	568
6.00-9	101,5	154	532	166	562

Section two : Load ratings

8 Load capacities and inflation pressures

Table 4 gives the maximum load capacities for the corresponding inflation pressures, with reference to a speed of 100 km/h. For other maximum speeds, apply the percentage overload given in table 5.

The marking of table 4 PR is optional.

Table 4 — Maximum load capacity and inflation pressures

RIM DIAMETER CODE 4-5-6-7		
Inflation pressure, kPa*	175	250
Tyre designation	Maximum load capacities, kg	
3.00-5 2 PR	60	—
3.00-5 4 PR	—	85
3.00-7 2 PR	75	—
3.00-7 4 PR	—	105
3.50-4 2 PR	70	—
3.50-4 4 PR	—	100
3.50-5 2 PR	80	—
3.50-5 4 PR	—	110
3.50-6 2 PR	90	—
3.50-6 4 PR	—	125
3.50-7 2 PR	100	—
3.50-7 4 PR	—	140
4.00-5 2 PR	110	—
4.00-5 4 PR	—	145
4.00-7 2 PR	130	—
4.00-7 4 PR	—	180
4.50-6 2 PR	150	—
4.50-6 4 PR	—	200
6.00-6 2 PR	230	—
6.00-6 4 PR	—	310

\* 1 kPa = 10<sup>-2</sup> bar.

Table 4 — (concluded)

RIM DIAMETER CODE 8-9-10-12		
Inflation pressure, kPa*	175	250
Tyre designation	Maximum load capacities, kg	
2.50-8 2 PR	70	—
2.50-8 4 PR	—	100
2.50-9 2 PR	80	—
2.50-9 4 PR	—	105
2.75-9 2 PR	90	—
2.75-9 4 PR	—	120
3.00-8 2 PR	95	—
3.00-8 4 PR	—	130
3.00-10 2 PR	110	—
3.00-10 4 PR	—	150
3.00-12 2 PR	130	—
3.00-12 4 PR	—	175
3.25-12 2 PR	140	—
3.25-12 4 PR	—	195
3.50-8 2 PR	120	—
3.50-8 4 PR	—	170
3.50-9 2 PR	135	—
3.50-9 4 PR	—	180
3.50-10 2 PR	145	—
3.50-10 4 PR	—	195
3.50-12 2 PR	165	—
3.50-12 4 PR	—	225
4.00-8 2 PR	160	—
4.00-8 4 PR	—	215
4.00-10 2 PR	185	—
4.00-10 4 PR	—	250
4.00-12 2 PR	210	—
4.00-12 4 PR	—	285
4.50-12 2 PR	255	—
4.50-12 4 PR	—	350
6.00-9 2 PR	320	—
6.00-9 4 PR	—	435

\* 1 kPa = 10<sup>-2</sup> bar

Table 5 — Percentage overload at other maximum speeds

Speed maximum km/h	Overload %
50	30
70	16
80	10
90	5
100	0
110	— 7
120	— 15
130	— 25

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