International Standard 5995/1

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Moped tyres and rims — Part 1 : Tyres

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Foreword

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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 5995/1 was developed by Technical Committee ISO/TC 31, *Tyres, rims and valves*, and was circulated to the member bodies in February 1980.

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

Australia	France	South Africa, Rep. of
Austria	Germany, F. R.	Spain
Belgium	Italy	Sweden
Brazil	Japan	United Kingdom
Bulgaria	Korea, Rep. of	USA
Canada	Netherlands	USSR
Czechoslovakia	Romania	

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

Poland

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Moped tyres and rims — Part 1 : Tyres

1 Scope

This International Standard establishes the designation, dimensions, and load ratings for moped tyres.[1]

ISO 5995/2 will deal with requirements for rims.[2]

2 Field of application

This International Standard applies to moped tyres, having a maximum speed of 50 km/h, fitted on rims with a nominal diameter corresponding to the codes 8 - 9 - 10 - 12 - 14 - 15 - 16 - 17 - 18 - 19 - 22.

3 References

ISO 3833, *Road vehicles — Types — Terms and definitions.*

ISO 4223/1, *Definition of some terms used in the tyre industry — Part 1 : Pneumatic tyres.*

4 Definitions

For the purposes of this International Standard, the definitions given in ISO 4223/1 as well as the following definition apply.

4.1 moped : A two-wheeled or three-wheeled motor-driven vehicle, with a maximum design speed not exceeding 50 km/h. If the driving motor is a thermic engine, its displacement or equivalent capacity must not exceed 50 cm^3.

[Definition given in ISO 3833.]

1) An International Standard is in preparation relating to a special series of moped tyres having a maximum speed of 100 km/h.

2) In preparation.

Section one : Tyre designation and dimensions

5 Tyre designation

The designation shall be shown on the sidewall of the tyre and shall include dimensional and service characteristics marking, and such markings shall be close to each other.

5.1 Dimensional characteristics shall include :

5.1.1 Nominal section width

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

5.1.2 Nominal rim diameter

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

5.2 Service characteristics shall include the word "MOPED" or "CYCLOMOTEUR" or "CICLOMOTORE".

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 those tyres using a nominal rim diameter code, see, in table 1, the value of D_r to be used.

Table 1 — Nominal rim diameter code

Code	Nominal rim diameter D_r mm
8	203
9	229
10	254
12	305
14	356
15	381
16	406
17	432
18	457
19	483
22	559

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
1 3/4	53
2	56
2 1/4	63
2 1/2	71
2 3/4	76
3	82
3 1/4	90

6.2 Calculation of "maximum overall (grown) tyre dimensions in service"

These dimensions include protective ribs, lettering, embellishment, manufacturing tolerances, special tread configurations and growth due to service.

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

The maximum overall width in service is equal to the product of the design new tyre section width (S) by the coefficient 1,08 :

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

6.2.2 Maximum overall (grown) 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) by the coefficient 1,08 :

$$D_o = D_r + 2{,}16\ H$$

6.3 Design new tyre dimensions and overall tyre dimensions in service

Table 3 give design new tyre dimensions in service for tyres designated rim diameter codes 14 to 22. Table 4 is for rim diameter codes 8 to 12.

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 readjusted to the original value.

Table 3 — Moped tyres in highway service — Designation and dimensions — Rim diameter code : 14 to 22

Dimensions in millimetres

Tyre designation	Measuring rim width R_M	Design new tyre dimensions		Grown tyre dimensions in service	
		Section width S	Outer diameter D_o	Maximum overall section width W_{max}	Maximum overall diameter $D_{o\,max}$
1 3/4-19 MOPED or CYCLOMOTEUR or CICLOMOTORE	30,5	50	589	54	597
2-14 "	34,0	55	468	59	477
2-16 "			518		527
2-17 "			544		553
2-18 "			569		578
2-19 "			595		604
2-22 "			670		680
2 1/4-14 "	38	62	482	67	492
2 1/4-15 "			507		517
2 1/4-16 "			532		542
2 1/4-17 "			558		568
2 1/4-18 "			583		593
2 1/4-19 "			609		619
2 1/4-22 "			685		695
2 1/2-15 "	40,5	68	523	73	534
2 1/2-16 "			548		559
2 1/2-17 "			574		585
2 1/2-18 "			599		610
2 1/2-19 "			625		636
2 3/4-15 "	47,0	75	533	81	545
2 3/4-16 "			558		570
2 3/4-17 "			584		596
2 3/4-18 "			609		621
3-17 "	47,0	81	596	87	609
3 1/4-18 "	55	89	637	96	651

Table 4 — Moped tyres in highway service — Designation and dimensions — Rim diameter code : 8 to 12

Dimensions in millimetres

Tyre designation	Measuring rim width R_M	Design new tyre dimensions		Grown tyre dimensions in service	
		Section width S	Outer diameter D_o	Maximum overall section width W_{max}	Maximum overall diameter $D_{o\,max}$
2-12 MOPED or CYCLOMOTEUR or CICLOMOTORE	34,0	55	417	59	426
2 1/4-12 "	38	62	431	67	441
2 1/2-8 " 2 1/2-9 "	44,5	70	345 371	76	356 382
2 3/4-9 "	44,5	73	381	79	393
3-10 " 3-12 "	53,3	84	418 469	91	431 482

Section two : Load ratings

8 Load capacities and inflation pressures

8.1 The load capacities and the relevant inflation pressures shown in the tables refer to the maximum speed of 50 km/h in the case of tyres marked in accordance with 5.2.

Table 5 — Maximum load capacity for corresponding inflation pressure — Rim diameter code : 14 to 22

Tyre designation[1]	Maximum load capacity, kg	
	Inflation pressure[2] 250 kPa	Inflation pressure[2] 275 kPa
1 3/4-19 MOPED or CYCLOMOTEUR or CICLOMOTORE	80	—
2-14 "	75	—
2-16 "	80	—
2-17 "	85	—
2-17 REINFORCED	—	110
2-18 "	85	—
2-19 "	90	—
2-22 "	95	—
2 1/4-14 "	90	—
2 1/4-15 "	90	—
2 1/4-16 "	95	—
2 1/4-16 REINFORCED	—	130
2 1/4-17 "	100	—
2 1/4-17 REINFORCED	—	135
2 1/4-18 "	105	—
2 1/4-19 "	105	—
2 1/4-19 REINFORCED	—	145
2 1/4-22 "	115	—
2 1/4-22 REINFORCED	—	155
2 1/2-15 "	105	—
2 1/2-16 "	110	—
2 1/2-16 REINFORCED	—	150
2 1/2-17 "	115	155
2 1/2-18 "	120	—
2 1/2-19 "	120	—
2 1/2-19 REINFORCED	—	165
2 3/4-15 "	120	—
2 3/4-16 "	125	—
2 3/4-16 REINFORCED	—	170
2 3/4-17 "	130	—
2 3/4-17 REINFORCED	—	175
2 3/4-18 "	135	—
3-17 "	145	—
3-17 REINFORCED	—	195
3 1/4-18 "	175	—

1) Reinforced may be replaced by the abbreviation "REINF".

2) 1 kPa = 10^{-2} bar

Table 6 — Maximum load capacity for corresponding inflation pressure — Rim diameter code : 8 to 12

Tyre designation[1]	Maximum load capacity, kg	
	Inflation pressure[2] 250 kPa	Inflation pressure[2] 275 kPa
2-12 MOPED or CYCLOMOTEUR or CICLOMOTORE	70	—
2 1/4-12 "	80	—
2 1/2-8 "	75	—
2 1/2-8 REINFORCED	—	105
2 1/2-9 "	80	—
2 3/4-9 "	90	—
3-10 "	110	—
3-12 "	120	—

1) Reinforced may be replaced by the abbreviation "REINF".

2) 1 kPa = 10^{-2} bar

Annex

Tyres for small cubic capacity motorcycles and mopeds

(not part of the Standard.)

Some tyres of similar size designation and dimensions to those shown in table 3 but with different performance capabilities are manufactured.

These tyres designed for a maximum speed of 100 km/h have the following differences :

a) the word "MOPED" or "CYCLOMOTEUR" or "CICLOMOTORE" is not marked on the tyre sidewall;

b) the service characteristics indicating the "LOAD INDEX" and the "SPEED SYMBOL" may be marked on the tyre side wall.

NOTE — Speed symbol "J" (100 km/h) would apply;

c) the load capacities and relevant inflation pressures appropriate to a maximum speed of 100 km/h, are shown in table 7;

d) the load capacities of table 7 can be increased by up to 30 % when the above tyres are fitted on mopeds (max speed 50 km/h) designed for carrying an additional passenger.

The relevant inflation pressure must be fixed by agreement with the relevant tyre manufacturer.

Table 7 — Load capacities and relevant inflation pressures

Tyre designation 1)		Load capacity, kg	Inflation pressure, kPa 2)
2-16	20 J	80	250
2-17 REINF	31 J	109	275
2-18	22 J	85	250
2-19	24 J	90	250
2 1/4-15	24 J	90	250
2 1/4-16	26 J	95	250
2 1/4-16 REINF	38 J	132	275
2 1/4-17	28 J	100	250
2 1/4-17 REINF	39 J	136	275
2 1/4-18	30 J	106	250
2 1/4-19	30 J	106	250
2 1/2-16	31 J	109	250
2 1/2-16 REINF	42 J	150	275
2 1/2-17	33 J	115	250
2 1/2-17 REINF	43 J	155	275
2 1/2-18	35 J	121	250
2 1/2-19	35 J	121	250
2 1/2-19 REINF	45 J	165	275
2 3/4-16	36 J	125	250
2 3/4-17	38 J	132	250
2 3/4-17 REINF	47 J	175	275
3-17	41 J	145	250
3-17 REINF	51 J	195	275
3-18	42 J	150	250
3 1/4-18	47 J	175	250

1) "REINF" may be replaced by "REINFORCED" in the tyre size designation.

2) 1 kPa = 10^{-2} bar.