

Tyres and wheels —

Part 1: Tyres —

Section 6: Motorcycle tyres —

Subsection 6.2b Specification for designations, dimensions and load ratings for metric series 100, 90, 80, 70, 60, 55 and 50 tyres

ICS 43.140; 83.160.10

Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee AUE/4, Tyres and wheels for motor vehicles, upon which the following bodies were represented:

- Agricultural Engineers' Association
- Automobile Association
- British Industrial Truck Association
- British Pressure Gauge Manufacturers' Association
- British Rubber Manufacturers' Association
- Confederation of Passenger Transport UK
- Department of Transport
- Freight Transport Association
- Institute of Road Transport Engineers (Inc)
- Motor Cycle Industry's Association of Great Britain Ltd.
- Motor Industry Research Association
- National Tyre Distributors' Association
- Retread Manufacturers' Association
- Road Haulage Association Ltd.
- Society of Motor Manufacturers and Traders Ltd.

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National foreword

This Subsection of this Part of BS AU 50 has been prepared by Technical Committee AUE/4 and is identical to ISO 5751-2:1994 *Motorcycle tyres and rims (metric series) — Part 2: Tyre dimensions and load-carrying capacities*, including Amendment 1 published by the International Organization for Standardization (ISO). Other Parts of the Standard are:

- *Part 2: Wheels and rims;*
- *Part 3: Valves;*
- *Part 4: Rim profiles and dimensions.*

Cross-references

International standard	Corresponding British Standard
	BS AU 50 <i>Tyres and wheels</i> Part 1: <i>Tyres</i> Section 6: <i>Motorcycle tyres</i>
ISO 5751-1:1994	Subsection 6.1a <i>Specification for general requirements and design guide for designations, dimensions and load ratings for metric series tyres</i> (Identical)

This Subsection supersedes BS AU 50-1.6.2:1989 which is withdrawn.
The Technical Committee has reviewed the provisions of ISO 4223-1:1989, to which normative reference is made in the text, and has decided that they are acceptable for use in conjunction with this standard.
A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 22, an inside back cover and a back cover.
This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This part of ISO 5751 specifies the designation, dimensions and load-carrying capacities of metric series 100, 90, 80, 70, 60, 55 and 50 motorcycle tyres to be mounted on the metric series of rims.

It applies to motorcycle tyres with reduced height/width ratio (low profile — 100, 90, 80, 70, 60, 55 and 50).

NOTE 1 ISO 4249 deals with the requirements for motorcycle tyres and rims (code-designated series) for rim diameters code 13 and above. ISO 6054 deals with the requirements for motorcycle tyres and rims (code-designated series) for rim diameters code 12 and below.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 5751. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 5751 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 4223-1:1989, *Definitions of some terms used in the tyre industry — Part 1: Pneumatic tyres.*

ISO 5751-1:1994, *Motorcycle tyres and rims (metric series) — Part 1: Design guides.*

3 Definitions

For the purposes of this part of ISO 5751, the definitions given in ISO 4223-1 apply.

4 Tyre designation

In the tyre designation, the tyre size designation shall be as shown in Table 1. The designation shall be completed by the addition of the “service description”, i.e. load index and speed symbol [see 4.2 b)].

4.1 Tyre construction code

The tyre construction code shall be as follows:

- “—” for diagonal ply tyres;
- “B” for bias-belted;
- “R” for radial ply tyres.

4.2 Example

A motorcycle tyre having

- a) a size and construction of:
 - nominal section width 100 mm,
 - nominal aspect ratio 90,
 - diagonal construction,
 - nominal rim diameter code 18;

b) service description of:

- load-carrying capacity 224 kg,
- reference speed 150 km/h;

shall be marked

100/90 – 18 56 P

The load-carrying capacity and maximum speed codes are given in ISO 5751-1:1994, Table 3 and Table 4 respectively.

4.3 Motorcycle tyre indication

For nominal rim diameter codes 13 up to 19 inclusive, it is recommended to add the suffix “M/C” to the size and construction marking.

5 Tyre dimensions

Table 1 to Table 10 show:

- a) the tyre designation as indicated in clause 4;
- b) the measuring rim width code;
- c) the design tyre dimensions, i.e. section width and overall diameter;
- d) the maximum tyre dimensions in service, i.e. overall width and overall diameter, for the various types of “tread configurations” to be considered by vehicle manufacturers in designing for tyre clearances.

6 Method of measurement of tyre dimensions

Before measuring, the tyre shall be mounted on the measuring rim ready for tyre fitment and inflated:

- a) **for standard load tyres:**
 - 225 kPa for speed symbols P and lower,
 - 250 kPa for speed symbol S,
 - 280 kPa for speed symbols higher than S;

- b) **for extra load tyres:**
 - 280 kPa for speed symbols M and P;

and allowed to stand for 24 h at normal room temperature, after which the inflation pressure shall be readjusted to the values shown above.

7 Tread configurations

Figure 1 in ISO 5751-1:1994 shows various tread configurations.

NOTE 2 These attributions of tread type configurations to the service are to be considered as examples only. The choice of a given tread type configuration for a given tyre depends on the tyre manufacturer alone.

Tread type A corresponds to highway service tyres manufactured in speed symbols P, S and higher.

Tread type B corresponds to highway service tyres (for high performance vehicles) manufactured in speed symbols S and higher.

Tread type C corresponds to tyres for on-and-off-road service manufactured in speed symbols up to H inclusive.
Tread type D corresponds to tyres for exclusive off-road service manufactured in speed symbol M.

8 Maximum load ratings

Table 11 and Table 12 show the maximum tyre load ratings for 100 series tyres.

Table 13 and Table 14 show the maximum tyre load ratings for 90 series tyres.

Table 15 and Table 16 show the maximum tyre load ratings for 80 series tyres.

Table 17 shows the maximum tyre load ratings for 70 series tyres.

Table 18 shows the maximum tyre load ratings for 60 series tyres.

Table 19 shows the maximum tyre load ratings for 55 series tyres.

Table 20 shows the maximum tyre load ratings for 50 series tyres.

9 Inflation pressures

The inflation pressures are given as a guide only. The inflation pressures used in practice are subject to agreement between the tyre and vehicle manufacturers and should take into account not only the load, but also the tyre construction, road-holding, maximum speed, the location of the tyre, the operating conditions and the mechanical characteristics of the vehicle.

The maximum load-carrying capacity is referred to the following inflation pressures:

a) rim diameter codes up to 12 inclusive:

- normal load version: 250 kPa,
- light load version: 175 kPa
- extra load version: 300 kPa;

b) rim diameter codes 13 and above (applies also to rim diameter codes 12 and below in series 70 and below):

1) normal load version:

- tyres marked with speed symbols up to and including P: 225 kPa,
- tyres marked with speed symbols Q, R, S: 250 kPa,
- tyres marked with speed symbols T, U, H: 280 kPa,
- tyres marked with speed symbol V: 290 kPa,

2) extra load version tyres with speed symbols up to and including P: 280 kPa.

10 Load capacity at reduced speeds

Subject to acceptance by the tyre manufacturer and taking into account the conditions of use of the motorcycle, the load capacities corresponding to the load indices indicated in Table 11 to Table 20 may be modified according to the percentage shown in Table 21. This modification is possible when the motorcycle maximum speed is different from the one which is associated with the speed symbol.

Table 1 — 100 series tyre dimensions — Design and in-service — Nominal rim diameter codes 14, 15, 16, 17, 18 and 19

Dimensions in millimetres

Tyre size designation ^{ab}	Measuring rim width code R_m	Design tyre		In-service			
		Section width S	Overall diameter D_o	Maximum overall width W_{max}		Maximum overall diameter $D_{0,max}$	
				Tread types A, B and C	Tread type D	Tread types A and B ^c	Tread types C and D
80/100 – 14 M/C	1.85	80	516	88	100	528	536
90/100 – 14 M/C	2.15	90	535	99	113	548	558
70/100 – 15 M/C	1.60	69	521	76	86	531	537
80/100 – 15 M/C	1.85	80	541	88	100	553	561
90/100 – 15 M/C	2.15	90	561	99	113	573	583
70/100 – 16	1.60	69	546	76	86	556	562
80/100 – 16	1.85	80	566	88	100	578	586
90/100 – 16	2.15	90	586	99	113	598	608
100/100 – 16	2.50	101	606	111	126	620	630
130/100 – 16	3.00	129	666	142	161	684	698
140/100 – 16	3.50	142	686	156	178	706	720
70/100 – 17	1.60	69	572	76	86	582	588
80/100 – 17	1.85	80	592	88	100	604	612
90/100 – 17	2.15	90	612	99	113	624	634
100/100 – 17	2.50	101	632	111	126	646	656
110/100 – 17	2.50	109	652	120	136	668	678
120/100 – 17	2.75	119	672	131	149	688	700
130/100 – 17	3.00	129	692	142	161	710	724
70/100 – 18	1.60	69	597	76	86	607	613
80/100 – 18	1.85	80	617	88	100	629	637
90/100 – 18	2.15	90	637	99	113	649	659
100/100 – 18	2.50	101	657	111	126	671	681
110/100 – 18	2.50	109	677	120	136	693	703
120/100 – 18	2.75	119	697	131	149	713	725
130/100 – 18	3.00	129	717	142	161	735	749
70/100 – 19	1.60	69	623	76	86	633	639
80/100 – 19	1.85	80	643	88	100	655	663
90/100 – 19	2.15	90	663	99	113	675	685
100/100 – 19	2.50	101	683	111	126	697	707
110/100 – 19	2.50	109	703	120	136	719	729
120/100 – 19	2.75	119	723	131	149	739	751
130/100 – 19	3.00	129	743	142	161	761	775

^a In the case of radial construction, the tyre size designation is completed by the letter “R” in place of the dash “–” (e.g. 80/100 R 14 M/C).

^b For nominal rim diameter codes 13 up to 19 inclusive, it is recommended to add the suffix “M/C” to the tyre size designation.

^c Maximum overall diameters for tread types A and B are related to service up to 150 km/h.

Table 2 — 100 series tyre dimensions — Design and in-service — Nominal rim diameter codes 8, 10 and 12

Dimensions in millimetres

Tyre size designation ^a	Measuring rim width code R_m	Design tyre		In-service ^b	
		Section width S	Overall diameter D_o	Maximum overall width W_{max}	Maximum overall diameter $D_{0,max}$
70/100 – 8	1.60	69	343	75	353
80/100 – 8	1.85	80	363	86	375
90/100 – 8	2.15	90	383	97	395
100/100 – 8	2.50	101	403	109	417
110/100 – 8	2.50	109	423	118	439
120/100 – 8	2.75	119	443	129	459
130/100 – 8	3.00	129	463	139	481
70/100 – 10	1.60	69	394	75	404
80/100 – 10	1.85	80	414	86	426
90/100 – 10	2.15	90	434	97	446
100/100 – 10	2.50	101	454	109	468
110/100 – 10	2.50	109	474	118	490
120/100 – 10	2.75	119	494	129	510
130/100 – 10	3.00	129	514	139	532
70/100 – 12	1.60	69	445	75	455
80/100 – 12	1.85	80	465	86	477
90/100 – 12	2.15	90	485	97	497
100/100 – 12	2.50	101	505	109	519
110/100 – 12	2.50	109	525	118	541
120/100 – 12	2.75	119	545	129	561
130/100 – 12	3.00	129	565	139	583

^a In the case of radial construction, the tyre size designation is completed by the letter “R” in place of the dash “–” (e.g. 80/100 R 14 M/C).

^b Tread type A.

Table 3 — 90 series tyre dimensions — Design and in-service — Nominal rim diameter codes 14, 15, 16, 17, 18, 19 and 21

Dimensions in millimetres

Tyre size designation ^{ab}	Measuring rim width code R_m	Design tyre		In-service			
		Section width S	Overall diameter D_o	Maximum overall width W_{max}		Maximum overall diameter $D_{o,max}$	
				Tread types A, B and C	Tread type D	Tread types A and B ^c	Tread types C and D
80/90 – 14 M/C	2.15	90	518	99	113	530	538
90/90 – 15 M/C	2.15	90	543	99	113	555	563
100/90 – 15 M/C	2.50	101	561	111	126	573	583
110/90 – 15 M/C	2.50	109	579	120	136	593	603
120/90 – 15 M/C	2.75	119	597	131	149	613	623
130/90 – 15 M/C	3.00	129	615	142	161	631	643
140/90 – 15 M/C	3.50	142	633	156	178	651	663
150/90 – 15 M/C	3.50	150	651	165	188	669	683
80/90 – 16	1.85	80	550	88	100	560	568
90/90 – 16	2.15	90	568	99	113	580	588
100/90 – 16	2.50	101	586	111	126	598	608
110/90 – 16	2.50	109	604	120	136	618	628
120/90 – 16	2.75	119	622	131	149	638	648
130/90 – 16	3.00	129	640	142	161	656	668
140/90 – 16	3.50	142	658	156	178	676	688
150/90 – 16	3.50	150	676	165	188	694	708
70/90 – 17	1.60	69	558	76	85	566	574
80/90 – 17	1.85	80	576	88	100	586	594
90/90 – 17	2.15	90	594	99	113	606	614
100/90 – 17	2.50	101	612	111	126	624	634
110/90 – 17	2.50	109	630	120	136	644	654
120/90 – 17	2.75	119	648	131	149	664	674
130/90 – 17	3.00	129	666	142	161	682	694
70/90 – 18	1.60	69	583	76	86	591	599
80/90 – 18	1.85	80	601	88	100	611	619
90/90 – 18	2.15	90	619	99	113	631	639
100/90 – 18	2.50	101	637	111	126	649	659
110/90 – 18	2.50	109	655	120	136	669	679
120/90 – 18	2.75	119	673	131	149	689	699
130/90 – 18	3.00	129	691	142	161	707	719
70/90 – 19	1.60	69	609	76	86	617	625
80/90 – 19	1.85	80	627	88	100	637	645
90/90 – 19	2.15	90	645	99	113	657	665
100/90 – 19	2.50	101	663	111	126	675	685
110/90 – 19	2.50	109	681	120	136	695	705
120/90 – 19	2.75	119	699	131	149	715	725
130/90 – 19	3.00	129	717	142	161	733	745
90/90 – 21	2.15	90	635	99	113	707	715
100/90 – 21	2.50	101	713	111	126	725	735

^a In the case of radial construction, the tyre size designation is completed by the letter “R” in place of the dash “–” (e.g. 80/100 R 14 M/C).

^b For nominal rim diameter codes 13 up to 19 inclusive, it is recommended to add the suffix “M/C” to the tyre size designation.

^c Maximum overall diameters for tread types A and B are related to service up to 150 km/h.