SRI LANKA STANDARD 890 : 2014

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SPECIFICATION FOR
PNEUMATIC TYRES FOR MOTORCYCLES AND SCOOTERS

(First Revision)

SRI LANKA STANDARDS INSTITUTION

Sri Lanka Standard

SPECIFICATION FOR PNEUMATIC TYRES FOR MOTORCYCLES AND SCOOTERS
(First Revision)

SLS 890 : 2014

Gr.13

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Sri Lanka Standards are subject to periodical revision in order to accommodate the progress made by industry. Suggestions for improvement will be recorded and brought to the notice of the Committees to which the revisions are entrusted.

This standard does not purport to include all the necessary provisions of a contract.

Sri Lanka Standard
SPECIFICATION FOR PNEUMATIC TYRES FOR MOTORCYCLES AND SCOOTERS
(First Revision)

FOREWORD

This standard was approved by the Sectoral Committee on Materials, Mechanical Systems and Manufacturing Engineering and authorized for adoption and publication as a Sri Lanka Standard by the Council of the Sri Lanka Standards Institution on 2014-06-26.

This Sri Lanka standard is the first revision of **SLS 890** : Specification for diagonal ply motorcycle and scooter tyres, first published in 1990. In this revision, the title, the scope, tyre dimensions and methods of test have been revised.

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated, expressing the result of a test or an analysis, shall be rounded off in accordance with **SLS 102**. The number of significant figures to be retained in the rounded off value shall be the same as that of the specified value in this standard.

In the preparation of this standard, valuable assistance derived from the following publications are gratefully acknowledged:

1) IS 15627 Automotive vehicles - Pneumatic tyres for two and three wheeled motor vehicles
2) European Tyre and Rim Technical Organization Standards Manual(ETRTO) - 2012

1 SCOPE

This standard specifies the requirements of dimension, performance and methods of test for pneumatic new tyres for motorcycles and scooters.

NOTES:

1) This standard does not apply to tyres designed for competitions.

2)On-road performance requirements of the tyres are not covered in this standard.

2 REFERENCES

SLS ISO 10231	Motorcycle tyres - Test methods for verifying tyre capabilities
SLS 102	Rules for rounding off numerical values
SLS 428	Random sampling methods
SLS 900 - 1	Definition of terms used in the tyre industry Part 1 - Pneumatic tyres

3 DEFINITION

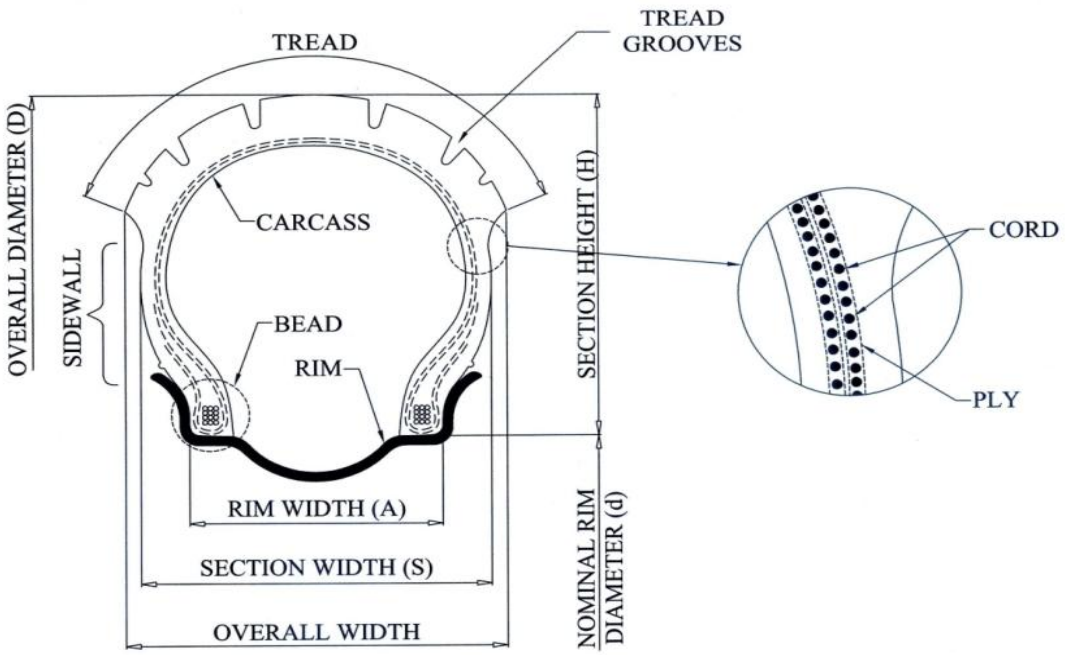


FIGURE 1 - Nomenclature of tyre

For the purposes of this standard the definition given in **SLS 900: Part 1** and the following shall apply.

3.1 bead : Part of the pneumatic tyre, the shape and structure of which enables it to fit the rim and hold the tyre on that rim (see Figure **1**).

3.2 cold inflation pressure : Internal pressure of the tyre at ambient temperature and not including any pressure build up due to tyre usage.

NOTE: *It is expressed in kPa.*

3.3 carcass : Part of the pneumatic tyre and other than the tread and the rubber sidewalls which, when inflated, bears the load (see Figure **1**).

3.4 cords : Strands forming the fabric of the plies in the pneumatic tyre (see Figure **1**).

3.5 cord separation : Parting of the cords from their rubber coating.

3.6 design section width : The tyre section width which is used for tyre design purposes.

3.7 design tyre diameter : The tyre overall diameter which is used for tyre design purposes.

3.8 inflation pressure : Inflation pressure means the pressure taken with the tyre at ambient temperature and does not include any pressure build up due to tyre usage.

3.9 load capacity : The maximum load, which a tyre is permitted to carry under specified operating conditions .

3.10 load index : A numerical code associated with the maximum load a tyre can carry (except for loads at speeds above 210 km/h, see Table **10**), corresponding to its speed symbol according to the operating conditions specified by the manufacturer (see Table **11**).

3.11 measuring rim : Rim on which a tyre shall be fitted for dimensional measurement and performance testing purposes.

3.12 nominal aspect ratio (R_a) : Hundred times the ratio of the section height to the section width of the tyre on its theoretical rim.

3.13 theoretical rim : A rim having a width of specified ratio to the nominal section width.

3.14 nominal rim diameter : A size code for reference purpose only; as indicated in the tyre and in the rim size designation (see Figure **1**).

3.15 new tyre : Tyre that has been neither used nor subjected to a retreading operation.

3.16 ply : Layer of rubber coated parallel cords (see Figure **1**).

3.17 ply rating : Tyres with its maximum recommended load when used in a specific type of service. It is an index of tyre strength and does not necessarily represent the number of cord plies in the tyre.

3.18 ply separation : Parting of adjacent plies.

3.19 overall width(S_o) : The linear distance between the outside of the sidewalls of an inflated tyre, including elevations due to marking, decorations, protective bands or ribs and excluding rim protectors.; the overall width of tyres, the tread width of which is greater than the section width of the tyre (see Figure **1**).

3.20 overall diameter (OD) : The diameter of an inflated tyre at the outermost surface of the tread (see Figure **1**).

3.21 rim : Support for either a tyre and inner tube or a tubeless tyre on which the beads of the tyre are seated (see Figure **1**).

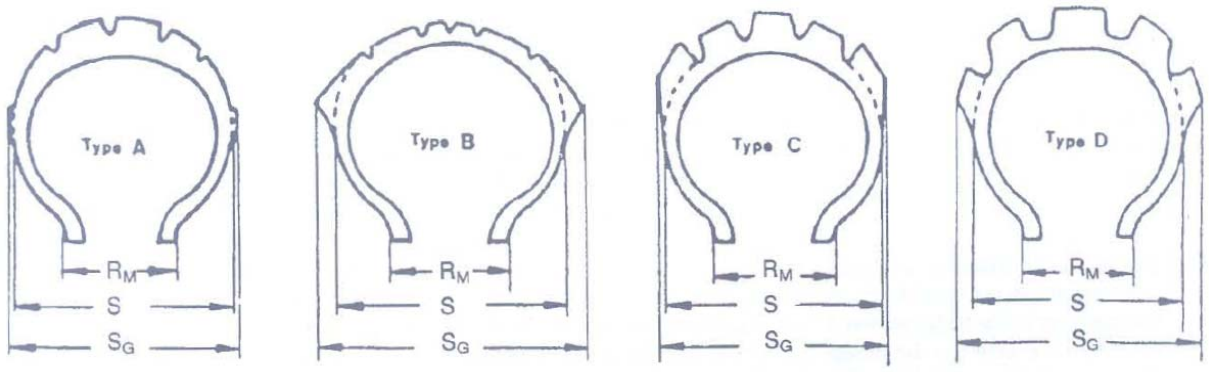
3.22 section height (H) : Half the difference between the overall diameter of the tyre and the nominal rim diameter.

3.23 section width (S) : Linear distance between the outsides of the sidewalls of an inflated tyre excluding the protrusions due to markings, embellishments or protective bands or ribs (see Figure **1**).

3.24 side wall : Part of a pneumatic tyre lying between the tread and the part intended to be covered by the wheel rim (see Figure **1**).

3.25 speed symbol : Indicates the maximum speed at which the tyre can carry a load corresponding to its load index under service conditions specified by the tyre manufacturer (see Table **5**).

3.26 tread profile : Figure **2** shows different basic tread profiles.



R_M - Measuring rim width S - Tyre section width S_G - Tyre overall width

Type A is commonly adopted for highway service low speed tyres.
Type B is commonly adopted for highway service high speed tyres.
Type C is commonly adopted for tyres in on-and-off the road service.
Type D is commonly adopted for tyres in off-the-road service.

FIGURE 2 – Basic tread profile

3.27 tyre size designation : Designation identifying the characteristics of a tyre, as follows:

a) in metric series,

Nominal section width / Nominal aspect ratio Tyre construction code Nominal rim diameter

Example : 120/60 R17

b) in code series,

Nominal section width – Nominal rim diameter

Example : 3.00 - 19

NOTE: *Letter or symbol that may also be part of the tyre size designation, identifying, for example, the type of tyre*

3.28 tyre structure : Technical characteristics of a tyre carcass. The following structures of a pneumatic tyre are distinguished in particular:

a) diagonal or bias ply (cross-ply) - describes a pneumatic tyre structure in which the ply cords extend to the beads and are laid at alternate angles substantially less than 90^0 to the centreline of the tread.
b) radial - describes a pneumatic tyre structure in which the ply cords extend to the beads and are laid substantially at 90^0 to the center line of the tread, the carcass being stabilized by an essentially inextensible circumferential belt.
c) reinforced - Pneumatic tyre structure in which the carcass is more resistant than that of a corresponding standard tyre.

4 REQUIREMENTS

4.1 Tyre Dimensions

4.1.1 The section width and the overall diameter shall comply with Table **1** to Table **4.** The overall diameter shall be measured in accordance with **6.1**.

4.1.2 The tyre section widths shown in the dimensional tables can change 1 mm per each 2.5 mm change in rim width from the measuring rim width.

4.1.3 The minimum width of motorcycle tyres shall be 4 per cent less than the design tyre section widths in the tables.

4.1.4 The minimum diameter of motorcycle tyre shall be equal to the design tyre diameter in the tables minus 3 per cent of the difference between the design tyre diameter and the nominal rim diameter, but smaller diameters are permitted code designated Type A tyres.

4.1.5 Type D tyres may have overall widths larger than those shown in the tables for Type C tyres (up to 25% larger than the design tyre section width).

TABLE 1(a) - Scooter tyres - Code designated sizes, diagonal ply with rim diameter code ≤ 12

Tyre size designation	Rim width code		New tyre - Inflated				Ply rating	Load index	Max. load capacity kg	Max. cold I.P[1] kPa
			Overall diameter		Design section width mm	Max. overall width mm				
	Recommended	Permitted	Design mm	D_{Max} mm						
(1)	(2)	(3)	(5)	(6)	(8)	(9)	(10)	(11)	(12)	(13)
2.75-10	Div. 1.75	1.50,1.85,2.10	399	412	71	75	4	37	128	250
3.00-10	Div.2.10	1.85,2.15,2.50	413	427	80	84	4	42	150	250
3.00-12	Div.2.50	1.85,2.15,2.50	464	475	84	90	4	47	175	250
3.50-8	Div.2.50C	2.10,2.15	386	402	92	97	4	46	170	250
3.50-10	Div.2.50	2.10,2.15	437	453	92	97	4	51	195	250
3.50-12	Div.2.50C	2.15,2.50	488	501	92	98	4	56	224	250

[1] Inflation pressure

TABLE 1 (b) - Scooter Tyres – ISO designated sizes, Diagonal ply with rim diameter code ≤ 12

Tyre size designation	Load index			Measuring rim width code	Tyre dimension, mm				Load capacity, kg			Inflation pressure kPa
					Design		Maximum in service					
	Light	Std	Reinf		Section Width	Overall Dia.	Overall Width	Overall dia.	Light	Std	Reinf.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Metric `60` series – Diagonal												
140/60 - 12	-	56	62	3.75	139	473	150	485	-	224	265	Std230 Reinf 280
Metric `70` series – Diagonal												
110/70 – 11	-	45	-	3.00	110	433	119	443	-	165		Std 230 Reinf 280
110/70 – 12	-	47	-	3.00	110	459	119	469	-	175	-	
120/70 – 10	-	48	54	3.50	122	422	132	434	-	180	212	
120/70 – 11	-	50	56	3.50	122	447	132	459	-	190	224	
120/70 – 12	-	51	58	3.50	122	473	132	485	-	195	236	
130/70 – 10	-	52	59	3.50	129	436	139	448	-	200	243	
130/70 – 11	-	54	60	3.50	129	461	139	473	-	212	250	
130/70 – 12	-	56	62	3.50	129	487	139	499	-	224	265	
140/70 – 8	-	53	-	3.75	139	399	150	413	-	206	-	
140/70 –12	-	60	65	3.75	139	501	150	515	-	250	290	
Metric `80` series- Diagonal												
100/80 – 10	-	53	58	2.50	101	414	109	426	-	206	236	Light 175 Std 250 Reinf 300
110/80 – 10	-	58	63	2.50	109	430	118	442	-	236	272	
110/80 – 12	-	61	-	2.50	109	481	118	493	-	257	-	
120/80 – 12	55	65	-	2.75	119	497	129	511	218	290	-	
130/80 – 12	60	69	-	3.00	129	513	139	527	250	325	-	
140/80 – 12	-	74	-	3.50	142	529	153	545	-	375	-	
150/80 –10	65	74	-	3.50	150	494	162	510	290	375	-	
Metric `90` Series – Diagonal												
90/90 – 10	-	50	-	2.15	90	416	97	428	-	190	-	Light 175 Std 250 Reinf 300
90/90 – 12	44	54	-	2.15	90	467	97	479	160	212	-	
100/90 – 10	-	56	61	2.50	101	434	109	446	-	224	257	
100/90 – 12	-	-	64	2.50	101	485	109	497	-	-	280	
110/90 – 12	54	64	69	2.50	109	503	118	517	212	280	325	
120/90 – 10	57	66	-	2.75	119	470	129	486	230	300	-	
130/90 – 10	61	70	-	3.00	129	488	139	504	257	335	-	
Metric `100` Series – Diagonal												
80/100 – 10	38	-	-	1.85	80	414	86	426	132	-	-	Light 175 Std 250
80/100 – 12	-	50	-	1.85	80	465	86	477	-	190	-	
90/100 – 10	-	53	-	2.10	90	434	97	446	-	206		
110/100 – 12	-	67	-	2.50	109	525	118	541	-	307	-	

TABLE 1 (c) – Approved rim contours for scooter Tyres - ISO designated sizes, diagonal ply with rim diameter code ≤ 12

Nominal tyre section code	Drop centre rims	Divided
`60` and `70` Metric Series		
110	2.50A, MT2.50, MT2.75, MT3.00, MT3.50	-
120	MT2.75, MT3.00, MT3.50, MT3.75	-
130	MT3.00, MT3.50, MT3.75, MT4.00	-
140	MT3.50, MT3.75, MT4.00, MT4.25, MT4.50	-
`80` , `90` and `100` Metric Series		
80	1.60, MT1.60, 1.85, 2.15, MT1.85, MT2.15	1.75, 2.10
90	1.85, MT1.85, 2.15, 2.50, MT2.15, MT2.50, 2.50C	2.50C
100	2.15, MT2.15, 2.50, 2.75, MT2.50, MT2.75, 2.50C	2.50C
110	2.15, MT2.15, 2.50, 2.75,3.00, MT2.50, MT2.75, MT3.00, 2.50C	2.50C
120	2.50, MT2.50, 2.75, 3.00, MT2.75, MT3.00	2.50C
130	2.50, MT2.50, 2.75, MT2.75, 3.00, MT3.00, MT3.50	-
140	MT2.75, MT3.00, MT3.50, MT3.75	-
150	MT3.00, MT3.50, MT3.75, MT4.00, MT4.25	-

NOTE: *It is recommended that divided rims be used for rim diameter codes up to 9 and drop-center rims for rim diameter codes 10 and above.*

TABLE 2(a) – Moped Tyres – Code designated sizes, Diagonal ply with rim diameter code ≤ 12

Tyre size designation (1)	Rim width code		New Tyre - Inflated				Load Index (10)	Maximum load capacity kg (11)	Max. Cold I.P.[1)] kPa (12)
			Overall diameter		Design section width mm (8)	Max. overall width mm (9)			
	Recommended (2)	Permitted (3)	Design mm (5)	D_{Max} mm (6)					
2 ½ -12	1.60	1.50, Div.1.50, Div.1.60, Div.1.75, 1.85	440	449	65	68	Std. 28	100	230
3-12	MT2.15;2.15	MT1.85, MT2.50,2.50, 2.50C	464	475	80	84	Std. 35	121	230

[1)]Inflation pressure

TABLE 2(b) – Moped Tyres – Code designated sizes, Diagonal ply with rim diameter code > 12

Tyre size designation (1)	Rim width code		New Tyre - Inflated				Load index (8)	Max load capacity kg (9)	Max cold I.P. kPa (10)
			Overall diameter		Design section width mm (6)	Max. overall width mm (7)			
	Recommended (2)	Permitted (3)	Design mm (4)	D_{Max} mm (5)					
1 ¾ -19	1.20	-	589	596	50	53	Std. 20 Reinf.33	80 115	250 275
2-19	1.35	-	595	603	55	58	Std.24 Reinf.36	90 125	250 275
2-22	1.35	-	670	678	55	58	Std.26 Reinf.37	95 128	250 275
2 ¼ - 16	1.50	-	532	541	62	65	Std.26 Reinf.37	95 128	250 275
2 ½ -16	1.60	-	548	558	68	71	Std.31 Reinf.42	109 150	250 275
2 ¼ -19	1.50	-	609	618	62	65	Std.30 Reinf.41	106 145	250 275
2 ½ -19	1.60	-	625	635	68	71	Std.35 Reinf.45	121 165	250 275

Std : Standard type of tyre Reinf : Reinforced type of tyre

TABLE 3 (a) – Motorcycle tyres – Code designated sizes, Diagonal ply with rim diameter code ≥ 13

Tyre size designation	Rim width code		New tyre- inflated				Ply rating	Load index	Max. load capacity	Max. cold I.P
	Recommended	Permitted	Overall dia.		Design section width mm	Max. overall width mm				
			Design Mm	D_{Max} mm					kg	kPa
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
2.25-16	1.60	1.20, 1.35 1.40, 1.50	530	541	61	65	4 6	31 36	109 125	225 280
2.25-17	1.60	1.20,1.35 1.40,1.50	556	567	61	65	4 6	33 38	115 132	225 280
2.25-18	1.60	1.40,1.50	581	592	61	65	4 6	35 40	121 140	225 280
2.25-19	1.60	1.20,1.35,1.50	607	616	61	65	4 6	37 42	128 150	225 280
2.50-16	1.60	1.35,1.40,1.50	542	554	65	70	4 6	36 41	125 145	225 280
2.50-17	1.60	1.35,1.40,1.50	568	580	65	70	4 6	38 43	132 155	225 280
2.50-18	1.60	1.35,1.40,1.50	593	605	65	70	4 6	40 45	140 165	225 280
2.75-14	1.85	1.40,1.50,1.60	512	523	75	80	4 6	37/35 43/41	128/121 155/145	225 280
2.75-16	1.85	1.40,1.50,1.60	562	573	75	80	4 6	42/40 48/46	150/140 180/170	225 280
2.75-17	1.85	1.40,1.50,1.60	588	599	75	80	4 6	43/41 49/47	155/145 185/175	225 280
2.75-18	1.85	1.40,1.50,1.60	613	624	75	80	4 6	44/42 50/48	160/150 190/180	225 280
3.00-14	1.85	1.60,2.15	526	538	80	86	4 6	40 45	140 165	225 280
3.00-17	1.85	1.60,2.15	602	614	80	86	4 6	46 50	170 190	225 280
3.00-18	1.85	1.60,2.15	627	639	80	86	4 6	47 52	175 200	225 280
3.00-19	1.85	1.60,2.15	653	665	80	86	4 6	49 54	185 212	225 280
3.25-16	2.15	1.85,2.50	588	601	89	95	4 6	48 55	180 218	225 280
3.25-18	2.15	1.85,2.50	639	652	89	95	4 6	52 59	200 243	225 280
3.25-19	2.15	1.85,2.50	665	678	89	95	4 6	54 60	212 250	225 280
3.50-18	2.15	1.85,2.50	649	662	93	100	4 6	56 62	224 265	225 280
3.50-19	2.15	1.85,2.50	675	688	93	100	4 6	57 63	230 272	225 280

TABLE 3 (b) – Motorcycle tyres – ISO designated sizes, Diagonal ply and bias-belted with rim diameter code ≥ 13

3(b). 1 – '55', '60' and '65' Series

Tyre size designation	Load index		Measuring rim width code	Tyre dimensions, mm				Load capacity kg		Inflation pressure kPa
				Design		Maximum in service, Types A-B				
	Std	Reinf		Section width	Overall dia.	Overall width	Overall diameter	Std	Reinf	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Metric `55` Series										
180/55– 17 M/C	73	-	5.50	178	630	196	644	365	-	230
180/55– 18 M/C	74	-	5.50	178	655	196	669	375	-	
200/55– 18 M/C	79	-	6.25	200	677	220	693	437	-	
210/55– 18 M/C	81	-	6.50	209	689	230	705	462	-	
Metric `60` Series										
130/60 – 13M/C	53	60	3.50	129	486	142	496	206	250	Std 230 Reinf 280
130/60 – 17M /C	59	-	3.50	129	588	142	598	243	-	
130/60 – 18M/C	60	-	3.50	129	613	142	623	250	-	
140/60 – 13M/C	57	63	3.75	139	498	153	510	230	272	
140/60 – 14 M/C	-	64	3.75	139	524	153	536	-	280	
140/60 – 18M/C	64	-	3.75	139	625	153	637	280	-	
150/60 – 13 M/C	61	66	4.25	151	510	166	522	257	300	
150/60 – 14 M/C	62	-	4.25	151	536	166	548	265	-	
50/60 – 17 M/C	66	-	4.25	151	612	163	624	300	-	
50/60 – 18 M/C	67	-	4.25	151	637	166	649	307	-	
160/60 – 17 M/C	69	-	4.50	161	624	177	638	325	-	
160/60 – 18 M/C	70	-	4.50	161	649	177	663	335	-	
170/60 – 17 M/C	72	-	4.50	168	636	185	650	355	-	
170/60 – 18 M/C	73	-	4.50	168	661	185	675	365	-	
180/60 – 16 M/C	74	-	5.00	180	622	198	638	375	-	
180/60 – 17 M/C	75	-	5.00	180	648	198	664	387	-	
200/60 – 16 M/C	79	-	5.50	200	646	220	662	437	-	
210/60 – 16 M/C	82	-	6.00	212	658	233	676	475	-	
230/60 – 15 M/C	86	-	6.25	229	657	252	677	530	-	
Metric `65` Series										
180/65 – 16 M/C	-	81	5.00	180	640	198	656	-	462	Reinf 280

3 (b). 2 – '70' Series

Tyre size designation	Load index		Measuring rim width code	Tyre dimensions, mm				Load capacity kg		Inflation pressure kPa
				Design		Maximum in service				
	Std	Reinf		Section width	Overall dia.	Overall width	Overall dia.			
						Type A-B	Type A-B	Std	Reinf	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
80/70 – 16 M/C	-	40	2.15	80	518	88	526	-	140	
100/70 – 17 M/C	49	-	2.75	100	572	110	582	185	-	
110/70 – 16 M/C	52	-	3.00	110	560	121	570	200	-	
110/70 – 17 M/C	54	-	3.00	110	586	121	596	212	-	
110/70 – 18 M/C	55	-	3.00	110	611	121	621	218	-	
120/70 – 13 M/C	53	-	3.50	122	498	134	510	206	-	Std 230
120/70 – 14 M/C	55	61	3.50	122	524	134	536	218	257	
120/70 – 15 M/C	56	-	3.50	122	549	134	561	224	-	Reinf 280
120/70 – 16 M/C	57	-	3.50	122	574	134	586	230	-	
120/70 – 17 M/C	58	-	3.50	122	600	134	612	236	-	
120/70 – 18 M/C	59	-	3.50	122	625	134	637	243	-	
120/70 – 21 M/C	62	68	3.50	122	701	134	713	265	315	
130/70 – 13 M/C	57	63	3.50	129	512	142	524	230	272	
130/70 – 16 M/C	61	-	3.50	129	588	142	600	257	-	
130/70 – 17 M/C	62	-	3.50	129	614	142	626	265	-	
130/70 – 18 M/C	63	69	3.50	129	639	142	651	272	325	
130/70 – 24 M/C	69	-	3.50	129	792	142	804	325	-	
140/70 – 14M/C	62	68	3.75	139	552	153	566	265	315	
140/70 – 15 M/C	-	69	3.75	139	577	153	591	-	325	
140/70 --16 M/C	65	-	3.75	139	602	153	616	290	-	
140/70 – 17 M/C	66	-	3.75	139	628	153	642	300	-	
140/70 - 18 M/C	67	-	3.75	139	653	153	667	307	-	
140/70 – 21 M/C	-	76	3.75	139	729	153	743	-	400	
150/70 – 13 M/C	64	-	4.25	151	540	166	554	280	-	
150/70 – 14 M/C	66	72	4.25	151	566	166	580	300	355	
150/70 – 16 M/C	68	-	4.25	151	616	166	630	315	-	
150 /70 – 17 M/C	69	-	4.25	151	642	166	656	325	-	
150/70 – 18 M/C	70	76	4.25	151	667	166	681	335	400	
160/70 – 16 M/C	71	-	4.50	161	630	177	646	345	-	
160/70 – 17 M/C	73	79	4.50	161	656	177	672	365	437	
160/70 – 18 M/C	74	-	4.50	161	681	177	697	375	-	
170/70 – 15 M/C	73	-	4.50	168	619	185	635	365	-	
180/70 – 15 M/C	76	-	5.00	180	633	198	651	400	-	
180/70 – 16 M/C	77	-	5.00	180	658	198	676	412	-	
200/70 – 15 M/C	82	-	5.50	200	661	220	681	475	-	

3(b). 3 – '80' Series

Tyre size designation	Load Index		Meas. rim width code	Tyre dimensions, mm					Load capacity kg		Inflation pressure kPa
				Design		Maximum in service					
	Std	Reinf		Section width	Overall dia.	Overall width	Overall diameter				
						Types A-B-C	Types A-B	Types C-D	Std	Reinf	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
60/80 – 17 M/C	27	-	1.40	60	528	65	534	540	97.5	-	
70/80 – 17 M/C	35	-	1.60	69	544	75	552	558	121	-	
80/80 – 14 M/C	-	43	1.85	80	484	88	492	500	-	155	
80/80 – 16 M/C	40	45	1.85	80	534	88	542	550	140	165	
90/80 – 14 M/C	-	49	2.15	90	500	97	510	518	-	185	
90/80 – 16 M/C	45	51	2.15	90	550	99	560	568	165	195	
90/80 – 17 M/C	46	-	2.15	90	576	99	586	-	170	-	
100/80 – 14 M/C	48	-	2.50	101	516	111	528	536	180	-	
100/80 – 16 M/C	50	-	2.50	101	566	111	578	586	190	-	
100/80 – 17 M/C	52	-	2.50	101	592	111	604	612	200	-	
100/80 – 18 M/C	53	-	2.50	101	617	111	629	637	206	-	
100/80 - 19 M/C	54	-	2.50	101	643	111	655	663	212	-	
110/80 – 14 M/C	53	59	2.50	109	532	120	544	554	206	243	
110/80 – 16 M/C	55	-	2.50	109	582	120	594	604	218	-	
110/80 – 17 M/C	57	-	2.50	109	608	120	620	630	230	-	
110/80 – 18 M/C	58	-	2.50	109	633	120	645	655	236	-	Std 230
110/80 – 19 M/C	59	-	2.50	109	659	120	671	681	243	-	
120/80 – 13 M/C	56	62	2.75	119	522	131	536	546	224	265	
120/80 – 14 M/C	58	-	2.75	119	548	131	562	572	236	-	
120/80 – 16 M/C	60	-	2.75	119	598	131	612	622	250	-	
120/80 – 17 M/C	61	67	2.75	119	624	131	638	648	257	307	Reinf 280
120/80 – 18 M/C	62	-	2.75	119	649	131	663	673	265	-	
120/80 – 19 M/C	63	-	2.75	119	675	131	689	699	272	-	
130/80 – 15 M/C	63	-	3.00	129	589	142	603	613	272	-	
130/80 – 16 M/C	64	-	3.00	129	614	142	628	638	280	-	
130/80 – 17 M/C	65	-	3.00	129	640	142	654	664	290	-	
130/80 – 18 M/C	66	72	3.00	129	665	142	679	689	300	355	
130/80 – 19 M/C	67	-	3.00	129	691	142	705	715	307	-	
140/80 – 15 M/C	67	73	3.50	142	605	156	621	631	307	365	
140/80 – 16 M/C	68	-	3.50	142	630	156	646	656	315	-	
140/80 – 17 M/C	69	-	3.50	142	656	156	672	682	325	-	
140/80 – 18 M/C	70	-	3.50	142	681	156	697	707	335	-	
140/80 – 19 M/C	71	-	3.50	142	707	156	723	733	345	-	
150/80 – 15 M/C	70	-	3.50	150	621	165	637	649	335	-	
150/80 – 16 M/C	71	77	3.50	150	646	165	662	674	345	412	
150/80 – 17 M/C	72	-	3.50	150	672	165	688	700	355	-	
160/80 – 15 M/C	74	-	3.75	160	637	176	655	667	375	-	
160/80 – 16 M/C	75	81	3.75	160	662	176	680	692	387	462	
170/80 – 15 M/C	77	83	4.00	170	653	187	673	685	412	487	

3 (b). 4 – '90' and '100' Series

Tyre size designation	Load index		Meas. rim width code	Tyre dimensions, mm					Load capacity kg		Inflation pressure kPa
				Design		Maximum in service					
				Section width	Over-all dia.	Overall width	Overall diameter				
(1)	Std (2)	Reinf (3)	(4)	(5)	(6)	Types A-B-C (7)	Types A-B (8)	Types C-D (9)	Std (10)	Reinf (11)	(12)
Metric `90`series											
50/90 – 17 M/C	21	-	1.20	50	522	54	528	532	82.5	-	
60/90 – 17 M/C	30	36	1.40	60	540	65	548	552	106	125	
70/90 – 14 M/C	-	40	1.60	69	482	76	490	498	-	140	
70/90 – 16 M/C	36	42	1.60	69	532	76	540	548	125	150	
70/90 – 17 M/C	38	43	1.60	69	558	76	566	574	132	155	
70/90 – 21 M/C	43	-	1.60	69	659	76	667	675	155	-	
80/90 – 14 M/C	40	46	1.85	80	500	88	510	518	140	170	
80/90 – 16 M/C	43	48	1.85	80	550	88	560	568	155	180	
80/90 – 17 M/C	44	50	1.85	80	576	88	586	594	160	190	
80/90 – 18 M/C	45	51	1.85	80	601	88	611	619	165	195	
80/90 – 19 M/C	46	-	1.85	80	627	88	637	645	170	-	
80/90 – 21 M/C	48	54	1.85	80	677	88	687	695	180	212	
90/90 – 14 M/C	46	52	2.15	90	518	99	530	538	170	200	
90/90 – 16 M/C	48	-	2.15	90	568	99	580	588	180	-	
90/90 – 17 M/C	49	-	2.15	90	594	99	606	614	185	-	
90/90 – 18 M/C	51	57	2.15	90	619	99	631	639	195	230	
90/90 – 19 M/C	52	-	2.15	90	645	99	657	665	200	-	
90/90 – 21 M/C	54	-	2.15	90	695	99	707	715	212	-	
100/90 – 14 M/C	-	57	2.50	101	536	111	548	558	-	230	
100/90 – 16M/C	54	-	2.50	101	586	111	598	608	212	-	Std 230
100/90 – 17 M/C	55	-	2.50	101	612	111	624	634	218	-	
100/90 – 18 M/C	56	62	2.50	101	637	111	649	659	224	265	Reinf
100/90 – 19 M/C	57	63	2.50	101	663	111	675	685	230	272	280
110/90 – 13 M/C	56	-	2.50	109	528	120	542	552	224	-	
110/90 – 16 M/C	59	-	2.50	109	604	120	618	628	243	-	
110/90 – 17 M/C	60	-	2.50	109	630	120	644	654	250	-	
110/90 – 18 M/C	61	-	2.50	109	655	120	669	679	257	-	
110/90 – 19 M/C	62	-	2.50	109	681	120	695	705	265		
120/90 – 16M/C	63	-	2.75	119	622	131	638	648	272	-	
120/90 – 17 M/C	64	-	2.75	119	648	131	664	674	280	-	
120/90 – 18 M/C	65	71	2.75	119	673	131	689	699	290	345	
130/90 – 15 M/C	66	-	3.00	129	615	142	631	643	300	-	
130/90 – 16 M/C	67	73	3.00	129	640	142	656	668	307	365	
130/90 – 17 M/C	68	74	3.00	129	666	142	682	694	315	375	
130/90 – 18 M/C	69	-	3.00	129	691	142	707	719	325	-	
140/90 – 15 M/C	70	76	3.50	142	633	156	651	663	335	400	
140/90 – 16 M/C	71	77	3.50	142	658	156	676	688	345	412	
140/90 – 17 M/C	72	-	3.50	142	684	156	702	714	355	-	
140/90 – 18 M/ C	73	-	3.50	142	709	156	727	739	365	-	
150/90 – 15 M/C	74	80	3.50	150	651	165	669	683	375	450	
150/90 – 16 M/C	75	-	3.50	150	676	165	694	708	387	-	
150/90 – 17 M/C	76	-	3.50	150	702	165	720	734	400	-	

Table 3 (b).4 -'90' and '100' Series (Concluded)

Tyre size Designation	Load index		Meas. rim width code	Tyre dimensions, mm					Load capacity kg		Inflation pressure kPa
				Design		Maximum in service					
	Std	Reinf		Section width	Overall diameter	Overall width	Overall diameter				
						Types A-B-C	Types A-B	Types C-D	Std	Reinf	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Metric `100` series											
50/100 – 17 M/C	23	--	1.20	50	532	54	540	544	87.5	-	Std 230 Reinf 280
60/100 – 14 M/C	29	-	1.40	60	476	65	484	490	103	-	
60/100 – 17 M/C	33	-	1.40	60	552	65	560	566	115	-	
70/100 – 17 M/C	40	-	1.60	69	572	76	582	588	140	-	
70/100 – 19 M/C	42	-	1.60	69	623	76	633	639	150	-	
70/100 – 21 M/C	44	-	1.60	69	673	76	683	689	160	-	
80/100 – 14 M/C	-	49	1.85	80	516	88	528	536	-	185	
80/100 – 16 M/C	45	-	1.85	80	566	88	578	586	165	-	
80/100 – 17 M/C	46	53	1.85	80	592	88	604	612	170	206	
80/100 – 18 M/C	47	-	1.85	80	617	88	629	637	175	-	
80/100 – 21 M/C	51	-	1.85	80	693	88	705	713	195	-	
90/100 – 14 M/C	49	-	2.15	90	536	99	548	558	185	-	
90/100 – 16 M/C	51	-	2.15	90	586	99	598	608	195	-	
90/100 – 18 M/C	54	-	2.15	90	637	99	649	659	212	-	
90/100 – 19 M/C	55	-	2.15	90	663	97	675	685	218	-	
90/100 – 20 M/C	56	-	2.15	90	688	99	700	710	224	-	
90/100 – 21 M/C	57	-	2.15	90	713	99	725	735	230	-	
100/100 – 18 M/C	59	-	2.50	101	657	111	671	681	243	-	
110/100 – 18 M/C	64	-	2.50	109	677	120	693	703	280	-	
120/100 - 18M/C	68	-	2.75	119	697	131	713	725	315	-	

TABLE 4 (a) – Motorcycle tyres – ISO designated sizes, radial ply

4 (a) – '30' to '65' Series with rim diameter code > 13

Tyre size designation	Load index		Measurement rim width code	Tyre dimensions, mm					Load capacity kg		Inflation pressure kPa
				Design		Maximum in service					
				Section-on width	Overall dia.	Overall width	Overall diameter				
	Std	Reinf				Types A-B-C	Types A-B	Type C	Std	Reinf	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Metric `30` series											
330/30 R 17 M/C	87	-	11.50	323	630	346	644	654	545	-	Std 230
360/30 R 18 M/C	92	–	12.50	342	673	366	689	699	630	-	
Metric `35` series											
280/35 R 18 M/C	84	-	10.00	281	653	301	667	-	500	-	Std 230
300/35 R 18 M/C	87	-	10.50	299	667	320	681	-	545	-	
260/35 R 21 M/C	83	-	9.00	258	715	276	727	-	487	-	
Metric `40` Series											
240/40 R 18 M/C	79	-	8.50	240	649	257	663	-	437	-	Std 230
210/40 R 18 M/C	73	-	7.50	211	625	226	637	645	365	-	
250/40 R 18 M/C	81	-	9.00	251	657	269	671	-	462	-	
260/40 R 18 M/C	84	-	9.00	258	665	276	679	689	500	-	
280/40 R 20 M/C	89	-	10.00	281	732	301	748	758	580	-	
300/40 R 17 M/C	90	-	10.00	299	672	320	688	-	600	-	
Metric `45` series											
240/45 R 17 M/C	82	-	8.50	240	648	257	664	-	475	-	Std 230
Metric `50` series											
180/50 R 17 M/C	70	-	5.50	178	612	190	624	-	335	-	Std 230
180/50 R 18 M/C	71	-	5.50	178	637	190	649	-	345	-	
190/50 R 17 M/C	73	-	6.00	190	622	203	636	-	365	-	
200/50 R 17 M/C	75	-	6.25	200	632	214	646	-	387	-	
200/50 R 18 M/C	76	-	6.25	200	657	214	671	-	400	-	
210/50 R 17 M/C	78	-	6.50	209	642	224	656	-	425	-	
240/50 R 16 M/C	84	-	7.50	239	646	256	662	-	500	-	
Metric `55` series											
150/55 R 18 M/C	65	-	4.50	148	623	158	635	-	290	-	Std 230
170/55 R 17 M/C	70	-	5.50	172	620	184	634	-	335	-	
180/55 R 17 M/C	73	78	5.50	178	630	190	644	-	365	425	
180/55 R 18 M/C	74	-	5.50	178	655	190	669	-	375	-	
190/55 R 17 M/C	75	-	6.00	190	642	203	656	-	387	-	
200/55 R 16 M/C	77	-	6.25	200	626	214	642	652	412	-	
200/55 R 17 M/C	78	-	6.25	200	652	214	668	678	425	-	

TABLE 4 (a) - '30' to '65' Series with rim diameter code > 13 (Concluded)

Tyre size designation	Load index		Measurement rim width code	Tyre dimensions, mm					Load capacity kg		Inflation pressure kPa
				Design		Maximum in service					
	Std	Reinf		Section width	Overall diameter	Overall width	Overall diameter				
						Types A-B-C	Types A-B	Type C	Std	Reinf	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Metric `60` series											
120/60 R 17 M/C	55	-	3.50	122	576	131	586	-	218	-	
120/60 R 18 M/C	56	-	3.50	122	601	131	611	-	224	-	
130/60 R 16 M/C	58	-	3.50	129	562	138	572	-	236	-	
130/60 R 17 M/C	59	-	3.50	129	588	138	598	-	243	-	
130/60 R 18 M/C	60	-	3.50	129	613	138	623	-	250	-	
130/60 R 23 M/C	65	-	3.50	129	740	138	750	758	290	-	
140/60 R 14 M/C	-	64	3.75	139	524	149	536	544	-	280	
140/60 R 17 M/C	63	-	3.75	139	600	149	612	-	272	-	
140/60 R 18 M/C	64	-	3.75	139	625	149	637	-	280	-	
150/60 R 14 M/C	62	-	4.25	151	536	162	548	558	265	-	
150/60 R 16 M/C	65	-	4.25	151	586	162	598	608	290	-	
150/60 R 17 M/C	66	-	4.25	151	612	162	624	-	300	-	std 230
150/60 R 18 M/C	67	-	4.25	151	637	162	649	-	307	-	reinf 280
160/60 R 14 M/C	65	-	4.50	161	548	172	562	572	290	-	
160/60 R 15 M/C	67	-	4.50	161	573	172	587	597	307	-	
160/60 R 16 M/C	68	-	4.50	161	598	172	612	-	315	-	
160/60 R 17 M/C	69	-	4.50	161	624	172	638	-	325	-	
160/60 R 18 M/C	70	-	4.50	161	649	172	663	-	335	-	
170/60 R 17 M/C	72	-	4.50	168	636	180	650	-	355	-	
170/60 R 18 M/C	73	-	4.50	168	661	180	675	-	365	-	
180/60 R 16 M/C	74	-	5.00	180	622	193	638	-	375	-	
180/60 R 17 M/C	75	-	5.00	180	648	193	664	-	387	-	
190/60 R 17 M/C	78	-	5.00	188	660	201	676	-	425	-	
200/60 R 16 M/C	79	-	5.50	200	646	214	662	-	437	-	
Metric `65` series											
120/65 R 17 M/C	56	-	3.50	122	588	131	598	-	224	-	230

TABLE 4 (b) – '70' to '100' Series rim diameter code > 13

Tyre size designation	Load index		Measurement rim width code	Tyre dimension, mm					Load capacity kg		Inflation pressure kPa
				Design		Maximum in service					
	Std	Reinf		Section width	Overall diameter(	Overall width	Overall diameter				
						Types A-B-C	Types A-B	Type C	Std	Reinf	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
100/70 R 17 M/C	49	-	2.75	100	572	107	582	-	185	-	Std 230 Reinf 280
110/70 R 17 M/C	54	-	3.00	110	586	118	596	-	212	-	
110/70 R 18 M/C	55	-	3.00	110	611	118	621	-	218	-	
120/70 R 14 M/C	55	-	3.50	122	524	131	536	544	218	-	
120/70 R 15 M/C	56	-	3.50	122	549	131	561	569	224	-	
120/70 R 16 M/C	57	-	3.75	125	574	134	586	-	230	-	
120/70 R 17 M/C	58	-	3.50	122	600	131	612	-	236	-	
120/70/R 18 M/C	59	-	3.50	122	625	131	637	-	243	-	
120/70 R 19 M/C	60	-	3.50	122	651	131	663	671	250	-	
130/70 R 16 M/C	61	-	3.50	129	588	138	600	-	257	-	
130/70 R 17 M/C	62	-	3.50	129	614	138	626	-	265	-	
130/70 R 18 M/C	63	69	3.50	129	639	138	651	-	272	325	
140/70 R 14 M/C	-	68	3.75	139	552	149	566	576	-	315	
140/70 R 17 M/C	66	-	3.75	139	628	149	642	-	300	-	
140/70 R 18 M/C	67	-	3.75	139	653	149	667	-	307	-	
150/70 R 14 M/C	66	-	4.25	151	566	162	580	592	300	-	
150/70 R 17 M/C	69	-	4.25	151	642	162	656	-	325	-	
150/70 R 18 M/C	70	-	4.25	151	667	162	681	-	335	-	
160/70 R 16 M/C	71	-	4.50	161	630	172	646	-	345	-	
160/70 R 17 M/C	73	79	4.50	161	656	172	672	-	365	437	
180/70 R 16 M/C	77	-	5.00	180	658	198	676	-	412	-	
Metric `75` series											
140/75 R 17 M/C	67	-	3.50	142	642	149	657	-	307	-	Std 230
Metric `80` series											
100/80 R 17 M/C	52	-	2.50	101	592	108	604	-	200	-	Std 230 Reinf 280
110/80 R 16 M/C	55	-	2.50	109	582	117	594	-	218	-	
110/80 R 17 M/C	57	-	2.50	109	608	117	620	-	230	-	
110/80 R 18 M/C	58	-	2.50	109	633	117	645	-	236	-	
110/80 R 19 M/C	59	-	2.50	109	659	117	671	-	243	-	
120/80 R 16 M/C	60	-	2.75	119	598	127	612	-	250	-	
120/80 R 17 M/C	61	67	2.75	119	624	127	638	-	257	307	
130/80 R 17 M/C	65	-	3.00	129	640	138	654	-	290	-	
130/80 R 18 M/C	66	72	3.00	129	665	138	679	-	300	355	
140/80 R 15 M/C	-	73	3.50	142	605	152	621	-	-	365	
140/80 R 16 M/C	68	-	3.50	142	630	152	646	-	315	-	
140/80 R 17 M/C	69	-	3.50	142	656	152	672	-	325	-	
150/80 R 16 M/C	71	-	3.50	150	646	161	662	-	345	-	
150/80 R 17 M/C	72	-	3.50	150	672	161	688	-	355	-	
160/80 R 16 M/C	75	81	3.75	160	662	171	680	-	387	462	
170/80 R 15 M/C	77	-	4.00	170	653	182	673	-	412	-	
Metric `90` series											
100/90 R 18 M/C	56	-	2.50	101	637	108	649	-	224	-	Std 230 Reinf 280
100/90 R 19 M/C	57	-	2.50	101	663	108	675	-	230	-	
120/90 R 18 M/C	65	71	2.75	119	673	127	689	-	290	345	
130/90 R 16 M/C	-	73	3.00	129	640	138	656	-	-	365	
130/90 R 17 M/C	68	74	3.00	129	666	138	682	-	315	375	
140/90 R 15 M/C	70	76	3.50	142	633	152	651	-	335	400	
140/90 R 16 M/C	71	77	3.50	142	658	152	676	-	345	412	
150/90 R 15 M/C	74	80	3.50	150	651	161	669	-	375	450	
Metric `100` Series											
120/100 R 18 M/C	68	-	2.75	119	697	127	713	725	315	-	230

TABLE 4 (c) – Approved rim contours - ISO designated sizes, radial ply

Nominal tyre section code	Approved rim contours	
	Radial, Diagonal and Bias belted	Diagonal and belted only
`30` Metric Series		
330	MT 11.00, MT 11.50, MT 12.00, MT 12.50	-
360	MT 12.00, MT 12.50 , MT 13.00, MT 13.50	-
`35` Metric Series		
260	MT 8.50, MT 9.00, MT 9.50	-
280	MT 9.50,MT 10.00, MT10.50	-
300	MT10.00,MT10.50 ,MT11.00	-
`40` and `45` Metric Series		
210	MT 7.00, MT 7.50, MT 8.00	-
240	MT8.00, MT8.50, MT9.00	-
250	MT8.50, MT9.00, MT9.50	-
260	MT8.50, MT9.00, MT9.50	-
280	MT9.50, MT10.00, MT10.50	-
300	MT10.00, MT10.50, MT11.00	-
`50` and `55` metric series		
150	MT4.50, MT5.00	-
170	MT5.00, MT5.50	-
180	MT5.50, MT6.00	-
190	MT5.50,MT6.00	-
200	MT6.00, MT6.25, MT6.50	-
210	MT6.25 ,MT6.50, MT7.00	-
240	MT7.00 , MT7.50, MT8.00	-
`60`, `65` and `70` Metric Series		
80	MT2.15, MT2.50	MT1.85
100	MT2.75, MT3.00	MT2.50
110	MT3.00, MT3.50	MT2.50, MT2.75
120	(**), MT3.50, MT3.75	MT2.75, MT3.00
130	MT3.50 , MT3.75, MT4.00	MT3.00
140	MT3.75, MT4.00, MT4.25, MT4.50	MT3.50
150	MT4.00, MT4.25, MT4.50	MT3.50, MT3.75
160	MT4.25, MT4.50, MT5.00	MT3.75, MT4.00
170	MT4.50, MT5.00, MT5.50	MT4.00, MT4.25
180	MT5.00, MT5.50	MT4.25, MT4.50
190	MT5.00, MT5.50, MT6.00	MT4.50
200	MT5.50, MT6.00, MT6.25	MT4.75, MT5.00
210	MT6.00, MT6.25, MT6.50	MT5.00, MT5.50
230	MT6.25, MT6.50, MT7.00	MT5.50, MT6.00

TABLE 4 (c) – Approved rim contours - ISO designated sizes, radial ply (Concluded)

Nominal tyre section code	Approved rim contours	
	Radial, Diagonal and Bias belted	Diagonal and belted only
`75` Metric Series (1)		
140	MT3.50, MT3.75, MT4.00, MT4.25	
`80` , `90` and `100` Metric Series (1)		
50	1.20, 1.40	
60	1.40, 1.50, MT1.50, 1.60, MT1.60	1.20
70	1.60, 1.85, MT1.60, MT1.85	1.40, 1.50, MT1.50
80	1.85, 2.15, MT1.85, MT2.15	1.60,MT1.60
90	2.15, 2.50, MT2.15, MT2.50,	1.85,MT1.85
100	2.50, 2.75, MT2.50, MT2.75	2.15, MT2.15
110	2.50,2.75, 3.00, MT2.50, MT2.75, MT3.00	2.15, MT2.15
120	2.75, 3.00, MT2.75, MT3.00	2.50, MT2.50
130	3.00, MT3.00, MT3.50	(*) , 2.50, MT2.50, 2.75, MT2.75
140	MT3.50, MT3.75	2.75, MT2.75, 3.00, MT3.00
150	MT3.50, MT3.75, MT4.00, MT4.25	3.00, MT3.00
160	MT3.75, MT4.00, MT4.25, MT4.50	MT3.00, MT3.50
170	MT4.00, MT4.25, MT4.50	MT3.00, MT3.50 MT3.75

NOTES :

1) ***** *For Tyre size 130/90-16, a 3.00D rim is permitted for motorcycles with a maximum speed up to 150km/h.*
2) ** *For Tyre size 120/70R19 a MT 3.00 rim is permitted.*

3) Cylindrical bead set rims are applicable only when tyres are fitted with a tube. For special applications, manufacturer and purchaser shall agree.

4.2 Tyre performance

4.2.1 *Tyre endurance*

When tested in accordance with **6.4** and when the tyre cut and examined on completion of the cumulative test running time, there shall be no evidence of broken cords, tread, separation, ply or bead separation or cracking of tread of side wall rubber deep enough to expose the carcass cords fabric.

4.2.2 *Speed performance*

The tyre shall be free from broken cords separation of tread/ply/cord/ bead or cracking of the tread or side wall rubber exposing the cord fabric when examined in accordance with **6.3**.

TABLE 5 - Speed category symbol

Speed category symbol (1)	Speed km/h (2)	Speed category symbol (1)	Speed km/h (2)
A1	5	J	100
A2	10	K	110
A3	15	L	120
A4	20	M	130
A5	25	N	140
A6	30	P	150
A7	35		
A8	40		
B	50		
C	60		
D	65		
E	70		
F	80		
G	90		

4.2.3 *Tyre strength*

The tyre shall comply with the static breaking energy requirements given in Table **6**, Table **7** and Table **8**, as appropriate when tested in accordance with the **6.2**.

TABLE 6 - Requirements for strength test for diagonal ply tyres

Tyres (1)	Ply rating (2)	Plunger diameter mm (3)	Static breaking energy, J (4)
Tyres with rim diameter code more than 12 mm	2 PR	8 ± 0.2	17
	4 PR	8 ± 0.2	34
	6 PR	8 ± 0.2	45
Tyres with rim diameter code not more than 12 mm	4 PR	19 ± 0.2	136
	6 PR	19 ± 0.2	203
	8 PR	19 ± 0.2	271

TABLE 7 - Requirements for strength test for radial ply ISO designated (milli metric) tyres

Tyres (1)	Ply rating (2)	Plunger diameter mm (3)	Static breaking energy, J (4)
Nominal section width up to 62 mm	2 PR	8 ± 0.2	15
	4 PR	8 ± 0.2	29
	6 PR	8 ± 0.2	39
Nominal section width above 62 mm	2 PR	8 ± 0.2	17
	4 PR	8 ± 0.2	34
	6 PR	8 ± 0.2	45
	8 PR	8 ± 0.2	56

TABLE 8 - Requirements for strength test for radial and diagonal ply for ISO designated (milli metric) tyres

Section width (1)	Inflation pressure, kPa (2)	Plunger diameter mm (3)	Static breaking energy, J (4)
Nominal Section width up to 62 mm	Up to 225	8 ± 0.2	15
	225 and above	8 ± 0.2	29
Nominal Section width above 62 mm	Up to 225	8 ± 0.2	17
	225 and above	8 ± 0.2	34

4.3 Tread wear indicators

4.3.1 The pneumatic tyre shall include minimum four transverse rows of wear indicators, approximately equally spaced and situated in the principle grooves of the tread. The tread wear indicators shall be such that cannot be confused with the rubber ridges between the ribs or blocks of the tread.

4.3.2 The tread wear indicators (height or deep the tread wear indicators) shall be $0.8^{+0.6}_{-0.00}$ mm.

4.3.3 The height of tread wear indicators is determined by measuring the difference between the depth, from the tread's surface, to the top of the tread wear indicator and to the bottom of the tread groove close to the slope at the base of the tread wear indicator.

NOTE: *The tyre shall be considered unsafe for service on road when remaining non skid depth reaches minimum value of 0.8 mm at any part of the tread circumference.*

5 MARKING

The tyre shall be marked legibly and indelibly with the following on at least at one side wall of the tyres.

a) tyre size designation (as per **3.27**);
b) load index or maximum load caring capacity(kg) with the recommended inflation pressure;
c) direction of rotation in the case of directional tread patterns;
d) name of the manufacturer and/or registered trade mark and /or brand name including the country of origin;
e) ply rating number of tyres (for cord designated tyres);
f) speed category;
g) Tread wear indicator (TWI);
h) batch or code or serial no (either inside or outside);
i) week and year of manufacturing; and
j) In the case of Radial ply tyres the letter R or the word RADIAL.

NOTE: *Further to the above marking, any other markings can also appear in agreement between the purchaser and the supplier.*
Example:
i) whether the tyre is to be used with or without an inner tube;
ii) fitting position(front or rear), if necessary;
iii) the marking "REINFORCED" or "REINF", if the tyre is a reinforced.

6 METHOD OF TEST

6.1 Measuring dimensions

6.1.1 Tyre shall be fitted to the measuring rim and inflated to the pressure specified by the manufacturer. In the absence of such specification from the tyre manufacturer, the values given in Table **9** may be used for the categories listed.

6.1.2 Tyre mounted on its rim shall be left at ambient laboratory temperature for at least 24 h.

6.1.3 Pressure shall be reset at the value as per **6.1.1.**

6.1.4 Overall width shall be measured by means of a caliper gauge at six equally spaced points account being taken of the thickness of the ribs or bands. The highest measurement obtained shall be considered on the overall width.

6.1.5 Outer diameter shall be determined as follows:

The maximum circumference is measured and the value obtained is divided by л (3.1416).

TABLE 9 - Recommended inflation pressure for measuring tyre dimensions

Tyre version	Speed category symbol	Pressure kPa
Motorcycles		
Standard and/or 4 PR rim diameter code ≤ 12 Code designated	J	250
Standard and/or 4 PR rim diameter code > 12 Code designated	L , P	225
Reinforced and/or 6 PR rim diameter code ≥ 12 Code designated	L , P	280
Standard rim diameter code ≤ 12 ISO designated	J , L	230 or 250
Reinforced rim diameter code ≤ 12 ISO designated	J , L	280 or 300
Standard rim diameter code > 12 ISO designated	P	225 or 250
Reinforced rim diameter code > 12 ISO designated	P	280
Scooters		
Standard and/or 4 PR rim diameter code ≤ 12 Code designated	J	250
Standard rim diameter code ≤ 12 ISO designated	J , L	230 or 250
Reinforced rim diameter code ≤ 12 ISO designated	J , L	280 or 300

6.2 Strength test

The strength test shall be determined in accordance with **SLS ISO 10231**.

6.3 High Speed Test

The high speed test shall be determined in accordance with **SLS ISO 10231**.

6.4 Endurance test

The endurance test shall be determined in accordance with **SLS ISO 10231**.

ANNEX A

TABLE 10 – Variation of load carrying capacity (%) with speed for moped and motorcycle tyres

Speed km/h	Variation in load carrying capacity (%)					
	Speed symbol (I)					
	J	K	L	M	N	P
30 (*)	+30	+30	+30	+30	+30	+30
50 (*)	+30	+30	+30	+30	+30	+30
60 (*)	+23	+23	+23	+23	+23	+23
70 (*)	+16	+16	+16	+16	+16	+16
80	+10	+10	+10	+10	+10	+14
90	+5	+5	+7.5	+7.5	+7.5	+12
100	0	0	+5	+5.0	+5.0	+10
110		0	+2.5	+2.5	+2.5	+8
120			0	0	0	+6
130				0	0	+4
140					0	0
*Overloads for these speeds are for the purpose of solving homologation difficulties when a motorcycle or a moped, originally approved for rider only, is re-homologated to include the passenger or the luggage.						

The speed categories of tyres shall be as given in Table **5**.

TABLE 11 - List of load indices and corresponding loads

Load Index, L_1 (1)	**Maximum Load kg** (2)	**Load Index, L_1** (1)	**Maximum Load kg** (2)	**Load Index, L_1** (1)	**Maximum Load kg** (2)	**Load Index, L_1** (1)	**Maximum Load kg** (2)
0	45	31	109	61	257	91	615
1	46.2	32	112	62	265	92	630
2	47.5	33	115	63	272	93	650
3	48.7	34	118	64	280	94	670
4	50	35	121	65	290	95	690
5	51.5	36	125	66	300	96	710
6	53	37	128	67	307	97	730
7	54.5	38	132	68	315	98	750
8	56	39	136	69	325	99	775
9	58	40	140	70	335	100	800
10	60	41	145	71	345	101	825
11	61.5	42	150	72	355	102	850
12	63	43	155	73	365	103	875
13	65	44	160	74	375	104	900
14	67	45	165	75	387	105	925
15	69	46	170	76	400	106	950
16	71	47	175	77	412	107	975
17	73	48	180	78	425	108	1 000
18	75	49	185	79	437	109	1 030
19	77.5	50	190	80	450	110	1 060
20	80	51	195	81	462	111	1 090
21	82.5	52	200	82	475	112	1 120
22	85	53	206	83	487	113	1 150
23	87.5	54	212	84	500	114	1 180
24	90	55	218	85	515	115	1 215
25	92.5	56	224	86	530	116	1 250
26	95	57	230	87	545	117	1 285
27	97.5	58	236	88	560	118	1 320
28	100	59	243	89	580	119	1 360
29	103	60	250	90	600	120	1 400
30	106						

ANNEX B
COMPLIANCE OF A LOT

The sampling scheme given in this Annex should be applied where compliance of a lot to the requirements of this standard is to be assessed based on statistical sampling and inspection.

Where compliance with this standard is to be assured based on manufacturer's control systems coupled with type testing and check tests or any other procedure, appropriate schemes of sampling and inspection should be adopted.

B.1 SAMPLING

B.1.1 *Lot*

All tyres in a single consignment of the same type and size manufactured under essentially similar conditions shall constitute a lot.

B.1.2 *Scale of sampling*

B.1.2.1 Sample shall be tested from each lot separately for ascertaining conformity of the lot to the requirements of this standard.

B.1.2.2 The number of tyres to be taken from the lot shall depend on the size of the lot and shall be in accordance with Table **12**.

B.1.2.3 Tyres shall be selected at random. In order to ensure randomness of selection, random number tables as given in **SLS 428** shall be used.

TABLE 12 – Scale of sampling

Number of tyres in the lot **(1)**	**Number of tyres to be selected** **(2)**
Up to 200	3
201 to 1000	6
Over 1000	9

B.1.3 *Number of tests*

B.1.3.1 Each tyre selected as in **B.1.2.2** shall be examined for the requirements given in **4.1** and **5**.

B.1.3.2 Each tyre selected as in **B.1.2.2** shall be divided into three subsamples of equal size. The tyres in one sub sample so obtained shall be tested separately for **4.2.1**, the tyres in another sub sample shall be tested separately for **4.2.2** The tyres in the remaining sub sample shall be tested for **4.2.3.**

B.1.3.3 One tyre shall be selected from the lot and tested for the requirements given in **4.3**.

B.1.4 *Conformity to standard*

B.1.4.1 The lot shall be declared as conforming to the requirements of this standard if the following conditions are satisfied;

B.1.4.1 a) Each tyre satisfies the requirements given in **4.1** and **5**, when examined as given in **B.1.3.1**.

B.1.4.1.b) The tyres tested as in **B.1.3.2** satisfy the relevant requirements.

B.1.4.1.c) The tyres tested as in **B.1.3.3** satisfy the relevant requirements.

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