

SRI LANKA STANDARD 1212 : 2001

UDC 685.551

**SPECIFICATION FOR
PASSENGER CAR TYRES**

SRI LANKA STANDARDS INSTITUTION

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SLS 1212 : 2001

Gr. 6

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**SRI LANKA STANDARD
SPECIFICATION FOR PASSENGER CAR TYRES**

FOREWORD

This standard was approved by the Sectoral Committee on Chemicals and Polymer Technology and was authorized for adoption and publication as a Sri Lanka Standard by the Council of the Sri Lanka Standards Institution on 2001-04-17.

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

Guidelines are given for the determination of a compliance of a lot with the requirements of this standard based on statistical sampling and inspection in Appendix A.

In the preparation of this specification the assistance derived from the following publications is gratefully acknowledged :

- ISO 4000 : 1994 Passenger car tyres and rims
Part 1 : Tyres (metric series)
- SABS 1550 : 1992 Motor vehicle tyres and rims dimensions and loads
Part 1 : General
Part 2 : Passenger car tyres
- SABS 1565 : 1992 Pneumatic tyres for passenger cars and trailers

1 SCOPE

This standard prescribes the designation, dimensions, markings and performance requirements for passenger car tyres.

2 REFERENCES

- ISO 10191 : Passenger car tyres - verifying tyre capabilities - laboratory test methods
- CS 102 : Presentation of numerical values
- SLS 428 : Random sampling method
- SLS 900 : Definition of terms and nomenclature of automobile tyres and rims.
Part 1 : pneumatic tyres.

3 DEFINITIONS

For the purpose of this standard definitions given in **SLS 900** : Part 1 and **ISO 10191** shall apply.

4 TYRE DESIGNATION

4.1 Size and construction

The characteristics shall be indicated as follows

Nominal Section width	Nominal aspect ratio	Tyre construction code	Nominal rim diameter code
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4.1.1 *Nominal section width*

The section width of a tyre mounted on the theoretical rim designated by the tyre manufacturer.

4.1.2 *Nominal aspect ratio*

The nominal aspect ratio shall be expressed as a percentage of ratio of section height to nominal section width.

4.1.3 *Tyre construction code*

The tyre construction code shall be as follows :

B for bias-belted construction;

D for diagonal construction; and

R for radial ply construction.

NOTE

Radial tyres designed for some existing vehicles with maximum speed capabilities in excess of 210 km/h or 240 km/h may be designated and marked differently.

4.1.4 *Nominal rim diameter code*

The nominal rim diameter shall be expressed by the code given in Table 1

TABLE 1 - Nominal rim diameter code

Nominal rim diameter code (1)	Nominal rim diameter in mm (2)
10	254
12	305
13	330
14	356
15	381
16	406
17	432
18	457
19	483

4.2 **Service condition characteristics**

The service condition characteristics or service description shall be indicated as follows :

Load index speed symbol

For the special case of tyres designed for vehicles having a maximum speed capability in excess of 270 km/h, the indication of the service condition characteristics is precluded. For the maximum speed capability and the load capacity of the tyres, the tyre manufacturer concerned shall be consulted.

4.2.1 *Load index*

The maximum tyre load capacity corresponding to the service conditions specified by the tyre manufacturer shall be indicated by a load index taken from Table 2. This indication is understood to be per tyre for a single mounting.

LI (1)	TLCC kg (2)	LI (3)	TLCC kg (4)	LI (5)	TLCC kg (6)	LI (7)	TLCC kg (8)
50	190	70	335	90	600	110	1060
51	195	71	345	91	615	111	1090
52	200	72	355	92	630	112	1120
53	206	73	365	93	650	113	1150
54	212	74	375	94	670	114	1180
55	218	75	387	95	690	115	1215
56	224	76	400	96	710	116	1250
57	230	77	412	97	730	117	1285
58	236	78	425	98	750	118	1320
59	243	79	437	99	775	119	1360
60	250	80	450	100	800	120	1400
61	257	81	462	101	825		
62	265	82	475	102	850		
63	272	83	487	103	875		
64	280	84	500	104	900		
65	290	85	515	105	925		
66	300	86	530	106	950		
67	307	87	545	107	975		
68	315	88	560	108	1000		
69	325	89	580	109	1030		

TABLE 2 - Correlation between load index (L1) and tyre load-carrying capacity (TLCC)

NOTES

1 The maximum tyre load capacity corresponding to the load index applies for speeds up to and including 210 km/h.

For speed symbol V tyres (between 210 km/h and 240 km/h), the maximum tyre load capacity is to be reduced to the following percentage :

100% at 210 km/h;

97% at 220 km/h;

94% at 230 km/h;

91% at 240 km/h.

Between the speeds, linear interpolation is permitted.

2. In the case of speed symbol W and ZR marked tyres, maximum load capacity corresponding to the load index applies for speeds up to and including 240 km/h.

For speed symbol W tyres (between 240 km/h and 270 km/h), the maximum tyre load capacity is to be reduced to the following percentage.

100% at 240 km/h;

95% at 250 km/h;

90% at 260 km/h;

85% at 270 km/h.

Between these speeds, linear interpolation is permitted.

For speeds over 270 km/h, consult the tyre manufacturer concerned for the maximum tyre load capacity permitted in relation to the maximum speed allowed for the tyre.

4.2.2 *Speed symbol*

The speed category is assigned to a tyre to denote the maximum speed for which use of the tyre is rated.

The speed symbol shall be indicated by a letter taken from Table 3 corresponding to the speed category.

TABLE 3 - Correlation between speed symbol and speed category

Speed symbol (1)	Speed category km/h (2)
J	100
K	110
L	120
M	130
N	140
P	150
Q	160
R	170
S	180
T	190
U	200
H	210
V	240
W ¹⁾	270 ¹⁾

NOTE

This list is not restrictive; other categories may be added later.

1) Radial ply tyres designed for operations at speeds in excess of 270 km/h are to be identified by means of code-letters ZR in the “dimensional and constructional” characteristics in place of the tyre construction code. For these tyres, consult the tyre manufacturers concerned for the maximum speed capability.

4.3 Other service characteristics

4.3.1 The word “TUBELESS” shall appear on the tyre to characterize tyres that can be used without a tube.

4.3.2 The letter “T” immediately in front of the tyre size designation shall be used to characterize high pressure special temporary - use spare tyres.

4.3.3 Specific indications, if required, may be added to indicate :

- the type of vehicle for which the tyre is primarily designed, using the symbol “P” (see note),
- the temporary use of certain spare tyres using indications such as “TEMPORARY USE ONLY”;
- the bias - belted construction with the words “BIAS BELTED”.
- the radial ply construction with the word “RADIAL”.
- the direction of mounting.
- the direction of rotation.
- the type of tread pattern.
- other characteristics.

NOTE

This symbol may be used where there may be ambiguity regarding the tyre type. Where this optional marking is used, it should be so positioned that confusion cannot result from its proximity to any other service condition marking.

In the case of tyres designed for vehicles having a maximum speed capability in excess of 270 km/h the code letters “ZR” shall be indicated in the dimensions and constructional characteristics for radial ply construction in place of the tyre construction code R.(see also **4.2**).

In the case of tyres designed for vehicles having a maximum speed capability of 240 km/h to 270 km/h, the code letters “ZR” may be indicated in the dimensional and constructional characteristics for radial ply construction in place of the tyre construction code R.

5 TYRE DIMENSIONS

Dimensions of the tyres, when inflated and measured in accordance with the conditions given in Appendix B shall be as given in Table 4.

TABLE 4 - Recommended pressures for measure of tyre dimensions

Tyre (1)	Pressure (kPa) (2)
Standard load version	180
Extra load/reinforced version	230
“T” type temporary use spare tyre	420

6 PERFORMANCE REQUIREMENTS

6.1 Endurance test

Endurance test of the tyre shall be conducted in accordance with **ISO 10191** and at the completion of the test, the tyre shall be inspected and shall be free from load, cord, ply or tread separation or tread chunking or broken cords.

6.2 Tyre strength test (plunger test)

The tyre shall conform to the breaking energy requirements, when tested in accordance with **ISO 10191**.

6.3 High speed performance test

High speed test of the tyre shall be conducted in accordance with **ISO 10191** and at the completion of the test, the tyre shall be inspected and shall be free from bead, cord, ply or tread separation or tread chunking or broken cords.

7 MARKING

Each tyre shall be marked legibly and indelibly at least on one side wall with the following details :

- a) The designation of size and construction as in **4.1**
- b) The designation of service condition characteristics as in **4.2**
- c) The designation of other service characteristics as in **4.3**

- d) Trade mark;
- e) Manufacturer's code;
- f) Month and year of manufacture or week and year of manufacture; and
- g) Direction of rotation (on directional type tyres).

8 METHODS OF TEST

Tests shall be carried out as prescribed in Appendix B of this specification and **ISO 10191**.

APPENDIX A COMPLIANCE OF A LOT

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

A.1 LOT

In any consignment all tyres of the same size belonging to one batch of manufacture or supply shall constitute a lot.

A.2 SCALE OF SAMPLING

A.2.1 Samples shall be tested from each lot for ascertaining conformity of tyres to the requirements of this specification.

A.2.2 The number of tyres to be selected from a lot shall be in accordance with the following table.

TABLE - 5 Scale of sampling

No. of tyres in the lot (1)	No. of tyres to be selected (2)
Up to 280	5
281 to 500	6
501 to 1 200	7
1 201 and above	8

A.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.

A.3 NUMBER OF TESTS

A.3.1 Each sample selected as in **A.2.2** shall be inspected for marking requirement(7).

A.3.2 Each sample selected as in **A.2.2** shall be tested for dimension and tread wear indicator requirements.

A.3.3 If the samples satisfy the above inspection/ tests given as in **A.3.1** and **A.3.2**, then following tests shall be performed on three samples in accordance with the following :

No. of tyres (1)	Requirement (2)
1	Endurance test
1	Tyre strength test
1	High speed performance test

A.4 CRITERIA FOR CONFORMITY

A lot shall be declared as conforming to the requirements of this specification if the following conditions are satisfied.

A.4.1 Each sample inspected/tested as in **A.3.1**, **A.3.2** and **A.3.3** satisfied the relevant requirement.

**APPENDIX B
MEASUREMENT OF DIMENSIONS**

B.1 Before being measured, the tyre shall be mounted on its measuring rim, inflated to the recommended pressure given in Table 4 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.

B.2 Caliper the section width and the overall width of the tyre at six points approximately equally spaced around the tyre circumference. Record the average of these measurements as section width and overall width, respectively.

B.3 Determine the overall tyre diameter by measuring maximum circumference of the tyre and dividing this dimension by π (where $\pi = 3.1416$).

SRI LANKA STANDARDS INSTITUTION

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Further particulars of the terms and conditions of the permit may be obtained from the Sri Lanka Standards Institution, 17, Victoria Place, Elvitigala Mawatha, Colombo 08.

