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Draft Jamaican Standard  
Specification  
for  
**Pneumatic tyres for passenger cars**

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**BUREAU OF STANDARDS JAMAICA**

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Draft Jamaican Standard

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Jamaican Standards establish requirements in relation to commodities, processes and practices, but do not purport to include all the necessary provisions of a contract.

The attention of those using this standard specification is called to the necessity of complying with any relevant legislation.

#### Amendments

No.	Date of issue	Remarks	Entered by and date

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## **Foreword**

This standard is a revision of JS 244: 2018 and has been updated to ensure that it is in line with current technical requirements within the motor vehicle industry.

The use of this standard will lead to a reduction in road fatalities due to the inspection and monitoring of pneumatic tyres for passenger cars.

This standard is compulsory.

## **Committee representation**

## **Related documents**

This standard makes reference to the following:

- a) United States Government Department of Transport, 49 CFR 571.109 Section 571.109 Standard No. 109, New pneumatic tyres
- b) International Organization of Standardization, ISO 4000-1: 2021, Passenger car tyres and rims – Part 1: Tyre (metric series)
- c) United States Department of Transportation National Highway Traffic Safety Administration – Tyres: Your safety and your life are riding on them, Volume 1



# Draft Jamaican Standard Specification for Pneumatic tyres for passenger cars

## 1. Scope

This standard specifies the designation, dimensions, load ratings and labeling requirements of metric-series tyres primarily intended for passenger cars.

The standard applies to all passenger car tyres to be used in the local market including those arriving with imported new and used vehicles.

## 2. Terms and definitions

For the purposes of this document, the following terms and definitions apply.

### 2.1

#### **bead**

part of tyre shaped to fit the rim and having a core made of one or several essentially inextensible strands with the plies wrapped around the core

### 2.2

#### **bead separation**

breakdown of bond between components in the bead

### 2.3

#### **carcass**

part of a tyre other than the tread and the sidewall rubber which, when inflated, bears the load

### 2.4

#### **chunking**

breaking away of pieces of rubber from the tread

### 2.5

#### **cord**

textile or non-textile strands (threads) used in various components of the tyre carcass

EXAMPLE Plies, belt, breakers etc.

### 2.6

#### **cord separation**

parting of the cords from their rubber coating

### 2.7

#### **cracking**

parting within the tread, sidewall or inner liner of the tyre that may extend to cord material

### 2.8

#### **inner-liner separation**

parting of inner-liner from cord material in the carcass

### 2.9

**load rating**

maximum load a tyre is rated to carry for a given inflation pressure

**2.10****maximum permissible inflation pressure**

maximum cold inflation pressure to which a tyre may be inflated

**2.11****maximum load rating**

load rating at the maximum permissible inflation pressure for that tyre

**2.12****open splice**

parting at any junction of tread, sidewall, or inner liner that extends to cord material

**2.13****ply**

layer of rubber-coated parallel cords

**2.14****pneumatic tyre**

mechanical device made of rubber, chemicals, fabric and steel or other materials, which, when mounted on an automotive wheel, provides the traction and contains the gas or fluid that sustains the load

**2.15****radial ply tyre**

pneumatic tyre in which the ply cords which extend to the beads are laid at substantially 90° to the centreline of the tread

**2.16****rim**

metal support for a tyre or a tyre and tube assembly upon which the tyre beads are seated

**2.17****section width**

linear distance between the outside of the sidewalls of an inflated pneumatic tyre, when fitted on a measuring rim, excluding elevations due to labelling (markings), decorations, protective bands or ribs, or rim protector

**2.18****sidewall**

portion of a tyre between the tread and the bead

**2.19****tread**

part of a tyre which comes into contact with the ground

**2.20****wheel**

rotating load-carrying member between the tyre and the axle, usually consisting of two major parts, the rim and the wheel disc, which may be integral, permanently attached or detachable

**3. Performance requirements**

### 3.1 General

Each tyre shall conform to each of the following:

- a) Maximum permissible inflation pressure shall be as follows:

**Table 1 - Maximum permissible inflation pressure**

Maximum Permissible Inflation Pressure	
kPa	psi
220	32
250	36
275	40
420	60
240	35
280	41
300	44
340	49
350	51

- b) The recommended cold tyre inflation pressure for each tyre position specified by the vehicle and or the tyre manufacturer for the intended service condition of the given vehicle shall be equal or higher than the minimum cold tyre inflation pressure, given by the tyre manufacturer.
- c) It shall incorporate a tread wear indicator that will provide a visual indication that the tyre has worn to a tread depth of 1.6 mm.
- d) It shall, before being subjected to use, exhibit no visual evidence of tread, sidewall, ply, cord, inner-liner, or bead separation, chunking, broken cords, cracking, or open splices.
- e) In selecting tyres for a vehicle, the vehicle maximum load on the tyre shall not be greater than the applicable maximum load-carrying capacity of the tyre. Vehicle maximum load on the tyre is the load on an individual tyre that is determined by distributing to each axle its share of the maximum loaded vehicle mass and dividing by the number of tyres on the axle.
- f) The age of the tyres should be checked using the date code stamped on the sidewall. Tyres should be changed as per the manufacturer's recommendations.

## 4. Designation

### 4.1 Size and construction

#### 4.1.1 Characteristics

The tyre characteristics shall be designed:

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

EXAMPLE 235/45 R 17.

#### 4.1.2 Nominal section width

The nominal section width of the tyre shall be indicated in millimetres, and this part of the designation shall end in either the numeral of zero or five, so that in any single series of tyres with the same nominal aspect ratio, the values shall all end in 0 or all end in 5.

For sizes mounted on 5° tapered (code-designated) rims, the nominal section width shall end in 5.

#### 4.1.3 Nominal aspect ratio

The nominal aspect ratio ( $H/S$ , where  $H$  is the design tyre section height and  $S$  is the design tyre section width) shall be expressed as a percentage and shall be a multiple of 5.

#### 4.1.4 Tyre construction code

The tyre construction code shall be:

- B for bias-belted construction;
- D for diagonal construction;
- R for radial construction;
- RF for radial run-flat construction (only applicable to run-flat or self-supporting tyres as defined in ISO 16992; radial extended mobility tyres as defined in ISO 16992 shall have the construction code R).

In the case of tyres having a maximum speed capability exceeding 240 km/h, the tyre construction code R can be replaced by ZR, and the tyre construction code RF can be replaced by ZRF.

In the case of tyres having a maximum speed capability exceeding 300 km/h, the tyre construction code R shall be replaced by ZR, and the tyre construction code RF shall be replaced by ZRF.

#### 4.1.5 Nominal rim diameter code

For tyres mounted on 5° tapered (code-designated) rims, the code shall be as given in Table 2.

Table 2 – Nominal rim diameter code

Nominal rim diameter code	Nominal rim diameter $D_r$ mm
10	254
12	305
13	330
14	356
15	381
16	406
17	432

18	457
19	483
20	508
21	533
22	559
23	584
24	610
25	635
26	660
28	711
30	762

In the case of tyres requiring new- concept rims, for safety reasons, especially concerning mounting, the code-number shall be equal to the nominal rim diameter ( $D_r$ ) expressed as a whole number in millimetres.

## 4.2 Service descriptions

### 4.2.1 General

The service description shall be:

Load index Speed symbol

In the case of tyres having a maximum speed capability exceeding 300 km/h, the speed symbol Y and the load index shall be both placed within parentheses, to identify performance up to 300 km/h.

EXAMPLE 235/45 ZR 17 (97Y).

For maximum speed capability and load carrying capacity of the tyre over 300 km/h, consult the manufacturer.

### 4.2.2 Load index

The maximum tyre load-carrying capacity corresponding to the service conditions specified by the tyre manufacturer shall be indicated by a load index taken from Table 3, per tyre for a single mounting.

### 4.2.3 Speed symbol

Alpha or alpha-numeric code which indicates the speed category of the tyre.

### 4.2.4 Speed category

A speed category is assigned to a tyre according to the maximum speed which the tyre can sustain. It is expressed by the speed symbol, in accordance with Table 4.

**Table 3 - Equivalence between load index (LI) and tyre load – carrying capacity (TLCC)**

LI	TLCC kg	LI	TLCC kg	LI	TLCC kg	LI	TLCC kg
50	190	70	335	90	600	110	1 060
51	195	71	345	91	615	111	1 090
52	200	72	355	92	630	112	1 120
53	206	73	365	93	650	113	1 150
54	212	74	375	94	670	114	1 180
55	218	75	387	95	690	115	1 215
56	224	76	400	96	710	116	1 250
57	230	77	412	97	730	117 <sup>a</sup>	1 285
58	236	78	425	98	750	118 <sup>a</sup>	1 320
59	243	79	437	99	775	119 <sup>a</sup>	1 360
60	250	80	450	100	800	120 <sup>a</sup>	1 400
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	1 000	—	—
69	325	89	580	109	1 030	—	—

<sup>a</sup> ISO tyre loads according to this document have a 116 load index maximum: some existing tyres can have a higher load index number.

The maximum tyre load carrying capacity corresponding (TLCC) to the load index (LI) shall apply for speeds up to and including 210 km/h.

For tyres with the speed symbol V (between 210 km/h and 240 km/h), the maximum load carrying capacity per tyre shall be reduced to 100 % at 210 km/h, 97 % at 220 km/h, 94 % at 230 km/h and 91 % at 240 km/h; linear interpolation is permitted.

In the case of speed symbols W and Y, the maximum load carrying capacity per tyre corresponding to the load index shall apply for speeds up to and including 240 km/h for W and 270 km/h for Y.

For tyres with the speed symbol W (between 240 km/h and 270 km/h), the maximum load carrying capacity per tyre shall be reduced to 100 % at 240 km/h, 95 % at 250 km/h, 90 % at 260 km/h and 85 % at 270 km/h; linear interpolation is permitted.

For tyres with the speed symbol Y (between 270 km/h and 300 km/h), the maximum load carrying capacity per tyre shall be reduced to 100 % at 270 km/h, 95 % at 280 km/h, 90 % at 290 km/h and 85 % at 300 km/h; linear interpolation is permitted.

See [4.2.3](#), [4.2.4](#) and [Table 4](#) for speed categories and their symbols.

For speeds of over 300 km/h or ZR-marked tyres or both, consult the tyre manufacturer for the maximum tyre load carrying capacity permitted in relation to the maximum speed allowed for the tyre.

For vehicles with a design maximum speed capability of up to 60 km/h, the maximum load carrying capacity corresponding to the load index can be exceeded, as shown below. However, an increase in the reference inflation pressure is necessary and should be determined in consultation with the tyre manufacturer. In the absence of such agreement, the following pressure increases are recommended:

- for 60 km/h, a 10 % load increase with a 10 kPa inflation pressure increase;
- for 50 km/h, a 15 % load increase with a 20 kPa inflation pressure increase;
- for 40 km/h, a 25 % load increase with a 30 kPa inflation pressure increase;
- for 30 km/h, a 35 % load increase with a 40 kPa inflation pressure increase;
- for 25 km/h, a 42 % load increase with a 50 kPa inflation pressure increase.

**Table 4 - Speed symbols and corresponding speed**

Speed symbol	Speed km/h
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	270
Y <sup>a</sup>	300
NOTE This list is not exhaustive, and other categories and symbols can be added later.	
<sup>a</sup> For tyres designed for speeds exceeding 300 km/h, see <a href="#">4.2.1</a> .	

### 4.3 Other service characteristics

**4.3.1** The word “TUBELESS” shall appear on the sidewalls of tyres without tube.

**4.3.2** The letters “XL”, close to the tyre size designation, or the words “REINFORCED” or “EXTRA LOAD” shall appear on the sidewalls of tyres designed for loads and inflation pressure higher than the standard version.

**4.3.3** The letter “LL”, close to the tyre size designation, or the words “LIGHT LOAD” shall appear on the sidewalls of tyres designed for loads lower than the standard version.

**4.3.4** The letter “T”, immediately preceding the tyre size designation, shall be used to identify T-type temporary-use spare tyres.

**4.3.5** Specific indications, if required, can be added to indicate:

- the type of vehicle for which the tyre is primarily designed, using the symbol “P” for passenger cars refer to Clause 4.3.6;
- temporary use of certain spare tyres, using indications such as “TEMPORARY USE ONLY”;
- bias-belted construction, with the words “BIAS-BELTED”;
- radial construction, with the word “RADIAL”;
- direction of mounting;
- direction of rotation;
- type of tread pattern;
- other characteristics.

**4.3.6** The optional marking "P" can be used where there could be ambiguity regarding the tyre type. It should be positioned such that confusion cannot result from its proximity to any other service condition marking.

EXAMPLE P295/45 R 17.

## **5. Marking**

The marking shall include designations of the following:

- a) size and construction;
- b) service description (see Clause 4.2)
- c) any other service characteristics.

The location of the marking of the load index and speed category shall be distinct, but near the marking of the size and construction.

## **6. Labelling requirements**

Each tyre shall have permanently moulded into or onto both sidewalls in letters and numerals not less than 2 mm high, the following information:

- a) one size designation, except that equivalent inch and metric size designations may be used;
- b) maximum permissible inflation pressure;
- c) maximum load rating;
- d) the generic name of each cord material used in the plies (both sidewall and tread area) of the tyre;
- e) actual number of plies in the sidewall, and the actual number of plies in the tread area if different;
- f) the words "tubeless" or "tube type" as applicable;
- g) the word "radial" or the letter "R" placed in front of the rim diameter marking of the size designation if the tyre is a radial ply tyre;
- h) country tyre of origin; and
- i) each tyre shall be labelled with the name of the manufacturer, or brand name, date of manufacture and number assigned to the manufacturer.

End of Document



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5. The Standards Council recommends the document to the Minister for publication.
6. The Minister approves the recommendation of the Standards Council.
7. The declaration of the standard is gazetted and copies placed on sale.
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