
Jamaican Standard

Specification

for

Used pneumatic tyres for passenger cars



BUREAU OF STANDARDS JAMAICA

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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 sets out requirements for physical dimensions, performance and labeling of used pneumatic tyres which are imported and offered for sale. This standard applies to passenger cars only. Used tyres will not be allowed for use on commercial motor vehicles eg. light trucks, trucks or buses.

This standard was prepared to provide adequate information to used tyre dealers, purchasers and consumers for the safe operational performance of used pneumatic tyres used on motor cars.

Used tyre dealers will be guided by the full range of tyre specifications outlined in this standard. The information provided to purchasers or consumers will permit proper selection and use of these tyres.

This standard is mandatory.

Committee representation

The preparation of this standard for the Standards Council, established under the Standards Act, 1968 was carried out under the supervision of the Bureau's Used Pneumatic Tyres Technical Committee which at the time comprised the following members respectively:

Mr K Hare, Chairman	Ministry of Transport and Works
Mr K Jackson, Vice Chairman	Jamaica Ultimate Tyre Co. Ltd.
Mr A Bahadur	A & A Tyres & Vulcanizing
Mr U Balfour	Lovell's Auto
Mr A Buddan	Tyres R Us Limited
Mrs S Buddan	Tyres R Us Limited
Mr. N Crum-Ewing	Tropical Battery Company Limited
Mrs D Hudson Sinclair	Ministry of Transport and Works
Mr D Gunzal	Beep Beep Tyres, Batteries and Lubes Ltd.
Mrs A Jones	National Environment Planning Agency
Mr E McDonald	Jamaica Customs Department
Mr G Murray	National Solid Waste Management Authority
Mr K Noteman	Lovell's Auto
Mr M Powell	Independent used tyre dealer
Mr N Pinnock	Jamaica Ultimate Tyre Co. Ltd.
Mr G Richards	Food Storage and Prevention of Infestation Division
Mr N Robinson	Stewarts Auto Sales Limited
Mr R Rowe	Consumer Affairs Commission
Ms S Sampson	Ministry of Transport and Works
Mr D Satterthwaite	Goodyear International Corporation
Mrs K Senior	National Environment Planning Agency
Mr G Ziadie	Chad-Ad Distributors Ltd.
Ms L. Morris	Bureau of Standards Jamaica
Mr W. Richards	Bureau of Standards Jamaica
Mr D. Tomlinson, Technical Secretary	Bureau of Standards Jamaica
Mrs J. Henry, Recording Secretary	Bureau of Standards Jamaica
Ms E. Williams, Facilitator	Bureau of Standards Jamaica

Related documents

This standard makes reference to the following:

JS 244:2006	Jamaican Standard Specification for Pneumatic tyres for passenger cars
TTS 266:2002	Pneumatic Tyres for Passenger Cars - Specification
	New Zealand's MAF Biosecurity Authority Import Health Standard (Biosecurity Act 1993) for Used Tyres from any Country

Jamaican Standard Specification for Used pneumatic tyres for passenger cars

1. Scope

This standard specifies laboratory, and regulatory test requirements for the inspection of used pneumatic passenger car tyres intended for resale without modification to the Jamaican consumer.

2. Application

2.1 This standard shall apply to used tyres with a maximum ply rating of 4 or a maximum load range of B, and shall not apply to the following:

- a) Used tyres with a ply rating of 6 or higher or a load range of C or greater. Used tyres of 6 ply rating or higher, or a load range of C or greater shall not be allowed entry into Jamaica regardless of quantities.
- b) Carcasses intended for retreading by a certified retreader.
- c) End-of-life used tyres that cannot be re-used for its originally intended purpose, and that is not suitable for retreading should not be imported into the island.

2.2 Importers of used pneumatic tyres shall be licensed with the Bureau of Standards Jamaica before importing such tyres. Each licensed used tyre dealer shall be assigned a unique code

2.3 Used tyres shall be imported in a 20 ft, 40 ft or 45 ft container.

3. Terms and definitions

For the purpose of this standard, the following terms and definitions apply:

3.1 beads. That part of a tyre made of steel wires, wrapped or reinforced by ply cords that are shaped to fit the rim.

3.2 bead separation. A breakdown of the bond between components of the bead area.

3.3 bias ply tyre. A pneumatic tyre in which the ply cords that extend to the beads are laid at alternate angles substantially less than 90° to the center-line of the tread.

3.4 blemished tyre. A tyre that the manufacturer has deemed imperfect.

3.5 carcass. The tyre structure, except tread and sidewall rubber.

3.6 chunking. The breaking away of pieces of the tread or sidewall.

3.7 cord. The strands forming the plies of the tyre.

3.8 cord separation. Cords parting away from adjacent rubber compounds.

3.9 cracking. Any parting within the tread, sidewall, or inner liner of the tyre extending to cord material.

3.10 groove. The space between two adjacent tread ribs.

- 3.11 impermeable surface.** A surface that cannot be penetrated by any element.
- 3.12 inner liner.** The layer(s) forming the inside surface of a tubeless tyre that contains the inflating medium within the tyre.
- 3.13 inner liner separation.** The parting inner liner from cord material in the carcass.
- 3.14 load range.** A figure indicating the strength of a tyre, and the tyres' ability to contain pressure.
- 3.15 load rating.** The maximum load a tyre is designed to carry for a given inflation pressure.
- 3.16 maximum permissible inflation pressure.** The maximum cold inflation pressure to which a tyre is designed to be safely inflated.
- 3.17 maximum load rating.** The load rating at the maximum permissible inflation for the tyre.
- 3.18 open splice.** Any parting at any junction of tread, sidewall, or inner liner that extends to cord material.
- 3.19 overall widths.** The linear distance between the exteriors of the sidewalls of an inflated tyre, including elevations due to labeling, decorations, or protective bands or ribs.
- 3.20 ply.** A layer of rubber-coated parallel cords.
- 3.21 ply rating.** The number of plies present in a tyre.
- 3.22 ply separation.** A parting of rubber compound between adjacent plies.
- 3.23 pneumatic tyre.** A mechanical device made of rubber, chemicals, fabric, and steel or other materials which when mounted on an automotive rim provides the traction and contains the fluid that sustains the load.
- 3.24 radial ply tyre.** A pneumatic tyre in which the ply cords that extend to the beads are laid at substantially 90° to the centerline of the tread.
- 3.25 rim.** A metal support for a tyre and tube assembly upon which the tyre beads are seated.
- 3.26 section width.** The linear distance between the exteriors of the sidewalls on an inflated tyre, excluding elevations due to labeling, decoration or protective bands.
- 3.27 sidewall.** That portion of a tyre between the tread and the bead.
- 3.28 sidewall separation.** The parting of the rubber compound from the cord material in the sidewall.
- 3.29 tread.** That portion of a tyre that is designed to normally come into contact with the road.
- 3.30 tread depth.** The linear distance measured in millimeters (mm) from the tread surface to the bottom of the groove of the tyre.
- 3.31 tread separation.** A parting of the tread from the carcass.
- 3.32 used tyre.** A pneumatic tyre which has already been fitted to a rim and, has provided traction for another vehicle prior to the time of inspection, sale or transfer.
- 3.33 wheel.** The assembled union of tyre and rim intended to provide traction for vehicles

4. Requirements

4.1 Presentation of used tyres for inspection

4.1.1 It shall be the responsibility of the vendor or importer to ensure that the following requirements are met before presenting used tyres for inspection:

- a) all wheels shall have the tyre removed from the rim for proper inspection;
- b) all used tyres shall have a minimum tread depth of 6mm;
- c) all used tyres shall have a maximum age of thirty-six months from the date of manufacture (as shown in figure 1);



Figure 1. Date of manufacture

- d) all used tyres shall be in a clean condition, that is, they are dry and free from dirt or any foreign material that may hinder the inspection process or prove hazardous to the health of the public.

4.1.2 Every consignment of used tyres shall be accompanied by documentation stating:

- a) number of tyres;
- b) type of tyres;
- c) size of tyres;
- d) container number;
- e) brand name of tyre;
- f) port of origin;
- g) consignment details;

- h) consignor; and
- i) consignee.

4.1.3 Every consignment of used tyres shall be free of contamination by any of the following:

- a) animals, insects or other invertebrates (in any living life stage including, eggs, egg casings or egg rafts), or any organic material of animal origin (including blood, bones, fibre, meat, secretions, excretions); or
- b) plants or plant products (including fruit, seeds, leaves, twigs, roots, bark, sawdust); or
- c) soil; or
- d) water;
- e) oil; or
- f) any other liquid.

Note. Of particular concern are exotic mosquitoes of public health significance.

4.1.4 All used tyres shall be fumigated with Eco2Fume on arrival at the port of entry by an operator approved by the Bureau of Standards Jamaica.

4.1.5 Used tyres may only be landed at ports or airports that have suitable decontamination or cleaning facilities which have been approved as transitional facilities.

4.1.6 All used tyres which do not comply with the requirements of all applicable health standards shall be detained at the port of entry.

4.2 Labelling requirements

4.2.1 Each used tyre shall have the following information permanently moulded into or onto both sidewalls in letters and numerals at least 2 mm high:

- 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 of origin;
- i) name of manufacturer or brand name; and
- j) number assigned to the manufacturer.

4.2.2 Each used tyre shall be labeled with a marking or markings stating the standard or standards to which the tyre complies which shall constitute a certification that the tyre conforms to the applicable standard or standards.

4.2.3 If the maximum inflation pressure of a tyre is 240, 280, 290, 300, 330, 340, 350, or 390 kpa, then:

- a) each marking of that inflation pressure pursuant to 4.2.1 (b) shall be followed in parenthesis by the equivalent inflation pressure in psi, rounded to the next higher whole number; and

- b) each marking of the tyre's maximum load rating pursuant to 4.2.1 (c) in kilograms shall be followed in parenthesis by the equivalent load rating in pounds, rounded to the whole number.

4.2.4 If the maximum inflation pressure of a tyre is 420 kpa (60 psi), the tyre shall have permanently moulded into or onto both side walls, in letters and numeral not less than 12.7 mm (1/2 inch), the words "Inflate to 420 kpa (60 psi)". On both sidewalls, the words shall be positioned in an area between the tyre shoulder and the bead of the tyre.

4.3 Inspection of used tyres

4.3.1 An Inspector appointed by the Bureau of Standards Jamaica shall carry out the inspection of used tyres. Every used tyre shall be inspected on its internal and external surfaces in order to detect any evidence of damage or defects. The inspection shall include distorting the natural contour of the tyre sufficiently for visual inspection under adequate lighting.

4.3.2 A used tyre shall not be acceptable for motor vehicle use unless it has a minimum tread depth of 6.0 mm. The minimum tread depth shall be determined in accordance with the method set out in clause 5.

4.3.3 A used tyre containing any of the following weaknesses, defects or characteristics shall not be approved for motor vehicle use:

- a) exposed cords due to tread wear or sidewall scuffing;
- b) radial or groove cracks;
- c) tread separation;
- d) weather cracking;
- e) broken, damaged, kinked or exposed bead wires;
- f) any visual evidence of belt damage;
- g) ply separation;
- h) porous liners or defective or opened splices in liners extending to the cords;
- i) loose cord on the inner ply;
- j) damage to the inner or bead seating areas on tyres identified as tubeless;
- k) evidence of having been used in an under-inflated or overloaded condition;
- l) casing break-up (flex break);
- m) generally weakened condition due to age, moisture, or exposure to oil or other chemical attack;
- n) damage to the plies in the bead area;
- o) sidewall separation;
- p) regrooved, retreaded, and no repairs;
- q) winter tyres;
- r) non-adjustable and;
- s) blemished.

4.3.4 Each used tyre shall incorporate a tread wear indicator that will provide a visual indication when the tyre has worn to a minimum acceptable tread depth as recommended by the manufacturer.

5. Test methods

5.1 Test method for the determination of the tread depth

5.1.1 Apparatus

The apparatus shall consist of a mechanical (or electromechanical) depth gauge fitted with a foot through which a spindle passes. The foot may have any of a variety of shapes, including but not limited to cylindrical, semi-cylindrical and rectangular. The reference surface of the gauge foot shall

be ground planar and perpendicular to the gauge spindle. A diagram of a mechanical depth gauge is shown in figure 2.

5.1.1.1 The smallest scale division on the gauge shall be no more than 1 mm.

5.1.1.2 The gauge spindle shall extend at least 25 mm. beyond the reference surface of the foot. Spindles may have any variety of shapes and diameters suitable for the tread depth to be measured.

5.1.1.3 The spindle shall not touch the side of the hole in the foot.

5.1.2 *Preparation*

5.1.2.1 Depth gauge

The gauge shall be calibrated and traceable to a recognized National Metrology Institute.

5.1.2.2 *Used Tyre*

The used tyre shall be dry and free of any foreign material that would interfere with accurate measurements.

5.1.3 *Procedure*

Place the foot of the gauge so that it bridges adjacent ribs over the area to be measured, avoiding tread wear indicators, so that the spindle makes perpendicular contact with the base of the groove as shown in figure 2. This single measurement characterizes the groove depth at this location.

5.1.3.1 *Location of tyre measurements*

Measurements shall be made along two outer circumferential grooves and along either the centre circumferential groove or, in the absence of a centre circumferential groove, along two circumferential grooves adjacent to the centerline of the tread.

5.1.3.2 *Number of measurements*

At least three measurements shall be taken in each quadrant of each of the circumferential grooves identified in **5.1.3.1**.

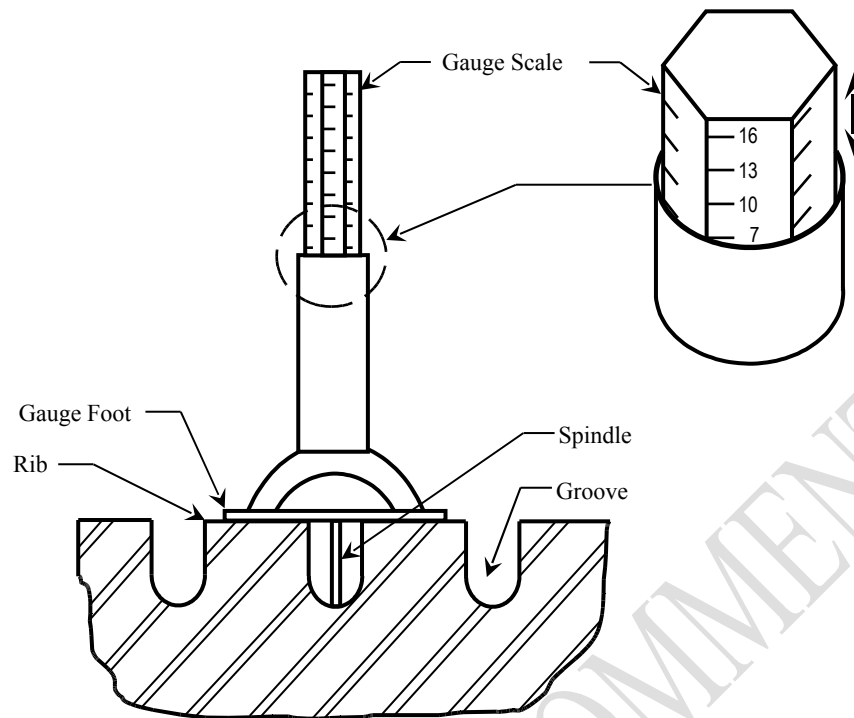


Figure 2. Measurement of tread depth for uniform wear

5.2 Test method for the electronic non-destructive casing inspection of used tyres

5.2.1 Apparatus

The apparatus shall consist of electronic casing inspection that uses ultrasonic, holographic, electromagnetic or other means of imaging to determine the internal structural integrity of each used tyre.

5.2.2 Test-setup for tyre testing

- a) The measuring setup shall be in accordance with figure 6 and shall be positioned relative to the tyre inside or/and outside.
- b) The inspection of the tyre shall be in sections of circumference.
- c) The whole setup shall be within a chamber to stress the tyre with a pressure differential.

5.2.3 Measuring

- a) The surface shall be illuminated with coherent light and simultaneously observed with the shearing setup.
- b) Two phase shifted images - before and after stress load - are superposed and preprocessed.
- c) Casing inspection technology (see 5.2.1) uses the coherent monochromatic properties of laser light to generate speckle patterns. The component to be inspected is illuminated by the laser. The surface reflects the light creating a speckle pattern at the viewing plane, which can be processed to provide information such as the presence of defects, material degradation or residual stress. The system records the speckle pattern from an unstressed component surface. The image is recorded using a video camera, digitized and stored on a computer.

- d) The surface is then stressed and a new speckle pattern generated, recorded and stored. The computer subtracts the speckle patterns from each other, thus forming an image made up of series of characteristic black and white fringes, representing the surface strain in the area of interest.
- e) If a defect such as a void or disband exists, this will affect the surface strain and the defect can be revealed by the fringe pattern developed as shown in figure 3. This can be processed further by the computer to make the fringe pattern easier to interpret by the user as shown in figures 4 and 5.



Figure 3. Fringe pattern

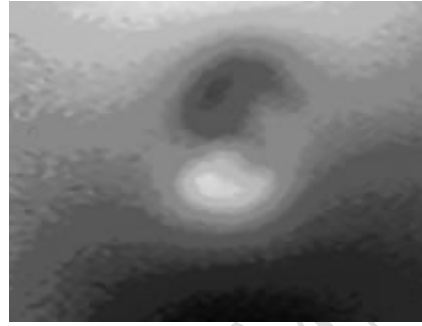


Figure 4. Unwrapped image

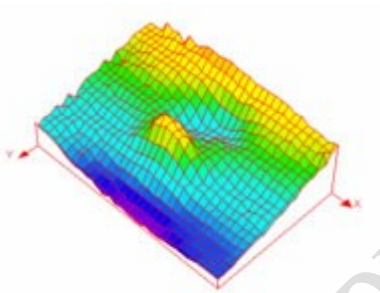


Figure 5. 3D Strain map

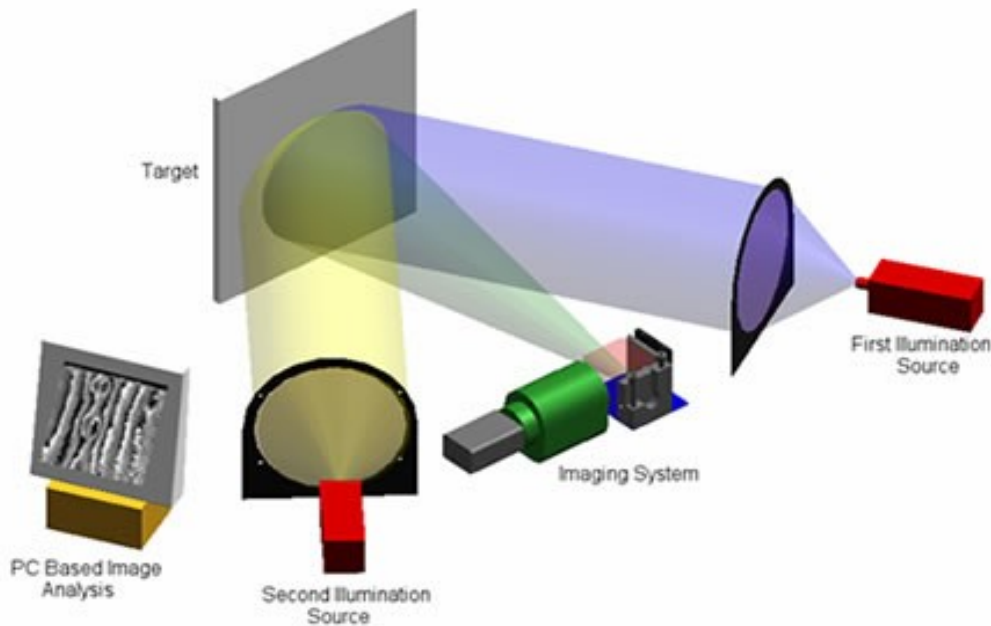


Figure 6. Dual laser system

6. Markings

All used tyres that meet the inspection, fumigation and testing requirements of this standard shall bear the words “USED TYRE” in upper case letters at least 4 mm high on both sides of the tyre. The words shall be applied immediately adjacent to the marking or markings stating the standard or standards to which the tyre complies. The wording shall be applied permanently and legibly otherwise than by hot-branding or cutting into the tyre.

7. Non-conforming used tyres

Used tyres that are designed for use on passenger cars, and manufactured on or after October 1, 1972, but do not conform to all the requirements of this standard, shall not be: sold, offered for sale, introduced, or delivered for introduction into inter-country commerce, or imported into Jamaica for any purpose.

8. Disposal

Non-conforming used tyres shall not be returned to the importer. Non-conforming tyres shall be isolated and re-exported at the importer’s expense in the presence of an officer of the Bureau of Standards.

9. Reporting

The Bureau’s representative witnessing the re-exportation of non-conforming tyres shall prepare a report containing the following information:

- a) name and address of exporter and importer of the non-conforming tyres;
- b) a list of the size and serial numbers of the tyres for re-exportation;
- c) the number of tyres for re-exportation;
- d) the date of re-exportation.

A copy of the report shall be sent to the exporter or importer of the non-conforming tyres and the original kept by the Bureau of Standards Jamaica.

10. Storage

Used tyres shall:

- a) be stored in a ventilated, dry and cool area protected from direct sunlight and precipitation.
- b) be stored away from chemicals, solvents or hydrocarbons capable of altering the composition of the rubber.
- c) be stored on an impermeable surface.
- d) be stored away from any object capable of penetrating the rubber.
- e) not be stored in piles for long period unless the tyres are assembled and inflated.
- f) not be stored under large heavy objects.
- g) not be stored near any flame or ignition source, or any device capable of producing sparks or an electrical discharge (i.e. battery chargers).

11. Fumigation

11.1 Used tyres are landed at ports or airports then, the Food Storage and Prevention of Infestation Division (FSPID) is informed by the broker or owner of the consignment(s).

11.2 The owner or broker shall pay for fumigation of the consignment at the FSPID Head Office.

12. Procedure for fumigation of containerized used tyres

12.1 Used tyres shall be fumigated within 48 hours of arrival at inspection center approved by the Bureau of Standards Jamaica. Such fumigation shall take place while the used tyres are in the container.

If fumigation cannot be carried out within 48 hours of discharge, the container shall be inspected for any damage which may permit insects to escape. Any damage must be sealed while the container awaits fumigation.

Fumigation shall be at the following rates: 16g/m³/24 hour, (that is, 1 lb per 1000 cubic feet).

12.2 An approved knockdown insecticide shall be applied by the fumigator as soon as the container door is cracked open. Fumigation shall be carried out in accordance with **4.1.4**.

12.3 The container door shall be closed for a minimum saturation period of 5 minutes.

12.4 The container shall be closed and the doors made gas tight. The fumigation operator then dispenses the fumigant.

12.5 The fumigant shall be added to the gas tight container.

12.6 All seals (e.g. doors and vents) shall be checked for gas leakage using a halide lamp. All leaks must be sealed.

12.7 The container shall not be opened for at least 24 hours.

12.8 The container may, under the direction of the FSPID, be taken to an approved transitional facility. If the container is directed to go to a transitional facility for treatment, it shall be inspected for holes (including vents) which shall be sealed (if this has not already been carried out in accordance with **12.1**), before being allowed to leave the port of entry.

Standards Council

The Standards Council is the controlling body of the Bureau of Standards and is responsible for the policy and general administration of the Bureau.

The Council is appointed by the Minister in the manner provided for in the Standards Act, 1968. Using its powers in the Standards Act, the Council appoints committees for specified purposes.

The Standard Act, 1968 sets out the duties of the Council and the steps to be followed for the formulation of a standard.

Preparation of standards documents

The following is an outline of the procedure which must be followed in the preparation of documents:

- a. The preparation of standards documents is undertaken upon the Standards Council's authorization. This may arise out of representations from national organizations or existing Bureau of Standards' Committees or Bureau's staff. If the project is approved it is referred to the appropriate sectional committee or if none exists a new committee is formed or the project is assigned to a Bureau staff.
- b. If necessary, when the final draft of a standard is ready, the Council authorizes an approach to the Minister in order to obtain the formal concurrence of any other Minister who may be responsible for any area which the standard may affect.
- c. With the approval of the Standards Council, the draft document is made available for general public comments. All interested parties, by means of a notice in the Press, are invited to comment. In addition, copies are forwarded to those known, interested in the subject.
- d. The committee considers all the comments received and recommends a final document to the Standards Council.
- e. The Standards Council recommends the document to the Minister for publication.
- f. The Minister approves the recommendation of the Standards Council.
- g. The declaration of the standard is gazetted and copies placed on sale.
- h. On the recommendation of the Standards Council the Minister may declare a standard to be compulsory.
- i. Amendments to and revisions of standards normally require the same procedure as is applied to the preparation of the original standard.

Overseas Standards documents

The Bureau of Standards maintains a reference library which includes the standards of many overseas standard organizations. These standards can be inspected upon request.

The Bureau can supply on demand copies of standards produced by some national standards and is the agency for the sale of standards produced by International Organization for Standardization (ISO) members.

Application to use the reference library and to purchase Jamaican and other standard documents should be addressed to:
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