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Draft Jamaican Standard

Method of Test

for

Cyclic Wind Pressure Loading

BUREAU OF STANDARDS JAMAICA

PUBLIC COMMENT PERIOD:

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DJS 383: 2026

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- The JBS provides certification services for manufacturers participating in the programme and licensed to use the gazetted JBS Certification Marks to indicate conformity with Jamaican Standards.
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Further information concerning the details of JBS Certification Mark Programme may be obtained from the Jamaica Bureau of Standards, 6 Winchester Road, Kingston 10.

CERTIFICATION MARKS

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Jamaica-Made Mark

Draft Jamaican Standard

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This standard was circulated in the draft form for comment under the reference DJS 383: 2026.

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

Contents

Foreword

The increasing frequency and intensity of hurricanes affecting Jamaica and the wider Caribbean underscore the need for reliable and standardized test methods to evaluate the performance of construction systems under extreme wind conditions.

This standard has been developed to establish a uniform method for assessing the resistance of building materials, components, and assemblies to hurricane-induced impact forces.

This standard is voluntary.

Committee representation

Related Documents

This standard makes reference to the following:

a) *Testing Application Standard (TAS) 202-94*
b) *The Florida Building Code, Building*
c) *TAS 301*

Acknowledgement

Acknowledgement is made to the International Council Code for permission to reproduce material from their standard.

Jamaican Standard Method of Test for Cyclic Wind Pressure Loading

1. Scope

This standard outlines the method of test for conducting uniform static air pressure testing on materials and products such as wall cladding, glass block, exterior doors, garage doors, skylights, exterior windows, storm shutters, and any other external component which help maintain the integrity of the building envelope.

Design pressures calculated in accordance with ASCE 7 are permitted to be multiplied by 0.6.

2. Normative references

The Florida Building Code, Building
TAS 301

3. Definitions

For the purpose of this standard the following definition applies:

For definitions of terms used in this protocol, refer to Sections 1625, 1626 and/or Chapter 2 of the Florida Building Code, Building.

3.1.
Design Wind Load
The uniform static air pressure difference, inward or outward, for which the specimen would be designed under service load conditions using the Florida Building Code, Building Section 1620.

3.2
Maximum Deflection
The maximum displacement of the specimen measured to the nearest 1/8 of an inch attained from the original position while the maximum test load is being applied.

3.3
One Cycle
Beginning at the specified static air pressure, the application of positive cyclic test load, and returning to the specified static air pressure, followed by the application of negative cyclic test load.

3.4
Permanent Deformation
The permanent displacement of the specimen measured to the nearest 1/8 of an inch from the original position to final position that remains after maximum test load has been removed.

3.5
Positive (Negative) Cyclic Load
The specified differential in static air pressure, creating an inward (outward) loading, for which the specimen is to be tested under repeated conditions, expressed in N/m2 (Pa).

3.6
Specimen Failure
A change in condition of the specimen indicative of deterioration under repeated load or incipient failure, such as cracking, fastener loosening, local yielding, or loss of adhesive bond.

3.7
Test Chamber
An airtight enclosure of sufficient depth to allow unobstructed deflection of the specimen during pressure cycling, including ports for air supply and removal, and equipped with instruments to measure test pressure differentials.

4. Test specimen

4.1 All parts of the test specimen shall be full size, using the same materials, details, methods of construction and methods of attachment as proposed for actual use. The specimen shall consist of the entire assembled unit attached to a given type of structural framing of the building and shall contain all de-vices used to resist wind forces and windborne debris. When testing glazed products, the material used to make such glazed product windborne debris resistant (i.e., fillers, film and similar), shall be an integral part, factory applied, of such glazed product. In the case of windows, doors, and sliding glass doors, a pressure treated nominal 2 × 4 wood buck #3 Southern Pine shall be used for attachment of the specimen to the test frame/stand/chamber. Such wood buck will become part of the approval. In the case of storm panels, they must be tested in worst case scenarios where attachments are directly to Concrete Masonry Unit (CMU). Figure 1 shows the basic three (3) configurations that shall be required; one per each of the three (3) required specimens. Each storm panel specimen shall consist

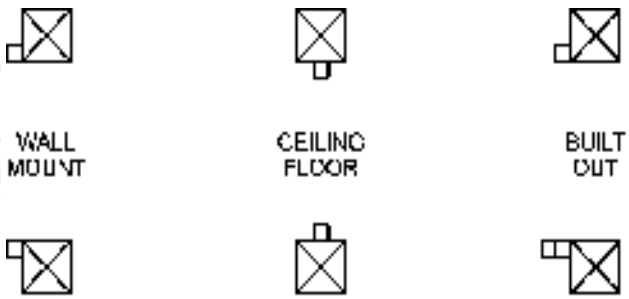

FIGURE 1
THREE (3) BASIC STORM PANEL
ATTACHMENTS FOR TESTING

4.1.1 Locking mechanisms shall be permanently mounted on the specimen. Such locking mechanism shall require no tools to be latched in the locked position. Devices such as pins shall be permanently secured to the specimen through the use of chains or wires which must be of corrosion resistant material. This section does not apply to specimens referenced in Section 2413 of the Florida Building Code, Building.

4.1.2 Products that are not categorized as means of egress/escape and are provided with more

than one single action locking mechanism, shall be provided with permanently posted instructions on latching for high wind pressures.

4.1.3 Specimen and fasteners, when used, shall not become disengaged during test procedure.

4.2 If the impact test is to be performed on the test specimen, such test shall be conducted prior to performing the test described in this protocol.

4.3 All locking mechanisms should be in place when performing this test.

4.4 Doors and windows must be operable after this test.

5. Procedure

5.1 Preparation

Remove from the test specimen any sealing or construction material that is not normally used when installed in or on a building. Fit the specimen with its structural framing into or against the chamber opening. The outdoor side of the specimen shall face the higher pressure side for positive loads; the indoor side shall face the higher pressure side for negative loads. Support and secure the specimen by the same number and type of anchors to be approved for normal installation of the specimen in the building.

5.2. Support and secure the test specimen by the same number and type of anchors normally used in installing the unit in the building.

5.3 Load the specimen using the cycles specified in section Table 1625.4 and/or Table 1626 of the Florida Building Code, Building whichever of these apply.

5.4 In the case of Table 1625.4 of the Florida Building Code, Section 5.3 of this protocol must be re-peated for negative pressures.

5.5 Assemblies shall be tested with no resultant failure or distress and shall have a recovery of at least 90% over maximum deflection.

5.6 Test Temperature. The test shall be conducted at a test temperature range of 15 to 35°C (59 to 95°F).

6. Apparatus

6.1 The description of the apparatus is general in nature. Any equipment, properly certified, calibrated, and approved by the Authority Having Jurisdiction capable of performing this test within the allowable tolerance is permitted.

6.1.1 Test Chamber—The test chamber, to which the specimen is mounted, shall be provided with pressure taps to measure the pressure difference across the test specimen and shall be so located that the reading is unaffected by the velocity of air supplied to or from the chamber. The specimen mounting frame (including the mullion and transom) must not deflect under test load in such manner that the performance of the specimen will be affected.

6.2. Pressure-Measuring Apparatus—The pressure-measuring apparatus shall measure the test pressure difference within a tolerance of ±2%.

6.2.3 Deflection-Measuring System—The deflection-measuring system shall measure the deflection within a tolerance of 0.25 mm (0.01 inch).

6.2.4 Air System—A controllable blower, a compressed-air supply, an exhaust system, or reversible controllable blower designed to provide the required maximum air pressure difference across the specimen. The system shall provide an essentially constant air-pressure difference for the required test period.

6.2.5 Water-Spray System—The water-spray system shall deliver water uniformly against the exterior surface of the test specimen at a minimum rate of 204 L/h/m2. The water-spray system shall have nozzles spaced at a uniform grid, located at uniform distance, and be adjustable to pro-vide the specified quantity of water in such a manner as to wet the test specimen uniformly and to wet those areas vulnerable to water leakage.

6.3 Calibration of Equipment - The pressure-measuring apparatus and the deflection-measuring system shall be calibrated and certified annually by an independent qualified agency approved by the Authority Having Jurisdiction.
6.3.1 **T**he calibration report shall include: the date of the calibration, the name of the agency con-conducting the calibration, methods and equipment used in the calibration process, the equipment being calibrated and any pertinent comments.

7. Hazard

Testing facilities must take all necessary precautions to protect the observers during the entire test procedure. All observers shall always be at a safe distance away from specimen and apparatus. Safety regulations must be followed in order to avoid any injuries to any and all observers.

8. Testing Facilities (for a more detailed description refer to TAS 301-94).

8.1 Any testing facility wishing to perform this test must first obtain the approval of the Authority Having Jurisdiction. Such approval shall only be given to those facilities which show that they are properly equipped to perform the complete test. Testing facilities shall request, in writing, approval of their facilities. Such request shall contain the ability of the facility to perform all aspects of the test, all equipment used in the performance of the test, name of independent agency calibrating their equipment, location of facilities, personnel involved in the testing, a quality control program, a safety program and any other pertinent information which will clearly indicate that such facility is in the business of performing independent testing. The Authority Having Jurisdiction will visit the site and reserve the right to order any changes necessary to accept the facility for testing.

8.2 Approval of facilities to perform the test described in this protocol, does not constitute an approval of such facilities to perform other tests not specifically mentioned in this protocol.

9. Format of Test

The manufacturer shall notify the Authority Having Jurisdiction two weeks (14) working days prior to the performing of the test. The Authority Having Jurisdiction reserves the right to observe the test. The Authority Having Jurisdiction must be notified of the place and time the test will take place. The test must be recorded on video and retained by the laboratory per TAS 301.

10. Test Reports

The following minimum information shall be included in the submitted report:

a) Date of the test and the report, and report number.
b) Name and location of facilities performing the test.
c) Name and address of requester of the test.
d) Identification of the specimen (manufacturer, source of supply, dimension, model types, material, procedure of selection and any other pertinent information).
e) Detailed drawings of the specimen showing dimensioned section profiles, type of framing specimen was attached to, panel arrangement, installation and spacing of anchorage, locking arrangement, sealant, hardware, product markings and their location, and any other pertinent construction details. Any deviation from the drawings or any modifications made to the specimen to obtain the reported values shall be noted on the drawings and in the report.
f) Maximum deflection recorded and mechanism used to make such determination.
g) Permanent deformation (provide cross section diagram to show where it occurred).
h) Name, address, signature and seal of a professional engineer, witnessing the test and preparing the report. Engineer shall be part of the laboratory's permanent staff or under laboratory's contract.
i) A tabulation of pressure differences exerted across the specimen during the test and their duration.
j) Maximum positive and negative pressures used in the cyclic wind pressure loading.
k) A description of the condition of the test specimens after testing, including details of any damage and any other pertinent observations.
l) When the tests are made to check conformity of the specimen to a particular specification, an identification or description of that specification.
m) A statement that the tests were conducted in accordance with this test method.
n) A statement of whether or not, upon completion of all testing, the specimens meet the requirements of Section 1620 of the Florida Building Code, Building and this protocol.

o) A statement as to whether or not tape or film, or both were used to seal against air leakage, and whether in the judgment of the test engineer, the tape or film influenced the results of the test.
p) Signatures of persons responsible for supervision of the tests and a list of official observers.
q) All data not required herein, but useful to a better understanding of the test results, conclusions or recommendations, should be appended to the report.

11. Recording Deflections

Maximum Deflection
Permanent Deformation

12. Additional Testing

12.1 Prior to conducting the test described in this protocol, all specimen must have successfully completed the test specified in protocol DJS 384: 20XX.
12.2 Any product when installed that is subjected to weathering, where such weathering can affect the integrity of the product, the manufacturer shall contact the Authority Having Jurisdiction for additional testing requirements such as but not limited to moisture, U.V., accelerated aging, and other similar tests.
12.3 The Authority Having Jurisdiction reserves the right to require any additional testing necessary to assure full compliance.
12.4 Some products, such as exterior doors, exterior windows, skylights, and wall cladding shall be required to be successfully tested under DJS 385: 20XX prior to conducting tests under this protocol.

13. Product Marking

13.1 Any and all approved products shall be permanently labeled with the manufacturer's name, and location and the following statement: "Product Approved."
13.2 Permanently labeled shall be a metallic label fixed permanently to the frame of the specimen by rivets or permanent adhesive. See Section 13.2.1 of this protocol for storm panels.
13.2.1 Permanent label on storm panels could be printed directly on each panel at intervals not to exceed 91 cm (36 inches) with non-removable paint or ink.
13.3 Any instructions for operations shall be permanently mounted on the specimen in an

area not subject to be painted or concealed. Storm panels may be excluded from this section.

Standards Council

The Standards Council is the controlling body of the Bureau of Standards Jamaica 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, 1969. Using its powers in the Standards Act, the Council appoints committees for specified purposes.

The Standards Act, 1969 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:

1. The preparation of standards documents is undertaken upon the Standard Council's authorisation. This may arise out of representation from national organisations or existing Bureau of Standards' Committees of Bureau 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 allotted to the Bureau's staff.

2. If necessary, when the final draft of a standard is ready, the Council authorises 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.

3. The draft document is made available to the general public for 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.

4. The Committee considers all the comments received and recommends a final document to the Standards Council

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.

8. On the recommendation of the Standards Council the Minister may declare a standard compulsory.

9. 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 Jamaica maintains a reference library which includes the standards of many overseas standards organisations. These standards can be inspected upon request.

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

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

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Kingston 10 JAMAICA, W. I.