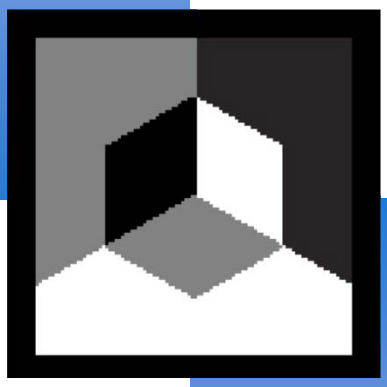
AAMA 501.1-17

An FGIA Test Specification

Standard Test Method for Water Penetration of Windows, Curtain Walls and Doors Using Dynamic Pressure



FGIA Fenestration & Glazing Industry Alliance

American Architectural Manufacturers Association

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1.0 SCOPE

1.1 This test method establishes the equipment and procedures for testing exterior windows, curtain walls and doors for water penetration using dynamic pressure.

Refer to AAMA 501 for applicability to sloped components

1.2 The primary units of measure in this document are metric. The values stated in SI units are to be regarded as the standard. The values given in parentheses are for reference only.

1.3 This document was developed in an open and consensus process and is maintained by representative members of AAMA as advisory information.

2.0 REFERENCED DOCUMENTS

2.1 References to the standards listed below shall be to the edition indicated. Any undated reference to a code or standard appearing in the requirements of this standard shall be interpreted as referring to the latest edition of that code or standard.

2.2 American Society of Civil Engineers (ASCE)

ASCE/SEI 7-10, Minimum Design Loads for Buildings and other Structures

2.3 ASTM International (ASTM)

ASTM E331-00(2016), Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference

ASTM E1105-15, Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform or Cyclic Static Air Pressure Difference

3.0 TEST SPECIMEN

3.1 When this method is used in a laboratory the test specimen shall comply with the Section 8 requirements of ASTM E331.

3.2 When this test method is used on site the test specimen shall comply with Section 8 requirements of ASTM E1105.

4.0 TEST EQUIPMENT

4.1 When this method is used in laboratory a test chamber and water spray system shall be provided to comply with the requirements of Section 6 of ASTM E331.

4.2 When this test method is used on site the test chamber (if used) and water spray system shall be provided to comply with the requirements of Section 6 of ASTM E1105. In site applications, the use of a test chamber is not mandatory.

4.3 Pressure measurement apparatus-Device to measure static pressure differential across the test specimen within a tolerance of 2% or ± 2.5 Pa (.01 in WC) whichever is greater.

4.4 A wind generating device, such as an aircraft propeller, shall be capable of producing a wind stream equivalent to the required wind velocity pressure.

NOTE 1: *Typically, wind generators used for this test have operational limitations, which limits the maximum wind velocity pressure to 720 Pa (15 PSF).*

The equivalent velocity pressure shall be calculated using the Ensewiler formula,

- For SI units, $P = 0.613\ V^2$
- For IP units, $P = 0.00256\ V^2$,

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