



Standard Practice for Determining Air Leakage Rates of Aerosol Foam Sealants and Other Construction Joint Fill and Insulation Materials¹

This standard is issued under the fixed designation C1642; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope*

1.1 This practice is intended to determine the air leakage rate of aerosol foam sealants as measured in a standardized jig. This practice provides a procedure for preparing the test apparatus and further describes the application of aerosol foam sealant and other joint fillers to the apparatus prior to conducting Test Method E283.

1.2 This practice allows testing laboratories to quantify the air leakage rate of aerosol foam sealants or joint filling products using Test Method E283 and reporting the data in $L/(s \cdot m^2)$ according to Practice E29.

1.3 This practice is used in conjunction with Test Method E283. Although Test Method E283 is a laboratory test method used with fenestration products, individuals interested in performing field air leakage tests on installed units should reference Test Method E783 and AAMA 502.

1.4 Aerosol foam sealants are used for a variety of end use applications generally intended to reduce air leakage in the building envelope.

1.5 Insulating type materials also will be found suitable for evaluation with this practice.

1.6 There are no other known practices or test methods that specify the preparation of the assemblies used to determine the air leakage rate of gap filling sealants, dry preformed foams or insulations.

1.7 The values given in SI units are the standard. The inch-pound units in parentheses are for information only.

1.8 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

¹ This practice is under the jurisdiction of ASTM Committee C24 on Building Seals and Sealants and is the direct responsibility of Subcommittee C24.61 on Aerosol Foam Sealants.

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2. Referenced Documents

2.1 ASTM Standards:²

- C717 Terminology of Building Seals and Sealants
- C1330 Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants
- C1536 Test Method for Measuring the Yield for Aerosol Foam Sealants
- C1620 Specification for Aerosol Polyurethane and Aerosol Latex Foam Sealants
- E29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications
- E283 Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
- E783 Test Method for Field Measurement of Air Leakage Through Installed Exterior Windows and Doors

2.2 Other Standards:

- AAMA 502 Voluntary Specification for Field Testing of Newly Installed Fenestration Products³
- ISO/IEC 17025 General requirements for the competence of testing and calibration laboratories⁴

3. Terminology

3.1 Definitions:

3.1.1 *air barrier*—the assembly of material(s) used in building construction to reduce or retard the uncontrolled passage of air into and out of the building.

3.1.2 *exfiltration*—air flow direction from building interior toward exterior.

3.1.3 *infiltration*—air flow direction from building exterior toward interior.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from American Architectural Manufacturers Association (AAMA), 1827 Walden Office Square, Suite 550, Schaumburg, IL 60173-4268, <http://www.aamanet.org>.

⁴ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

*A Summary of Changes section appears at the end of this standard