



Standard Practice for Specimen Preparation and Mounting of Caulks and Sealants to Assess Surface Burning Characteristics¹

This standard is issued under the fixed designation E2690; 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.

^{ε1} NOTE—Editorial changes were made throughout in January 2011.

^{ε2} NOTE—Fig. 1 was updated in April 2011.

1. Scope

1.1 This practice describes procedures for specimen preparation and mounting when testing caulks and sealants intended to be applied up to 8 in. (203.2 mm) in width to assess flame spread and smoke development as surface burning characteristics using Test Method E84. Caulks and sealants intended to be applied in excess of 8 in. (203.2 mm) are to be tested applied to a substrate so as to completely cover the substrate in a full tunnel width application of Test Method E84.

1.2 This practice applies to caulks and sealants intended for various uses within buildings. The caulks and sealants addressed in this practice are not able to be supported by their own structural characteristics during the test unless they are applied to a substrate.

1.3 Testing is conducted in accordance with Test Method E84.

1.4 This practice does not provide pass/fail criteria that can be used as a regulatory tool.

1.5 This practice does not apply to materials for which the test specimen does not remain in place before and during the test until maximum flame propagation has occurred.

1.6 This practice is not for system evaluation. It is for the comparison of the materials only.

1.7 The results obtained by using this mounting procedure are confined to the materials themselves as tested and are not comparable to those obtained with materials that are tested in a full tunnel width application.

1.8 This fire standard cannot be used to provide quantitative measures.

1.9 Fire testing is inherently hazardous. Adequate safeguards for personnel and property shall be employed in conducting these tests.

1.10 This standard gives instructions on specimen preparation and mounting, but the fire-test-response method is given in Test Method E84. See also Section 9.

1.11 The text of this standard references notes and footnotes which provide explanatory material. These notes and footnotes shall not be considered requirements of the standard.

1.12 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.13 *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.*

2. Referenced Documents

2.1 *ASTM Standards:*²

C717 Terminology of Building Seals and Sealants

E84 Test Method for Surface Burning Characteristics of Building Materials

E176 Terminology of Fire Standards

IEEE/ASTM SI-10 International System of Units (SI): The Modernized Metric System

3. Terminology

3.1 *Definitions*—For definitions of terms used in this practice associated with fire issues, refer to the terminology contained in Terminology E176. For definitions of terms used in this practice associated with caulks and sealants refer to the terminology contained in Terminology C717.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *bead, n—in building construction*, a strip of applied sealant, glazing compound or putty.

3.2.2 *sealant, n—in building construction*, a material that has the adhesive and cohesive properties to form a seal.

3.2.3 *self-supporting specimen, n*—a specimen that remains in place by its own structural characteristics both before and during the fire test.

¹ This practice is under the jurisdiction of ASTM Committee E05 on Fire Standards and is the direct responsibility of Subcommittee E05.22 on Surface Burning.

Current edition approved Aug. 15, 2010. Published September 2010. DOI: 10.1520/E2690-10E02.

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.

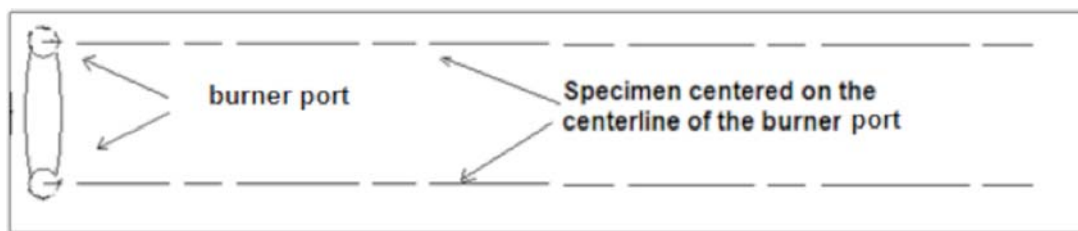


FIG. 1 Schematic of Specimen Placement

4. Summary of Practice

4.1 This practice describes procedures for specimen preparation and mounting when testing caulks and sealants up to and including 8 in. (203.2 mm) in width to assess flame spread index and smoke developed index as surface burning characteristics using Test Method E84. Caulks and sealants in excess of 8 in. (203.2 mm) are to be tested in full coverage as applied to fiber cement board as described in Test Method E84.

4.2 This practice applies only to caulks and sealants from which it is possible to develop specimens that when applied to the substrate are self-supporting by their own structural characteristics.

4.3 The caulks and sealants addressed in this practice shall be tested in accordance with the specimen preparation and mounting procedures described in this practice, using Test Method E84.

5. Significance and Use

5.1 Building products made with caulks and sealants are often used for applications for which Test Method E84 is used for compliance with building code, life safety code or mechanical code requirements. This practice describes, in detail, specimen mounting procedures for those caulks and sealants which are not able to be supported by their own structural characteristics during the test.

5.2 Codes are often silent with regard to testing caulks and sealants for the assessment of flame spread index and smoke developed index as surface burning characteristics. This practice describes specimen preparation and mounting procedures for such materials and products.

5.3 The material shall be representative of the materials used in actual field installations.

5.4 The limitations for this procedure are those associated with Test Method E84.

6. Conditioning

6.1 Following application to the substrate, the specimens used for testing shall be conditioned as described in the section on specimen conditioning in Test Method E84.

7. Specimen Preparation and Mounting

7.1 Caulks and Sealants:

7.1.1 Specimens shall consist of two 24.5 ± 0.5 ft. (7.47 ± 0.15 m) long beads or strips of sealant or caulk installed with each bead or strip centered on the centerline of each gas burner port for the entire length of the fire test chamber. The beads or strips shall be at the maximum width or diameter recommended for use by the manufacturer, but not be less than $\frac{3}{8}$ in. (9.5 mm). See Fig. 1.

7.1.2 The specimens shall be centered so that they align on the center line of the burner port.

7.1.3 The caulk or sealant shall be applied directly to a fiber-cement board substrate.

7.1.4 Caulks and sealants shall be cured per manufacturer's instructions prior to conditioning as specified in 6.1.

8. Testing of Specimens

8.1 Testing shall be conducted using the methodology described in Test Method E84.

9. Operator Safety

9.1 The primary concerns for operator safety are associated with the fire-test response procedure, Test Method E84, and not with the specimen preparation procedure. Safety recommendations are included in Test Method E84.

10. Report

10.1 Report a detailed description of the specimen being tested.

10.2 Report a detailed description of the specimen preparation method used, per Section 7.

10.3 Report all the information required in the reporting section of Test Method E84, including observations, graphical results and the values of the flame spread index and of the smoke developed index in each test.

11. Keywords

11.1 caulk; fire; fire test; flame spread; plastic; sealants; smoke developed



ASTM International takes no position respecting the validity of any patent rights asserted in connection with any item mentioned in this standard. Users of this standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility.

This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, at the address shown below.

This standard is copyrighted by ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, United States. Individual reprints (single or multiple copies) of this standard may be obtained by contacting ASTM at the above address or at 610-832-9585 (phone), 610-832-9555 (fax), or service@astm.org (e-mail); or through the ASTM website (www.astm.org). Permission rights to photocopy the standard may also be secured from the ASTM website (www.astm.org/COPYRIGHT/).