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## Standard Guide for Use of Joint Sealants with Exterior Insulation and Finish Systems (EIFS)<sup>1</sup>

This standard is issued under the fixed designation C1481; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 1. Scope

1.1 This guide describes the use of single and multi-component, cold-applied joint sealants, or precured sealant systems for joint sealing applications, or both, in buildings using ~~exterior insulation~~ Exterior Insulation and ~~finish systems~~ Finish Systems (EIFS) on one or both sides of the joint. Refer to 10.1 for joint seal geometries.

1.2 The elastomeric sealants described by this guide meet the requirements of Specifications C834, C920, or C1311.

~~1.3 The values stated in SI units are to be regarded as the standard. The values given in parentheses are provided for information only.~~

1.3 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

~~1.4 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. For specific hazard statements, see Notes 1 and 2.~~

1.5 There are no ISO standards similar or equivalent to this ASTM standard.

### 2. Referenced Documents

#### 2.1 ASTM Standards:<sup>2</sup>

C717 [Terminology of Building Seals and Sealants](#)

C719 [Test Method for Adhesion and Cohesion of Elastomeric Joint Sealants Under Cyclic Movement \(Hockman Cycle\)](#)

C794 [Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants](#)

C834 [Specification for Latex Sealants](#)

C920 [Specification for Elastomeric Joint Sealants](#)

~~C1193 [Guide for Use of Joint Sealants](#)~~ ~~C1299 [Guide for Use in Selection of Liquid-Applied Sealants](#)~~

C1311 [Specification for Solvent Release Sealants](#)

C1382 [Test Method for Determining Tensile Adhesion Properties of Sealants When Used in Exterior Insulation and Finish Systems \(EIFS\) Joints](#)

C1397 [Practice for Application of Class PB Exterior Insulation and Finish Systems \(EIFS\) and EIFS with Drainage](#)

~~C1472 [Guide for Calculating Movement and Other Effects When Establishing Sealant Joint Width](#)~~ [Guide for Calculating Movement and Other Effects When Establishing Sealant Joint Width](#)

E2110 [Terminology for Exterior Insulation and Finish Systems \(EIFS\)](#)

E2511 [Guide for Detailing of EIFS-Clad Wall Assemblies](#)

E2568 [Specification for PB Exterior Insulation and Finish Systems](#)

#### 2.2 ANSI Standard:

American National Standard for Exterior Insulation and Finish Systems (EIFS)<sup>3</sup>

### 3. Terminology

#### 3.1 Definitions:

3.1.1 Refer to Terminology C717 for definitions of the following terms used in this guide: *bicellular sealant backing, bond breaker, bridge sealant joint, butt sealant joint, chemically curing sealant, closed cell sealant backing, compatibility, compatible materials, cure, elastomeric, elongation, fillet sealant joint, joint, lap sealant joint, latex sealant, modulus, non-sag sealant, open*

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

<sup>3</sup> Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036.

cell sealant backing, preured sealant, primer, seal, sealant, sealant backing, shelf-life, solvent-release sealant, shrinkage, substrate, tooling, tooling time, working life (pot life).

3.1.2 Refer to Terminology E1397E2110 for definitions of the following terms used in this guide: accessories, base coat, cure, dry, durability, edge wrap, embed, expansion joint, exterior insulation and finish system (EIFS), finish coat, lamina, nonmetallic reinforcing mesh, primers, reinforced base coat, substrate, texture, thermal insulation board, wrap, wrapping-wrap.

#### 4. Significance and Use

4.1 The intent of this guide is to provide information and guidelines for the selection of materials for joint seals in, or adjacent to, EIFS.

4.2 Joints need to be designed for the expected movements and construction tolerances so an appropriate joint width can be established.

#### DESIGN CONSIDERATIONS

4.1 The intent of this guide is to provide information and guidelines for consideration by the designer or applicator of joint seals in, or adjacent to, EIFS. Refer to Specification E2568 for additional information pertaining to specifying Class PB EIFS. Refer to Guide E2511 for additional information pertaining to detailing of EIFS-Clad Wall Assemblies.

4.2 Proper selection and use of a sealant is fundamental to its ultimate performance, service life, and durability. A sealant joint subjected to movement and other similar performance factors should be designed for the particular application to avoid compromising its performance capability and causing failures. Refer to C1193 for guidance.

4.3 In addition to the design and installation data in this guide, consult the sealant manufacturer about applications for its products and their proper use and installation.

#### 5. General

5.1 The major components of a joint seal in, or adjacent to, EIFS that should be considered when selecting or using sealants are as follows: EIFS substrate, EIFS, primer, sealant backing or bond-breaker, adjacent substrates and sealant (see Figs. 1-11).

NOTE—This legend applies to Figs. 1-11

Legend	
A.	Sealant
B.	Sealant Backing
C.	Bond Breaker
D.	Joint Width
E.	Finish Coat
F.	Reinforcing Mesh Embedded in Base Coat
G.	Wrapped Mesh Embedded in Base Coat
H.	Insulation Board
I.	Adjacent Substrate
J.	Sealant Bead
K.	Manufacturer's Primer or Paint Coating (if required)
L.	Trim Accessory
M.	Preured Sealant
N.	Existing Sealant Joint with Optional Cut Down the Middle

5.2 EIFS presents a substrate that may be acceptable for sealant adhesion if the sealant joint is properly designed in accordance with the EIFS and sealant manufacturer recommendations. Most EIFS manufacturers recommend adhering sealant directly to the base coat or primed base coat and avoiding adhesion to the finish coat, which can soften on exposure to moisture and lose cohesion as the sealant extends and exerts a stress on the finish coat. Typically, a sealant that has a low modulus should be used. A low modulus sealant will have a lower stress at the sealant and substrate interface when the joint is in extension.

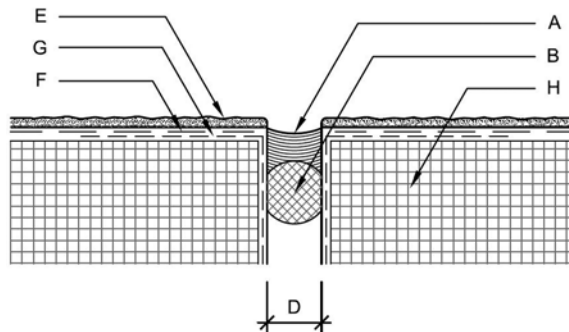


FIG. 1 Sealant Butt Joint Seal (EIFS to EIFS)

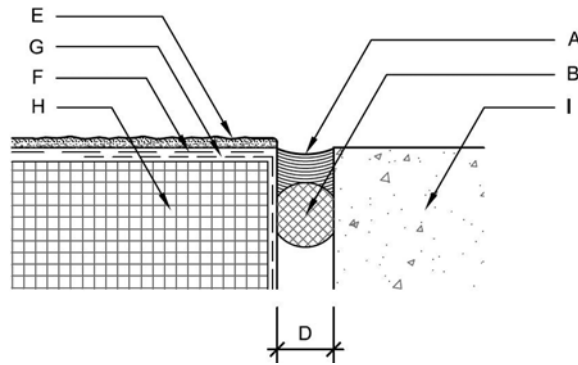


FIG. 2 Sealant Butt Joint Seal (EIFS to Dissimilar Substrates)

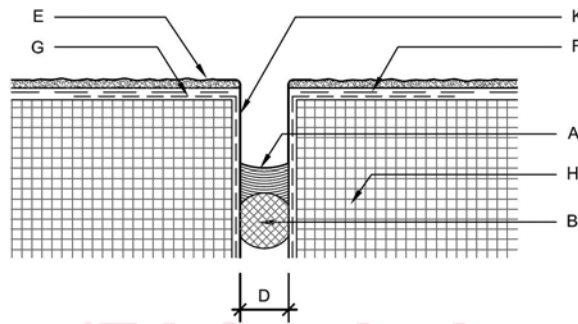


FIG. 3 Recessed Sealant Butt Joint Seal (EIFS to EIFS)

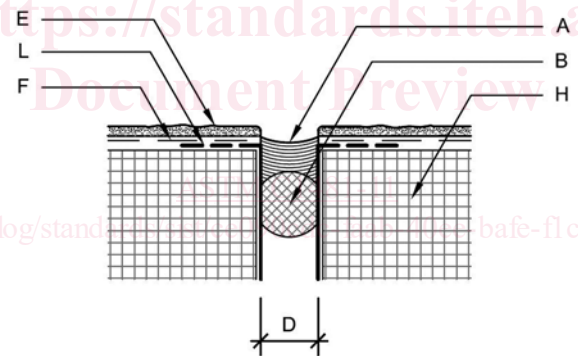


FIG. 4 Sealant Butt Joint Seal (Accessory to Accessory)

5.3 Due to the difficulty that can be encountered in performing remedial work for an EIFS sealant joint, the selected sealant should have very good environmental weathering characteristics so that it will last for the maximum useful lifetime of the sealant. Since an EIFS system is water-based, if it becomes saturated with rainwater or snow melt, the adhesion of a sealant to an EIFS base coat can be lessened. Information on sealant tensile adhesion properties when used with EIFS can be found in Test Method C1382. EIFS can be damaged by grinding or cutting during sealant removal, so it is a good candidate for use of a bridge type sealant joint or precured sealant, in a remedial application. This may be helpful since it does not require the removal of all the old or failed sealant but does change the appearance of the joint seal.

## 6. EIFS Substrate EIFS

6.1 *Joint Location and Configuration*—In an EIFS-clad building, sealant joints typically are required at the following locations:

- 6.1.1 At the floor line of multi-level wood frame construction;
- 6.1.2 At an existing building expansion joint;
- 6.1.3 Where dissimilar substrates are bridged;
- 6.1.3 Where dissimilar substrates form the joint;
- 6.1.4 When an EIFS abuts dissimilar building construction;
- 6.1.5 Some EIFS manufacturers may require movement joints in long continuous elevations;
- 6.1.6 The size and location of joints is the responsibility of the design professional and shall be consistent with the project conditions and guidelines of the EIFS manufacturer.

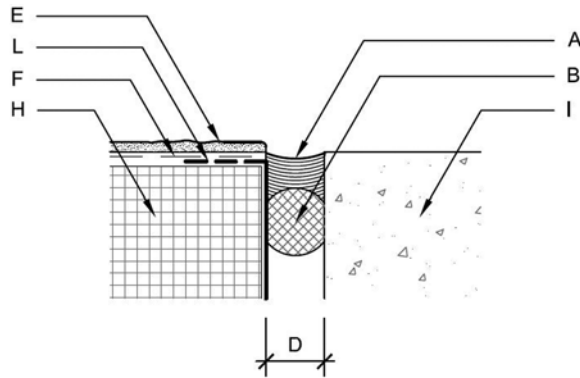


FIG. 5 Sealant Butt Joint Seal (Accessory to Dissimilar Substrate)

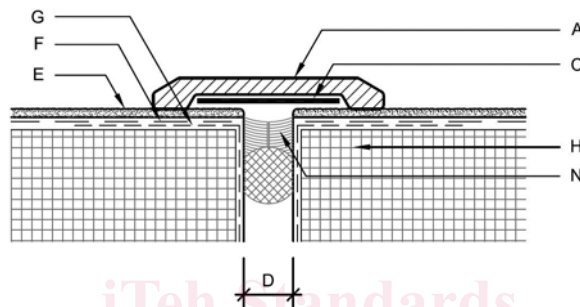


FIG. 6 Sealant Bridge Joint Seal Using Liquid—Applied Sealant and Bond Breaker

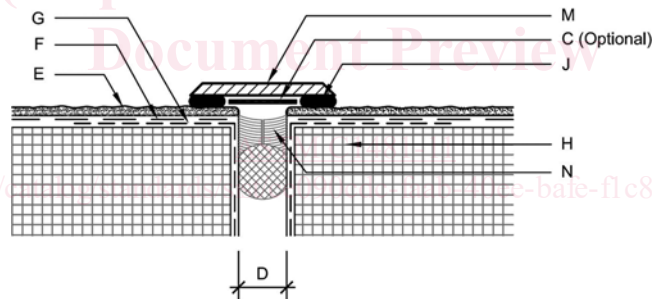


FIG. 7 Sealant Bridge Joint Seal Using Precured Sealant

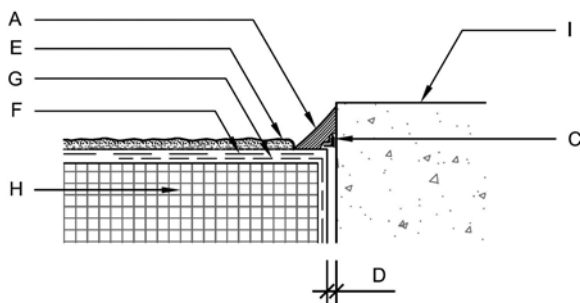


FIG. 8 Sealant Fillet Joint Seal With Bond Breaker

6.1.7 *Joint Configuration*—Industry accepted minimum joint width is 19 mm (3/4 in.) with sufficient depth to accommodate the sealant backing and sealant material. Lesser joint widths may be allowable where EIFS abuts adjacent materials. Consider the sealant manufacturer's published sealant movement capability when determining the appropriate joint width. Refer to Guide—The EIFS Industry accepted minimum joint width for EIFS applications is 19 mm with sufficient depth to accommodate the sealant backing and sealant material. Some EIFS manufacturers may permit joint widths that are less than 19 mm. Consider the sealant manufacturer's published sealant movement capability when determining the appropriate joint width. Refer to Guide C1472 - Good