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# Standard Specification for Solvent Release Sealants<sup>1</sup>

This standard is issued under the fixed designation C1311; 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 specification describes the properties of a one-component solvent release sealant for use in building construction. These sealants are generally formulated to withstand a maximum joint movement of 7.5 % in extension and 7.5 % in compression of the nominal joint width.

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

1.3 The committee with jurisdiction of this specification is not aware of any similar specification within ISO or any other organization.

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

## 2. Referenced Documents

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

- [C661 Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer](#)
- [C712 Test Method for Bubbling of One-Part, Elastomeric, Solvent-Release Type Sealants](#)
- [C717 Terminology of Building Seals and Sealants](#)
- [C1193 Guide for Use of Joint Sealants](#)
- [C1216 Test Method for Adhesion and Cohesion of One-Part Elastomeric Solvent Release Sealants](#)
- [C1257 Test Method for Accelerated Weathering of Solvent-Release-Type Sealants](#)
- [C1442 Practice for Conducting Tests on Sealants Using Artificial Weathering Apparatus](#)

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee C24 on Building Seals and Sealants and is the direct responsibility of Subcommittee C24.10 on Specifications, Guides and Practices.

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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.

- [D2202 Test Method for Slump of Sealants](#)
- [D2203 Test Method for Staining from Sealants](#)
- [D2377 Test Method for Tack-Free Time of Caulking Compounds and Sealants](#)
- [D2452 Test Method for Extrudability of Oil- and Resin-Base Caulking Compounds](#)

## 3. Terminology

3.1 *Definitions*—Definitions of the following terms used in this specification are found in Terminology C717: adhesive failure (adhesion loss), caulk ( $v$ ), compound, durometer, hardness, joint, primer, seal, sealant, sealing material, solvent release sealant, and standard conditions.

## 4. Materials and Manufacture

4.1 The sealing compound shall be a solvent release material compounded to conform to the requirements prescribed in this specification.

4.2 All material and workmanship shall be in accordance with good commercial practice. The producer is permitted a wide latitude in choice of raw materials for making these products. Consequently, there is no implication that the compounds are equivalent in all physical properties.

4.3 The manufacturing process shall be such as will ensure a homogeneous mix, free of defects that would affect serviceability, and of a consistency suitable for immediate application.

## 5. General Requirements

5.1 *Standard Conditions*—Perform all of the tests in a controlled environment at standard conditions. Condition sealant samples for at least 5 h at these conditions before any tests are performed.

5.2 The sealant in the original container shall be suitable for use for at least 12 months from the date of manufacture when stored at a temperature neither below 5 °C (41.0 °F) nor exceeding 27 °C (80.6 °F).

5.3 The color of the sealant shall be as agreed upon between the purchaser and the manufacturer.

5.4 The sealant shall be intended for use only on clean, dry surfaces. When a primer is recommended by a manufacturer for a specific substrate, all tests on that substrate shall include

the primer. The proper use of primers (or surface conditioners) with the application of sealants is described in detail in Guide **C1193**. This guide also describes proper methods for joint design, backup materials, surface preparation, tooling of sealant, and other important procedures in sealant application in buildings.

## 6. Significance and Use

6.1 This specification describes solvent release sealants for general caulking and sealing operations in building construction. However, it should be recognized by the user that not all sealants meeting this specification are suitable for all applications and all substrates and that there is no implication that the sealants are equivalent in all physical properties.

6.2 Refer to Guide **C1193** for information on the proper use of sealants meeting this specification.

## 7. Physical Requirements

7.1 *Indentation Hardness*—The sealant shall have durometer hardness with a mean value of not more than 50 units when tested in accordance with Test Method **C661**.

7.2 *Bubbling*—The sealant shall exhibit no more than 650 mm<sup>2</sup> (1.0 in.<sup>2</sup>) in bubbling when tested in accordance with Test Method **C712**.

7.3 *Adhesion and Cohesion After Cyclic Movement*—The sealant shall have no more than 9.0 cm<sup>2</sup> (1.5 in.<sup>2</sup>) total failure per substrate when tested in accordance to Test Method **C1216**.

7.4 *Accelerated Weathering*—The sealant shall be rated no higher than a 3 for Edge Cracking, 3 for Center Cracking, and 3 for Adhesion Loss when tested in accordance with **7.4.1**. Color change is to no more than that as agreed upon between user and manufacturer.

7.4.1 The sealant is exposed to 1 cycle (1000 h) using a Fluorescent UV/Condensation Machine as described in Test Method **C1257** Section 6.1.1, or a xenon-arc apparatus described in Test Method **C1257** Section 6.1.2. As mentioned in that standard, when using irradiance values other than specified, consult Annex A1 of Test Method **C1442**.

7.5 *Slump*—The sealant shall have a slump of not more than 0.40 cm (0.15 in.) when tested in accordance with Test Method **D2202**.

7.6 *Staining*—The sealant shall have a stain index of no more than 3 when tested in accordance with Test Method **D2203**.

7.7 *Tack-Free Time*—The sealant shall have a tack-free time of not more than 72.0 h when tested in accordance with Test Method **D2377**.

7.8 *Extrudability After Aging*—The sealant shall have a flow rate of not more than 9.0 s/mL when tested in accordance with Test Method **D2452**.

7.9 A summary of the physical requirements is contained in **Table 1**.

## 8. Test Methods

8.1 *Indentation Hardness*—Refer to Test Method **C661**.

8.2 *Bubbling*—Refer to Test Method **C712**.

8.3 *Adhesion and Cohesion After Cyclic Movement*—Refer to Test Method **C1216**.

8.4 *Accelerated Weathering*—Refer to Test Method **C1257**.

8.5 *Slump*—Refer to Test Method **D2202**.

8.6 *Staining*—Refer to Test Method **D2203**.

8.7 *Tack-Free Time*—Refer to Test Method **D2377**.

8.8 *Extrudability After Aging*—Refer to Test Method **D2452**.

## 9. Packaging and Package Marking

9.1 Unless otherwise specified in the contract or order, the sealant shall be packaged in standard commercial containers constructed so as to ensure acceptance by common or other carrier for safe transportation to the point of delivery.

9.2 Shipping containers shall be marked with the name, grade, and quantity of the sealant contained therein, as defined by the contract or order under which shipments are made. The name of the supplier and the lot or batch shall also be shown.

## 10. Keywords

10.1 accelerated weathering; application life; bubbling; extrusion rate; sealant; sealing compound (sealing material); slump; solvent-release sealant; staining; tack free

**TABLE 1 Physical Requirements**

Property	Requirement	Test Method
Extrudability	9.0 s/mL, max	<b>D2452</b>
Indentation hardness	50, max	<b>C661</b>
Bubbling	25 %, max	<b>C712</b>
Adhesive and cohesive loss	9 cm <sup>2</sup> (1.5 in. <sup>2</sup> ), max per substrate	<b>C1216</b>
Slump	0.38 cm (0.15 in.), max	<b>D2202</b>
Stain index	3, max	<b>D2203</b>
Tack-free time	72 h, max	<b>D2377</b>
Accelerated weathering	1000 h exposure	<b>C1257</b>
Edge cracking	3, max	
Center cracking	3, max	
Adhesion loss	3, max	
Color Change	as agreed	