



Designation: C 834 – 00<sup>ε1</sup>

## Standard Specification for Latex Sealants<sup>1</sup>

This standard is issued under the fixed designation C 834; 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.

*This standard has been approved for use by agencies of the Department of Defense.*

ε<sup>1</sup> NOTE—An editorial change was made in Section 4.1.3 in January 2001.

### 1. Scope

1.1 This specification covers one component latex sealants used for sealing joints in building construction.

1.2 A sealant meeting the requirements of this specification shall be classified by the manufacturer to be one of the types and grades defined in Section 4.

1.3 The values stated in SI units are to be regarded as the standard. The inch-pound in parenthesis are provided for information purposes only.

1.4 The following precautionary caveat pertains only to the test method portion, Section 10, of this Specification: *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.*

NOTE 1—Currently, there is no ISO standard similar to this specification.

### 2. Referenced Documents

#### 2.1 ASTM Standards:

- C 717 Terminology of Building Seals and Sealants<sup>2</sup>
- C 731 Test Method for Extrudability, After Package Aging, of Latex Sealants<sup>2</sup>
- C 732 Test Method for Aging Effects of Artificial Weathering on Latex Sealants<sup>2</sup>
- C 734 Test Method for Low-Temperature Flexibility of Latex Sealants After Artificial Weathering<sup>2</sup>
- C 736 Test Method for Extension-Recovery and Adhesion of Latex Sealants<sup>2</sup>
- C 1193 Guide for Use of Joint Sealants<sup>2</sup>
- C 1241 Test Method for Volume Shrinkage of Latex Sealants During Cure<sup>2</sup>

<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> Annual Book of ASTM Standards, Vol 04.07.

D 2202 Test Method for Slump of Sealants<sup>2</sup>

D 2203 Test Method for Staining from Sealants<sup>2</sup>

D 2377 Test Method for Tack-Free Time of Caulking Compounds and Sealants<sup>2</sup>

### 3. Terminology

3.1 *Definitions*—Definitions of the following terms apply to this specification and are found in Terminology C 717: adhesive failure (adhesion loss), cure, joint, latex sealant, sealant, shrinkage (volume), and substrate.

### 4. Classification of Sealants

4.1 A sealant qualifying under this specification shall be classified by type and grade as follows:

4.1.1 *Type OP*—An opaque sealant containing color pigments or extender pigments, or both, that has no more than 30 % volume shrinkage (see 10.1.3).

4.1.2 *Type C*—A clear or translucent sealant that has no more than 50 % volume shrinkage (see 10.1.3).

4.1.3 *Grade –18°C*—A sealant that meets the requirements for low temperature flexibility (see 7.1) when tested at –18°C (0°F).

4.1.4 *Grade 0°C*—A sealant that meets the requirements for low temperature flexibility (see 7.1) when tested at 0°C (32°F).

4.1.5 *Grade NF*—A sealant that does not meet the requirements for low temperature flexibility of Grade 0°C (see 4.1.4).

### 5. Materials and Manufacture

5.1 The sealant shall be composed of latex formulated with appropriate fillers, pigments, and chemical additives to result in conformance to this specification.

5.2 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.

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

## 6. General Requirements

6.1 The sealant in the original unopened container shall meet the requirements of this specification for at least 12 months from the date of manufacture when stored at a temperature neither below 5°C (41°F) nor exceeding 26.7°C (80°F).

6.2 After 21 days cure at laboratory conditions controlled at  $23 \pm 2^\circ\text{C}$  ( $73 \pm 3.6^\circ\text{F}$ ) and  $50 \pm 10\%$  relative humidity, the color of the sealant shall be that color that has been agreed upon between the purchaser and the supplier.

6.3 The sealant is intended for application to clean substrate surfaces only.

## 7. Physical Properties

7.1 The sealant shall conform to the physical requirements specified in Table 1 according to type and grade.

## 8. Significance and Use

8.1 This specification covers two types and three grades of latex sealants as described in Section 4 that are formulated for general caulking and sealing operations in building construction. It should be recognized by the user that not all sealants meeting this specification are suitable for all applications and all substrates. It is essential, therefore, that the type and grade

be specified for proper description of a sealant. Test methods relate to special standard substrates of glass, wood and aluminum. If tests are required using substrates in addition to or other than standard, they should be so specified for testing.

8.2 Refer to Guide C 1193 for information on the proper use of sealants meeting this specification.

## 9. Sampling

9.1 The sealant to be tested for conformance to this specification shall be taken directly from a randomly selected container as commercially supplied by the manufacturer.

## 10. Test Methods

10.1 Perform all of the following tests at laboratory conditions controlled at  $23 \pm 2^\circ\text{C}$  ( $73 \pm 3.6^\circ\text{F}$ ) and  $50 \pm 10\%$  relative humidity. Condition sealant samples for at least 5 h at these conditions before any tests are conducted.

10.1.1 *Extrudability After Aging*—Test Method C 731.

10.1.2 *Artificial Weathering*—Test Method C 732.

10.1.3 *Volume Shrinkage*—Test Method C 1241.

10.1.4 *Low-Temperature Flexibility*—Test Method C 734. For 0°C sealants, the test method is modified to perform the bend at  $0 \pm 1^\circ\text{C}$  ( $32 \pm 2^\circ\text{F}$ ).

10.1.5 *Extension-Recovery and Adhesion*—Test Method C 736.

10.1.6 *Slump*—Test Method D 2202 modified to advance the plunger to its maximum extent, leaving a solid cylinder of sealing compound 38 mm (1½ in.) in diameter and 10 mm (¾ in.) thick, ready to flow down the face of the instrument.

10.1.7 *Staining*—Test Method D 2203.

10.1.8 *Tack-Free Time*—Test Method D 2377 modified to expose the specimen for 1 h before applying polyethylene strip for Type OP and modified to expose the specimen for 24 h before applying the polyethylene strip for Type C sealants.

## 11. Packaging

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

11.2 Shipping containers shall be marked with the name, grade, and quantity of the material contained therein, as defined by the contract or order under which shipments are made. The name of the manufacturer, the lot and batch number of the contract order, and the date of manufacture shall also be shown.

## 12. Keywords

12.1 latex sealant

TABLE 1 Physical Requirements

Test	Requirements	ASTM Test Method
Extrudability	2 g/s, minimum	C 731
Artificial weathering:		C 732
Wash-out	none, after weathering	
Slump	none, after weathering	
Cracking	none, after weathering	
Discoloration	as acceptable to purchaser	
Adhesion loss	25 % max (estimated on the basis of a total possible bond area of 45.16 cm <sup>2</sup> (7 in. <sup>2</sup> ))	
Volume shrinkage:		
Type OP	30 % max	C 1241
Type C	50 % max	
Low-temperature flexibility:		
Grades –18° and 0°	no cracking through to substrate or adhesion loss	C 734 <sup>A</sup>
Grade NF	none	
Recovery	75 % min (average of all specimens)	C 736
Adhesion loss	25 % or 19.35 cm <sup>2</sup> (3 in. <sup>2</sup> ) max (of total bond area of all specimens)	C 736
Slump	4 mm (0.15 in.) max (on each specimen)	D 2202 <sup>B</sup>
Stain index	3 max	D 2203
Tack-free time	no material adhering to plastic strip	D 2377 <sup>C</sup>
Color	as acceptable to purchaser	6.2

<sup>A</sup>See 10.1.4 for modification of this test method for 0°C.

<sup>B</sup>See 10.1.6 for modification to this test method.

<sup>C</sup>See 10.1.8 for modification to this test method.