

TESTING APPLICATION STANDARD (TAS) 132-95

STANDARD REQUIREMENTS FOR TESTING AND APPROVAL OF SEALANTS USED IN ROOFING

1. Scope:

- 1.1 This Protocol covers the procedures for testing of sealants used in roofing applications and the approval process for all products which have successfully met the test criteria.
- 1.2 All testing shall be conducted by an approved testing agency, and all test reports shall be signed by an authorized signer of the testing/listing agency.
- 1.3 This Protocol has not been contemplated to measure the performance of the sealants in conjunction with any particular Roof System Assembly.

2. Referenced Documents:

- 2.1 *The Florida Building Code, Building.*
- 2.2 *ASTM Standards*
 - C 661 Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer
 - C 679 Test Method for Tack-Free Time of Elastomeric Sealants
 - C 719 Test Method for Adhesion and Cohesion of Elastomeric joint Sealants Under Cyclic Movement
 - C 792 Test Method for Effects of Heat Aging on Weight Loss, Cracking, and Chalking of Elastomeric Sealants
 - C 793 Test Method for Effects of Accelerated Weathering on Elastomeric Joint Sealants
 - C 794 Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants

- C 1021 Standard Practice for Laboratories Engaged in the Testing of Building Sealants
- D 140 Standard Practice for Sampling Bituminous Materials
- D 412 Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers - Tension
- D 624 Test Method for Rubber Property -Tear Resistance.
- D 1079 Standard Definitions and Terms Relating to Roofing, Waterproofing and Bituminous Materials
- D 1149 Test Method for Ozone Resistance
- E 380 Excerpts from the Standard Practice for Use of the International System of Units (SI) (the Modernized Metric System)
- 2.3 *Application Standards*
 - TAS 110 Standard Requirements for Physical Properties of Roof Membranes, Insulation, Coatings and Other Roofing Components.
- 2.4 *Roof Consultants Institute*
Glossary of Terms

3. Terminology:

- 3.1 Definitions - For definitions of terms used in this Protocol, refer to ASTM D 16 and/or ASTM D 1079 and/or Chapter 2 of the *Florida Building Code, Building* and/or the RCI Glossary of Terms. Definitions from the *Florida Building Code, Building* shall take precedence.

- 3.2 Units - For conversion of U.S. customary units to SI units, refer to ASTM E 380.

4. Limitations and Precautions:

- 4.1 This Protocol may involve hazardous materials, operations and equipment. This Protocol does not purport to address all of the safety problems associated with its use. It is the responsibility of whomever uses this Protocol to consult and establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

5. Sampling:

- 5.1 Unless otherwise noted in the specific ASTM Test Standard, sampling of all non-bituminous products under this Protocol shall be in compliance with ASTM C 1021. Particular reference is made to Subsection 5.2.1 of this ASTM Test Standard.

6. Materials and Manufacture:

- 6.1 *Composition* - Sealants shall consist of an elastomeric material that can be applied in a bead to create a homogenous sealant joint, such as, but not limited to:

- one-part, low modulus, neutral-curing silicone;
- one-part, architectural grade polyurethane;
- one-part, architectural grade butyl rubber sealant;
- one-part, architectural grade polysulfide; or,
- acrylic.

7. Performance Requirements:

- 7.1 *Physical Properties* - Sealants products used in roofing shall be in compliance with the minimum physical property requirements listed below:

PHYSICAL PROPERTY REQUIREMENTS

Physical Property	Test Standard	Requirement
Joint Movement Capability	C 719	min. \pm 25%
UV Resistance	C 793	Good
Heat Aging	C 792	Good
Modulus of Elongation	D 412	min. 50 psi
Tensile Strength	D 412	min. 125 psi
Elongation	D 412	min. 500%
Tear Strength	D 624	min. 25 pli
Peel Strength	C 794	min. 18 pli (aluminum) min. 16 pli (concrete) min. 18 pli (steel) min. 20 pli (vinyl) min. 20 pli (wood)
Shore "A" Hardness	C 661	min. 30
Ozone Resistance	D 1149	Good

- 7.2 *Performance* - Sealant products used in roofing shall be in compliance with the minimum performance requirements listed below:

PERFORMANCE REQUIREMENTS

Performance Characteristic	Test Standard	Requirement
Shelf Life	see Section 7.2.1	min. 1 year
Tool/Work Time		min. 20-30 minutes
Tack Free Time	C 679	min. 2 hours
Curing Time @ 77° F (25°C)		2-14 days
Full Adhesion Development		14-21 days

- 7.2.1 *Shelf Storage Life* - One tube or container of sealant shall be stored for 12 months from the date of manufacture at $77^{\circ} \pm 2^{\circ}$ F ($25^{\circ} \pm 1.1^{\circ}$ C) and a relative humidity of $50 \pm 5\%$ and then shall be tested to determine compliance with the requirements of Section 7.2.

- 7.2.2 Product shall be approved by the manufacturer for application in a temperature range of 40°F to 100°F (4.4°C to 37.8°C).

8. Installation:

- 8.1 Sealant shall be installed to create two-point adhesion. Bond breakers and backer rods shall be applied in compliance with manufacturer's instructions.

9. Packaged Material:

- 9.1 Packaged material shall be certified by the manufacturer to be in compliance with this specification and shall be labeled in compliance with Section 1517 of the *Florida Building Code, Building*. Product Approval documents shall be provided to the purchaser or end user upon request.
- 9.2 Shipping containers shall be marked with the name of the material, stock number, lot number, year of issue and quantity therein and the name of the manufacturer or supplier.
- 9.3 Packaging shall provide coverage for bead size, storage requirements, limitations of use, and safety precautions.
- 9.4 Not all sealants are compatible for all roofing materials and adjoining substrates. The Sealant manufacturer shall provide a Product Data Sheet detailing applicable use and non-compatible substrates.
 - 9.4.1 Product Data Sheet shall also include detailed instructions for substrate adhesion tests.
 - 9.4.2 Product Data Sheets shall note any substrates that require primer before sealant application. Product Data Sheets shall note the name of the primer used for a specific substrate.

10. Rejection and Reinspection:

- 10.1 The Authority Having Jurisdiction may periodically purchase commercial quantities of the approved product for testing at Approved Testing Agencies to confirm compliance with the provisions of this Protocol. Failure to meet the minimum requirements set forth in Section 5 shall constitute grounds for rejection of the lots and suspension of the Product Approval.

In cases of rejection the Authority Having Jurisdiction shall request removal of the rejected lot number(s) from commercial sale.

- 10.2 The Authority Having Jurisdiction may, after rejection of one or more lots, require third party quality control inspection as a provision to lifting of Approval suspension.
- 10.3 Shipping containers shall be marked with the name of the material, the stock number, lot number, quantity therein, and the name of the manufacturer or supplier.

