TESTING APPLICATION STANDARD (TAS) 139-95

STANDARD REQUIREMENTS FOR WHITE ROOF PATCH SPECIFICATION

1. Scope:

1.1 This Protocol covers water-based elastomeric white roof patch with short bristle brush or trowel consistency.

1.2 The Protocol is provided as a guide for the selection of and proper use of white roof patch.

1.3 The Protocol specifically addresses laboratory testing of these coatings and does not provide guidance for actual field application.

1.4 All testing shall be conducted by an approved testing agency and all test reports shall be signed by an authorized signer of the testing agency and/or Professional Engineer.

2. Referenced Documents:

2.1 *ASTM Standards*

C 834 Standard Specification for Latex Sealants

D 16 Terminology Relating to Paint, Varnish, Lacquer and Related Products

D 412 Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers - Tension

D 1079 Definition of Terms Relating to Roofing, Waterproofing, and Bituminous Materials

D 2196 Standard Test Methods for Rheological Properties of Non-Newtonian Material by Rotational (Brookfield) Viscometer

D 1475 Density of Paint, Varnish, Lacquer and Related Products

D 2824 Standard Specification for Aluminum-Pigmented Asphalt Roof Coatings

D 2939 Standard Test Methods for Emulsified Bitumens Used as Protective Coatings

E 380 Use of the International System of Units (SI) (The Modernized Metric System)

G 26 Standard Practice for Operating Light-Exposure Apparatus (Xenon-Arc Type) With and Without Water for Exposure of Nonmetallic Materials

2.2 *The Florida Building Code, Building*

2.3 *Application Standards*

TAS 143 Standard Requirements for White Elastomeric Roof Coatings Used for Coating Built Up Roofs and Metal Roofing Systems

2.4 *Roof Consultants Institute*
Glossary of Terms

3. Terminology & Units:

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. The 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. Materials and Manufacture:

5.1 The patch shall be one component, water based, white elastomeric material, suitable for application by short bristle brush or trowel without heating or thinning.

5.2 The patch shall be suitable for the application intended to adhere on a clean, dry, properly prepared, built-up roofing, metal, concrete, polyurethane foam, roof flashing and wood. The patch is not intended for use where ponding water conditions exist.

5.3 White roof patch has been formulated and designed to repair roof cracks and holes less than $^1/_4$ in. in width and it is recommended to be used in combination with White Elastomeric Roof Coatings as a top finishing coat.

5.4 The patch shall be suitable for application where sunlight and surface and ambient temperatures of 50°F or above and rising are maintained long enough for the patch application to cure.

5.5 *Composition* - The water-based elastomeric white roof patch product shall conform to composition requirements as follows:

Component Property	Test Standard	Requirement
Weight per U.S. Gallon, (lb)	D 1475	min. 11.0
Solids, (% by Weight)	D 2939 Section 8	min. 55.0

6. Performance Requirements:

6.1 *Physical Properties* - The water-based elastomeric white roof patch product shall conform to physical property requirements as follows:

Physical Property	Reference Section	Requirement
Viscosity, (CPS)	See Section 7.2	min. 30,000
Elongation, (%)	See Section 7.3	min. 150
Tensile Strength, (psi)	See Section 7.4	min. 150
Reflectance	See Section 7.5	min. 75
Accelerated Weathering	See Section 7.6	1000 hours no visible sign of cracks
Firm Set	See Section 7.7	24 hours
Resistance to Water	See Section 7.8	24 hours

7. Test Methods:

7.1 Preparation of Test Specimens - unless otherwise noted, test specimens shall be prepared as follows.

7.1.1 Dry films are prepared by applying one coat to release paper or glass to give a total dry film thickness of 25-27 mils (50 wet mils thickness is suggested).

7.1.2 The film is allowed to cure at 77°F (25°C) and 50% relative humidity for 48 hours, then dry the film in the forced draft oven at 140°F (60°C) for 24 hours.

7.1.3 The dried films are ready when they reach a constant weight at the one hour interval.

7.2 *Viscosity* - Test Method D 2196

7.2.1 Brookfield viscometer, #6D 20 RPM RVF Viscometer

7.3 *Elongation* - Test Method D 412 (Instron or equivalent) except as noted below.

7.3.1 Prepare test specimens as noted in Section 7.1 of TAS 143.

7.3.2 Cut specimens in type “C” die dumb bell shape.

7.3.3 Test type or functional equivalent at 77°F (25°C) and 50% relative humidity.

Cross head speed	2.0 in. per min.
Calibration prior testing	0.0 in. per min.
Gauge length	3.0 in. opening

7.3.4 Calculate percent elongation (E) in compliance with the following equation:

$$E = \left(\frac{L - L_0}{L_0} \right) \times 100$$

where,

E = percent elongation (%);

L = sample length at break (in.); and

L_o = gage length (in.).

7.4 *Tensile Strength* - Test Method D 412, except as noted below.

7.4.1 Prepare test specimens as noted in Sections 7.3.1 through 7.3.3 herein.

7.4.2 Tensile strength in pounds/inch^2 = $\frac{f}{w}$

where:

f = the force at break in pounds;

w = sample width in inches; and

t = sample thickness in inches.

7.5 *Reflectance* - Test Method D 2824, Section 8.6

7.6 *Accelerated Weathering* - Test Method G 155

7.7 *Firm Set* - Test Method D 2939, Sections 13 & 14

7.8 *Resistance to Water* - Test Method D 2939, Section 17, ALT: A

8. Packaged Material:

8.1 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.

8.2 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. Rejection and Reinspection:

9.1 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 Sections 5 and 6 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.

9.2 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.

9.3 Shipping containers shall be marked with the name of the material, the stock number, lot number, quantity therein, and the name of the manufacture or supplier.