

## Laboratory Report C41420.09.12-1

**Tensile Adhesion / Long Term Aging Testing**  
*of*  
**Touch 'n Seal StormBond Roof Tile Adhesive**  
*in accordance with*  
**ICC-ES AC152**

**Prepared for:**  
**Convenience Products**  
866 Horan Drive  
Fenton, MO 63026

**Date of Issuance:**  
**September 7, 2012**

**EXTERIOR RESEARCH & DESIGN, LLC**

MAIN: 80 Yesler Way, Suite 200 Seattle, WA 98104 P: (206) 467-0054 F: (206) 267-0272  
EAST: 353 Christian Street, Unit 13 Oxford, CT 06478 P: (203) 262-9245 F: (203) 262-9243  
LAB: 10 Mauney Court Columbia, SC 29201 P: (803) 988-8133 F: (803) 988-8111



**CLIENT INFORMATION:** Convenience Products  
866 Horan Drive  
Fenton, MO 63026  
Attn: Michael Sites

**TRINITY|ERD PROJECT:** 2012.C41420SC

<b>SAMPLES:</b>	<u>Product</u>	<u>Description</u>
	Touch 'n Seal StormBond Roof Tile Adhesive	One component polyurethane adhesive for clay and roof tiles by Convenience Products
	AC TileSeal	Glass-reinforced-polyester-fabric-surfaced, self-adhering, modified bitumen roof tile underlayment by Northern Elastomeric, Inc.
	Polystick TU Plus	Polyester-fabric-surfaced, fiberglass reinforced, self-adhering, modified bitumen roof tile underlayment by Polyglass USA, Inc.
	QUIK-Stick HT Smooth	Polyester-fabric-surfaced, fiberglass reinforced, self-adhering, modified bitumen roof tile underlayment by Mid-States Asphalt.

**SAMPLE DELIVERY:** Client arranged for the above named samples to be shipped to Trinity|ERD South Carolina lab, received on 03/30/2012 and 04/02/2012.

**TEST DATE(S):** 04/16/2012 - 08/22/2012

**ERD TECHNICIANS:** Charles Phillips

**M-D NOTIFICATION:** None

**PROPERTIES:** Tensile Adhesion / Long Term Aging

**STANDARDS:** ACI 52 – *Acceptance Criteria for Adhesive Attachment of Concrete or Clay Roofing Tiles*, © 2011, ICC Evaluation Service  
ASTM D1623-09 – *Standard Test Method for Tensile and Tensile Adhesion Properties of Rigid Cellular Plastics*, © 2009, ASTM

**EQUIPMENT:** Tensile Adhesion / Long Term Aging Thermotron, PGC, Instron 1011

**I. TENSILE ADHESION / LONG TERM AGING:**

I.1 Specimen Preparation:

I.1.1 Specimens are constructed with StormBond Roof Tile Adhesive and allowed to cure.

I.1.2 After curing, the composite panels are cut into squares and conditioned as follows prior to testing.

I.2 Specimen Conditioning:

I.2.1 Control samples are conditioned at  $75 \pm 2^\circ\text{F}$  and 50% relative humidity. Long Term Aging specimens are conditioned at  $180 \pm 2^\circ\text{F}$  and 65% relative humidity for 7, 14, 30, 60, and 120 days. Specimens were then allowed to equilibrate at  $75 \pm 2^\circ\text{F}$  and 50% relative humidity prior to testing.

I.3 Procedure:

I.3.1 Specimens are placed within the tensile loading device, aligned properly to central axis and load applied at a cross-head speed in accordance with D1623, Section 8. Maximum load is recorded.

**EXTERIOR RESEARCH & DESIGN, LLC**

MAIN: 80 Yesler Way, Suite 200 Seattle, WA 98104 P: (206) 467-0054 F: (206) 267-0272  
EAST: 353 Christian Street, Unit 13 Oxford, CT 06478 P: (203) 262-9245 F: (203) 262-9243  
LAB: 10 Mauney Court Columbia, SC 29201 P: (803) 988-8133 F: (803) 988-8111



1.5 Results:

TABLE 1: TENSILE ADHESION / LONG TERM AGING OF TOUCH 'N SEAL STORMBOND ROOF TILE ADHESIVE											
Material	Aging Cycle	Test Data (psi)					Results		AC152	Pass/ Fail	Mode of Failure
		1	2	3	4	5	Avg.	SD			
NEI AC TileSeal	0 day	16.2	16.4	14.6	18.3	25.5	18.2	4.3	≥ 15 psi	Pass	Cohesive foam
	7 day	21.5	18.6	19.5	25.4	14.5	19.9	4.0		Pass	
	14 day	19.7	21.9	18.6	23.7	18.4	20.4	2.3		Pass	
	30 day	15.2	19.1	15.9	20.7	25.5	19.3	4.1		Pass	
	60 day	23.6	24.7	22.1	17.3	24.5	22.4	3.1		Pass	
	90 day	25.5	31.2	24.7	15.5	19.1	23.2	6.1		Pass	
	120 day	18.8	19.4	29.2	26.9	16.4	22.2	5.6		Pass	
Polyglass Polystick TU Plus	0 day	13.7	15.3	13.3	19.2	22.0	16.7	3.8	≥ 15 psi	Pass	Cohesive foam
	7 day	16.5	16.8	11.6	16.4	14.0	15.0	2.2		Pass	
	14 day	15.4	15.5	14.5	16.4	12.6	15.0	1.5		Pass	
	30 day	16.3	14.3	17.4	11.5	17.0	15.3	2.5		Pass	
	60 day	17.9	19.0	17.0	15.3	17.0	17.2	1.4		Pass	
	90 day	15.0	14.3	14.9	20.0	11.6	15.2	3.0		Pass	
	120 day	16.8	21.8	15.6	14.3	18.9	17.5	3.0		Pass	
Mid-States Asphalt QUIK-Stick HT Smooth	0 day	14.3	12.9	21.0	12.7	N.A.*	15.2	3.9	≥ 15 psi	Pass	Cohesive foam
	7 day	19.0	9.9	14.6	13.6	19.8	15.4	4.1		Pass	
	14 day	10.0	16.1	15.7	19.6	16.4	15.6	3.5		Pass	
	30 day	10.7	14.7	6.5	10.6	21.1	12.7	5.5		Fail	
	60 day	19.2	19.8	18.9	14.6	12.7	17.0	3.2		Pass	
	90 day	11.7	10.8	10.0	15.0	15.2	12.5	2.4		Fail	
	120 day	16.9	9.9	9.9	14.3	11.8	12.6	3.0		Fail	

\*N.A.: Data acquisition failure

2. COMMENTS:

2.1 According to code evaluation documentation and communications with the underlayment suppliers, the test results herein are applicable to the following underlayment products.

<u>Tested Product</u>	<u>Alternate</u>
NEI AC TileSeal	Atlas Roofing "WeatherMaster TU Ultra"; Boral Roofing "MLT TileSeal" or "Boral TileSeal"; Commercial Innovations "Viking UDL MT" or Owens Corning "WeatherLock Speciality Tile and Metal".
Polystick TU Plus	Polystick TU Max
QUIK-Stick HT Smooth	Nordic Waterproofing "RoofAquaGuard MT-HT"; Tag & Stick, LLD. "Tag & Stick MTP"

**3. CONCLUSIONS:**

- 3.1 Trinity|ERD has tested Touch 'n Seal StormBond Roof Tile Adhesive, as supplied by Convenience Products, for tensile adhesion / long term aging in accordance with Table I, Item 3 of ICC-ES AC I52 resulting in the data outlined herein.
- 3.1.1 Review of results indicates:
- Compliance with the minimum 15 psi criteria with NEI TileSeal and Polystick TU Plus for all conditioning durations.
  - Non-compliance with the minimum 15 psi criteria with Mid-States QUIK-Stick HT Smooth for conditioning durations 30, 90 and 120 days.
- 3.2 Alternate underlayment products are discussed in Section 2.

Please contact our offices with any questions.

Sincerely,  
TRINITY | ERD



Charles Phillips  
Laboratory Manager



Robert Nieminen, P.E.  
Vice President  
Florida Reg. No. 59166

**REPORT HISTORY:**

<u>Date</u>	<u>Event</u>	<u>Notes</u>	<u>Authorized By:</u>
09/05/2012	Draft Report	For client review	RN
09/07/2012	Final Report	After client review	RN

This report and the data contained therein is the sole property of Trinity|ERD and the named client. This report shall not be reproduced outside Trinity|ERD except by the named client without written permission by the named client, in which case the report shall be reproduced in its entirety.

**EXTERIOR RESEARCH & DESIGN, LLC**

MAIN: 80 Yesler Way, Suite 200 Seattle, WA 98104 P: (206) 467-0054 F: (206) 267-0272  
EAST: 353 Christian Street, Unit 13 Oxford, CT 06478 P: (203) 262-9245 F: (203) 262-9243  
LAB: 10 Mauney Court Columbia, SC 29201 P: (803) 988-8133 F: (803) 988-8111

