EVALUATION REPORT

ICP Adhesives and Sealants, Inc.
12505 NW 44th Street
Coral Springs, FL 33065
(888) 774-1419

Evaluation Report 02768.03.06-R8
FL6332-R8
Date of Issuance: 08/08/2008
Revision 8: 10/12/2017

SCOPE:
This Evaluation Report is issued under Rule 61G20-3 and the applicable rules and regulations governing the use of construction materials in the State of Florida. The documentation submitted has been reviewed by Robert Nieminen, P.E. for use of the product under the Florida Building Code. The product described herein has been evaluated for compliance with the 6th Edition (2017) Florida Building Code sections noted herein.

DESCRIPTION: ICP Adhesives Polyset® AH-160

LABELING: Labeling shall be in accordance with the requirements the Accredited Quality Assurance Agency noted herein.

CONTINUED COMPLIANCE: This Evaluation Report is valid until such time as the named product(s) changes, the referenced Quality Assurance documentation changes, or provisions of the Code that relate to the product change. Acceptance of this Evaluation Report by the named client constitutes agreement to notify Robert Nieminen, P.E. if the product changes or the referenced Quality Assurance documentation changes. Trinity|ERD requires a complete review of this Evaluation Report relative to updated Code requirements with each Code Cycle.

ADVERTISEMENT: The Evaluation Report number preceded by the words “Trinity | ERD Evaluated” may be displayed in advertising literature. If any portion of the Evaluation Report is displayed, then it shall be done in its entirety.

INSPECTION: Upon request, a copy of this entire Evaluation Report shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This Evaluation Report consists of pages 1 through 9.

Prepared by:

Robert J.M. Nieminen, P.E.
Florida Registration No. 59166, Florida DCA ANE1983

CERTIFICATION OF INDEPENDENCE:
1. Exterior Research & Design, LLC. d/b/a Trinity | ERD does not have, nor does it intend to acquire or will it acquire, a financial interest in any company manufacturing or distributing products it evaluates.
2. Exterior Research & Design, LLC. d/b/a Trinity | ERD is not owned, operated or controlled by any company manufacturing or distributing products it evaluates.
3. Robert Nieminen, P.E. does not have nor will acquire, a financial interest in any company manufacturing or distributing products for which the evaluation reports are being issued.
4. Robert Nieminen, P.E. does not have, nor will acquire, a financial interest in any other entity involved in the approval process of the product.
5. This is a building code evaluation. Neither Trinity|ERD nor Robert Nieminen, P.E. are, in any way, the Designer of Record for any project on which this Evaluation Report, or previous versions thereof, is/was used for permitting or design guidance unless retained specifically for that purpose.

The facsimile seal appearing was authorized by Robert Nieminen, P.E. on 10/12/2017. This does not serve as an electronically signed document.
ROOFING COMPONENT EVALUATION:

1. **Scope:**
   - **Product Category:** Roofing
   - **Sub-Category:** Roof Tile Adhesives
   - **Compliance Statement:** ICP Adhesives Polyset® AH-160, as produced by ICP Adhesives and Sealants, Inc., has demonstrated compliance with the 6th Edition (2017) Florida Building Code through testing in accordance with the Standards set forth herein. Compliance is subject to the Installation Requirements and Limitations / Conditions of Use set forth herein.

2. **Standards:**
   - **Sections:**
     - 1504.2.1.1
   - **Property:** Overturning resistance
   - **Standard:** SSTD 11
   - **Year:** 1997

3. **References:**
   - **Entity**
     - ERD (TST 6049)
     - ERD (TST 6049)
     - ICC-ES (EVL2396)
     - Miami-Dade (CER 1592)
     - PRI (TST 5878)
     - PRI (TST 5878)
     - PRI (TST 5878)
     - PRI (TST 5878)
     - PRI (TST 5878)
     - PRI (TST 5878)
     - PRI (TST 5878)
     - PRI (TST 5878)
     - PRI (TST 5878)
     - PRI (TST 5878)
     - PRI (TST 5878)
     - UL LLC (QUA 9625)
   - **Examination**
     - Static Uplift – SSTD 11
     - Static Uplift – SSTD 11
     - 2012 IBC Compliance
     - HVHZ compliance
     - Static Uplift – SSTD 11
     - Static Uplift – SSTD 11
     - Static Uplift – SSTD 11
     - Static Uplift – SSTD 11
     - Static Uplift – SSTD 11
     - Static Uplift – SSTD 11
     - Static Uplift – SSTD 11
     - Static Uplift – SSTD 11
     - Quality Assurance
   - **Reference**
     - P39740.02.12
     - P39740.11.13-R1
     - ESR-1709
     - 17-0322.03
     - PFI-006-02-01
     - PFI-006-02-02
     - PFI-007-02-01
     - PFI-008-02-04
     - PFI-009-02-03
     - TGRI-001-02-03
     - TGRI-001-02-03
     - PFI-010-02-01
     - PFI-011-02-01
     - PFI-012-02-01
     - PFI-013-02-01
     - PFI-014-02-01
     - ECM-003-02-01
     - ECM-004-02-01
     - ECM-005-02-01
     - ECM-006-02-01
     - ECM-007-02-01
     - ECM-008-02-01
     - Service Confirmation
   - **Date**
     - 02/20/2012
     - 01/02/2015
     - 12/01/2016
     - 04/27/2017
     - 05/09/2005
     - 05/09/2005
     - 10/11/2005
     - 02/21/2006
     - 02/21/2006
     - 10/30/2006
     - 10/30/2006
     - 12/07/2006
     - 12/07/2006
     - 12/07/2006
     - 12/07/2006
     - 06/13/2008
     - 06/13/2008
     - 06/13/2008
     - 06/13/2008
     - Exp. 06/05/2018

4. **Product Description:**
   - 4.1 ICP Adhesives Polyset® AH-160 is a two-component expanding polyurethane roof tile adhesive that is mixed and dispensed from a dispensing system provided by ICP Adhesives and Sealants, Inc. The components are available in refillable tanks or disposable cylinders (ICP Adhesives ProPack® 30 & 100).

5. **Limitations:**
   - 5.1 This is a building code evaluation. Neither Trinity | ERD nor Robert Nieminen, P.E. are, in any way, the Designer of Record for any project on which this Evaluation Report, or previous versions thereof, is/was used for permitting or design guidance unless retained specifically for that purpose.
   - 5.2 This Evaluation Report is not for use in FBC HVHZ jurisdictions.
5.3 Fire classification is not part of this evaluation. Refer to a current Roofing Materials Directory for fire ratings of this product and **FBC 1505.2**.

5.4 **ICP Adhesives Polyset® AH-160** can be used with flat, low and high profile tiles or any rigid, discontinuous roof assembly having a current Florida Statewide Product Approval or approved on a local-level by the Authority Having Jurisdiction.

5.5 Minimum underlayment shall be per **FRSA/TRI April 2012 (04-12)** or having a current Florida Statewide Product Approval or approved on a local-level by the Authority Having Jurisdiction for use with **ICP Adhesives Polyset® AH-160**.

5.6 Field tiles, meeting the limitations of **FBC 1609.5.3**, using **ICP Adhesives Polyset® AH-160** are limited to projects having an Aerodynamic Uplift Moment \( (M_{u}) \), determined in accordance with **FBC 1609.5.3** or Tables 2A and 2B of **FRSA/TRI April 2012 (04-12)**, not greater than the following Allowable Overturning Moment values. Refer to Section 10 and **ICP Adhesives and Sealants, Inc.** published installation instructions for Adhesive Paddy Placement details.

<table>
<thead>
<tr>
<th>Tile (FBC 1609.5.3)</th>
<th>Adhesive Paddy Placement</th>
<th>Allowable Overturning Moment (ft-lbf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clay or Concrete</td>
<td>Flat</td>
<td>Independent; Single Paddy, Medium (2x7-inch, ~30 gram)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Independent; Single Paddy, Large (2x10-inch, ~45 gram)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Interdependent; Two Paddy (4x4-inch on underlayment, 2x4-inch at tile overlap)</td>
</tr>
<tr>
<td>Clay or Concrete</td>
<td>Low/Medium</td>
<td>Independent; Single Paddy, Medium (2x7-inch, ~30 gram)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Independent; Single Paddy, Large (2x10-inch, ~54 gram)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Interdependent; Two Paddy (4x4-inch on underlayment, 2x4-inch at tile overlap)</td>
</tr>
<tr>
<td>Clay or Concrete</td>
<td>High</td>
<td>Independent; Single Paddy, Large (2x10-inch, ~45 gram)</td>
</tr>
<tr>
<td>Clay or Concrete</td>
<td>High</td>
<td>Independent; Single Paddy, Medium (2x7-inch, ~30 gram)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Independent; Single Paddy, Large (2x10-inch, ~63 gram)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Interdependent; Two Paddy (4x4-inch on underlayment, 2x4-inch at tile overlap)</td>
</tr>
<tr>
<td>Clay or Concrete</td>
<td>Barrel</td>
<td>2x10-inch x ~35 gram for pans; 2 @ 1x10-inch x ~17 gram for cap</td>
</tr>
<tr>
<td>Clay or Concrete</td>
<td>Cap atop 2x stringer</td>
<td>2x10-inch x ~35 gram for pans; 2 @ 1x10-inch x ~17 gram for cap</td>
</tr>
<tr>
<td>Clay or Concrete</td>
<td>Cap atop 2x stringer</td>
<td>Independent: Continuous Paddy (~34 gram/ft)</td>
</tr>
<tr>
<td>Clay or Concrete</td>
<td>Cap atop 2x stringer</td>
<td>Independent: Continuous Paddy (~ 34 gram/ft)</td>
</tr>
<tr>
<td>Clay</td>
<td>Cap atop 2x stringer</td>
<td>Interdependent: Head: One (1) #10 x 2½” screw; Overlap: 1 x 6 inch (~10.5 gram)</td>
</tr>
<tr>
<td>Concrete</td>
<td>Cap atop 2x stringer</td>
<td>Interdependent: Head: One (1) #10 x 2½” screw; Overlap: 1 x 6 inch (~10.5 gram)</td>
</tr>
</tbody>
</table>

5.6.1 Data in Table 1 relates to installation over a ‘30/90’ underlayment system, as detailed in the **FRSA/TRI April 2012 (04-12)**. Alternate underlayment systems include those having a current Florida Statewide Product Approval and/or approved on a local-level by the Authority Having Jurisdiction specifically for use with **ICP Adhesives Polyset® AH-160**.

5.6.2 Tile roof systems using tile types or profiles other than those listed above acquiring acceptance for use with **ICP Adhesives Polyset® AH-160** shall be tested in accordance with **SSTD 11** or **Testing Application Standard TAS 101**. For the interdependent two-paddy method, an additional 2-to-1 margin above that specified in **SSTD 11** or **Testing Application Standard TAS 101** shall be applied in determining the ‘allowable overturning moment’.
5.7 Hip and ridge tiles using ICP Adhesives Polyset® AH-160 are limited to projects having hip/ridge design pressure requirements, determined in accordance with Table 1A of FRSA/TRI April 2012 (04-12), not greater than the following values. Refer to ICP Adhesives and Sealants, Inc. published installation instructions for Adhesive Paddy Placement details.

<table>
<thead>
<tr>
<th>Tile</th>
<th>Substrate</th>
<th>Attachment Method</th>
<th>Allowable Design Pressure (psf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clay</td>
<td>2x PT ridge board</td>
<td>Independent: Continuous Paddy (~34 gram/ft)</td>
<td>116</td>
</tr>
<tr>
<td>Concrete</td>
<td>2x PT ridge board</td>
<td>Independent: Continuous Paddy (~34 gram/ft)</td>
<td>107</td>
</tr>
<tr>
<td>Clay</td>
<td>2x PT ridge board</td>
<td>Interdependent: Head: One (1) #10 x 2½” screw; Overlap: 1 x 6 inch (~10.5 gram)</td>
<td>90</td>
</tr>
<tr>
<td>Concrete</td>
<td>2x PT ridge board</td>
<td>Interdependent: Head: One (1) #10 x 2½” screw; Overlap: 1 x 6 inch (~10.5 gram)</td>
<td>56</td>
</tr>
<tr>
<td>Clay or Concrete</td>
<td>Hip &amp; Ridge Channel Metal (FL5374): galvanized only</td>
<td>Independent: Continuous Paddy (~34 gram/ft)</td>
<td>169</td>
</tr>
<tr>
<td>Clay or Concrete</td>
<td>Trim Lock™ (FL5374): aluminum, galvanized, Galvalume® or stainless steel</td>
<td>Independent: Continuous Paddy (~34 gram/ft)</td>
<td>173</td>
</tr>
<tr>
<td>Clay or Concrete</td>
<td>Trim Lock™ Plus (FL5374): aluminum, galvanized, Galvalume® or stainless steel</td>
<td>Independent: Continuous Paddy (~34 gram/ft)</td>
<td>178</td>
</tr>
<tr>
<td>Clay</td>
<td>Top Notch (FL8095)</td>
<td>Independent: Continuous Paddy (~32 gram/ft)</td>
<td>125</td>
</tr>
<tr>
<td>Concrete</td>
<td>Top Notch (FL8095)</td>
<td>Independent: Continuous Paddy (~32 gram/ft)</td>
<td>146</td>
</tr>
</tbody>
</table>

6. **INSTALLATION:**

6.1 ICP Adhesives Polyset® AH-160 and the tile roof assembly shall be installed in accordance with FRSA/TRI April 2012 (04-12) and ICP Adhesives and Sealants, Inc. published installation instructions, subject to the limitations outlined in Section 5.

6.2 Hip and ridge boards or hip/ridge metal shall be installed in accordance with the FRSA/TRI April 2012 (04-12). Proprietary hip and ridge metal shall be installed in accordance with the manufacturer’s Florida Product Approval.

6.3 Installation shall be performed by applicators who hold a valid Qualified Applicator Card presented by ICP Adhesives and Sealants, Inc.

7. **BUILDING PERMIT REQUIREMENTS:**

As required by the Building Official or Authority Having Jurisdiction in order to properly evaluate the installation of this product.

8. **MANUFACTURING PLANTS:**

Tomball, TX

9. **QUALITY ASSURANCE ENTITY:**

UL, LLC. – QUA9625; (847) 664-3623; LeAnna.Gradecki@ul.com
10. **PADDY PLACEMENT DETAILS (FROM ICP ADHESIVES AND SEALANTS, INC. PUBLISHED LITERATURE):**

10.1 **Independent, Medium Paddy:**

![Diagram of Paddy Placement Details]

- **Flat/Low Profile Tile**
- **Medium Profile Tile**
- **High Profile Tile**
10.2 **Independent, Large Paddy:**

- **Flat/Low Profile Tile**
  - Nail through plastic cement (when required)
  - Underlayment
  - 10 in. Battens optional
  - Eave Course
  - 2 in.
  - Eave Closure

- **Medium Profile Tile**
  - Nail through plastic cement (when required)
  - Underlayment
  - 10 in. x 2 in. wide Battens optional
  - Eave Course
  - 2 in.
  - Eave Closure

- **High Profile Tile**
  - Nail through plastic cement (when required)
  - Underlayment
  - 10 in. x 2 in. wide Battens optional
  - Eave Course
  - 2 in.
  - Eave Closure
  - Fascia
  - Weep hole
  - Drip edge
10.3 Interdependent, Two Paddy:

Flat/Low Profile Tile

- Nail through plastic cement (when required)
- Battens optional
- Single paddy on underlayment
- 2 x 4 in.
- 2 in.
- 10 in.

Paddy (between tiles)

- Single paddy on top of tile
- 4 x 4 in.

Paddy (under tile)

Fascia

Eave Closure

Medium Profile Tile

- Nail through plastic cement (when required)
- Battens optional
- Single paddy under tile
- 4 x 4 in.
- 2 x 4 in.
- 10 in.
- 2 in.

Paddy (between tiles)

Single paddy on underlayment

Fascia

Eave Course

High Profile Tile

- Nail through plastic cement (when required)
- Battens optional
- Single paddy under tile
- 4 x 4 in.
- 2 x 4 in.
- 10 in.
- 2 in.

Paddy (between tiles)

Single paddy on underlayment

Fascia

Weep hole

Eave closure

Drip edge
10.4 **Two Piece Barrel (Cap & Pan) Tile:**

![Diagram of Two Piece Barrel - High Profile Tile]

1) Place enough adhesive to achieve 65 to 70 sq. in. in contact with the pan tile.
2) Turn Covers upside down. Place adhesive 1/2 in. to 1 inch in from outside edge of cover tile.
   Ensure 20 to 25 sq. in. contact area on each side of cover tile.

**Steep pitch applications (when required)**

Underlayment

Eave closure (mortar shown)

Weep hole

Fascia Board

Remove top portion of the eave course cover tile. Abut to second course of pan tiles. Ensure eave end of pan and cover tiles are flush at eave line.

10.5 **Hip and Ridge (independent placement):**

![Diagram of Hip and Ridge installation]

A bead of ICP Polyset® AH-160 may be applied above the field tile surface on both sides of the hip/ridge board or galvanized metal frame to provide weather/leaking.

To attach hip/ridge tiles, a bead of ICP Polyset® AH-160 may be applied along the center of the hip/ridge board or galvanized frame.

To attach hip/ridge tiles, a bead of ICP Polyset® AH-160 may be applied along the center of the hip/ridge board or galvanized frame.
10.6 **Hip and Ridge (interdependent placement):**

![Diagram showing hip and ridge placement](image)

```
1" X 6" Bead of ICP Polyset® AH-160 roof tile adhesive
#10 x 2-1/2" Screw Code Approved Fastener

Adhere starter tile with a 2" x 7" Paddy placed 3" down from head of tile
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- END OF EVALUATION REPORT -