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EVALUATION REPORT

East Coast Metals, Inc.
2301 West 8 Lane
Hialeah, FL 33010

Evaluation Report E10240.08.08-R3
FL5374-R3
Date of Issuance: 09/03/2008
Revision 3: 04/25/2012

SCOPE:
This Evaluation Report is issued under Rule 9N-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 and Florida Building Code, Residential Volume. The products described herein have been designed to comply with the 2010 Florida Building Code.

DESCRIPTION: East Coast Metals Channel Metals

LABELING: Each unit shall bear labeling in accordance with the requirements the Accredited Quality Assurance Agency noted herein.

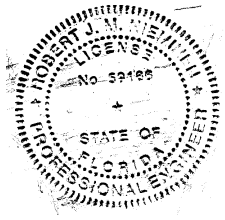
CONTINUED COMPLIANCE: This Evaluation Report is valid until such time as the named product(s) changes, the referenced Quality Assurance documentation changes, or provisions of the Code that relate to the product change. Acceptance of this Evaluation Report by the named client constitutes agreement to 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 7.

Prepared by:



The facsimile seal appearing was authorized by Robert Nieminen, P.E. on 04/25/2012
This does not serve as an electronically signed document. Signed, sealed hardcopies have been transmitted to the Product Approval Administrator and to the named client

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

CERTIFICATION OF INDEPENDENCE:
1. 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. 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.

ROOFING COMPONENT EVALUATION:

1. SCOPE:

Product Category: Roofing
Sub-Category: Roofing Accessories that are an Integral Part of the Roofing System
Compliance Statement: East Coast Metals Channel Metals, as produced by East Coast Metals, have demonstrated compliance with the following sections of the Florida Building Code through testing in accordance with the following Standards. Compliance is subject to the Installation Requirements and Limitations / Conditions of Use set forth herein.

2. STANDARDS:

Section	Property	Standard	Year
1523.6.5.2.2	Static Uplift Resistance	TAS 101	1995

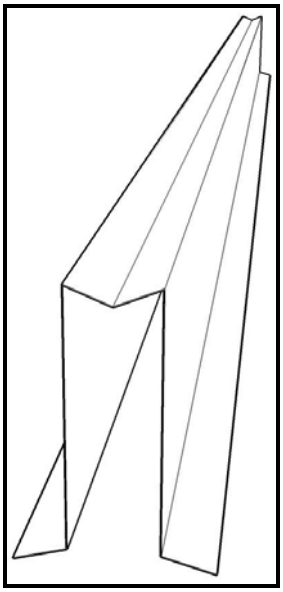
3. REFERENCES:

Entity	Examination	Reference	Date
Florida TEC (TST7393)	TAS 101	S10-628R	10/27/2010
PRI (TST5878)	TAS 101	ECM-001-02-01	09/21/2001
PRI (TST5878)	TAS 101	ECM-003-02-01	06/13/2008
PRI (TST5878)	TAS 101	ECM-004-02-01	06/13/2008
PRI (TST5878)	TAS 101	ECM-005-02-01	06/13/2008
PRI (TST5878)	TAS 101	ECM-006-02-01	06/13/2008
PRI (TST5878)	TAS 101	ECM-007-02-01	06/13/2008
PRI (TST5878)	TAS 101	ECM-008-02-01	06/13/2008
Florida Building Code	Attachment Requirements	FRSA/TRI 07320/8-05	08/2005
Florida Building Code - HVHZ	Attachment Requirements	RAS 118, 119 and 120	1995
East Coast Metals	Metal Quality	Mill Certifications	Various
Architectural Testing (QUA1844)	Quality Control	Participation Letter	Exp. 12/31/2014

4. PRODUCT DESCRIPTION:

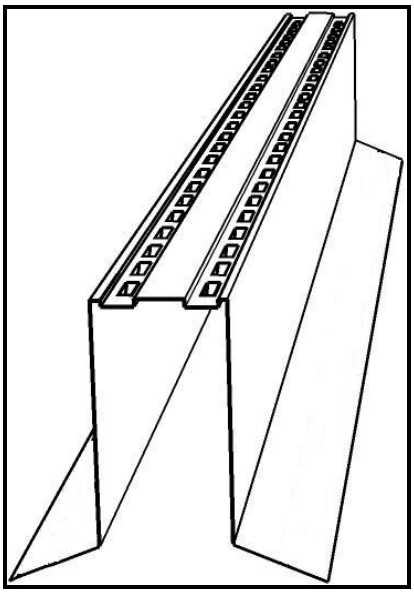
4.1 **Hip & Ridge Channel Metal:** Pre-formed metal channel designed for use as a hip and ridge base to which roof tiles are bonded in FBC Approved roof tile adhesive.

Hip & Ridge Channel Metal is available in 119-3/8-inch (± 3/8-inch) length by 2.5, 3, 3.5, 4, 5, 6 or 7-inch (± 3/8-inch) heights with 1.5-inch (± 1/16-inch) deck-flanges.



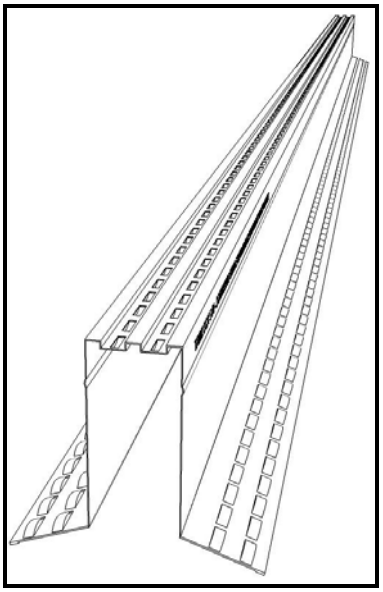
4.2 **Trim Lock Channel Metal:** Pre-formed metal channel designed for use as a hip and ridge base to which roof tiles are bonded in FBC Approved roof tile adhesive. Trim Lock Channel Metal is characterized by its profiled and perforated upper horizontal flange designed to receive and allow for interlock with the overlying tile adhesive.

Trim Lock Channel Metal is available in 119-3/8-inch (± 3/8") length by 3, 3.5, 4, 5 or 6-inch (± 3/8-inch) heights with 1.5-inch (± 1/16-inch) deck-flanges.



4.2 **Trim Lock Plus Channel Metal:** Pre-formed metal channel designed for use as a hip and ridge base to which roof tiles are bonded in FBC Approved roof tile adhesive. Trim Lock Plus Channel Metal is characterized by its profiled and perforated upper horizontal flange designed to receive and allow for interlock with the overlying tile adhesive and its perforated deck flanges, designed for installation atop the roof underlayment via placement in Polyset AH160 adhesive, which flows-through and interlocks with the underlying adhesive.

Trim Lock Plus Channel Metal is available in 119-3/8-inch (± 3/8") length by 3, 3.5, 4, 5 or 6-inch (± 3/8-inch) heights with 1.5-inch (± 1/16-inch) deck-flanges.



4.4 East Coast Metals Channel Metals are fabricated of the following metals:

- Galvanized Steel: Min. 0.019 ± 0.002-inch, ASTM A653 (G-90), min. 33 KSI.
- Galvalume Steel: Min. 0.019 ± 0.002-inch, ASTM A792, AZ55, min. 35 KSI.
- Aluminum: Min. 0.032 ± 0.002-inch, ASTM B209, 3003-H14, min. 21 KSI.
- Stainless Steel: Min. 0.019 ± 0.002-inch, ASTM A240/A480, T304, min. 35 KSI.

5. LIMITATIONS:

5.1 FOR HVHZ JURISDICTIONS:

5.1.1 For Hip & Ridge Channel Metal or Trim Lock Channel Metal, refer to FBC RAS 118, Drawing 13, Detail 3; RAS 119, Drawing 12, Detail 3; or RAS 120, Drawing 15, Detail 3. For Trim Lock Plus Channel Metal, refer to the installation instructions herein.

5.1.2 For HVHZ jurisdictions, installations are limited to projects having a required moment resistance (M_r) or uplift resistance (F_r)[1] not greater than the following values.

- "Interdependent" paddy placement means each individual tile is bonded to the Channel Metal in a foam paddy, and a second foam paddy bonds the tile head lap, or two tiles are bonded to the Channel Metal using a single foam paddy.
- "Independent" paddy placement means each individual tile is bonded to the Trim Lock in its own, single foam paddy; tile head laps are not bonded.

Table 1A: Performance Limitations - HVHZ: Interdependent Foam-Paddy Placement

Channel Type	Tile Type	Foam Adhesive	Foam Paddy Information			Moment Based M_f (ft-lbf)	Uplift Based F' (lbf)
			Approx. Size (inch)	Approx. Wt (grams)	Placement		
Trim Lock Channel Metal	Concrete	PolyPro AH160	2 x 4	9.7	Tile-to-metal, 3" from tile head	73	104
			4 x 2	9.7	Tile-to-tile at 3" tile headlap		
		Polyset ONE	2 x 4	6.0	Tile-to-metal, 3" from tile head	71	101
			4 x 1	4.7	Tile-to-tile at 3" tile headlap		
	Clay	PolyPro AH160	2 x 4	9.7	Tile-to-metal, 3" from tile head	88	116
			4 x 2	9.7	Tile-to-tile at 3" tile headlap		
		Polyset ONE	2 x 4	6.0	Tile-to-metal, 3" from tile head	66	88
			4 x 1	4.7	Tile-to-tile at 3" tile headlap		

Table 1B: Performance Limitations - HVHZ: Independent Paddy Placement

Channel Type	Tile Type	Foam Adhesive	Foam Paddy Information			Moment Based M_f (ft-lbf)	Uplift Based F' (lbf)
			Approx. Size (inch)	Approx. Wt (grams)	Placement		
Hip & Ridge Channel Metal	Concrete	PolyPro AH160	2 x 8	Min. 30	Tile-to-metal, shared paddy starting 4-inch below the head of the 1st course and ending 4-inch beyond the tail of the overlapping tile	127	169
Trim Lock Channel Metal	Concrete	PolyPro AH160	2 x 7	Min. 38	Tile-to-metal, centered along tile length	140	199
			Two at Min 2 x 7	Min. 15 each	One 2x7 paddy or continuous 2-inch wide bead to metal, one 2x7 paddy to tile underside, centered along tile length sandwiched together	138	148
	Clay	PolyPro AH160	2 x 7	Min. 38	Tile-to-metal, centered along tile length	230	307
			Two at Min 2 x 7	Min. 15 each	One 2x7 paddy or continuous 2-inch wide bead to metal, one 2x7 paddy to tile underside, centered along tile length sandwiched together	159	181
Trim Lock Plus Channel Metal	Concrete	PolyPro AH160	Two at Min 2 x 7	Min. 15 each	One 2x7 paddy or continuous 2-inch wide bead to metal, one 2x7 paddy to tile underside, centered along tile length sandwiched together	138	148
	Clay	PolyPro AH160	Two at Min 2 x 7	Min. 15 each	One 2x7 paddy or continuous 2-inch wide bead to metal, one 2x7 paddy to tile underside, centered along tile length sandwiched together	159	181

[1] *Determined in accordance with RAS 127 or ASCE 7-10 per FBC 1609.5.3 and 1609.1.5 for Zones 2 and 3.*

5.2 FOR NON-HVHZ JURISDICTIONS:

5.2.1 For Hip & Ridge Channel Metal or Trim Lock Channel Metal, refer to "Instructions for Hip and Ridge Attachment" sections of the FRSA/TRI 07320/8-05. For Trim Lock Plus Channel Metal, refer to the installation instructions herein

5.2.2 For non-HVHZ, installations are limited to projects having hip/ridge design pressure requirements[2] not greater than the following values. Refer to the tile adhesive manufacturer's published installation instructions for Adhesive Paddy Placement details.

- "Interdependent" paddy placement means each individual tile is bonded to the Channel Metal in a foam paddy, and a second foam paddy bonds the tile head lap, or two tiles are bonded to the Channel Metal using a single foam paddy.
- "Independent" paddy placement means each individual tile is bonded to the Channel Metal in its own, single foam paddy; tile head laps are not bonded.

Table 2A: Performance Limitations – non-HVHZ - Maximum Design Pressure – (psf)
Interdependent Foam-Paddy Placement

Channel Type	Tile Type	Foam Adhesive	Foam Paddy Information			MDP (psf)
			Approx. Size (inch)	Approx. Wt (grams)	Placement	
Trim Lock Channel Metal	Concrete	PolyPro AH160	2 x 4	9.7	Tile-to-metal, 3" from tile head	103
			4 x 2	9.7	Tile-to-tile at 3" tile headlap	
		Polyset ONE	2 x 4	6.0	Tile-to-metal, 3" from tile head	100
			4 x 1	4.7	Tile-to-tile at 3" tile headlap	
	Clay	PolyPro AH160	2 x 4	9.7	Tile-to-metal, 3" from tile head	140
			4 x 2	9.7	Tile-to-tile at 3" tile headlap	
		Polyset ONE	2 x 4	6.0	Tile-to-metal, 3" from tile head	105
			4 x 1	4.7	Tile-to-tile at 3" tile headlap	

Table 2B: Performance Limitations – non-HVHZ - Maximum Design Pressure – (psf)
Independent Paddy Placement

Channel Type	Tile Type	Foam Adhesive	Foam Paddy Information			MDP (psf)
			Approx. Size (inch)	Approx. Wt (grams)	Placement	
Hip & Ridge Channel Metal	Concrete	PolyPro AH160	2 x 8	Min. 30	Tile-to-metal, shared paddy starting 4-inch below the head of the 1st course and ending 4-inch beyond the tail of the overlapping tile	169
Trim Lock Channel Metal	Concrete	PolyPro AH160	2 x 7	Min. 38	Tile-to-metal, centered along tile length	197
			Two at Min 2 x 7	Min. 15 each	One 2x7 paddy or continuous 2-inch wide bead to metal, one 2x7 paddy to tile underside, centered along tile length sandwiched together	140
	Clay	PolyPro AH160	2 x 7	Min. 38	Tile-to-metal, centered along tile length	368
			Two at Min 2 x 7	Min. 15 each	One 2x7 paddy or continuous 2-inch wide bead to metal, one 2x7 paddy to tile underside, centered along tile length sandwiched together	181
Trim Lock Plus Channel Metal	Concrete	PolyPro AH160	Two at Min 2 x 7	Min. 15 each	One 2x7 paddy or continuous 2-inch wide bead to metal, one 2x7 paddy to tile underside, centered along tile length sandwiched together	140
	Clay	PolyPro AH160	Two at Min 2 x 7	Min. 15 each	One 2x7 paddy or continuous 2-inch wide bead to metal, one 2x7 paddy to tile underside, centered along tile length sandwiched together	181

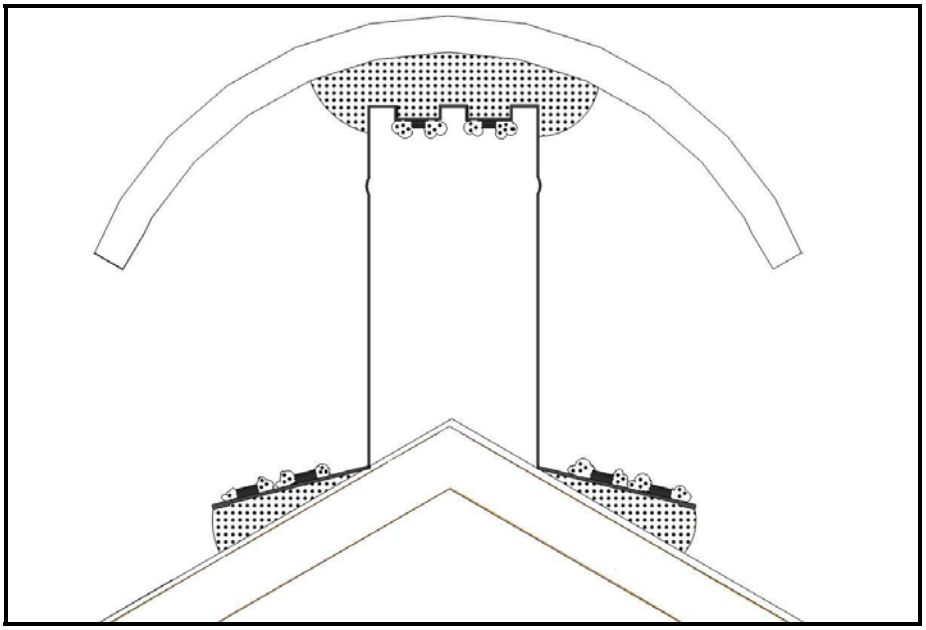
[2] *Determined in accordance with FBC 1609.1.5.*

6. INSTALLATION:

6.1 The roof deck shall be minimum 15/32-inch plywood (non-HVHZ) or minimum 19/32-inch plywood (HVHZ) attached in accordance with FBC Chapter 23 to the satisfaction of the AHJ.

6.2 Hip & Ridge Channel Metal and Trim Lock Channel Metal shall be installed using min. 11 ga. x 1¼-inch long x 3/8-inch head diameter galvanized annular ring shank nails spaced 6-inch o.c. along both deck-flanges. Fasteners shall be positioned ¾-inch from the outside edge of each deck-flange, set in a bed plastic roof cement. For FBC HVHZ, refer to FBC RAS 118, Drawing 13, Detail 3; RAS 119, Drawing 12, Detail 3; or RAS 120, Drawing 15, Detail 3.

6.3 Trim Lock Plus Channel Metal shall be installed atop the Approved roof underlayment in continuous 2-inch wide ribbons of Polyset AH160 centered beneath each 1.5-inch wide deck flange, approximately 16 grams/ft. Place the Trim Lock Plus Channel Metal into the wet adhesive and allow to set prior to installation of roof tiles.

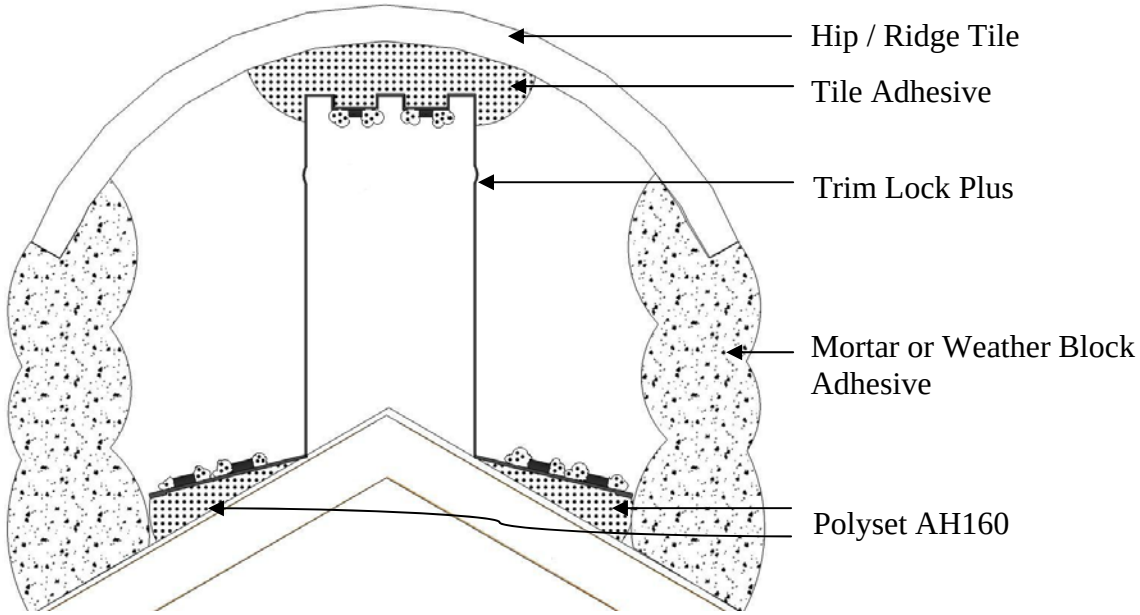


View of Polyset AH160 Placement for Trim Lock Plus Channel Metal Installation

6.3.1 It is critical that the bond between the Trim Lock Plus Channel Metal, the Polyset AH160 and the underlayment is not disturbed prior to or during placement of the ridge tiles.

6.3.2 Approved underlayments are the codified '30/90' system or other FBC Approved roof underlayments listing approved use of Polyset AH160.

6.4 Tile shall be installed atop the Channel Metal in accordance with the tile adhesive manufacturer's Approved, published installation instructions, subject to the limitations outlined in Section 5 herein. When using Polyfoam Products' tile adhesive, the hip/ridge tile installation shall result in minimum 30 square inches of contact area on the underside of the tile, as measured 3-inch down from the head of the tile to the tile overlap. The exposed edges shall be packed and pointed with Approved mortar or weather blocking adhesive in accordance with FRSA/TRI 07320/8-05 or RAS 118, RAS 119, RAS 120 requirements.



View of Trim Lock Plus Channel Metal Installation after Weather Blocked

6.4.1 Channel Metal shall be free of dust, debris, oils or other bond-breaking substance prior to placement of adhesive.

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:

Contact the named QA entity for manufacturing facilities covered by F.A.C. Rule 9N-3 QA requirements.

9. QUALITY ASSURANCE ENTITY:

Architectural Testing, Inc. – QUA1844
(717) 764-7700

- END OF EVALUATION REPORT -