NEMO|etc.
Certificate of Authorization #32455
353 Christian Street, Unit #13
Oxford, CT 06478
(203) 262-9245

ENGINEER | EVALUATE | TEST | CONSULT

P.E. EVALUATION REPORT (PEER)

ICP Construction, Inc.
2775 Barber Road
Norton, OH 44203
(330) 753-4585

PEER-ICP-004.A.R10
FL6332-R10 (NON-HVHZ)
Date of Issuance: 08/08/2008
Revision 10: 10/11/2023

SCOPE:
This P.E. Evaluation Report (henceforth 'PEER') is issued under **F.A.C. 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 products described herein have been evaluated for compliance with the **8th Edition (2023) Florida Building Code** sections noted herein.

DESCRIPTION: APOC POLYSET® AH-160

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

CONTINUED COMPLIANCE: This PEER is valid until such time as the named product(s) changes, the referenced Quality Assurance or production facility location(s) changes, or Code provisions that relate to the product(s) change. Acceptance of our PEERs by the named client constitutes agreement to notify NEMO ETC, LLC of any changes to the product(s), the Quality Assurance, or the production facility location(s). NEMO ETC, LLC requires a complete review of its PEER relative to updated Code requirements with each Code Cycle.

ADVERTISEMENT: The Florida Product Approval Number (FL#) preceded by the words "NEMO P.E. Evaluated" may be displayed in advertising literature. If any portion of the PEER is displayed, then it shall be done in its entirety.

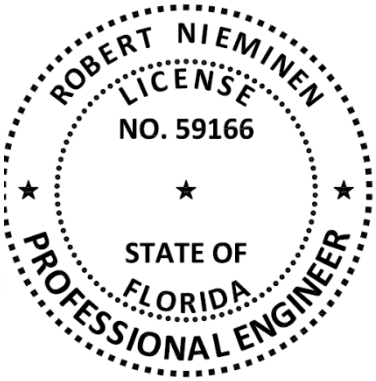
INSPECTION: Upon request, a copy of this entire PEER shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This PEER consists of pages 1 through 10.

Prepared by:

Digitally signed by Robert Nieminen
Date: 2023.10.11 '14:33:28 -04'00

This item has been digitally signed and sealed by Robert Nieminen, P.E.
Printed copies of this document are not considered signed and sealed, and the signature must be verified on any electronic copies.
Robert Nieminen, Florida P.E. 59166, FBC ANE1983
NEMO ETC, LLC, Florida CA #32455



CERTIFICATION OF INDEPENDENCE:
1. NEMO ETC, LLC 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. NEMO ETC, LLC 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 PEERs 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 NEMO ETC, LLC nor Robert Nieminen, P.E. are, in any way, the Designer of Record for any project on which this PEER, or previous versions thereof, is/was used for permitting or design guidance unless retained specifically for that purpose.

ROOFING COMPONENT EVALUATION:

1. SCOPE:

Product Category: Roofing
Sub-Category: Roof Tile Adhesives
Compliance Statement: **APOC POLYSET® AH-160**, as produced by **ICP Construction, Inc.**, has demonstrated compliance with the following sections of the **8th Edition (2023) Florida Building Code** through testing in accordance with the Standards set forth herein. Compliance is subject to the Installation Requirements and Limitations of Use set forth herein.

2. STANDARDS:

SECTIONS	PROPERTY	STANDARD
1504.2.1.1	Overturning resistance	SSTD 11

3. REFERENCES:

ENTITY	EXAMINATION	REFERENCE	DATE
ERD (TST 6049)	Static Uplift – SSTD 11	P39740.02.12	02/20/2012
ERD (TST 6049)	Static Uplift – SSTD 11	P39740.11.13-R1	01/02/2015
ICC-ES (EVL2396)	2021 IBC Compliance	ESR-1709	05/01/2023
Miami-Dade (CER 1592)	HVHZ compliance	22-0614.10	10/13/2022
NEMO (TST6049)	Tensile Adhesion (ridge metal)	4i-ECM-20-SSCRT-01	09/29/2020
NEMO (TST6049)	Tensile Adhesion	4p-ICP-20-SSLAP-01.A	12/15/2020
NEMO (TST6049)	Tensile Adhesion	4p-ICP-20-SSLAP-03.A	03/16/2021
NEMO (TST6049)	Physical properties	4p-ICP-22-SSLAP-06.A	08/29/2023
PRI (TST 5878)	Static Uplift – SSTD 11	ECM-001-02-01	09/21/2001
PRI (TST 5878)	Static Uplift – SSTD 11	PFI-006-02-01	05/09/2005
PRI (TST 5878)	Static Uplift – SSTD 11	PFI-006-02-02	05/09/2005
PRI (TST 5878)	Static Uplift – SSTD 11	PFI-007-02-01	10/11/2005
PRI (TST 5878)	Static Uplift – SSTD 11	PFI-008-02-04	02/21/2006
PRI (TST 5878)	Static Uplift – SSTD 11	PFI-009-02-03	02/21/2006
PRI (TST 5878)	Static Uplift – SSTD 11	TGRI-001-02-03	10/30/2006
PRI (TST 5878)	Static Uplift – SSTD 11	TGRI-001-02-03	10/30/2006
PRI (TST 5878)	Static Uplift – SSTD 11	PFPI-010-02-01	12/07/2006
PRI (TST 5878)	Static Uplift – SSTD 11	PFPI-011-02-01	12/07/2006
PRI (TST 5878)	Static Uplift – SSTD 11	PFPI-012-02-01	12/07/2006
PRI (TST 5878)	Static Uplift – SSTD 11	PFPI-013-02-01	12/07/2006
PRI (TST 5878)	Static Uplift – SSTD 11	PFPI-014-02-01	12/07/2006
PRI (TST 5878)	Static Uplift – SSTD 11	ECM-003-02-01	06/13/2008
PRI (TST 5878)	Static Uplift – SSTD 11	ECM-004-02-01	06/13/2008
PRI (TST 5878)	Static Uplift – SSTD 11	ECM-005-02-01	06/13/2008
PRI (TST 5878)	Static Uplift – SSTD 11	ECM-006-02-01	06/13/2008
PRI (TST 5878)	Static Uplift – SSTD 11	ECM-007-02-01	06/13/2008
PRI (TST 5878)	Static Uplift – SSTD 11	ECM-008-02-01	06/13/2008
UL LLC (QUA 9625)	Quality Assurance	Service Confirmation	02/09/2021
UL, LLC. (QUA 9625)	Quality Assurance	Florida BCIS	Current

4. PRODUCT DESCRIPTION:

4.1 **APOC POLYSET® AH-160** is a two-component expanding polyurethane roof tile adhesive that is mixed and dispensed from a dispensing system provided by **ICP Construction, Inc.** The components are available in refillable tanks or disposable cylinders, and are applied with ICP Adhesives Foam Dispenser RTF1000 or ICP Adhesives ProPack® 30 & 100 dispensing equipment only.

4.2 Unless otherwise noted, reference to **APOC POLYSET® AH-160** herein pertains to any of three (3) formulation designations; "HFC", "HFO1" and "HFO2"

5. LIMITATIONS:

5.1 This is a building code evaluation. Neither NEMO ETC, LLC nor Robert Nieminen, P.E. are, in any way, the Designer of Record for any project on which this PEER, or previous versions thereof, is/was used for permitting or design guidance. PEERs are not to be construed as representing any attributes not specifically listed, nor are PEERs to be construed as an endorsement of the subject, or a recommendation for its use. There is no warranty by NEMO ETC, LLC or Robert Nieminen, P.E., express or implied, as to any finding or other matter in this PEER, or as to any product covered by the PEER.

5.2 This PEER is not for use in FBC High Velocity Hurricane Zone jurisdictions, as defined in FBC Chapter 2 (Broward and Miami-Dade Counties).

5.3 This PEER pertains to above-deck roof components. Roof decks and structural members shall be in accordance with FBC requirements to the satisfaction of the Authority Having Jurisdiction.

5.4 This PEER does not include evaluation of fire classification. Refer to **FBC 1505** or **R902** for requirements and limitations regarding roof assembly fire classification. Refer to **FBC 2603** for requirements and limitations concerning the use of foam plastic insulation.

5.5 This PEER does not include evaluation of roof edge termination.

5.6 **APOC POLYSET® AH-160** may be used with flat, low and high profile tiles having a current Florida Product Approval, Miami-Dade NOA or approved on a local-level by the Authority Having Jurisdiction.

5.6.1 Field tiles, meeting the limitations of **FBC 1609.6.3**, using **APOC POLYSET® AH-160** are limited to projects having an Aerodynamic Uplift Moment (M_a), determined in accordance with Table 2HB, 2HC, 2HD, 2GB, 2GC or 2GD of the **FRSA/TRI Manual 7th Edition** or **FBC 1609.6.3**, not greater than the Allowable Overturning Moment values in Table 1. Refer to Section 10 and **ICP Construction, Inc.** published installation instructions for Adhesive Paddy Placement details.

5.6.2 Data in Table 1 relates to installation over a TWO-PLY underlayment system, as detailed in the **FRSA/TRI Manual 7th Edition**, using a hot-asphalt-applied, ASTM D6380, Class M cap sheet (commonly called a '30/90 system').

Alternate underlayment systems are those having a current Florida Product Approval and/or approved on a local-level by the Authority Having Jurisdiction, listed specifically for use with **APOC POLYSET® AH-160**.

5.6.3 Tile roof systems using tile types or profiles other than those listed above acquiring acceptance for use with **APOC POLYSET® AH-160** shall be tested in accordance with **SSTD 11** or **Testing Application Standard TAS 101**. For the interdependent multi-paddy method, an additional 2-to-1 margin above that specified shall be applied in determining the 'allowable overturning moment'.

TABLE 1: FIELD TILES IN APOC POLYSET® AH-160 ALLOWABLE OVERTURNING MOMENT PERFORMANCE DATA *(MARGINS OF SAFETY ALREADY APPLIED)*				
TILE (FBC 1609.6.3)		ADHESIVE PADDY PLACEMENT (SECTION 10)		ALLOWABLE OVERTURNING MOMENT (FT-LBF)
TYPE	PROFILE	PLACEMENT DETAIL	PADDY DETAILS	
Clay or Concrete	Flat / Low	#1	Independent; Single Paddy, Medium (2x7-inch, ~30 gram)	60
		#2	Independent; Single Paddy, Large (2x10-inch, ~45 gram)	112
		#3	Interdependent; Two Paddy (4x4-inch on underlayment, 2x4-inch at tile overlap)	54
Clay or Concrete	Medium	#1	Independent; Single Paddy, Medium (2x7-inch, ~30 gram)	39
		#2	Independent; Single Paddy, Large (2x10-inch, ~54 gram)	67
		#3	Interdependent; Two Paddy (4x4-inch on underlayment, 2x4-inch at tile overlap)	58
Clay	High	#3	Independent; Single Paddy, Large (2x10-inch, ~45 gram)	134
Clay or Concrete	High	#1	Independent; Single Paddy, Medium (2x7-inch, ~30 gram)	65
		#2	Independent; Single Paddy, Large (2x10-inch, ~63 gram)	109
		#3	Interdependent; Two Paddy (4x4-inch on underlayment, 2x4-inch at tile overlap)	40
Clay	Barrel	#4	2x10-inch x ~35 gram for pans; 2 @ 1x10-inch x ~17 gram for cap	147
Concrete	Barrel	#4	2x10-inch x ~35 gram for pans; 2 @ 1x10-inch x ~17 gram for cap	107
Clay	Cap atop 2x stringer	#5	Independent: Continuous Paddy (~34 gram/ft)	135
Concrete	Cap atop 2x stringer	#5	Independent: Continuous Paddy (~ 34 gram/ft)	116
Clay	Cap atop 2x stringer	#6	Interdependent: Head: One (1) #10 x 2½" screw; Overlap: 1 x 6 inch (~10.5 gram)	105
Concrete	Cap atop 2x stringer	#6	Interdependent: Head: One (1) #10 x 2½" screw; Overlap: 1 x 6 inch (~10.5 gram)	76

5.7 **APOC POLYSET® AH-160** may be used with hip and ridge tiles having a current Florida Product Approval, Miami-Dade NOA or approved on a local-level by the Authority Having Jurisdiction.

5.7.1 Hip and ridge tiles using **APOC POLYSET® AH-160** are limited to projects having hip/ridge design pressure requirements, determined in accordance with Table 1H or 1G of the **FRSA/TRI Manual 7th Edition, FBC 1609** or **FBC Residential Chapter 3**, not greater than the Allowable Uplift values in Table 2. Refer to **ICP Construction, Inc.** published installation instructions for Adhesive Paddy Placement details.

TABLE 2: HIP & RIDGE TILES IN APOC POLYSET® AH-160 ALLOWABLE UPLIFT RESISTANCE PERFORMANCE DATA *(MARGINS OF SAFETY ALREADY APPLIED)*				
TILE	SUBSTRATE	PLACEMENT DETAIL (SECTION 10)	ATTACHMENT DETAILS	ALLOWABLE DESIGN PRESSURE (PSF)
Clay	2x PT ridge board	#5	Independent: Continuous Paddy (~34 gram/ft)	116
Concrete	2x PT ridge board	#5	Independent: Continuous Paddy (~ 34 gram/ft)	107
Clay	2x PT ridge board	#6	Interdependent: Head: One (1) #10 x 2½" screw; Overlap: 1 x 6 inch (~10.5 gram)	90
Concrete	2x PT ridge board	#6	Interdependent: Head: One (1) #10 x 2½" screw; Overlap: 1 x 6 inch (~10.5 gram)	56
Clay or Concrete	East Coast Metals "Trim Lock™" (FL5374): *aluminum, Galvalume® or stainless steel*	#5	Independent: Continuous Paddy (~34 gram/ft)	173

TABLE 2: HIP & RIDGE TILES IN APOC POLYSET® AH-160 ALLOWABLE UPLIFT RESISTANCE PERFORMANCE DATA *(MARGINS OF SAFETY ALREADY APPLIED)*				
TILE	**SUBSTRATE**	**PLACEMENT DETAIL (SECTION 10)**	**ATTACHMENT DETAILS**	**ALLOWABLE DESIGN PRESSURE (PSF)**
Clay or Concrete	East Coast Metals "Trim Lock™ Plus" (FL5374): *aluminum, Galvalume® or stainless steel*	#5	Independent: Continuous Paddy (~ 34 gram/ft)	178
Clay	Ridged Systems "Top Notch" (FL8095)	#5	Independent: Continuous Paddy (~ 32 gram/ft)	125
Concrete	Ridged Systems "Top Notch" (FL8095)	#5	Independent: Continuous Paddy (~ 32 gram/ft)	146

6. INSTALLATION:

6.1 **APOC POLYSET® AH-160** and the tile roof assembly shall be installed in accordance with the manufacturers' current published instructions, but not less than the requirements of **FBC 1507.3** and the **FRSA/TRI Manual 7th Edition**, subject to the Limitations of Use herein.

6.1.1 Installation of **APOC POLYSET® AH-160** shall be performed by applicators that hold a valid **Qualified Applicator Card** presented by **ICP Construction, Inc**, using ICP Adhesives Foam Dispenser RTF1000 or ICP Adhesives ProPack® 30 & 100 dispensing equipment only.

6.2 Underlayment shall hold current Florida Product Approval for use with tile roofing systems. The underlayment Product Approval shall specify allowable use with **APOC POLYSET® AH-160**. The underlayment Product Approval shall specify attachment methods for the underlayment system to resist wind uplift design loads in accordance with Table 1H or 1G of the **FRSA/TRI Manual 7th Edition** or the critical (highest) design pressure determined in accordance with **FBC 1609** or **FBC Residential Chapter 3**.

6.3 Hip and ridge boards or hip/ridge metal shall be installed in accordance with the **FRSA/TRI Manual 7th Edition**. Proprietary hip and ridge metal shall be installed in accordance with the manufacturer's Florida Product Approval.

7. BUILDING PERMIT REQUIREMENTS:

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

8. MANUFACTURING PLANTS:

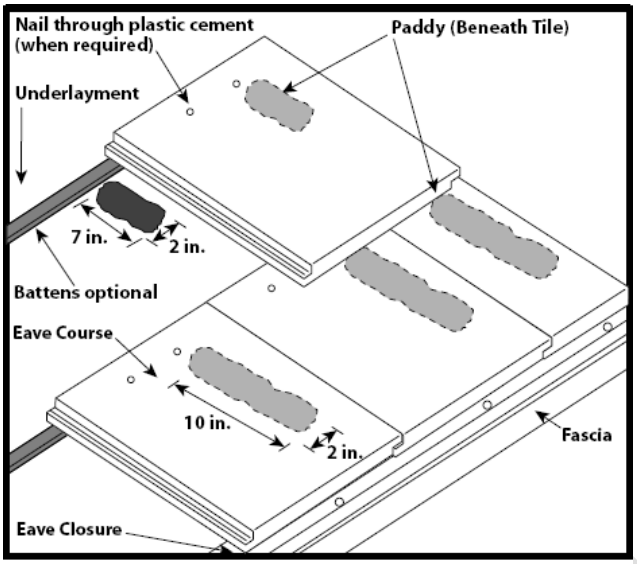
Tomball, TX

9. QUALITY ASSURANCE ENTITY:

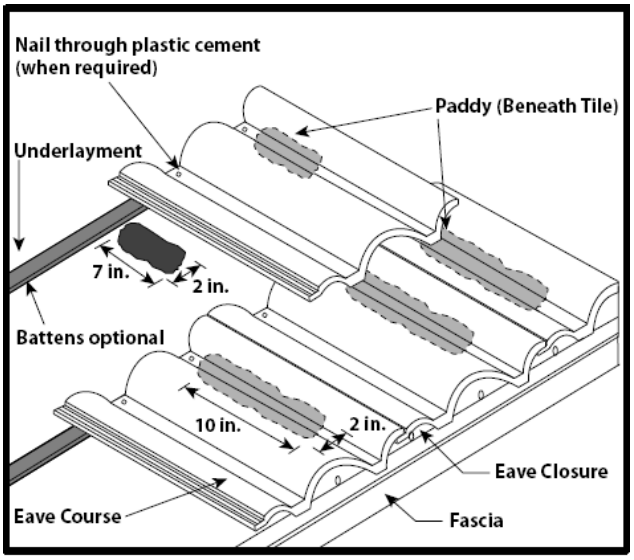
UL, LLC – QUA9625: (360) 817-5512; bsai.inspections@ul.com

10. PADDY PLACEMENT DETAILS (FROM ICP CONSTRUCTION, INC. PUBLISHED LITERATURE):

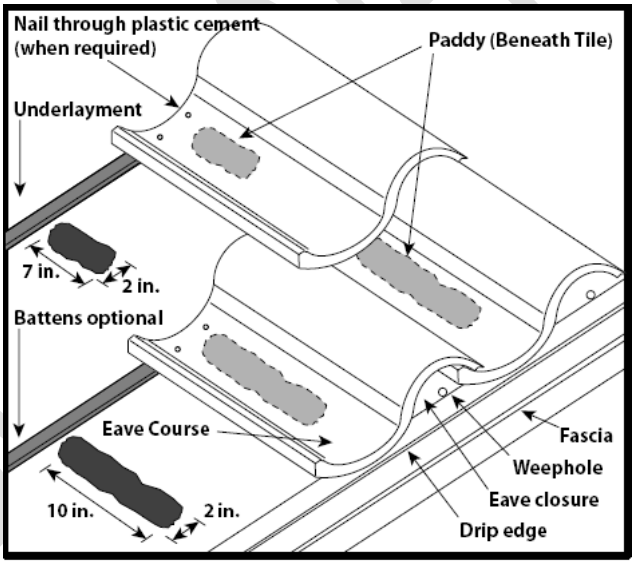
10.1 DETAIL #1: Independent, Medium Paddy:



Flat/Low Profile Tile

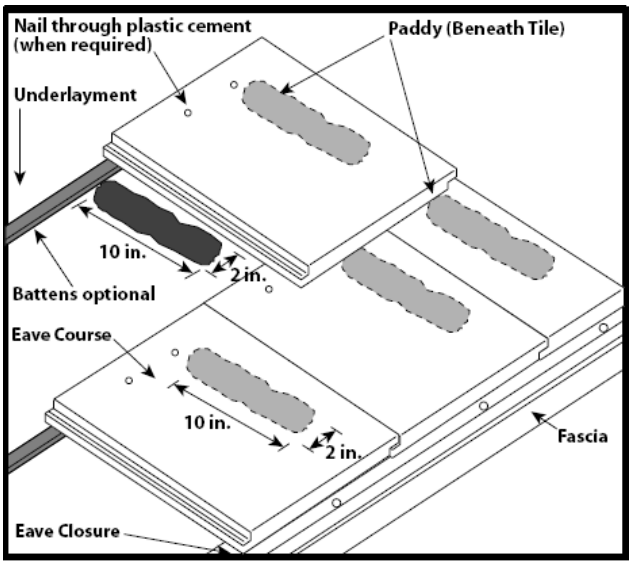


Medium Profile Tile



High Profile Tile

10.2 **DETAIL #2: Independent, Large Paddy:**



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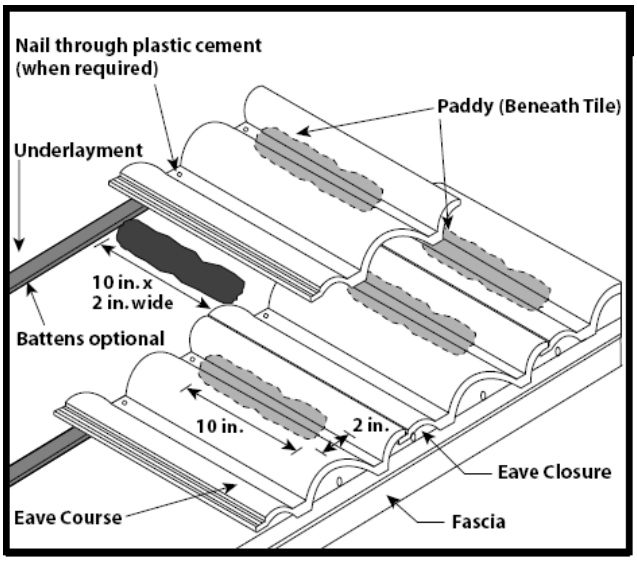
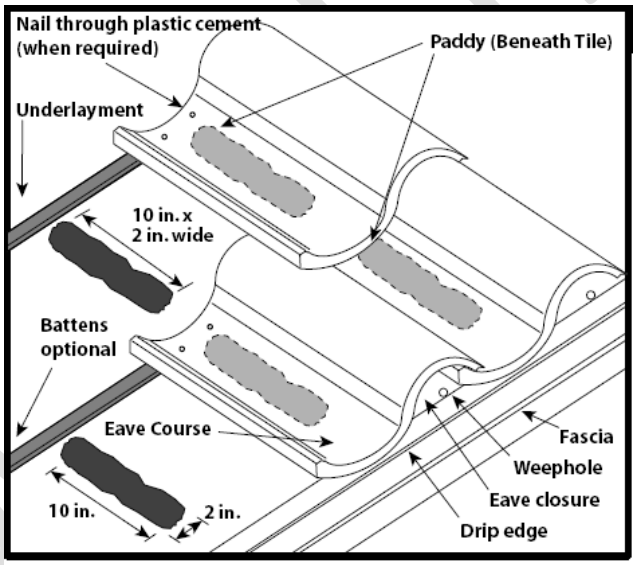
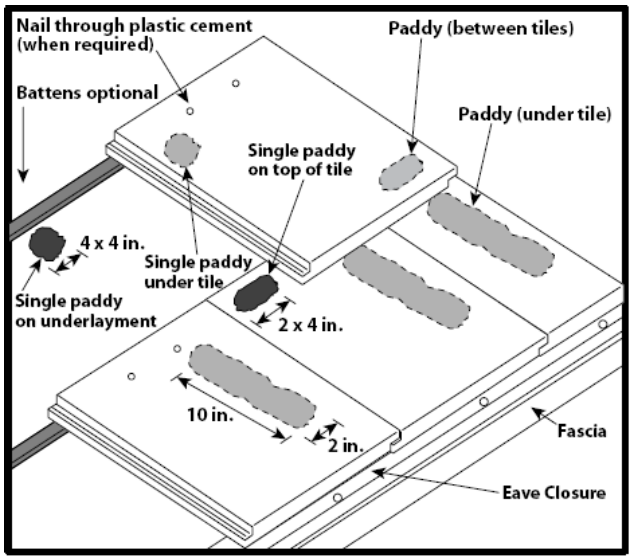


Medium Profile Tile

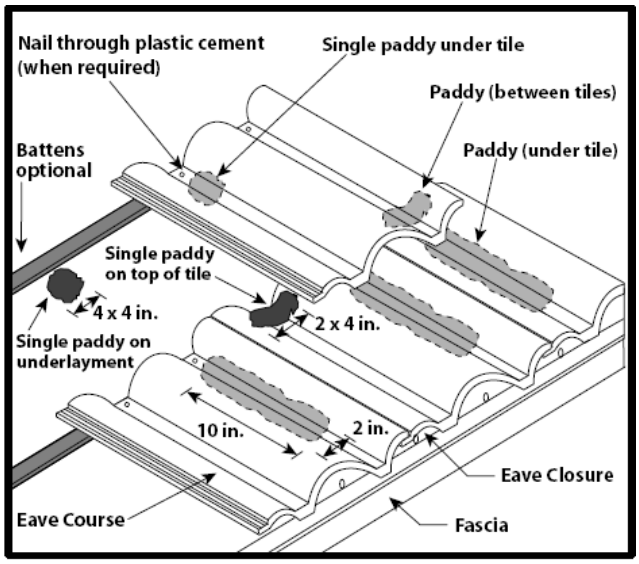


High Profile Tile

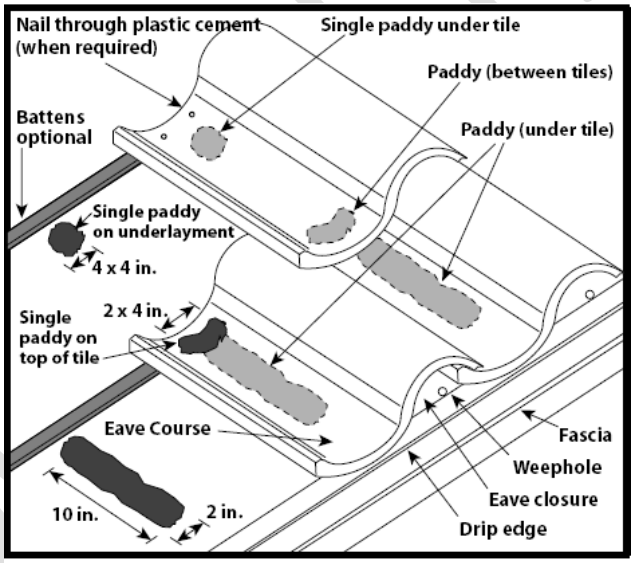
10.3 **DETAIL #3: Interdependent, Two Paddy:**



Flat/Low Profile Tile

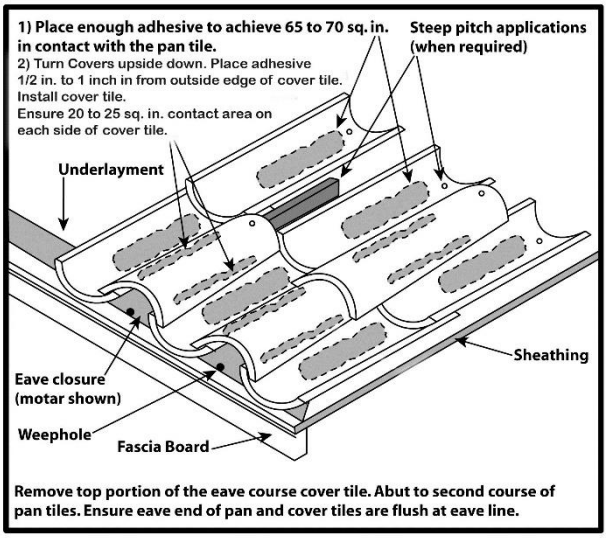


Medium Profile Tile



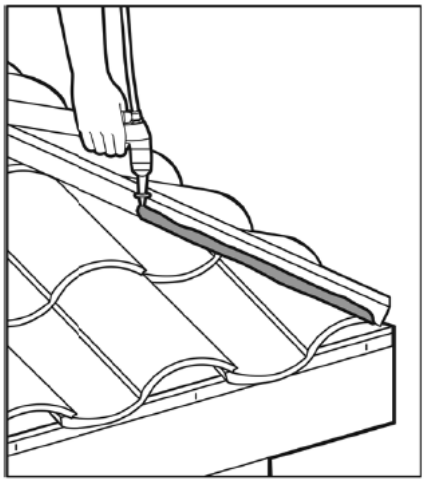
High Profile Tile

10.4 **DETAIL #4: Two Piece Barrel (Cap & Pan) Tile:**

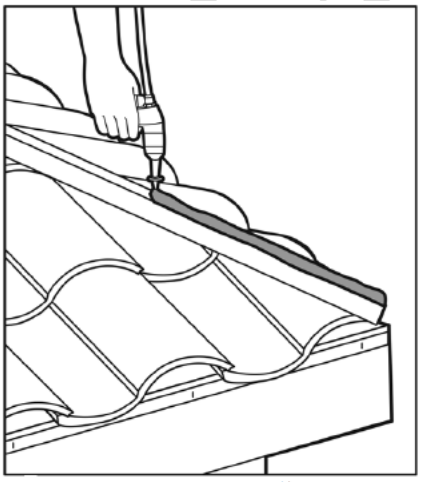


Two Piece Barrel - High Profile Tile

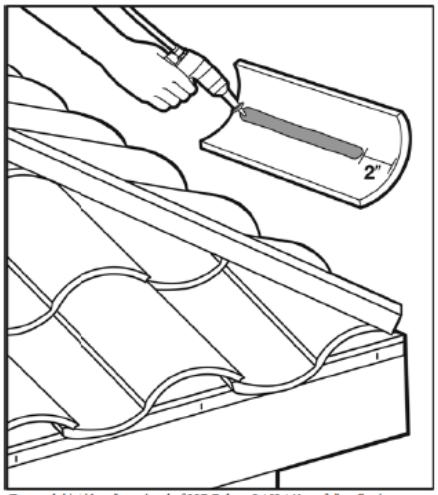
10.5 **DETAIL #5: Hip and Ridge (independent placement):**



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

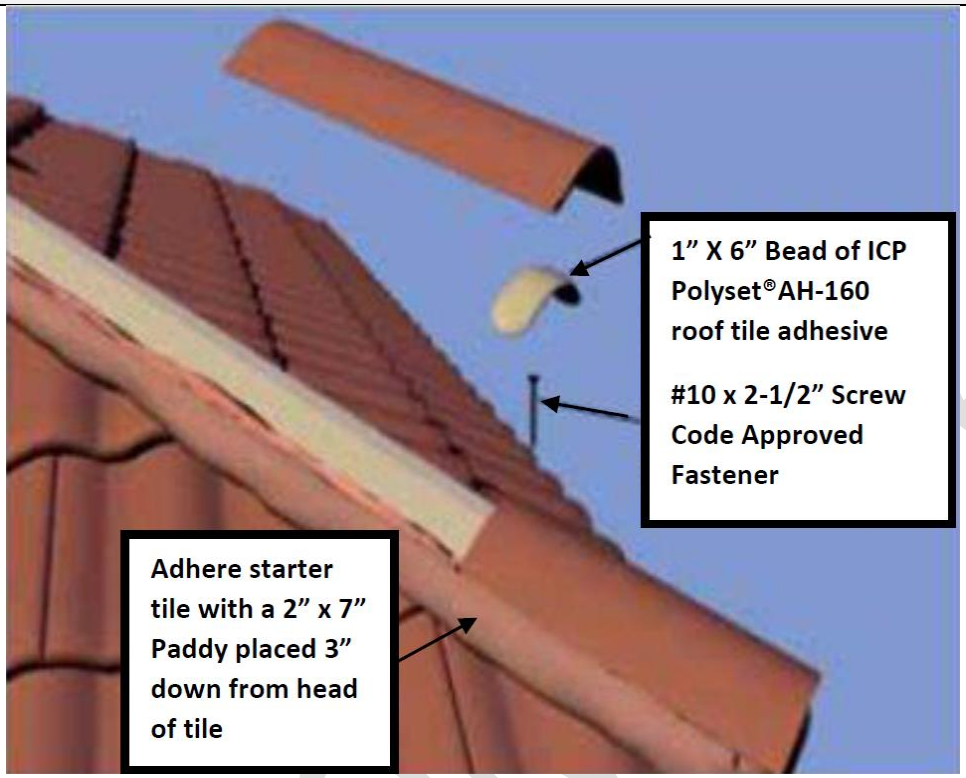


To attach hip/ridge tiles, a bead of ICP Polyset®AH-160 may be applied down the center of the hip/ridge board or galvinized frame.



To attach hip/ridge tiles, a bead of ICP Polyset®AH-160 roof tile adhesive may be applied along the full length of the tile excluding 2 inches excluding 2 inches on the eave end of tile.

10.6 **DETAIL #6: Hip and Ridge (interdependent placement):**



- END OF PEER -