



EXTERIOR RESEARCH & DESIGN, LLC.

Certificate of Authorization #9503

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EVALUATION REPORT

DAP Foam, Inc.

1645 Manufactures Drive

Fenton, MO 63026

(636) 717-2888

Evaluation Report C35840.04.11-R3

FL14506-R3

Date of Issuance: 04/04/2011

Revision 3: 10/16/2017

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: Touch 'n Seal Storm Bond Roof Tile Adhesive

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.

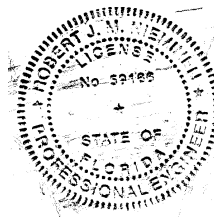
This Evaluation Report consists of pages 1 through 4, plus a 7-page Appendix.

Prepared by:

A handwritten signature in black ink, appearing to read "Robert J.M. Nieminen".

Robert J.M. Nieminen, P.E.

Florida Registration No. 59166, Florida DCA ANE1983



The facsimile seal appearing was authorized by Robert Nieminen, P.E. on 10/16/2017. This does not serve as an electronically signed document.

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.

ROOFING COMPONENT EVALUATION:

1. SCOPE:

Product Category: Roofing

Sub-Category: Roof Tile Adhesive

Compliance Statement: Touch 'n Seal Storm Bond Roof Tile Adhesive, as produced by DAP Foam, 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:

<u>Sections</u>	<u>Property</u>	<u>Standard</u>	<u>Year</u>
1504.2.1.1	Wind	SSTD 11	1997

3. REFERENCES:

<u>Entity</u>	<u>Examination</u>	<u>Reference</u>	<u>Date</u>
ERD (TST6049)	Static Uplift – SSTD 11	E42730.08.13	08/23/2013
ATL (TST3782)	Static Uplift – SSTD 11	1005.01-10	01/14/2010
ATL (TST3782)	Static Uplift – SSTD 11	1005.02-10	01/14/2010
ATL (TST3782)	Static Uplift – SSTD 11	1005.03-10	01/14/2010
ATL (TST3782)	Static Uplift – SSTD 11	1005.05-10	01/15/2010
ATL (TST3782)	Static Uplift – SSTD 11	1005.06-10	01/15/2010
ATL (TST3782)	Static Uplift – SSTD 11	1005.07-10	01/15/2010
ATL (TST3782)	Static Uplift – SSTD 11	0215.01-10	02/15/2010
FTL (TST1657)	ASTM E108	14-5523	12/16/2014
Miami-Dade (CER1592)	HVHZ compliance	17-0306.06	08/31/2017
ITS (QUA1673)	Quality Assurance	Inspections Listing	10/16/2017

4. PRODUCT DESCRIPTION:

4.1 **Touch 'n Seal Storm Bond Roof Tile Adhesive** is a single component polyurethane foam roof tile adhesive.

4.2 Typical Physical Properties:

<u>Property</u>	<u>Test</u>	<u>Results</u>
Density	ASTM D1622	1.88 lbs/ft ³
Compressive Strength	ASTM D1621	Parallel to Rise: 49 psi Perpendicular to Rise: 41 psi
Tensile Strength	ASTM D1623	Parallel to Rise: 72 psi
Water Absorption	ASTM D2842	8%
Moisture Vapor Permeability	ASTM E96	2.4 perm/inch
Dimensional Stability	ASTM D2126	0.1% vol change @ -40°C, 2 weeks 6.0% vol change @ 70°C & 100% RH, 2 weeks
Closed Cell Content	ASTM D2856	87%

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. Touch 'n Seal Storm Bond Roof Tile Adhesive** has been tested for Spread of Flame in accordance with ASTM E108 in a concrete roof tile installation atop Polystick TU Plus atop combustible 15/32-inch sheathing for unlimited roof slope. Test results yielded a Class A fire classification.

- 5.4 **Touch 'n Seal Storm Bond Roof Tile Adhesive** can be used with flat, low, medium, 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)** and having a current Florida Statewide Product Approval or approved on a local-level by the Authority Having Jurisdiction for use with **Touch 'n Seal Storm Bond Roof Tile Adhesive**.
- 5.6 Field tiles, meeting the limitations of **FBC 1609.5.3**, using **Touch 'n Seal Storm Bond Roof Tile Adhesive** are limited to projects having an Aerodynamic Uplift Moment (Ma), 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 Appendix 1 and **DAP Foam, Inc.** published installation instructions for Adhesive Bead Placement details.

TABLE 1: FIELD TILES IN TOUCH 'N SEAL STORM BOND ROOF TILE ADHESIVE ALLOWABLE OVERTURNING MOMENT PERFORMANCE DATA (4 TO 1 MARGIN OF SAFETY ALREADY APPLIED)				
Tile (FBC 1609.5.3)		Underlayment (See 5.6.1)	Placement Detail Drawing	Allowable Overturning Moment (ft-lbf)
Type	Profile			
Concrete	Flat/Low	30/90 System	#1	73.2
Concrete	Low/Medium	30/90 System	#2	41.8
Concrete	High-S	30/90 System	#3	51.6
Clay	Flat	30/90 System	#4	52.1
Clay	Low	30/90 System	#5	48.9
Clay	High-S	30/90 System	#6	47.8
Clay	High-Barrel	30/90 System	#7	75.2

- 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 **Touch 'n Seal Storm Bond Roof Tile Adhesive**, including but not limited to the following:
- Boral TileSeal^{HT} by Boral Roofing (FL14317).
 - Polystick TU Plus or Polystick TU Max by Polyglass USA, Inc. (FL5259).
 - QUIK-Stick HT by Mid-States Asphalt and Cant Strip (FL17401).
 - Tag & Stick MTP by Tag & Stick, LLC (FL15218).
 - Viking UDL Metal by Commercial Innovations (NOA 15-0211.09).
 - WeatherLock Speciality Tile and Metal by Owens Corning (FL9777).
- The data in Table 1 also applies to these types of underlayment systems. Refer to the underlayment system manufacturer's Product Approval documentation for installation requirements and Limits of Use.
- 5.6.2 Tile roof systems using tile types or profiles other than those listed above acquiring acceptance for use with **Touch 'n Seal Storm Bond Roof Tile Adhesive** 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 of safety 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 **Touch 'n Seal Storm Bond Roof Tile Adhesive** 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 **DAP Foam, Inc.** published installation instructions for Adhesive Paddy Placement details.

TABLE 2: HIP & RIDGE TILES IN TOUCH 'N SEAL STORM BOND ROOF TILE ADHESIVE ALLOWABLE UPLIFT RESISTANCE PERFORMANCE DATA (4 TO 1 MARGIN OF SAFETY ALREADY APPLIED)			
Tile	Substrate	Adhesive Placement	Allowable Design Pressure (psf)
Clay or Concrete	Trim Lock Channel Metal (FBC FL5374): <i>galvanized, Galvalume® or stainless steel</i>	<u>Interdependent:</u> One 1.5-inch wide continuous ribbon to metal and one 1-inch wide ribbon at tile overlap	148
Clay or Concrete	Trim Lock Channel Metal (FBC FL5374): <i>aluminum</i>	<u>Interdependent:</u> One 1.5-inch wide continuous ribbon to metal and one 1-inch wide ribbon at tile overlap	61
Clay or Concrete	Trim Lock Plus Channel Metal (FBC FL5374): <i>galvanized, Galvalume®, aluminum or stainless steel</i>	<u>Interdependent:</u> One 1.5-inch wide continuous ribbon to metal and one 1-inch wide ribbon at tile overlap	61

6. INSTALLATION:

- 6.1 **Touch 'n Seal Storm Bond Roof Tile Adhesive** and the tile roof assembly shall be installed in accordance with **FRSA/TRI April 2012 (04-12)** and **DAP Foam, Inc.** published installation instructions.
- 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 by a Factory Trained 'Qualified Applicator' or 'Qualified Trainer' approved by **DAP Foam, 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:

Pacific, MO

9. QUALITY ASSURANCE ENTITY:

Intertek Testing Services NA Inc. – QUA1673; (608) 836-4400; danica.goss@intertek.com

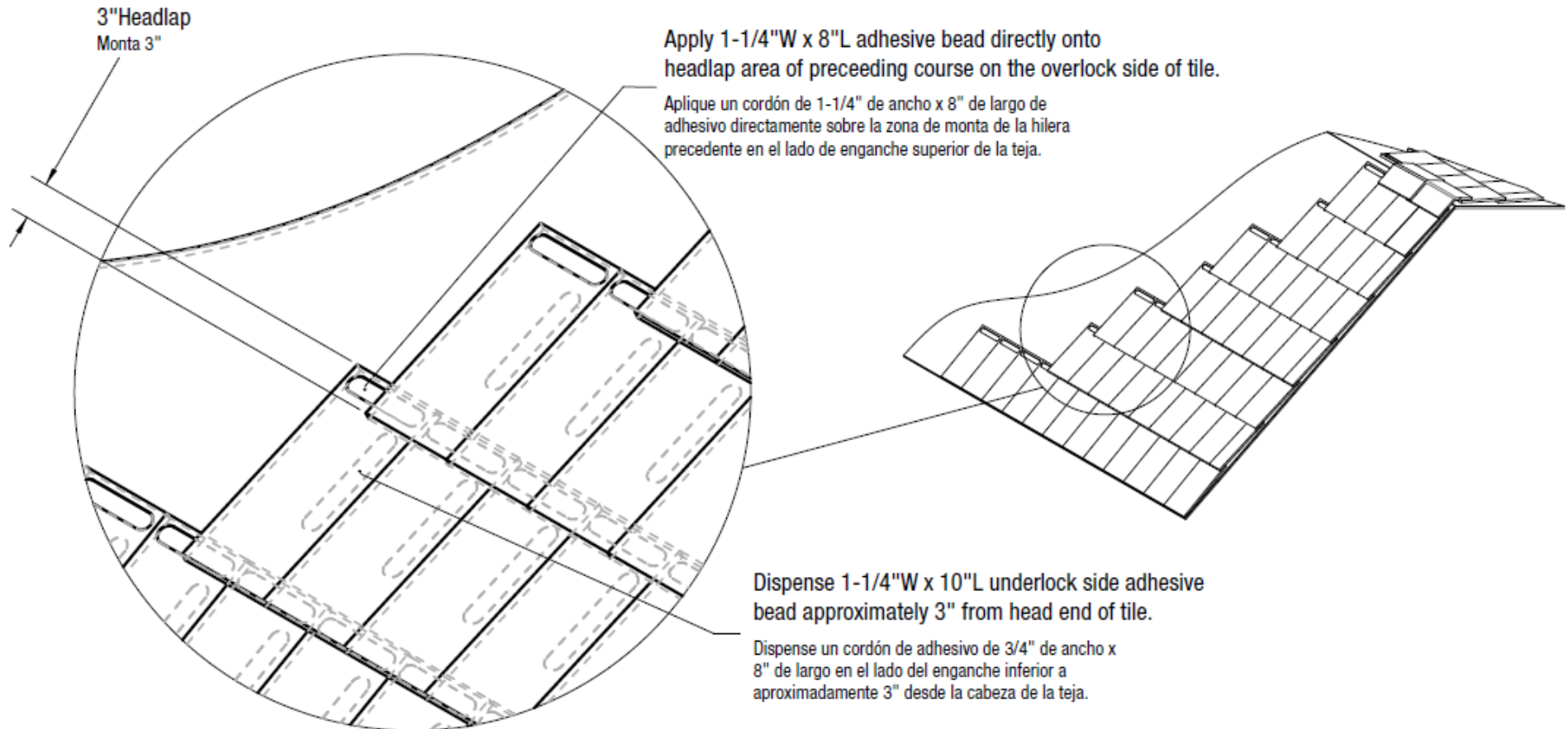
- THE SEVEN (7)-PAGE APPENDIX FORMS PART OF THIS EVALUATION REPORT -

Drawing #1: Concrete Tile - Flat/Low Profile

Gráfico #1: Teja De Hormigón - Perfil Plano/Bajo

TOUCH 'N SEAL STORM BOND ROOF TILE ADHESIVE PLACEMENT DETAIL — DOUBLE BEAD SYSTEM

DETALLE DE COLOCACIÓN DEL ADHESIVO PARA TEJAS DE TECHO TOUCH 'N SEAL STORM BOND — SISTEMA DE DOBLE CORDÓN

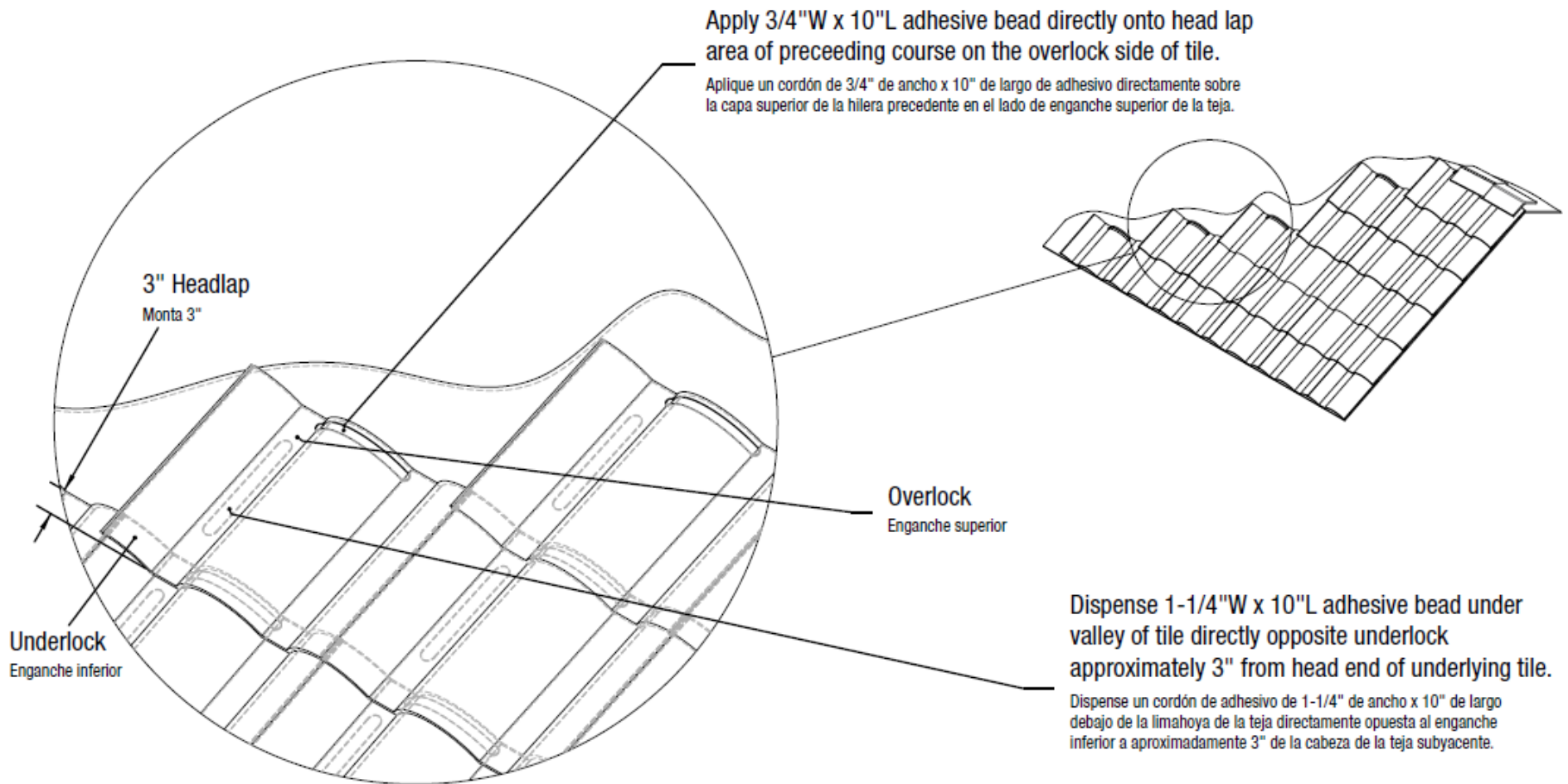


Drawing #2: Concrete Tile - Low/Medium Profile

Gráfico #2: Teja De Hormigón - Perfil Bajo/Medio

TOUCH 'N SEAL STORM BOND ROOF TILE ADHESIVE PLACEMENT DETAIL — DOUBLE BEAD SYSTEM

DETALLE DE COLOCACIÓN DEL ADHESIVO PARA TEJAS DE TECHO TOUCH 'N SEAL STORM BOND — SISTEMA DE DOBLE CORDÓN

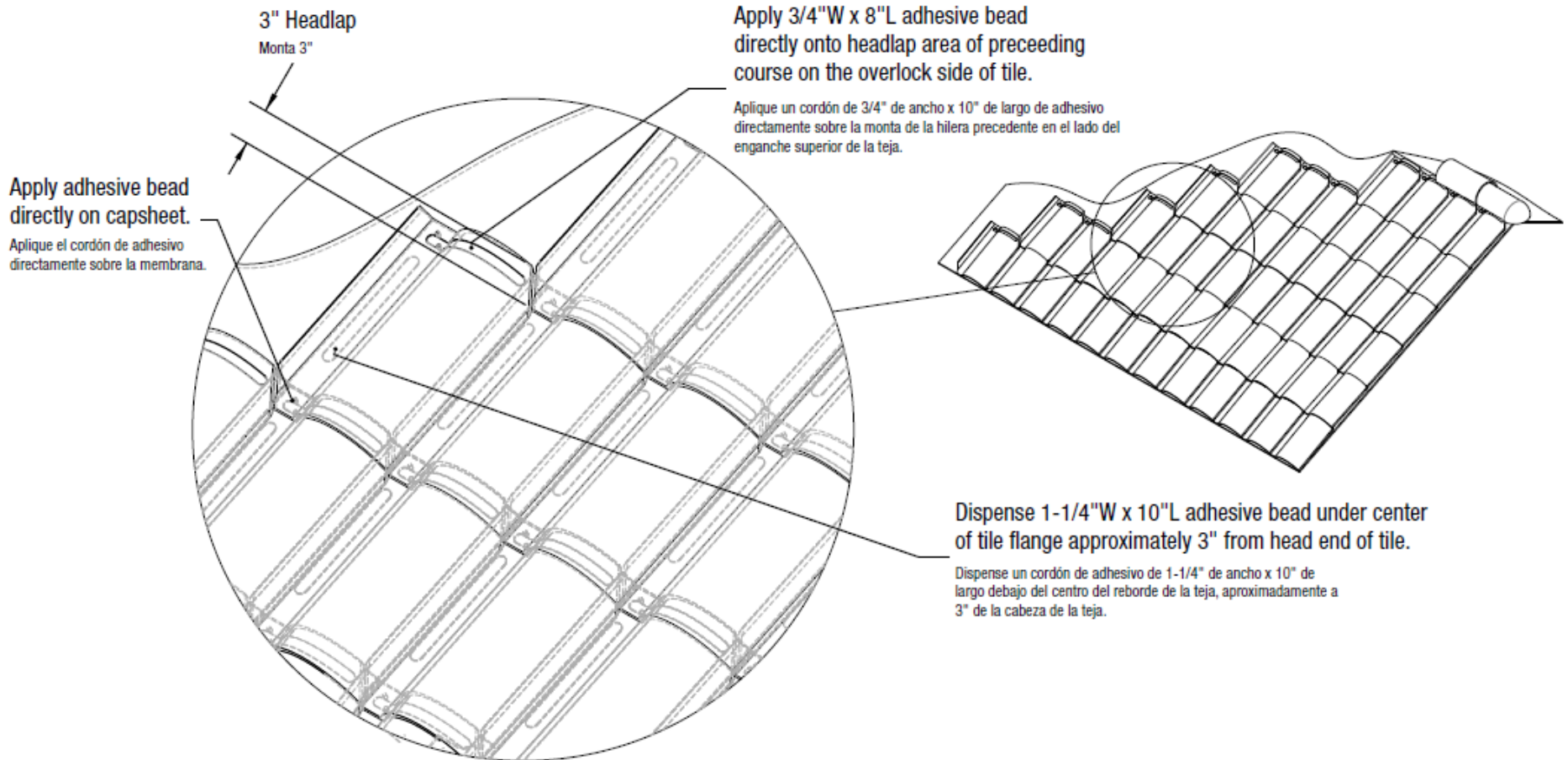


Drawing #3: Concrete Tile - High Profile

Gráfico #3: Teja De Hormigón - Perfil Alto

TOUCH 'N SEAL STORM BOND ROOF TILE ADHESIVE PLACEMENT DETAIL — DOUBLE BEAD SYSTEM

DETALLE DE COLOCACIÓN DEL ADHESIVO PARA TEJAS DE TECHO TOUCH 'N SEAL STORM BOND — SISTEMA DE DOBLE CORDÓN

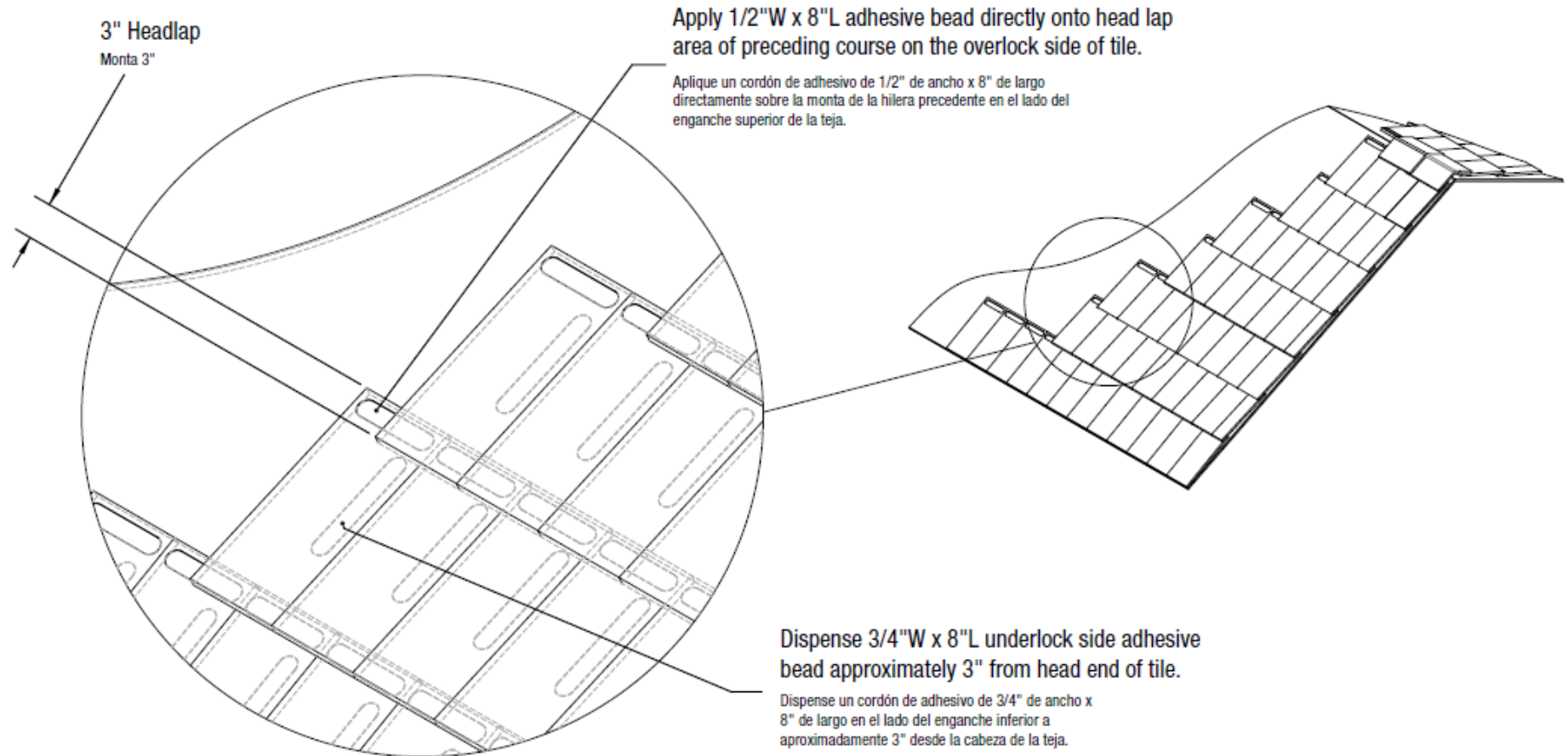


Drawing #4: Clay Tile - Flat Profile

Gráfico #4: Teja De Cerámica - Perfil Plano

TOUCH 'N SEAL STORM BOND ROOF TILE ADHESIVE PLACEMENT DETAIL — DOUBLE BEAD SYSTEM

DETALLE DE COLOCACIÓN DEL ADHESIVO PARA TEJAS DE TECHO TOUCH 'N SEAL STORM BOND — SISTEMA DE DOBLE CORDÓN

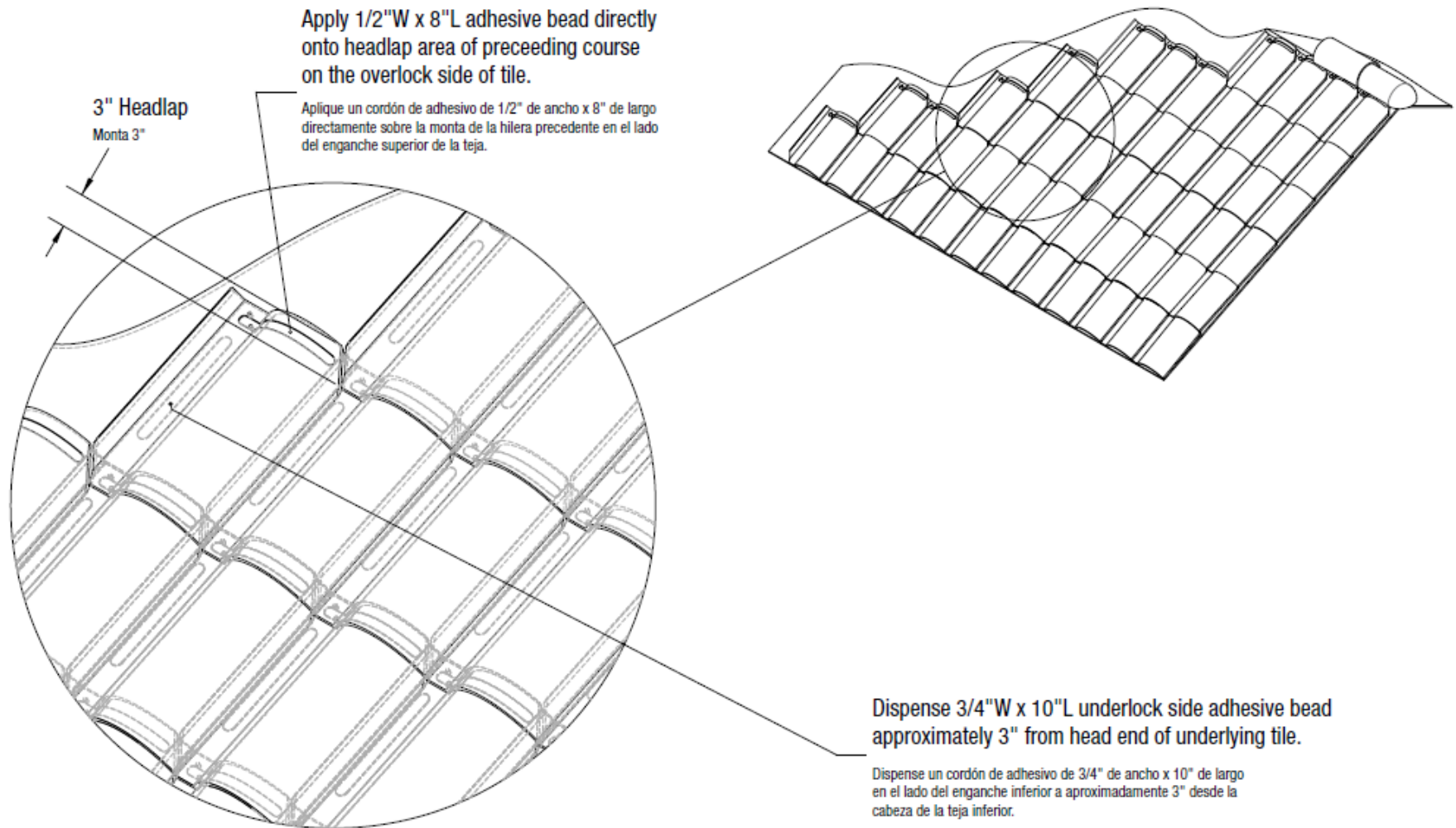


Drawing #5: Clay Tile - Low Profile

Gráfico #5: Teja De Cerámica - Perfil Bajo

TOUCH 'N SEAL STORM BOND ROOF TILE ADHESIVE PLACEMENT DETAIL — DOUBLE BEAD SYSTEM

DETALLE DE COLOCACIÓN DEL ADHESIVO PARA TEJAS DE TECHO TOUCH 'N SEAL STORM BOND — SISTEMA DE DOBLE CORDÓN

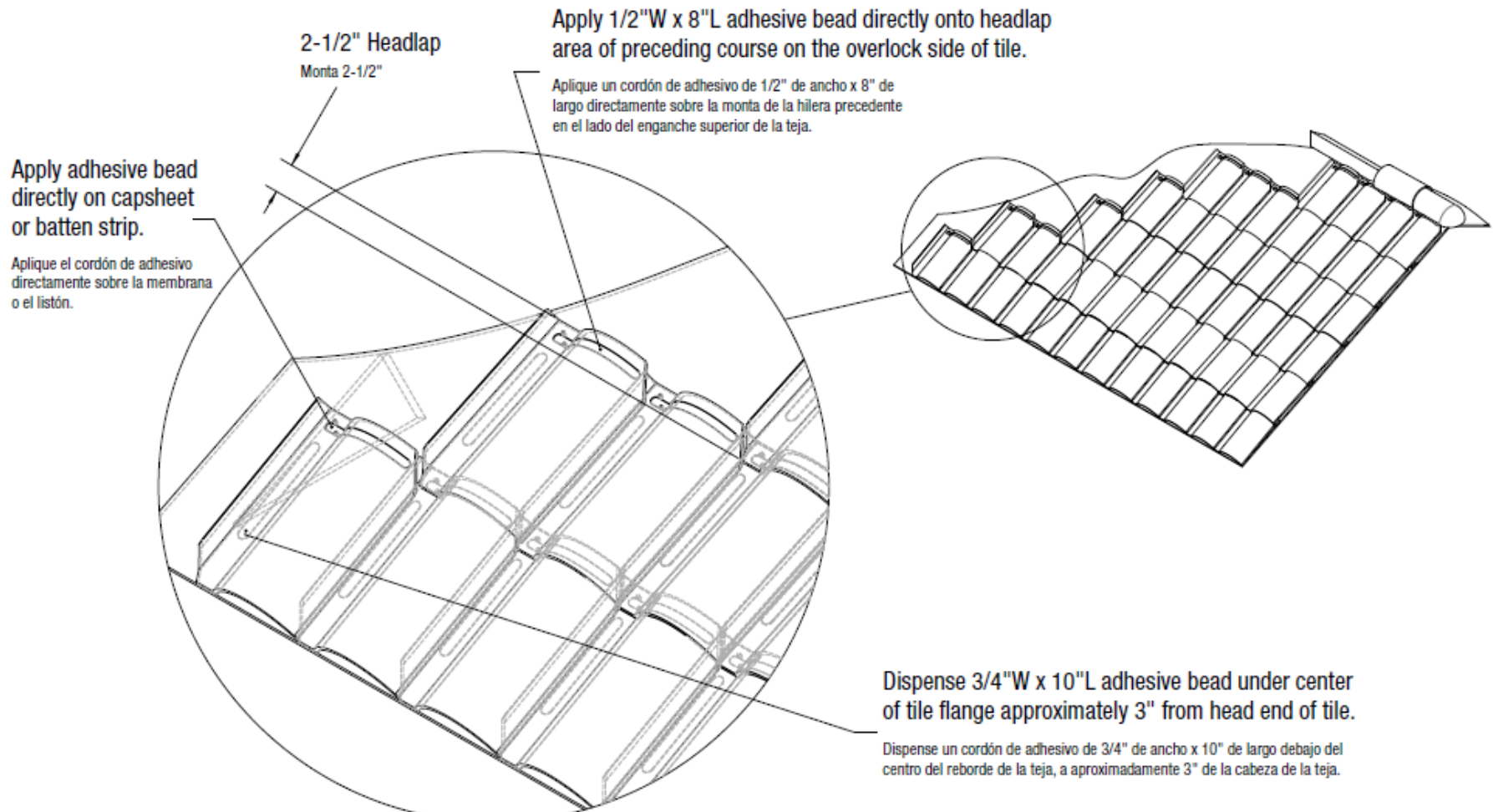


Drawing #6: Clay Tile - High Profile, S-Tile

Gráfico #6: Teja De Cerámica - Perfil Alto, Teja "S"

TOUCH 'N SEAL STORM BOND ROOF TILE ADHESIVE PLACEMENT DETAIL — DOUBLE BEAD SYSTEM

DETALLE DE COLOCACIÓN DEL ADHESIVO PARA TEJAS DE TECHO TOUCH 'N SEAL STORM BOND — SISTEMA DE DOBLE CORDÓN



Drawing #7: Clay Tile - High Profile, Barrel Tile

Gráfico #7: Teja De Cerámica - Perfil Alto, Teja Barril

TOUCH 'N SEAL STORM BOND ROOF TILE ADHESIVE PLACEMENT DETAIL

DETALLE DE COLOCACIÓN DEL ADHESIVO PARA TEJAS DE TECHO TOUCH 'N SEAL STORM BOND

Apply 3/4"W x 15"L adhesive bead directly onto the Captile on each side of the pan.

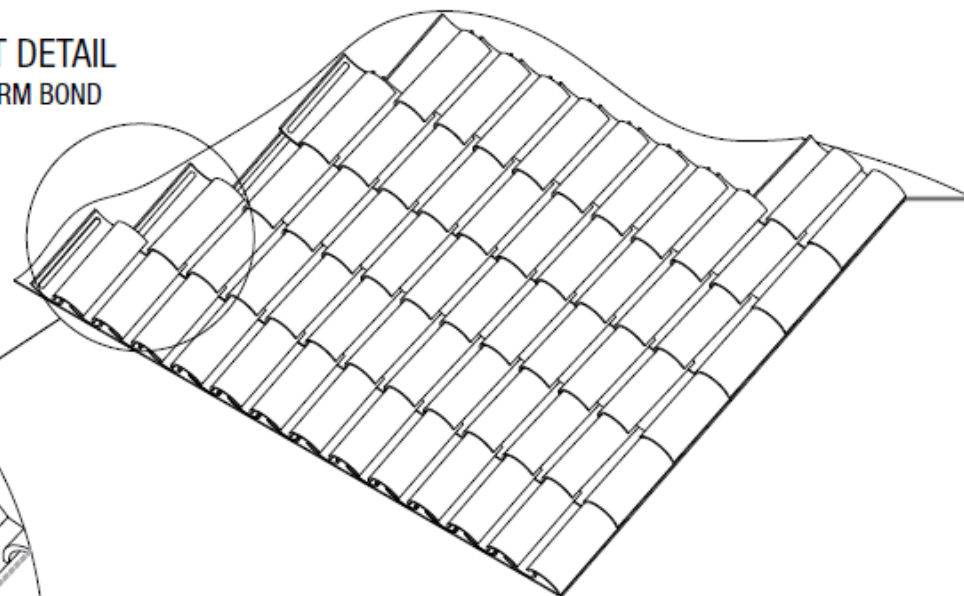
Aplique un cordón de adhesivo de 3/4" de ancho x 15" de largo directamente sobre la tapa a cada lado de la parte baja de la teja.

3" Headlap

Monta 3"

(See Detail "A")

(Ver Detalle "A")



Dispense 3/4"W adhesive bead under Pan Tiles, the length of the tile.

Dispense un cordón de adhesivo de 3/4" debajo de la teja canalón, el largo de la teja.

Detail "A"

Detalle "A"