3

Section A/B

BREV131462

MIAMI-DADE COUNTY

"Delivering Excellence Every Day"

Miami-Dade County HVHZ Electronic Roof Permit Form

NOTICE: In addition to the requirement of this permit, there may be additional restrictions applicable to this property that may be found in the Public Records of this County, and there may be additional permits required from other governmental entities such as water management districts, state agencies or federal agencies. The City ... responsibility for accuracy of or ... compliance with all Federal, State ... regulations.

Section A (General Information)

Master Permit No: b1100678 **Process No:**

Contractor's Name: heights roofing

Job Address: 3555 flamingo dr.

Roof Category

- ☐ Low Slope
- ☐ Mechanically Fastened Tile
- ☑ Mortar/Adhesive Set Tile
- ☐ Asphaltic Shingles
- ☐ Metal Panel/Shingles
- ☐ Wood Shingles/Shakes
- ☐ Sprayed Polyurethane Foam
- ☐ Other:

Roof Type

☑ New Roof ☐ Re-Roofing ☐ Recovering ☐ Repair ☐ Maintenance

Are there Gas Vent Stacks located on the roof? ☐ Yes ☑ No If yes, what type? ☐ Natural ☐ LPGX

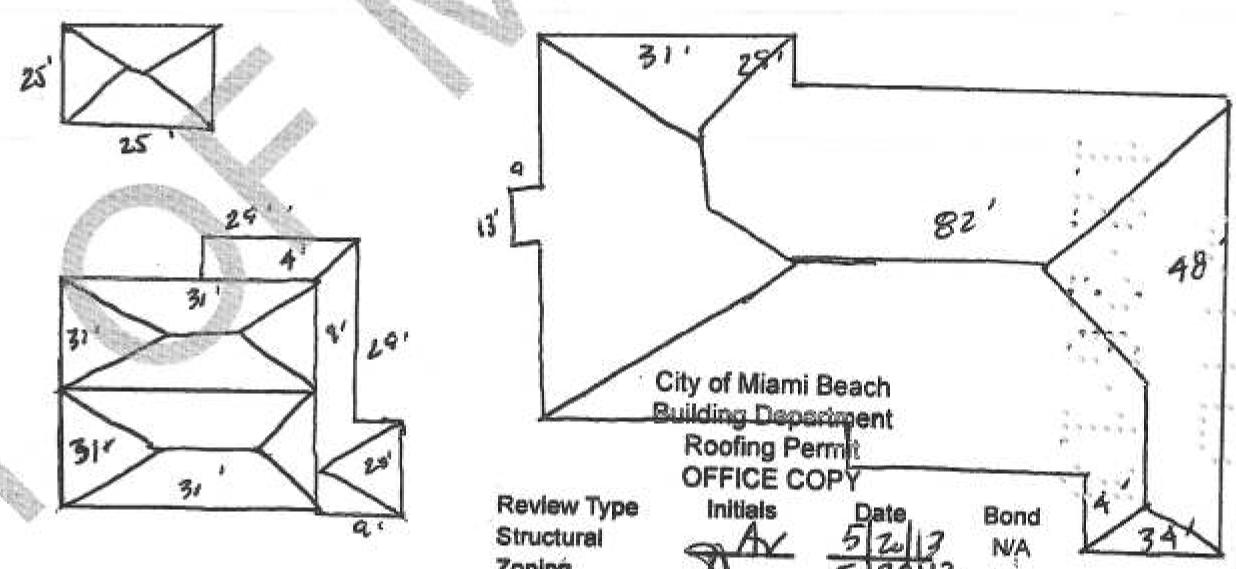
Roof System Information

Low slope roof area (ft.²): Steep Sloped area (ft.²): 6500 Total (ft.²): 6500

Section B (Roof Plan)

Sketch Roof Plan: Illustrate all levels and sections, roof drains, scuppers, overflow scuppers and overflow drains. Include dimensions of sections and levels, clearly identify dimensions of elevated pressure zones and location of parapets.

Perimeter Width (a'): **Corner Size (a' × a'):**



City of Miami Beach
Building Department
Roofing Permit
OFFICE COPY

Review Type	Initials	Date	Bond
Structural	AV	5/20/13	N/A
Zoning	[illegible]	5/20/13	N/A
Engineering	[illegible]	5/20/13	N/A
Public Works	[illegible]	5-20-2013	

MIAMI-DADE COUNTY

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Miami-Dade County HVHZ Electronic Roof Permit Form
Section D Tile Roof System

Roof System Manufacturer: zion tiles

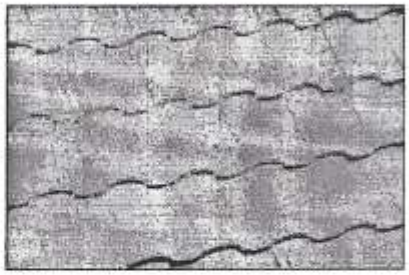
Notice of Acceptance Number (NOA): fl 16057

Minimum Design Wind Pressures, If Applicable (from RAS 127 or Calculations):

P 1: 48.8 **P 2:** 85.0 **P 3:** 125.7

Maximum Design Wind Pressures, (From the NOA Specific system): 113.01 **psf**

Fill in the specific roof assembly components. If a component is not required, insert not applicable (n/a) in the text box.



Roof Slope: 5 "/12"

Roof Mean Height: 23 ft.

Method of Tile Attachment:
--Adhesive, Large Paddy Polyfoam Polypro--

Alternate Method of Tile Attachment per NOA:

Drip Edge Size & Gauge: --3.5" face16 oz.--

Drip Edge Material Type: --Copper--

Drip Edge Fastener Type: 1 1/4 r.s. nails stainless steel

Hook Strip/Cleat gauge or weight: --n/a-

Deck Type: --5/8" Plywood--

Optional Insulation:

Optional Nailable Substrate:

Optional Nailable Substrate Attachment:

Basesheet Type:
astm # 30

Fastener Type for Basesheet Attachment:
1 1/4 rs nails 1 5/8 t.c

Tile Underlayment (Cap Sheet) Type:
astm # 90

Tile Underlayment Attachment Method:
hot mop

Tile Profile:
alhambra handmade clay

MIAMI-DADE COUNTY

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Miami-Dade County HVHZ Electronic Roof Permit Form

Section E (Tile Calculations)

Method 1 "Moment Based Tile Calculations Per RAS 127"

For Moment based tile systems, use Method 1. Compare the values for Mr with the values from Mf. If the Mf values are greater than or equal to the Mr values, for each area of the roof, then the tile attachment method is acceptable.

P 1: [48.8] x λ [0.21] = [10.24] - Mg: [4.88] = Mr1: [4.36] ≤ [113.0] NOA Mf

P 2: [85.0] x λ [0.21] = [17.85] - Mg: [4.88] = Mr2: [12.97] ≤ [113.0] NOA Mf

P 3: [125.7] x λ [0.21] = [26.39] - Mg: [4.88] = Mr3: [21.51] ≤ [113.0] NOA Mf

Method 3 "Uplift Based Tile Calculations Per RAS 127"

For Uplift based tile systems use Method 3. Compare the values for F' with the values for Fr. If the F' values are greater than or equal to the Fr values, for each area of the roof, then the tile attachment method is acceptable.

P1: [ ] × l: [ ] = [ ] × w: [ ] = [ ] - W: [ ] = [ ] × cos θ: [ ] = Fr1: [ ] ≤ [ ] NOA F'

P2: [ ] × l: [ ] = [ ] × w: [ ] = [ ] - W: [ ] = [ ] × cos θ: [ ] = Fr2: [ ] ≤ [ ] NOA F'

P3: [ ] × l: [ ] = [ ] × w: [ ] = [ ] - W: [ ] = [ ] × cos θ: [ ] = Fr3: [ ] ≤ [ ] NOA F'

Where to Obtain Information to complete tile calculations

Description	Symbol	Where to Find
Design Pressure	P1 or P2 or P3	Table 1 RAS 127, or by an engineer analysis prepared, signed and sealed by a professional engineer based on ASCE 7.
Mean Roof Height	H	Job Site
Roof Slope	θ	Job Site
Aerodynamic Multiplier	λ	Product Approval (NOA)
Restoring Moment due to Gravity	Mg	Product Approval (NOA)
Attachment Resistance	Mf	Product Approval (NOA)
Required Moment Resistance	Mr	Calculated
Minimum Attachment Resistance	F'	Product Approval (NOA)
Required Uplift Resistance	Fr	Calculated
Average Tile Weight	W	Product Approval (NOA)
Tile Dimensions	l = length w = width	Product Approval (NOA)

Lab Report No. 121066

FLORIDA TEC
Providing Solutions to the Roofing Industry

C.A. #: 26095

Quarterly Report

May 8, 2013

Referenced Quarter

- ☐ 1st Quarter (Oct-Dec)
- ☐ 2nd Quarter (Jan-Mar)
- ☐ 3rd Quarter (Apr-Jun)
- ☐ 4th Quarter (Jul-Sep)

Test Date(s): 04/15/13 - 04/19/13

Technician: Ricardo Peralta

Manufacturer: Imexinsa, Nicaragua.
Zion Tile Corporation.
12002 S.W. 128th Court, Suite 103
Miami, FL 33186

Product: NOA #: 07-0815.03
Alhambra ~~Handmade~~ Clay Tile
Made in Nicaragua

Physical properties in strict accordance with ASTM C-1167

Specimen #		1	2	3	4	5	Average	Specified
Length (in.)		19.14	19.14	19.14	19.14	19.14	19.14	19 to 20.5 19 average of 5
Width (in.)	Head End	8.3	8.4	8.3	8.4	8.4	8.36	8.1 to 8.5
	Butt End	6.18	6.17	6.20	6.2	6.2	6.19	6.1 to 6.2
Height (in)		2.4	2.4	2.30	2.5	2.4	2.40	N/A
Thickness (in.)		0.54	0.53	0.54	0.54	0.55	0.54	N/A
Dry Wt. (lbf.)		5.50	5.60	5.50	5.70	5.60	5.58	5.5 to 6.5 ind. 6.0 average of 5
Transverse Strength (lbs.) Tested Dry - after 24 hr at 160°F		675	655	728	591	728	675	>350-Individual >400-Average of 5
Water Absorption (%) 24 Hr. submersion		9.09	11.11	9.09	10.71	10.53	10.11	≤13 Individual tile ≤11 average of 5 tiles
Absorption (%) 5 hr. boil								N/A
Saturation Coefficient		0.75	0.74	0.75	0.77	0.78	0.76	≤.82 Individual tile ≤.80 average of 5 tiles
Efflorescence								N/A
Reactive Particles								None
Permeability (pass or fail)		Pass	Pass	Pass			Pass	Pass

To the best of my knowledge, belief and professional opinion, the above data represent the actual conditions as reported herein. Florida Tec, Inc. has no part or financial interest in in any part of the material tested herein.

Sincerely,

Alberto Cardona
P.E. Lic. # 17138
5-8-13

Office (305) 256-4550
Fax (866) 333-6988

www.floridatec.net

595 West 18 Street
Hialeah, FL 33010

Jesus Gonzalez, P.E, LEED AP
7364 Sedgebrook Dr.
Stanley, NC 28164

PRODUCT EVALUATION REPORT

Florida Building Code 2010

Per Rule 9B-72.070 – Method 1-D Evaluation Report from a Professional Engineer
REF: FL # 16057

CATEGORY:	Roofing
SUB-CATEGORY:	Roofing Tiles
PRODUCT NAME:	Alhambra Handmade Clay Roof Tile
MATERIAL:	CLAY
SUPPORT TYPE:	Wood Deck
DATE:	December 14, 2012
MANUFACTURER:	**IMEXINSA** La Paz Centro, Nicaragua and distributed by: **Zion Tile Corp.** 12002 Southwest 128th Court #103 Miami, FL 33186
PREPARED BY:	Florida Professional Engineer Jesus Gonzalez – PE 68553 7364 Sedgebrook Dr. Stanley, NC 28164

General:

Statement of Compliance:
This product as described herein has demonstrated compliance with the Florida Building Code 2010, including the High Velocity Hurricane Zone of the Florida Building Code.

This engineering validation report is being issued per Rule Chapter No. 9B-72 to support the application to a Florida Product Approval using option under section 9B-72.070 (1) (D) of the Department of Community Affairs – Florida Building Commission.

Scope:
This roofing system using the "Alhambra Roof Tile" shall be used for locations where the pressure requirements, as determined by applicable Building Code do not exceed the design pressure values obtained by calculations in compliance with RAS 127 using the values listed

Product Approval Method	Method 1 Option D
Date Submitted	10/31/2012
Date Validated	02/15/2013
Date Pending FBC Approval	12/21/2012
Date Approved	02/19/2013

Summary of Products

FL #	Model, Number or Name	Description
16057.1	ALHAMBRA ROOF TILE	ALHAMBRA HANDMADE CLAY TILE

Limits of Use
Approved for use in HVHZ: Yes
Approved for use outside HVHZ: Yes
Impact Resistant: N/A
Design Pressure: N/A
Other: See limitations and guidelines for installation listed in the product evaluation report. Tiles shall pass a quarterly test performed by a State of Florida approved Laboratory in accordance with TAS 112, appendix 'A'. Results of the test shall be submitted to Keystone Certification, Inc. for review.

Installation Instructions
FL16057_R0_IL_Alhambra_PER_R1.pdf
Verified By: Jesus Gonzalez 68553
Created by Independent Third Party: Yes

Evaluation Reports
FL16057_R0_AE_Alhambra_PER_R1.pdf
FL16057_R0_AE_TAS 112_Report.pdf
Created by Independent Third Party: Yes

Back Next

Limitation and Conditions of Use:

1- This system is for wood deck applications. Minimum deck requirements shall be in compliance with applicable Building Code
2- Fire Classification: Fire Classification is outside the scope of Rule 9B-72, and it is not included in this evaluation
3- Tiles shall pass a quarterly test performed by a State of Florida approved Laboratory in accordance with TAS 112, appendix 'A'. Results of the test shall be submitted to Keystone Certification, Inc. for review.
4- A static field test shall be performed in accordance with RAS 106
5- Minimum underlayment shall comply with the applicable Roofing Application Standard RAS 120.

Installation

- This product shall be install to comply with Roofing Application Standard RAS 120.

Aerodynamic Multipliers – $\lambda(ft^3)$	
Tile Profile	Direct Deck Installation
Alhambra Tile	0.21

Restoring Moment due to Gravity – Mg (ft-lbf)						
Tile Profile	2":12"	3":12"	4":12"	5":12"	6":12"	7":12"
Alhambra Tile	Direct Deck	Direct Deck	Direct Deck	Direct Deck	Direct Deck	Direct Deck
	5.27	5.18	5.05	4.88	4.65	4.36

Attachment Resistance Expressed as a Moment - M_f (ft-lbf) for Simple Patty Adhesive Set System		
Tile Profile	Tile Application	Minimum Attachment Resistance
Alhambra Tile	3M™ 2-Component Foam Roof Tile Adhesive AH-160 (Formerly known as Polyfoam Polipro AH160™)	113.010*
* Paddy placement of 34.5 gram of 2-Component Foam Roof Tile Adhesive AH 160tm for pan Tile, 17.25 grams on each side of cap tiles.		

3M™ 2-Component Foam Roof Tile Adhesive AH-160 (NOA-12-0228.18, Exp 05/10/17) renews and revises NOA 11-0124.04 from Polifoam Polypro AH160™

Attachment Resistance Expressed as a Moment - M_f (ft-lbf) for Mortar Set Systems		
Tile Profile	Tile Application	Minimum Attachment Resistance
Alhambra Tile	Mortar Set	38.80

Labeling
All tiles shall bear an imprint per FBC 2010 Section 1715.8.1.

ZION TILE CORP.
MADE IN NICARAGUA

End of Evaluation Report.

DEPARTMENT OF PERMITTING, ENVIRONMENT, AND REGULATORY AFFAIRS (PERA)
BOARD AND CODE ADMINISTRATION DIVISION

MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION
11805 SW 26 Street, Room 208
Miami, Florida 33175-2474
T (786) 315-2590 F (786) 315-2599
www.miamidade.gov/pera

NOTICE OF ACCEPTANCE (NOA)

3M Company
3M Center Building 0220-05-E-06
St. Paul, MN. 55144-1000

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County PERA - Product Control Section to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Section (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. PERA reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.
This product is approved as described herein, and has been designed to comply with the Florida Building Code including the High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: 3M™ 2-Component Foam Roof Tile Adhesive AH-160

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, city, state and following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA 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 renews and revises NOA# 11-0124.04 and consists of pages 1 through 7.
The submitted documentation was reviewed by Alex Tigera.

MIAMI-DADE COUNTY APPROVED

NOA No.: 12-0228.18
Expiration Date: 05/10/17
Approval Date: 05/10/12

ROOFING COMPONENT APPROVAL:

Category:	Roofing
Sub Category:	Roof tile adhesive
Materials:	Polyurethane

SCOPE:

This approves **3M™ 2-Component Foam Roof Tile Adhesive AH-160** as manufactured by **3M Company** as described in Section 2 of this Notice of Acceptance. For the locations where the design pressure requirements, as determined by applicable building code, does not exceed the design pressure values obtained by calculations in compliance with Roofing Application Standard RAS 127, for use with approved flat, low, and high profile roof tiles system using 2-Component Foam Roof Tile Adhesive AH-160. Where the attachment calculations are done as a moment based system for single patty placement, and as an uplift based system for double patty systems.

PRODUCTS MANUFACTURED BY APPLICANT:

Product	Dimensions	Test Specifications	Product Description
3M™ 2-Component Foam Roof Tile Adhesive AH-160	N/A	TAS 101	Two component polyurethane foam adhesive
Foam Dispenser RTF1000	N/A		Dispensing Equipment
ProPack® 30 & 100	N/A		Dispensing Equipment

PRODUCTS MANUFACTURED BY OTHERS:

Any Miami-Dade County Product Control Accepted Roof Tile Assembly having a current NOA which list moment resistance values with the use of 2-Component Foam Roof Tile Adhesive AH-160 roof tile adhesive.

MANUFACTURING LOCATION:

1. Tomball, TX.

PHYSICAL PROPERTIES:

Property	Test	Results
Density	ASTM D 1622	1.6 lbs./ft.^{3}
Compressive Strength	ASTM D 1621	18 PSI Parallel to rise 12 PSI Perpendicular to rise
Tensile Strength	ASTM D 1623	28 PSI Parallel to rise
Water Absorption	ASTM D 2127	0.08 Lbs./Ft^2
Moisture Vapor Transmission	ASTM E 96	3.1 Perm / Inch
Dimensional Stability	ASTM D 2126	+0.07% Volume Change @ -40° F., 2 weeks +6.0% Volume Change @158°F., 100% Humidity, 2 weeks
Closed Cell Content	ASTM D 2856	86%

Note: **The physical properties listed above are presented as typical average values as determined by accepted ASTM test methods and are subject to normal manufacturing variation.**

EVIDENCE SUBMITTED:

Test Agency	Test Identifier	Test Name/Report	Date
Center for Applied Engineering	#94-060	TAS 101	04/08/94
	257818-1PA	TAS 101	12/16/96
	25-7438-3	SSTD 11-93	10/25/95
	25-7438-4		
	25-7438-7	SSTD 11-93	11/02/95
	25-7492	SSTD 11-93	12/12/95
Miles Laboratories Polymers Division	NB-589-631	ASTM D 1623	02/01/94
Ramtech Laboratories, Inc.	9637-92	ASTM E 108	04/30/93
Southwest Research Institute	01-6743-011	ASTM E 108	11/16/94
	01-6739-062b[1]	ASTM E 84	01/16/95
Trinity Engineering	7050.02.96-1	TAS 114	03/14/96
Celotex Corp. Testing Services	528454-2-1	TAS 101	10/23/98
	528454-9-1		
	528454-10-1		
	520109-1	TAS 101	12/28/98
	520109-2		
	520109-3		
	520109-6		
	520109-7		
	520191-1	TAS 101	03/02/99
	520109-2-1		

LIMITATIONS:

1. Fire classification is not part of this acceptance. Refer to the Prepared Roof Tile Assembly for fire rating.
2. 3M™ 2-Component Foam Roof Tile Adhesive AH-160 shall solely be used with flat, low, & high tile profiles.
3. Minimum underlayment shall be in compliance with the Roofing Application Standard RAS 120.
4. Roof Tile manufactures acquiring acceptance for the use of 3M™ 2-Component Foam Roof Tile Adhesive AH-160 roof tile adhesive with their tile assemblies shall test in accordance with TAS 101.
5. Roof Tile manufactures acquiring acceptance for the use of HANDI-STICK roof tile adhesive with their tile assemblies shall test in accordance with TAS 101 with section 10.4 as modified herein.

$$\frac{\left(\frac{\overline{F}}{2}\right) - W}{MS}$$

INSTALLATION:

1. 3M™ 2-Component Foam Roof Tile Adhesive AH-160 may be used with any roof tile assembly having a current NOA that lists uplift resistance values with the use of 3M™ 2-Component Foam Roof Tile Adhesive AH-160.
2. 3M™ 2-Component Foam Roof Tile Adhesive AH-160 shall be applied in compliance with the Component Application section and the corresponding Placement Details noted herein. The roof tile assembly's adhesive attachment with the use of 3M™ 2-Component Foam Roof Tile Adhesive AH-160 shall provide sufficient attachment resistance, expressed as an uplift based system, to meet or exceed the uplift resistance determined in compliance with Miami-Dade County Roofing Application Standards RAS 127. The adhesive attachment data is noted in the roof tile assembly NOA.
3. 3M™ 2-Component Foam Roof Tile Adhesive AH-160 and its components shall be installed in accordance with Roofing Application Standard RAS 120, and 3M Company's 3M™ 2-Component Foam Roof Tile Adhesive AH-160 Operating Instruction and Maintenance Booklet.
4. Installation must be by a Factory Trained 'Qualified Applicator' approved and licensed by 3M Company. 3M Company shall supply a list of approved applicators to the authority having jurisdiction.
5. Calibration of the Foam Dispenser RTF1000 dispensing equipment is required before application of any adhesive. The mix ratio between the "A" component and the "B" component shall be maintained between 1.0-1.15 (A): 1.0 (B). The dispense timer shall be set to deliver 0.0175 to 0.15 pounds per tile as determined at calibration. No other settings shall be approved.
6. 3M™ 2-Component Foam Roof Tile Adhesive AH-160 shall be applied with Foam Dispenser RTF1000 or ProPack® 30 & 100 dispensing equipment only.
7. 3M™ 2-Component Foam Roof Tile Adhesive AH-160 shall not be exposed permanently to sunlight.
8. Tiles must be adhered in freshly applied adhesive. Tile must be set within 2 to 3 minutes after 3M™ 2-Component Foam Roof Tile Adhesive AH-160 has been dispensed.
9. 3M™ 2-Component Foam Roof Tile Adhesive AH-160 placement and minimum patty weight shall be in accordance with the 'Placement Details' herein. Each generic tile profile requires the specific placement noted herein.

Table 1: Adhesive Placement For Each Generic Tile Profile

Tile Profile	Placement Detail	Single Paddy Weight Min. (grams)	Two Paddy Weight per paddy Min. (grams)
Flat, Low, High Profiles	#1	35	N/A
High Profile (2 Piece Barrel)	#1	17/side on cap and 34/pan	N/A
Flat, Low, High Profiles	#2	24	N/A
Flat, Low, High Profiles	#3		8

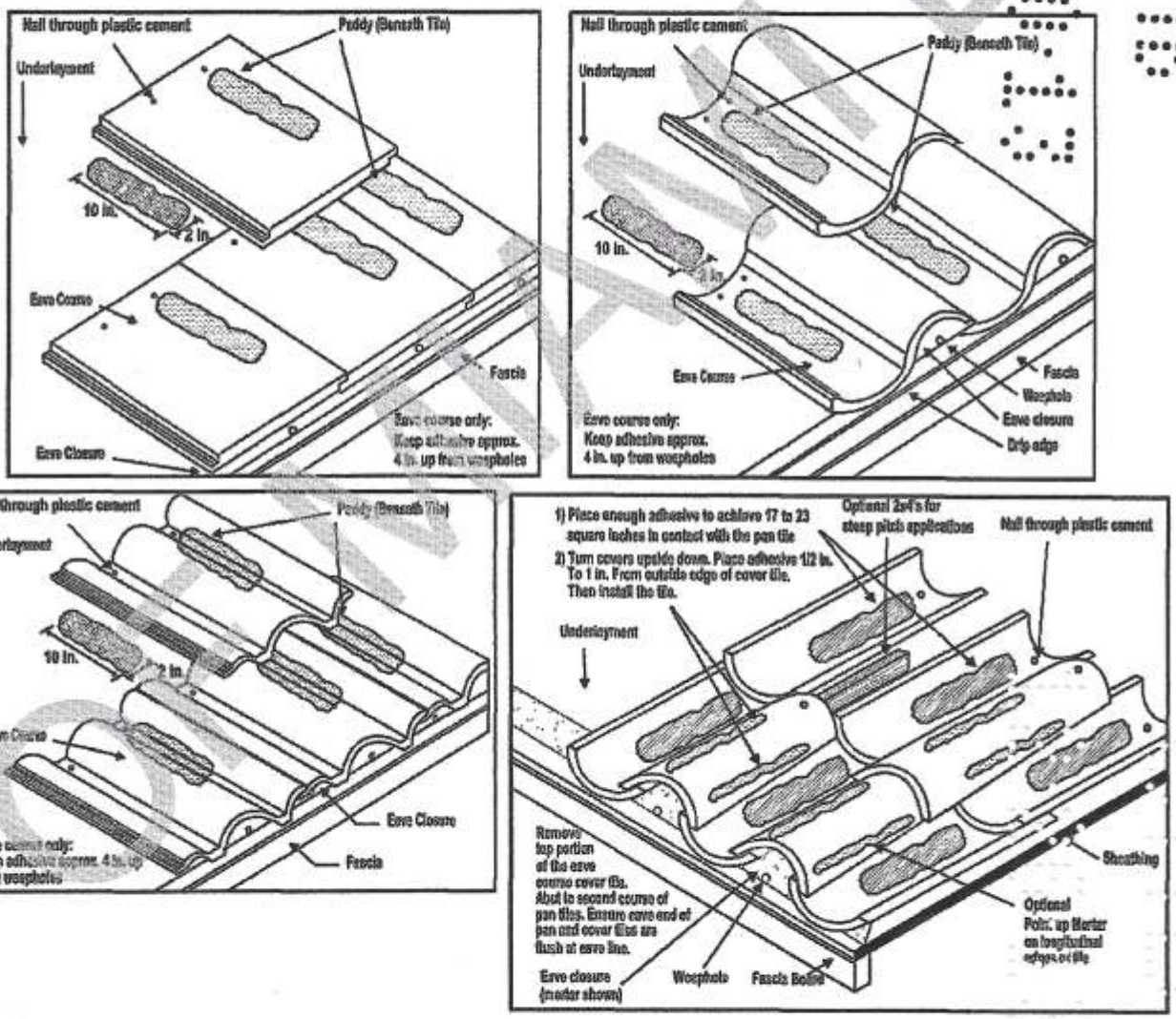
LABELING:

All 3M™ 2-Component Foam Roof Tile Adhesive AH-160 containers shall comply with the Standard Conditions listed herein.

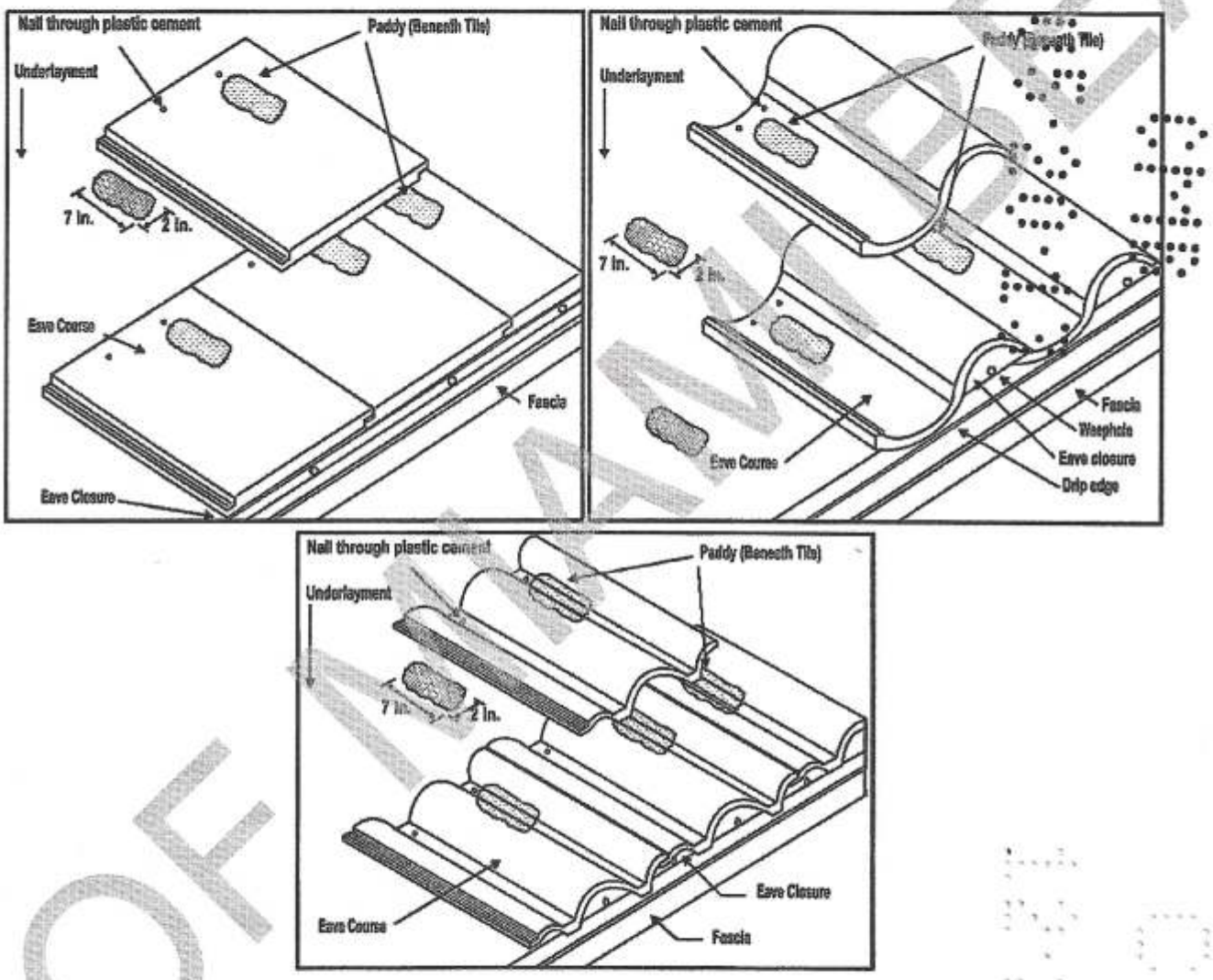
BUILDING PERMIT REQUIREMENTS:

As required by the Building Official or applicable building code in order to properly evaluate the installation of this system.

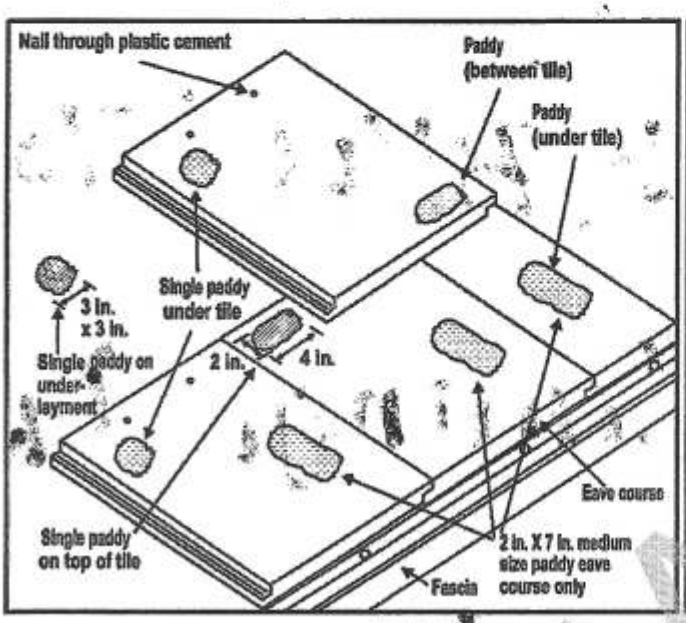
ADHESIVE PLACEMENT DETAIL 1
SINGLE PATTY

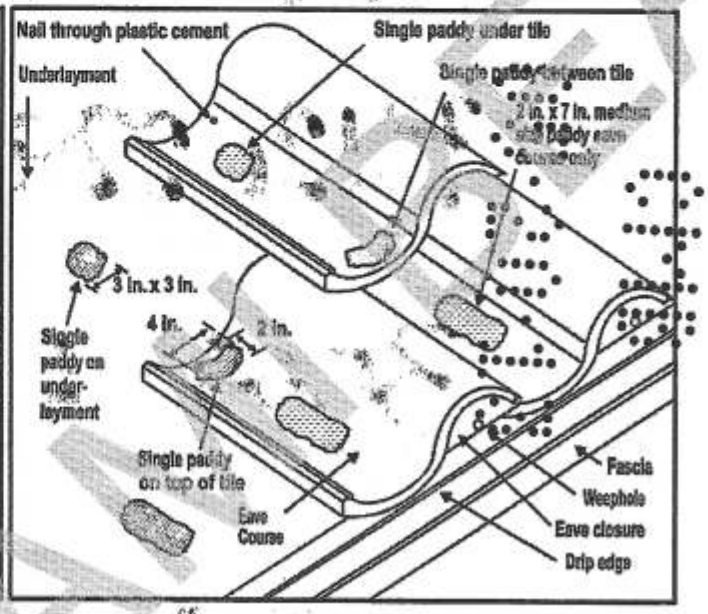


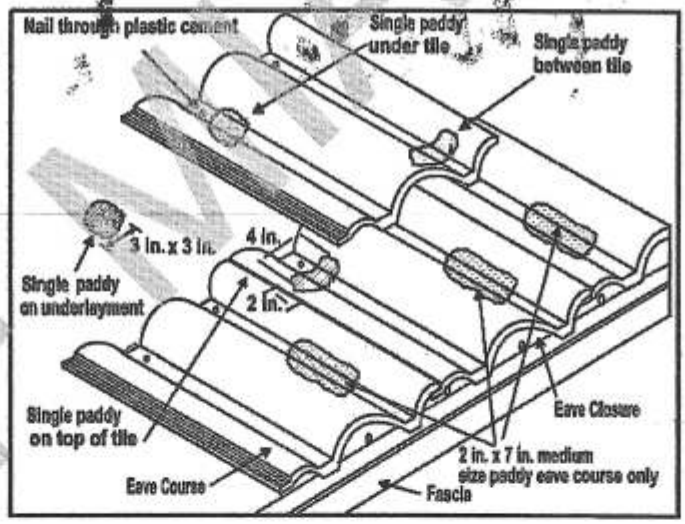
ADHESIVE PLACEMENT DETAIL 2
SINGLE PATTY



ADHESIVE PLACEMENT DETAIL 3
DOUBLE PATTY







END OF THIS ACCEPTANCE