



**BUILDING CODE COMPLIANCE OFFICE (BCCO)  
PRODUCT CONTROL DIVISION**

**MIAMI-DADE COUNTY, FLORIDA  
METRO-DADE FLAGLER BUILDING  
140 WEST FLAGLER STREET, SUITE 1603  
MIAMI, FLORIDA 33130-1563  
(305) 375-2901 FAX (305) 375-2908**

**NOTICE OF ACCEPTANCE (NOA)**

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**Almar (USA), Inc.  
6801 NW 77<sup>th</sup> Avenue  
Miami, FL 33166**

**SCOPE:**

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed by Miami-Dade County Product Control Division and accepted by the Board of Rules and Appeals (BORA) 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 Division (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. BORA reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Division 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 High Velocity Hurricane Zone of the Florida Building Code.

**DESCRIPTION: Altusa "S" Clay Roof Tile**

**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 NOA consists of pages 1 through 7.

The submitted documentation was reviewed by Frank Zuloaga, RRC



**NOA No.: 02-0114.05  
Expiration Date: 12/16/02  
Approval Date: 03/07/02  
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**Roofing Assembly Approval:**

**Category:** Roofing  
**Sub-Category:** High Profile Roofing Tiles  
**Material:** Clay

**1. SCOPE**

This revises a roofing system using ‘Altusa One Piece S’ Clay Roof Tile, as manufactured Almar (USA), Inc. described in Section 2 of this Notice of Acceptance, designed to comply with the South Florida Building Code, 1994 Edition for Miami-Dade County. For the locations where the pressure requirements, as determined by applicable Building Code does not exceed the design pressure values obtain by calculations in compliance with RAS 127 using the values listed in section 4 herein. The attachment calculations shall be done as a moment based system.

**2. PRODUCT DESCRIPTION**

<u>Manufactured by Applicant</u>	<u>Dimensions</u>	<u>Test Specifications</u>	<u>Product Description</u>
Altusa One Piece ‘S’ Tile	L = 18 ¼” W = 10.5” ½” thick nominal 3.25” high	PA 112	High profile clay roof tile. For direct deck or batten nail-on, mortar set or adhesive set applications.
Trim Pieces	L = varies W = varies Varying thickness	PA 112	Accessory trim, clay roof pieces for use at hips, rakes, ridges and valley terminations. Manufactured for each tile profile.
Clip	L = 6” D = 0.125”	PA 114	Tile clip
Clip	L &h = 2” W = ½” 0.05” thick	PA 114	L Shaped tile clip

**2.1 COMPONENTS OR PRODUCTS MANUFACTURED BY OTHERS**

<u>Product</u>	<u>Dimensions</u>	<u>Test Specifications</u>	<u>Product Description</u>	<u>Manufacturer</u>
Wood Battens	<u>Vertical</u> Min. 1" x 4" <u>Horizontal</u> Min. 1" x 4" for use with vertical battens or Min. 1" x 2" for use alone	Wood Preservers Institute LP - 2	Salt pressure treated or decay resistant lumber battens	Generic (With current NOA)



<u>Product</u>	<u>Dimensions</u>	<u>Test Specifications</u>	<u>Product Description</u>	<u>Manufacturer</u>
Tile Nails	Min. 10d x 3"	PA 114 Appendix E	Corrosion resistant, smooth, screw or annular ring shank nail.	Generic (With current NOA)
Tile Screws	#8 x 2 1/2" long 0.335" head dia. 0.131" shank dia. 0.175" screw thread diameter	PA 114 Appendix E	Corrosion resistant coated, square drive, galvanized, coarse thread wood screw	Generic (With current NOA)
Roof Tile Mortar ("TileTite™")	N/A	PA 123	Prepared mortar mix designed for mortar set roof tile applications.	Bermuda Roof Company, Inc. (With current NOA)
Quickcrete Roof Tile Mortar	N/A	PA 123	Prepared mortar mix designed for mortar set roof tile applications.	Quickcrete Mortar (With current NOA)
Roof Tile Adhesive ("Polypro® AH160")	N/A	See PCA	Two-component polyurethane adhesive designed for adhesive set roof tile applications.	Polyfoam Products, Inc. (With current NOA)
Tile-Bond	Factory premixed canisters	See PCA	Single component polyurethane foam roof tile adhesive	Flexible Products (With current NOA)

### 3. LIMITATIONS

- 3.1 Fire classification is not part of this acceptance.
- 3.2 For mortar or adhesive set tile applications, a static field uplift test shall be performed in accordance with RAS 106.
- 3.3 Applicant shall retain the services of a Miami-Dade County Certified Laboratory to perform quarterly test in accordance with PA 112, appendix 'A'. Such testing shall be submitted to the Building Code Compliance Office for review.
- 3.4 Minimum underlayments shall be in compliance with the applicable Roofing Applications Standards listed section 4.1 herein.
- 3.5 30/90 hot mopped underlayment applications may be installed perpendicular to the roof slope unless stated otherwise by the underlayment material manufacturers published literature.
- 3.6 This acceptance is for wood deck applications. Minimum deck requirements shall be in compliance with applicable Building Code.
- 3.7 May be installed on slopes 7:12 and greater.



#### 4. INSTALLATION

4.1 Almar 'Altusa One Piece S' Clay Roof Tile and its components shall be installed in strict compliance with Roofing Application Standard RAS 118, RAS 119, and RAS 120.

4.2 Data For Attachment Calculations

Table 1: Aerodynamic Multipliers - $\lambda$ (ft <sup>3</sup> )		
Tile Profile	$\lambda$ (ft <sup>3</sup> ) Batten Application	$\lambda$ (ft <sup>3</sup> ) Direct Deck Application
One Piece 'S' Tile	0.253	0.274

Table 2: Restoring Moments due to Gravity - $M_g$ (ft-lbf)										
Tile Profile	3": 12" or less		4": 12"		5": 12"		6": 12"		7": 12" or greater	
	Battens	Direct Deck	Battens	Direct Deck	Battens	Direct Deck	Battens	Direct Deck	Battens	Direct Deck
One Piece 'S' Tile	4.47	5.35	4.40	5.27	4.31	5.16	4.20	5.03	4.08	4.89

Table 3: Attachment Resistance Expressed as a Moment - $M_f$ (ft-lbf) for Nail-On Systems				
Tile Profile	Fastener Type	Direct Deck (Min 15/32" plywood)	Direct Deck (Min. 19/32" plywood)	Battens
One Piece 'S' Tile	2-10d Ring Shank Nails	28.6	41.2	19.4
	1-10d Smooth or Screw Shank Nail	5.1	6.8	2.8
	2-10d Smooth or Screw Shank Nails	6.9	9.2	7.3
	1 #8 Screw	28.7	28.7	N/A
	2 #8 Screws	58.2	58.2	26.8
	1-10d Smooth or Screw Shank Nail (Field Clip)	23.1	23.1	19.0
	1-10d Smooth or Screw Shank Nail (Eave Clip)	29.3	29.3	24.0
	2-10d Smooth or Screw Shank Nails (Field Clip)	27.6	27.6	38.6
	2-10d Smooth or Screw Shank Nails (Eave Clip)	38.1	38.1	41.8
	2-10d Ring Shank Nails	33.1	48.1	45.2
1 Screw with Altusa Clip (See clip details)				
One Piece "S" Tile <sup>1</sup>	1 Screw with clip (at the head of tile)	187.1	187.1	N/A
One Piece "S" Tile <sup>1</sup>	1 Screw with clip (at the water course of tile)	35.2	35.2	N/A

1. Screw must be installed in the inside nail hole located nearest to the hump of the tile.



<b>Table 4: Attachment Resistance Expressed as a Moment <math>M_f</math> (ft-lbf) for Two Patty Adhesive Set Systems</b>		
<b>Tile Profile</b>	<b>Tile Application</b>	<b>Minimum Attachment Resistance</b>
One Piece 'S' Tile	Adhesive	29.3 <sup>3</sup>
2 See manufactures component approval for installation requirements.		
3 Flexible Products Company TileBond Average weight per patty 10.7 grams. Polyfoam Product, Inc. Average weight per patty 8 grams.		

<b>Table 4A: Attachment Resistance Expressed as a Moment - <math>M_f</math> (ft-lbf) for Single Patty Adhesive Set Systems</b>		
<b>Tile Profile</b>	<b>Tile Application</b>	<b>Minimum Attachment Resistance</b>
One Piece 'S' Tile	Polyfoam PolyPro™	66.5 <sup>4</sup>
	Polyfoam PolyPro™	38.7 <sup>5</sup>
4 Large patty placement of 63grams of PolyPro™.		
5 Medium patty placement of 24grams of PolyPro™.		

<b>Table 4B: Attachment Resistance Expressed as a Moment - <math>M_f</math> (ft-lbf) for Mortar Set Systems</b>		
<b>Tile Profile</b>	<b>Tile Application</b>	<b>Attachment Resistance</b>
One Piece 'S' Tile	Mortar Set <sup>1</sup>	24.50

## 5. LABELING

All tiles shall bear the imprint or identifiable marking of the manufacturer, name, logo, or following statement: "Miami-Dade County Product Control Approved".

## 6. BUILDING PERMIT REQUIREMENTS

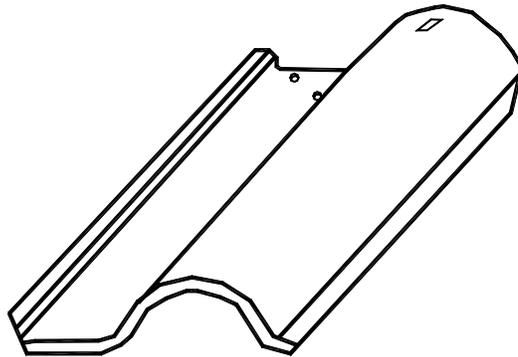
**6.1** Application for building permit shall be accompanied by copies of the following:

**6.1.1** This Notice of Acceptance.

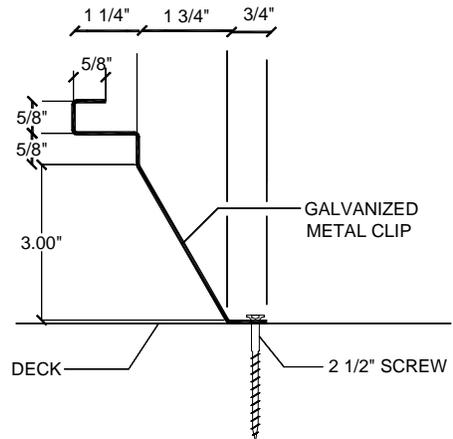
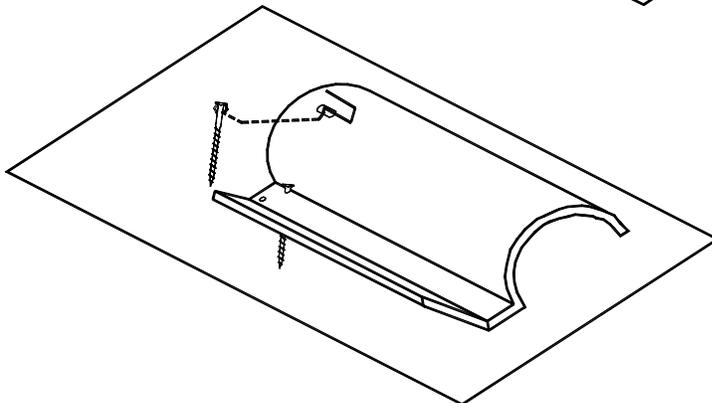
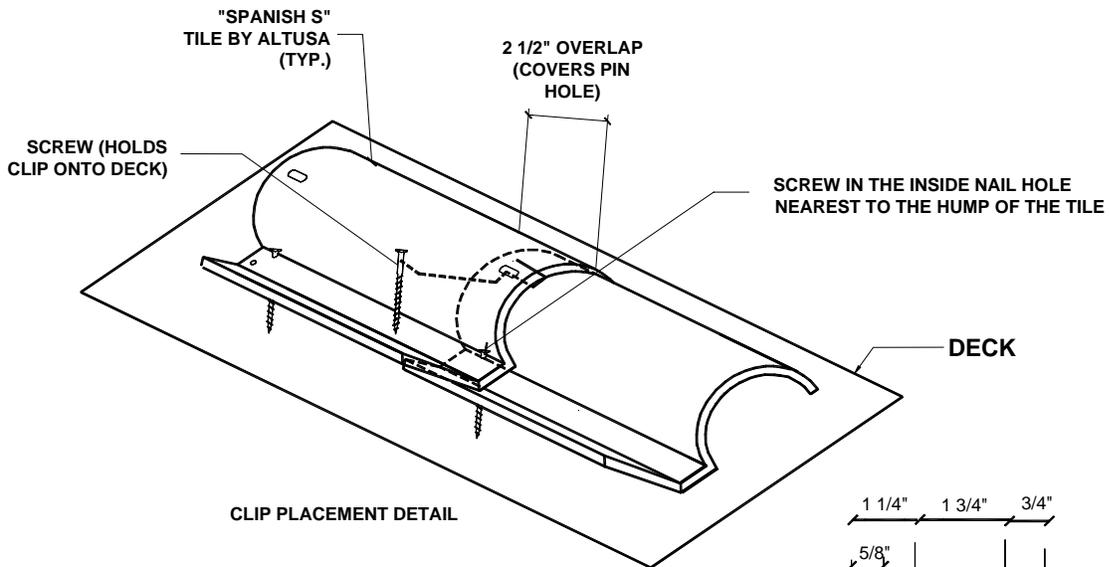
**6.1.2** Any other documents required by the Building Official or applicable Building Code in order to properly evaluate the installation of this system.



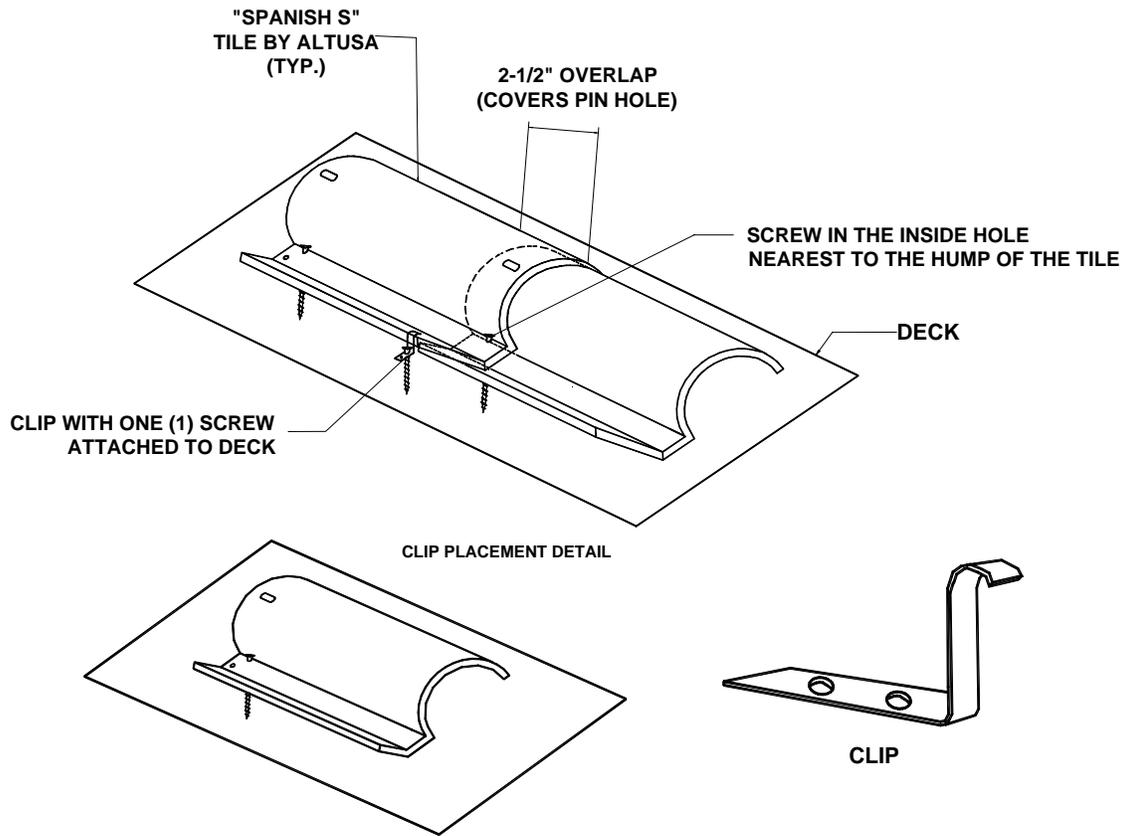
**PROFILE DRAWINGS  
ONE PIECE 'S' CLAY ROOF TILE**



**CLIP DETAILS**



## CLIP DETAILS (CON'T)



**END OF THIS ACCEPTANCE**



NOA No.: 02-0114.05  
Expiration Date: 12/16/02  
Approval Date: 03/07/02  
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**A. TESTS:**

<u>Test Agency</u>	<u>Test Identifier</u>	<u>Test Name/Report</u>	<u>Date</u>
Redland Technologies	7161-03 Appendix III	Static Uplift Testing PA 102	Dec. 1991
Redland Technologies	7161-03 Appendix II	Wind Tunnel Testing PA 108 (Nail-On)	Dec. 1991
Redland Technologies	Letter Dated Aug. 1, 1994	Wind Tunnel Testing PA 108 (Nail-On)	Aug. 1994
Redland Technologies	P0631-01	Wind Tunnel Testing PA 108 (Mortar Set)	July 1994
Redland Technologies	P0402	Withdrawal Resistance Testing of screw vs. smooth shank nails	Sept. 1993
Redland Technologies	7161-03 Appendix III	Static Uplift Testing PA 102(A)	Dec. 1991
The Center for Applied Engineering, Inc.	94-83	Static Uplift Testing PA 101 (Adhesive Set)	April 1994
The Center for Applied Engineering, Inc.	94-084	Static Uplift Testing PA 101 (Mortar Set)	May 1994
The Center for Applied Engineering, Inc.	25-7200-1	Static Uplift Testing PA 102 (Quick-Drive Screws, Battens)	Feb. 1995
The Center for Applied Engineering, Inc.	Project No. 307025 Test #MDC-78	Wind Driven Rain PA 100	Oct. 1994
Walker Engineering, Inc.	Calculations	Aerodynamic Multiplier	March 1999
Celotex Corporation Testing	MTS 520649	Static Uplift Testing PA 102(A)	May 2000
PRI Asphalt Technology, Inc.	CLF-003-02-01	Static Uplift Testing PA 102	October 2001

**B. CALCULATION**

<u>Calculation</u>	<u>Test Report Evaluated</u>	<u>Date</u>
Walker Engineering, Inc.	25-7183	March 1995
Walker Engineering, Inc.	25-7094	February 1996
Walker Engineering, Inc.	25-7496	April 1996
Walker Engineering, Inc.	25-7584 25-7804b-8 25-7804-4 & 5 25-7848-6	December 1996

**C. OTHER**

1. NTRMA Association Member
2. Notice of Acceptance number 02-0114.05