



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)**

**M.C.A Maruhachi Ceramics of America**  
 1985 Sampson Ave.  
 Corona, CA. 92879

**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 Florida Building Code including the High Velocity Hurricane Zone of the Florida Building Code.

**DESCRIPTION: Improved 'S' 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 6.  
 The submitted documentation was reviewed by Alex Tigera.



NOA No.: 07-0905.06  
 Expiration Date: 12/20/12  
 Approval Date: 12/20/07  
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## ROOFING ASSEMBLY APPROVAL

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

### 1. SCOPE

This renews a system using the Improved 'S' Tile, as manufactured by Tsuruya Company Ltd in Aichi-Pre, Japan and distributed by M.C.A. Maruhachi Ceramics of America and described in Section 2 of this Notice of Acceptance. For locations where the pressure requirements, as determined by applicable Building Code does not exceed the design pressure values obtained 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>
Improved 'S' Tile	l = 12.17" w = 12.25" .70" thick	ASTM C 1167	High profile, interlocking, one-piece, 'S' shaped, clay roof tile equipped with two nail holes. For direct deck or battened nail-on, mortar set or adhesive set applications.
Trim Pieces	l = varies w = varies varying thickness	ASTM C 1167	Accessory trim, concrete roof pieces for use at hips, rakes, ridges and valley terminations. Manufactured for each tile profile. □

#### 2.1 SUBMITTED EVIDENCE:

<u>Test Agency</u>	<u>Test Identifier</u>	<u>Test Name/Report</u>	<u>Date</u>
Nutting Engineering	13343.1	TAS-112	June 2006
Redland Technologies	7161-03	Static Uplift Testing	Dec. 1991
	Appendix III	TAS 102 & TAS 102(A)	
Redland Technologies	7161-03	Wind Tunnel Testing	Dec. 1991
	Appendix II	TAS 108(Nail-On)	
Redland Technologies	P0402	Withdrawal Resistance	Sept. 1993
		Testing of screw vs. smooth shank nails	
Redland Technologies	Letter Dated Aug. 1, 1994	Wind Tunnel Testing	Aug. 1994
		TAS 108 (Nail-On)	
Redland Technologies	P0631-01	Wind Tunnel Testing	July 1994
		TAS 108 (Mortar Set)	
Professional Service Industries, Inc.	IC-1320-94	Physical Properties	Feb. 1995
		TAS 112	
The Center for Applied Engineering, Inc.	25-7688-3	Static Uplift Testing	June 1996
	25-7688-10	TAS 101 (Adhesive Set)	July 1996
		TAS 101 (Mortar Set)	



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<u>Test Agency</u>	<u>Test Identifier</u>	<u>Test Name/Report</u>	<u>Date</u>
The Center for Applied Engineering, Inc.	25-7688-5	Static Uplift Testing TAS 102 (3" Headlap, Nails, Direct Deck, New Construction)□	June 1996
The Center for Applied Engineering, Inc.	25-7688-4	Static Uplift Testing TAS 102 (4" Headlap, Nails, Clips)	June 1996
Celotex Corporation Testing Services	520111-3 520191-2-1	Static Uplift Testing TAS 101	Dec. 1998 March 1999
Ronald Ogawa Associates Walker Engineering, Inc.	Calculations Calculations	Aerodynamic Multiplier Two Patty Adhesive Set System	July 2007 April 1999
Walker Engineering, Inc.	Evaluation Calculations	25-7183	March 1995
Walker Engineering, Inc.	Evaluation Calculations	25-7094	February 1996
Walker Engineering, Inc.	Evaluation Calculations	25-7496	April 1996
Walker Engineering, Inc.	Evaluation Calculations	25-7584 25-7804b-8 25-7804-4 & 5 25-7848-6	December 1996
Ramtech Laboratories	ASTM C 1167	2022A-07-05	July 2007

### 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 TAS 112, appendix 'A'. Such testing shall be submitted to the Building Code Compliance Office for review.
- 3.4 Minimum underlayment 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.



#### 4. INSTALLATION

4.1 M.C.A. Maruhachi Ceramic of America's Improved 'S' 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: Average Weight (W) and Dimensions (l x w)			
Tile Profile	Weight-W (lbf)	Length-l (ft)	Width-w (ft)
Improved 'S' Tile	7.13	1.02	1.02

Table 2: Aerodynamic Multipliers - $\lambda$ (ft <sup>3</sup> )		
Tile Profile	$\lambda$ (ft <sup>3</sup> ) Batten Application	$\lambda$ (ft <sup>3</sup> ) Direct Deck Application
Improved 'S' Tile	0.133	0.144

Table 3: Restoring Moments due to Gravity - $M_g$ (ft-lbf)										
Tile Profile	3":12"		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
Improved 'S' Tile	3.59	2.92	3.53	2.87	3.46	2.81	3.37	2.74	3.28	2.67

Table 4: 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
Improved '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		20.7	20.7	18.1
	2 .#8 Screws		43.2	43.2	29.8
	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



Table 5: Attachment Resistance Expressed as a Moment $M_r$ (ft-lbf) for Two Patty Adhesive Set Systems		
Tile Profile	Tile Application	Minimum Attachment Resistance
Improved 'S' Tile	Adhesive	29.3 <sup>2</sup>
1 See manufactures component approval for installation requirements.		
2 Flexible Products Company TileBond Average weight per patty 10.7 grams. Polyfoam Product, Inc. Average weight per patty 8 grams.		

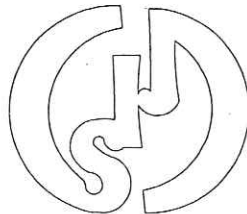
Table 5A: Attachment Resistance Expressed as a Moment - $M_r$ (ft-lbf) for Single Patty Adhesive Set Systems		
Tile Profile	Tile Application	Minimum Attachment Resistance
Improved 'S' Tile	Polyfoam PolyPro™	66.5 <sup>3</sup>
	Polyfoam PolyPro™	38.7 <sup>4</sup>
3 Large paddy placement of 63grams of PolyPro™.		
4 Medium paddy placement of 24grams of PolyPro™.		

Table 5B: Attachment Resistance Expressed as a Moment - $M_r$ (ft-lbf) for Mortar Set Systems		
Tile Profile	Tile Application	Attachment Resistance
Improved 'S' Tile	Mortar Set <sup>5</sup>	24.5
5 Tile-Tite Roof Tile Mortar.		

**5. LABELING**

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

SHINTO



LABEL FOR IMPROVED 'S' TILE.  
(LOCATED ON THE UNDERSIDE OF TILE)



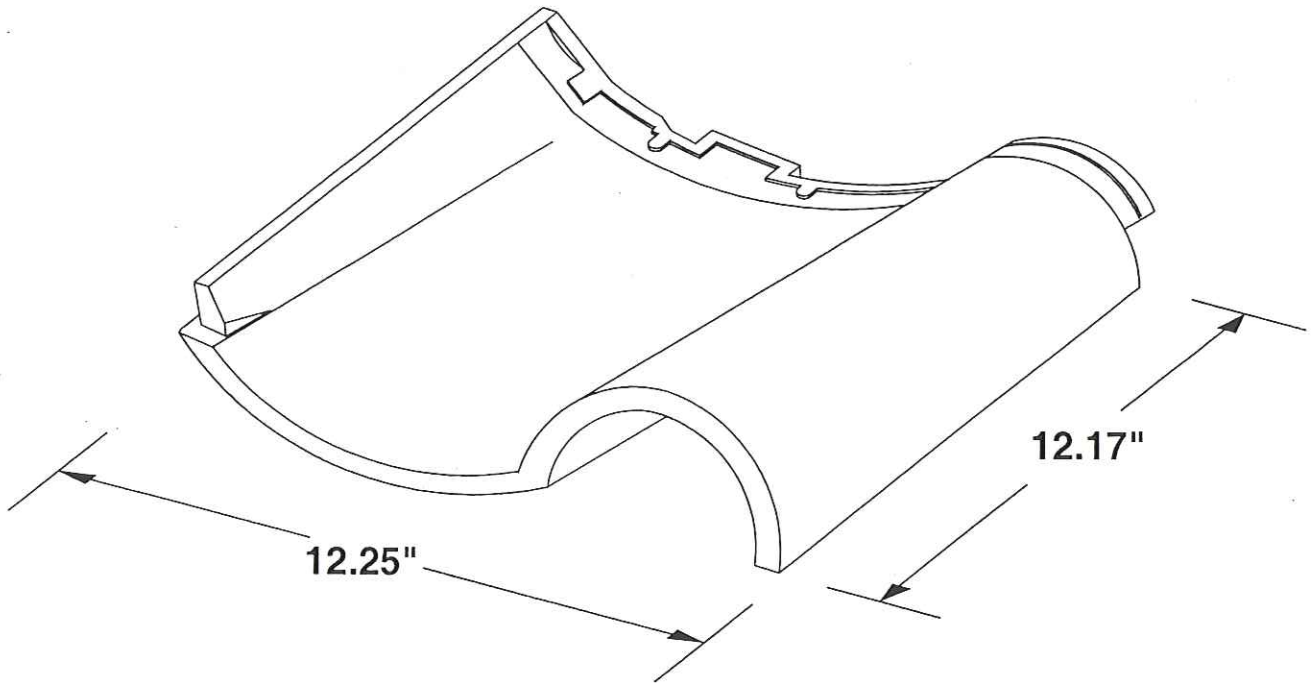
**6. BUILDING PERMIT REQUIREMENTS**

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**



**IMPROVED 'S' TILE**

**END OF THIS ACCEPTANCE**

