



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

MIAMI-DADE COUNTY  
PRODUCT CONTROL SECTION  
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**NOTICE OF ACCEPTANCE (NOA)**

**Boral Roofing LLC.**  
7575 Irvine Center Drive, Suite 100  
Irvine, CA. 92618

**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: Vanguard Roll Concrete 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 revises NOA# 07-1023.07 and consists of pages 1 through 6.  
The submitted documentation was reviewed by Alex Tigera.



NOA No.: 12-0308.06  
Expiration Date: 12/16/12  
Approval Date: 06/21/12  
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## ROOFING ASSEMBLY APPROVAL

**Category:** Roofing  
**Sub-Category:** Roofing Tiles  
**Material:** Concrete

### 1. SCOPE

This approves a system using Vanguard Roll Concrete Roof Tile, as manufactured Boral Roofing LLC in Pompano Beach, FL., and described 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 the installation section 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>   |
|----------------------------------|---|----------------------------|--|
| Vanguard Roll Concrete Roof Tile | L = 16-1/2"<br>W = 13"<br>1/2" thick          | TAS 112                    | Low profile, interlocking, high pressure extruded concrete roof tile equipped with one nail hole and double roll ribs. For direct deck or battened nail-on, mortar or adhesive set applications. |
| Trim Pieces                      | l = varies<br>w = varies<br>varying thickness | TAS 112                    | Accessory trim, concrete roof pieces for use at hips, rakes, ridges and valley terminations. Manufactured for each tile profile.   |

#### 2.1 PRODUCT DESCRIPTION

- Pompano Beach, FL.

#### 2.2 SUBMITTED EVIDENCE:

| <u>Test Agency</u>                          | <u>Test Identifier</u>    | <u>Test Name/Report</u>  | <u>Date</u> |
|---|---------------------------|--|-------------|
| Redland Technologies                        | 7161-03<br>Appendix III   | Static Uplift Testing<br>PA 102 & PA 102(A)                      | Dec. 1991   |
| Redland Technologies                        | 7161-03<br>Appendix II    | Wind Tunnel Testing<br>PA 108 (Nail-On)                          | Dec. 1991   |
| Redland Technologies                        | P0402                     | Withdrawal Resistance Testing of<br>screw vs. smooth shank nails | Sept. 1993  |
| The Center for Applied<br>Engineering, Inc. | 94-060B                   | Static Uplift Testing<br>PA 101 (Adhesive Set)                   | March, 1994 |
| The Center for Applied<br>Engineering, Inc. | 94-084                    | Static Uplift Testing<br>PA 101 (Mortar Set)                     | May 1994    |
| Redland Technologies                        | P0631-01                  | Wind Tunnel Testing<br>PA 108 (Mortar Set)                       | July 1994   |
| Redland Technologies                        | Letter Dated Aug. 1, 1994 | Wind Tunnel Testing<br>PA 108 (Nail-On)                          | Aug. 1994   |



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## 2.2 SUBMITTED EVIDENCE:

| <u>Test Agency</u>                       | <u>Test Identifier</u>              | <u>Test Name/Report</u>   | <u>Date</u>            |
|--|-------------------------------------|---|------------------------|
| The Center for Applied Engineering, Inc. | Project No. 307025<br>Test #MDC-76□ | Wind Driven Rain<br>PA 100  | Oct. 1994              |
| The Center for Applied Engineering, Inc. | 25-7183-1                           | Static Uplift Testing<br>PA 102<br>(2 Quik-Drive Screws, Direct Deck)                                 | Feb. 1995              |
| The Center for Applied Engineering, Inc. | 25-7183-2                           | Static Uplift Testing<br>PA 102<br>(2 Quik-Drive Screws, Battens)                                     | Feb. 1995              |
| The Center for Applied Engineering, Inc. | 25-7214-2<br>25-7214-6              | Static Uplift Testing<br>PA 102<br>(1 Quik-Drive Screw, Direct Deck)<br>(1 Quik-Drive Screw, Battens) | March, 1995            |
| Celotex Corporation<br>Testing Services  | 528454-2-1<br>520109-2              | Static Uplift Testing<br>PA 101   | Sep. 1998<br>Dec. 1998 |
| Walker Engineering, Inc.                 | Calculations                        | Aerodynamic Multiplier  | August 2007            |
| 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<br>25-7804b-8<br>25-7804-4 & 5<br>25-7848-6   | December 1996          |
| Walker Engineering, Inc.                 | Evaluation Calculations             | Aerodynamic Multipliers   | October 2007           |
| Walker Engineering, Inc.                 | Evaluation Calculations             | Two Patty Adhesive Set System   | April 1999             |
| Nutting Engineering                      | TAS-112                             | 13343.1   | June 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 TAS 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 Vanguard Roll Concrete 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: Average Weight (W) and Dimensions (l x w) |                |               |              |
|--|----------------|---------------|--------------|
| Tile Profile                                       | Weight-W (lbf) | Length-l (ft) | Width-w (ft) |
| Vanguard Roll Roof Tile                            | 9.2            | 1.38          | 1.08         |

| Table 2: Aerodynamic Multipliers - $\lambda$ (ft <sup>3</sup> ) |  |   |
|---|--|---|
| Tile Profile  | $\lambda$ (ft <sup>3</sup> )<br>Batten Application | $\lambda$ (ft <sup>3</sup> )<br>Direct Deck Application |
| Vanguard Roll Roof Tile   | 0.266  | 0.289   |

| Table 3: Restoring Moments due to Gravity - $M_g$ (ft-lbf) |         |             |         |             |         |             |         |             |         |             |                   |             |  |
|--|---------|-------------|---------|-------------|---------|-------------|---------|-------------|---------|-------------|-------------------|-------------|--|
| Tile Profile   | 2":12"  |             | 3":12"  |             | 4":12"  |             | 5":12"  |             | 6":12"  |             | 7":12" or greater |             |  |
|  | Battens | Direct Deck | Battens           | Direct Deck |  |
| Vanguard Roll Roof Tile                                    | 5.30    | 6.03        | 5.24    | 5.97        | 5.16    | 5.87        | 5.05    | 5.75        | 4.92    | 5.60        | 4.78              | 5.44        |  |

| Table 4: Attachment Resistance Expressed as a Moment - $M_r$ (ft-lbf) for Nail-On Systems |  |      |                                  |                                   |         |
|---|--|------|----------------------------------|-----------------------------------|---------|
| Tile Profile  | Fastener Type                                  |      | Direct Deck (min 15/32" plywood) | Direct Deck (min. 19/32" plywood) | Battens |
| Vanguard Roll Roof Tile   | 2-10d Ring Shank Nails                         |      | 27.8                             | 37.4                              | 28.8    |
|   | 1-10d Smooth or Screw Shank Nail               |      | 8.8                              | 11.8                              | 4.1     |
|   | 2-10d Smooth or Screw Shank Nails              |      | 16.4                             | 21.9                              | 7.1     |
|   | 1 .#8 Screw                                    |      | 25.8                             | 25.8                              | 22.9    |
|   | 2 .#8 Screws                                   |      | 47.1                             | 47.1                              | 49.1    |
|   | 1-10d Smooth or Screw Shank Nail (Field Clip)  |      | 24.3                             | 24.3                              | 24.2    |
|   | 1-10d Smooth or Screw Shank Nail (Eave Clip)   |      | 19.0                             | 19.0                              | 22.1    |
|   | 2-10d Smooth or Screw Shank Nails (Field Clip) |      | 35.5                             | 35.5                              | 34.8    |
| 2-10d Smooth or Screw Shank Nails (Eave Clip)   |  | 31.9 | 31.9                             | 32.2                              |         |



| Table 6: Attachment Resistance Expressed as a Moment $M_r$ (ft-lbf)<br>for Two Patty Adhesive Set Systems   |                       |                               |
|---|-----------------------|-------------------------------|
| Tile Profile  | Tile Application      | Minimum Attachment Resistance |
| Vanguard Roll Roof Tile   | Adhesive <sup>1</sup> | 26.1 <sup>2</sup>             |
| 1 See manufactures component approval for installation requirements.  |                       |                               |
| 2 Flexible Products Company TileBond Average weight per patty 11.4 grams.<br>3M™ 2-Component Foam Roof Tile Adhesive AH-160 Average weight per patty 8 grams. |                       |                               |

| Table 7: Attachment Resistance Expressed as a Moment - $M_r$ (ft-lbf)<br>for Single Patty Adhesive Set Systems |  |                               |
|--|--|-------------------------------|
| Tile Profile   | Tile Application                               | Minimum Attachment Resistance |
| Vanguard Roll Roof Tile  | 3M™ 2-Component Foam Roof Tile Adhesive AH-160 | 86.61 <sup>3</sup>            |
|  | 3M™ 2-Component Foam Roof Tile Adhesive AH-160 | 45.5 <sup>4</sup>             |
| 3 Large paddy placement of 54grams of 3M™ 2-Component Foam Roof Tile Adhesive AH-160.                          |  |                               |
| 4 Medium paddy placement of 24grams of 3M™ 2-Component Foam Roof Tile Adhesive AH-160.                         |  |                               |

| Table 8: Attachment Resistance Expressed as a Moment - $M_r$ (ft-lbf)<br>for Mortar Set Systems |                         |                       |
|---|-------------------------|-----------------------|
| Tile Profile  | Tile Application        | Attachment Resistance |
| Vanguard Roll Roof Tile   | Mortar Set <sup>5</sup> | 20.60                 |
| 5 Tile-Tite Roof Tile Mortar.   |                         |                       |

## 5. LABELING

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



VANGUARD ROLL

BORAL ROOFING LLC VANGUARD ROLL ROOF TILE (POMPANO BEACH, FL.)  
(LOCATED ON-UNDERSIDE OF TILE)



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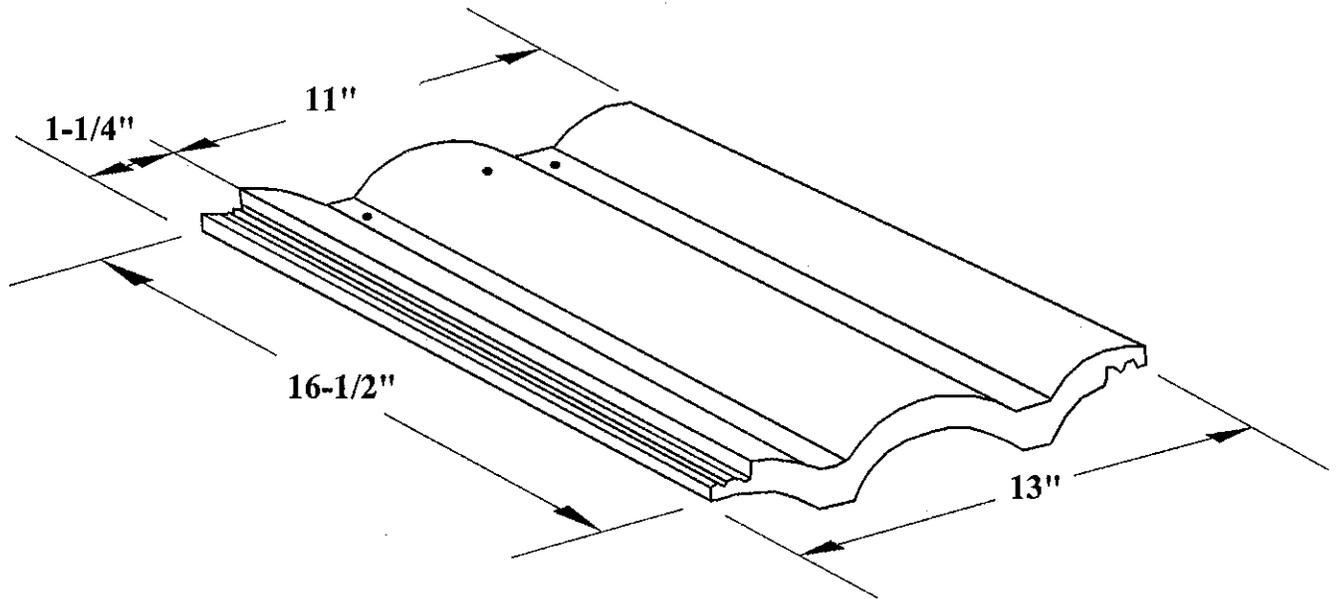
**6. BUILDING PERMIT REQUIREMENTS**

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**



**VANGUARD ROLL ROOF TILE (POMPANO BEACH, FL.)**

**END OF THIS ACCEPTANCE**



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