MIAMI-DADE COUNTY

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
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NOTICE OF ACCEPTANCE (NOA)

Viridian Systems
300 Southwest Avenue
Tallmadge, OH 44278

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 and the High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: Viridian Single Ply PVC Roof Systems over Concrete Decks

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 08-1117.03 and consists of pages 1 through 8.
The submitted documentation was reviewed by Alex Tigera.

MIAMI-DADE COUNTY APPROVED

NOA No.: 10-0408.10
Expiration Date: 02/12/14
Approval Date: 07/21/10

ROOFING SYSTEM APPROVAL

Category:	Roofing
Sub-Category:	Single Ply
Material:	PVC
Deck Type:	Concrete
Maximum Design Pressure	-615 psf

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

Product	Dimensions	Test Specification	Product Description
HK 5000		ASTM D 4434 TAS 110	Polyester reinforced PVC membrane for mechanical attachment or adhered application.
HK 5001		ASTM D 4434	Polyester felt-backed PVC membrane for application in hot asphalt or adhesive.
HK 5000 NR		ASTM D 4434	PVC membrane for mechanical attachment.
HK 5000 Flashing Adhesive	5 gallon	proprietary	Adhesive used to bond HK 5001 membrane to concrete or cellular concrete.
HK 5000 Bonding Adhesive		proprietary	Adhesive used to bond HK 5000 membrane to substrate.

APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
Pyrox	Isocyanurate Insulation	Apache Products Co.
Isotherm R (EnergyGuard)	Polyisocyanurate foam insulation	GAF
Dens Deck	Silicon treated gypsum	G-P Products
ENRGY 2, ENERGY 3, PSI-25, UltraGard	Isocyanurate Insulation	Johns Manville
Fesco Foam	Isocyanurate Insulation with perlite facer	Johns Manville
High Density Wood Fiberboard	High Density Wood Fiber insulation board.	Generic
Perlite Insulation Board	Perlite Insulation	Generic
Type X Gypsum	Gypsum Wallboard	Generic
Multi-Max, FA	Polyisocyanurate foam insulation	Rmax, Inc.

APPROVED FASTENERS:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
1.	Dekfast Fasteners	Insulation and membrane fastener	Various	Construction Fasteners, Inc.
2.	Dekfast Hex Plate	Insulation and membrane fastener	Various	Construction Fasteners, Inc.
3.	#14 Roofgrip	Insulation and membrane fastener	Various	ITW Buildex
4.	Metal Plate	Galvalume AZ50 stress plate	3" square 3" round	ITW Buildex
5.	Plastic Plate	Polyethylene stress plate	3.2" round	ITW Buildex
6.	Olympic Standard	Galvalume AZ55 stress plate	3" round	Olympic Mfg. Group
7.	Olympic G-2	Galvalume AZ55 stress plate	3.5" round	Olympic Mfg. Group
8.	Olympic	Plastic plates for fasteners.	3" round	Olympic Mfg. Group
9.	Insul-Fixx Fastener	Insulation fastener for use in wood and steel decks	Various	SFS Stadler, Inc.
10.	Insul-Fixx S	Galvalume AZ55 stress plate	3" round	SFS Stadler, Inc.
11.	Insul-Fixx PG	Polyethylene stress plate	3" round	SFS Stadler, Inc.

EVIDENCE SUBMITTED:

Test Agency/Identifier	Name	Report	Date
Factory Mutual Research Corp.	FMRC 4470 FMRC 4470	J.I. 2X4A1.AM 3033126	06/29/94 07/11/08
Underwriters Laboratories, Inc.	UL 790	R9228	01/01/96
Trinity Engineering, Inc.	TAS 114	#3901.12.95-1	12/31/95
Exterior Research & Design, LLC. - Trinity Engineering	TAS 114	#3901.02.96-1	01/30/96
IRT of S. Florida, Inc.	TAS 114	99027	11/16/99

APPROVED ASSEMBLIES

Membrane Type: Single Ply, PVC

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete.

System Type A: All layers of insulation fully adhered; membrane fully adhered.

All General and System Limitations apply.

One or more layers of the following.

Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY 2 **Minimum 1.5" thick**	**N/A**	**N/A**

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of base sheet. All insulation shall be adhered to the deck in full mopping of approved asphalt within the EVT range and at a rate of 20-40 lbs/100 ft^2. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels used as a top layer shall be placed with the Polyisocyanurate side facing down.

Vapor Retarder: None.

Barrier: None.

Membrane: HK 5000 or HK 5001 adhered with HK 5000 Flashing Adhesive at a rate of 1.66 gal./sq. applied to the insulation.

Maximum Design Pressure: -205 psf. (See General Limitation # 9.)

Membrane Type: Single Ply, PVC

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete.

System Type C: All layers of insulation simultaneously attached; membrane fully adhered.

All General and System Limitations apply.

One or more layers of the following.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Pyrox Minimum 1.2" thick	**N/A**	**N/A**
EnergyGuard, UltraGard Minimum 1.3" thick	**N/A**	**N/A**
ENRGY 2, PSI-25 Minimum 1.4" thick	**N/A**	**N/A**

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Pyrox Minimum 1.2" thick	**2, 4 or 10**	**1:2 ft^2**
EnergyGuard, UltraGard, ENRGY 2 Composite, Fesco Foam Minimum 1.3" thick	**2, 4 or 10**	**1:2 ft^2**
ENRGY 2, PSI-25 Minimum 1.4" thick	**2, 4 or 10**	**1:2 ft^2**

Vapor Retarder: Any UL or FMRC approved vapor retarder may be installed on the deck or over the base layer of insulation.

Barrier: None.

Membrane: HK 5000 or HK 5001 membrane adhered to the insulation substrate with HK 5000 Flashing Adhesive at a rate of 1.66 gal./sq. applied to the insulation, or the HK 5001 membrane may be set in hot asphalt adhesive applied at the rate of 20-40 lbs./sq.

Note: Substrate Adhesive shall not be used on composite board insulation with the perlite face up.

Maximum Design Pressure: -45 psf. (See General Limitation # 9.)

Membrane Type: Single Ply, PVC

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete.

System Type D: Membrane mechanically attached over preliminary fastened insulation.

All General and System Limitations apply.

One or more layers of the following.

Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Pyrox Minimum 1.2" thick	**N/A**	**N/A**
EnergyGuard, UltraGard, Multi Max Minimum 1.3" thick	**N/A**	**N/A**
ENRGY 2, PSI-25 Minimum 1.4" thick	**N/A**	**N/A**

Note: Top layer shall have preliminary attachment, prior to the installation of the membrane sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See membrane sheet below for fasteners and density.

Vapor Retarder: Any UL or FMRC approved vapor retarder may be installed on the deck or over the base layer of insulation.

Barrier: None.

Membrane: HK 5000 or HK 5001 attached through preliminary attached insulation to the deck as described below.

Fastening: Olympic 2" plates and Olympic #14 screws placed 6" o.c. in the membrane lap seams not more than 55" o.c.

Maximum Design Pressure: -45 psf. (See General Limitation # 7.)

Membrane Type: Single Ply, PVC

Deck Type 3: Concrete Decks, Non-insulated

Deck Description: 2500 psi structural concrete.

System Type E: Membrane mechanically attached to deck.

All General and System Limitations apply.

Barrier: None.

Membrane: HK 5000 or HK 5000 NR attached to the deck as described below.

Fastening: Olympic 2" plates and Olympic #14 screws placed 6" o.c. in the membrane lap seams not more than 55" o.c.

Maximum Design Pressure: -45 psf. (See General Limitation # 7.)

Membrane Type: Single Ply, PVC

Deck Type 3: Concrete Decks, Non-insulated

Deck Description: 2500 psi structural concrete.

System Type F: Membrane fully adhered to deck.

All General and System Limitations apply.

Barrier: None.

Membrane: HK 5000 or HK 5001 adhered with HK 5000 Flashing Adhesive at a rate of 1.66 gal./sq. applied to the deck. The deck shall be primed with Monsey asphalt primer which shall be allowed sufficient time to cure prior to the application of the membrane. HK 5001 membrane may be set in type III hot asphalt adhesive applied at the rate of 20-40 lbs./sq.

Maximum Design Pressure: -615 psf. (See General Limitation # 9.)

CONCRETE DECK SYSTEM LIMITATIONS:

1. If mechanical attachment to the structural deck through the lightweight insulating concrete is proposed, a field withdrawal resistance testing shall be performed to determine equivalent or enhanced fastener patterns and density. All testing and fastening design shall be in compliance with Testing Application Standard TAS 105 and Roofing Application Standard RAS 117 and/or RAS 137, calculations shall be signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant.

GENERAL LIMITATIONS:

1. Fire classification is not part of this acceptance, refer to a current Approved Roofing Materials Directory for fire ratings of this product.
2. Insulation may be installed in multiple layers. The first layer shall be attached in compliance with Product Control Approval guidelines. All other layers shall be adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq., or mechanically attached using the fastening pattern of the top layer
3. All standard panel sizes are acceptable for mechanical attachment. When applied in approved asphalt, panel size shall be 4' x 4' maximum.
4. An overlay and/or recovery board insulation panel is required on all applications over closed cell foam insulations when the base sheet is fully mopped. If no recovery board is used the base sheet shall be applied using spot mopping with approved asphalt, 12" diameter circles, 24" o.c.; or strip mopped 8" ribbons in three rows, one at each side lap and one down the center of the sheet allowing a continuous area of ventilation. Encircling of the strips is not acceptable. A 6" break shall be placed every 12' in each ribbon to allow cross ventilation. Asphalt application of either system shall be at a minimum rate of 12 lbs./sq. **Note: Spot attached systems shall be limited to a maximum design pressure of -45 psf.**
5. Fastener spacing for insulation attachment is based on a Minimum Characteristic Force (F') value of 275 lbf., as tested in compliance with Testing Application Standard TAS 105. If the fastener value, as field-tested, are below 275 lbf. Insulation attachment shall not be acceptable.
6. Fastener spacing for mechanical attachment of anchor/base sheet or membrane attachment is based on a minimum fastener resistance value in conjunction with the maximum design value listed within a specific system. Should the fastener resistance be less than that required, as determined by the Building Official, a revised fastener spacing, prepared, signed and sealed by a Florida Registered Engineer, Architect, or Registered Roof Consultant may be submitted. Said revised fastener spacing shall utilize the withdrawal resistance value taken from Testing Application Standards TAS 105 and calculations in compliance with Roofing Application Standard RAS 117.
7. Perimeter and corner areas shall comply with the enhanced uplift pressure requirements of these areas. Fastener densities shall be increased for both insulation and base sheet as calculated in compliance with Roofing Application Standard RAS 117 and/or RAS 137. Calculations prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant **(When this limitation is specifically referred within this NOA, General Limitation #9 will not be applicable.)**
8. All attachment and sizing of perimeter nailers, metal profile, and/or flashing termination designs shall conform to Roofing Application Standard RAS 111 and applicable wind load requirements.
9. The maximum designed pressure limitation listed shall be applicable to all roof pressure zones (i.e. field, perimeters, and corners). Neither rational analysis, nor extrapolation shall be permitted for enhanced fastening at enhanced pressure zones (i.e. perimeters, extended corners and corners). **(When this limitation is specifically referred within this NOA, General Limitation #7 will not be applicable.)**
10. All products listed herein shall have a quality assurance audit in accordance with the Florida Building Code and Rule 9B-72 of the Florida Administrative Code.

END OF THIS ACCEPTANCE