MIAMI-DADE

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)

Flex Membrane International
2670 Leiscz's Bridge Road, Suite 400
Leesport, PA 19533

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: Flex Single Ply PVC Roof Systems over Recover 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 NOA renews NOA No. 04-0113.01 and consists of pages 1 through 7.
The submitted documentation was reviewed by Jorge L. Acebo.

MIAMI-DADE COUNTY APPROVED

NOA No.: 09-0106.03
Expiration Date: 02/12/14
Approval Date: 02/11/09

ROOFING SYSTEM APPROVAL

Category:	Roofing
Sub-Category:	Single Ply
Material:	PVC
Deck Type:	Recover
Maximum Design Pressure	See specific deck assemblies.

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

Product	Dimensions	Test Specification	Product Description
Flex Tri-Polymer MF/R		ASTM D 4434 TAS 110	Polyester reinforced PVC membrane for mechanical attachment or adhered application.
Flex Tri-Polymer FB		ASTM D 4434	Polyester felt-backed PVC membrane for application in hot asphalt or adhesive.
Flex MF		ASTM D 4434	PVC membrane for mechanical attachment.
Flex Substrate Adhesive	5 gallon	proprietary	Adhesive used to bond Flex FB membrane to concrete or cellular concrete.
Flex Bonding Adhesive		proprietary	Adhesive used to bond Flex MF/R 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.	Flex Membrane Plates	Galvalume disc with barbs.	2" round	Flex
2.	Dekfast Fasteners	Insulation and membrane fastener	Various	Construction Fasteners, Inc.
3.	Dekfast Hex Plate	Insulation and membrane fastener	Various	Construction Fasteners, Inc.
4.	#14 Roofgrip	Insulation and membrane fastener	Various	ITW Buildex
5.	Metal Plate	Galvalume AZ50 stress plate	3" square 3" round	ITW Buildex
6.	Plastic Plate	Polyethylene stress plate	3.2" round	ITW Buildex
7.	Olympic Standard	Galvalume AZ55 stress plate	3" round	Olympic Mfg. Group
8.	Olympic G-2	Galvalume AZ55 stress plate	3.5" round	Olympic Mfg. Group
9.	Olympic	Plastic plates for fasteners.	3" round	Olympic Mfg. Group
10.	Insul-Fixx Fastener	Insulation fastener for use in wood and steel decks	Various	SFS Stadler, Inc.
11.	Insul-Fixx S	Galvalume AZ55 stress plate	3" round	SFS Stadler, Inc.
12.	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 7I: Recover

Deck Description: Concrete/Lightweight Concrete/Cementitious Wood Fiber/Wood/Steel

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**	Approved Fastener for Deck Type	**1:2 ft^2**
EnergyGuard, UltraGard, ENRGY 2 Composite, Fesco Foam **Minimum 1.3" thick**	Approved Fastener for Deck Type	**1:2 ft^2**
ENRGY 2 **Minimum 1.4" thick**	Approved Fastener for Deck Type	**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: Flex Tripolymer MF/R or Flex Tripolymer FB membrane adhered to the insulation substrate with Flex Substrate Adhesive at a rate of 1.66 gal./sq. applied to the insulation, or the Flex Tripolymer FB membrane may be set in hot asphalt adhesive applied at the rate of 20-40 lbs/sq.

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

Membrane Type: Single Ply, PVC

Deck Type 7I: Recover

Deck Description: Concrete/Lightweight Concrete/Cementitious Wood Fiber/Wood/Steel

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: Flex Tripolymer MF/R or Flex MF attached through preliminary attached insulation to the deck as described below.

Fastening: Flex Membrane or Olympic 2" plates and approved fasteners placed 6" o.c. in the membrane lap seams not more than 55" o.c..
(Maximum Design Pressure: -45 psf; See General Limitation #7.)

Flex Membrane or Olympic 2" plates and approved fasteners placed 18" o.c. through the membrane or the laps in rows not more than 54" o.c., and covered with a welded membrane cover strip.
(Maximum Design Pressure: -45 psf; See General Limitation #9.)

Maximum Design Pressure: See fastening Options Above

Membrane Type: Single Ply, PVC

Deck Type 7: Recover, Non-Insulated

Deck Description: Concrete/Lightweight Concrete/Cementitious Wood Fiber/Wood/Steel

System Type E: Membrane mechanically attached to deck.

All General and System Limitations apply.

Barrier: None.

Membrane: Flex Tripolymer MF/R or Flex MF attached to the deck as described below.

Fastening: Flex Membrane or Olympic 2" plates and approved fasteners placed 6" o.c. in the membrane lap seams not more than 55" o.c..
(Maximum Design Pressure: -45 psf; See General Limitation #7.)

Flex Membrane or Olympic 2" plates and approved fasteners placed 18" o.c. through the membrane or the laps in rows not more than 54" o.c., and covered with a welded membrane cover strip.
(Maximum Design Pressure: -45 psf; See General Limitation #9.)

Maximum Design Pressure: See fastening Options Above

RECOVER SYSTEM LIMITATIONS:

1. All System Limitations and General Limitations shall apply. See specific deck type Notice of Acceptance for deck type System Limitations.

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