



BUILDING AND NEIGHBORHOOD COMPLIANCE DEPARTMENT (BNC)
BOARD AND CODE ADMINISTRATION DIVISION

MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION
11805 SW 26 Street, Room 208
Miami, Florida 33175-2474
T (786) 315-2590 F (786) 315-2599
www.miamidade.gov/building

NOTICE OF ACCEPTANCE (NOA)

Johns Manville Corporation
717 17th Street
Denver, CO. 80202

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 BNC - 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. BNC 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 High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: JM TPO Single Ply Roofing System over Concrete Deck

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 revises NOA No. 08-0922.09 and consists of pages 1 through 21.
The submitted documentation was reviewed by Jorge L Acebo.



NOA No.: 09-1013.06
Expiration Date: 12/24/13
Approval Date: 10/13/11
Page 1 of 21

ROOFING SYSTEM APPROVAL

Category: Roofing
Sub-Category: Single Ply
Material: TPO
Deck Type: Concrete
Maximum Design Pressure -217.5 psf

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
JM TPO-45	45 mils thick	ASTM D 6878 TAS 131	Polyester reinforced Thermoplastic Olefin single ply membrane.
JM TPO-60	60 mils thick	ASTM D 6878 TAS 131	Polyester reinforced Thermoplastic Olefin single ply membrane.
JM TPO-80	80 mils thick	ASTM D 6878 TAS 131	Polyester reinforced Thermoplastic Olefin single ply membrane.
JM TPO FB-100	45 mils thick	ASTM D 6878 TAS 131	Polyester reinforced, fleece backed, Thermoplastic Olefin single ply membrane.
JM TPO FB-115	60 mils thick	ASTM D 6878 TAS 131	Polyester reinforced, fleece backed, Thermoplastic Olefin single ply membrane.
JM TPO FB-135	80 mils thick	ASTM D 6878 TAS 131	Polyester reinforced, fleece backed, Thermoplastic Olefin single ply membrane.
JM Urethane Insulation Adhesive	5 gal.	Proprietary	A one part, cold-applied adhesive
JM Two Part Urethane Insulation Adhesive	5 gal.	Proprietary	A two-component, cold-applied adhesive
JM TPO Membrane Adhesive (Solvent Based)	5 gal.	Proprietary	A synthetic rubber-based adhesive used on single ply roofing membranes.
JM TPO Membrane Adhesive (Low VOC)	5 gal.	Proprietary	A synthetic rubber-based adhesive used with fully or partially adhered TPO roofing membrane systems.
JM TPO Membrane Adhesive (Water based)	5 gal.	Proprietary	A polymeric, wet laying (single side application), low-VOC adhesive.
JM TPO 10" RPS	10" x 100'	ASTM D 6878 TAS 131	A 10" wide strip of JM TPO with a 3" wide strip of adhesive tape laminated along its length.
JM TPO Primer	3 gal.	Proprietary	A synthetic polymer-based primer
JM TPO Primer (Low VOC)	3 gal.	Proprietary	A low VOC, synthetic polymer-based primer



NOA No.: 09-1013.06
 Expiration Date: 12/24/13
 Approval Date: 10/13/11
 Page 2 of 21

JM Green Two Part
Urethane Insulation
Adhesive

5 gal.

A two-component, plant based, low
VOC adhesive

APPROVED INSULATIONS:

TABLE 2

<u>Product Name</u>	<u>Product Description</u>	<u>Manufacturer (With Current NOA)</u>
ENRGY 3, ValuTherm, JM ISO 3, PSI-25 Invinsa Roof Board	Polyisocyanurate insulation	Johns Manville
DensDeck	High density polyisocyanurate board	Johns Manville
SECUROCK Gypsum-Fiber Roof Board	Silicone treated gypsum	G-P Products
	Fiber reinforced coverboard	USG Corp.

APPROVED FASTENERS:

TABLE 3

<u>Fastener Number</u>	<u>Product Name</u>	<u>Product Description</u>	<u>Dimensions</u>	<u>Manufacturer (With Current NOA)</u>
1.	UltraFast Fasteners	Insulation and membrane fastener	Various	Johns Manville
2.	UltraFast 3" Round Metal Plates	Insulation Plate	3" diameter	Johns Manville
3.	UltraFast Square Recessed Metal Plates	Insulation Plate	N/A	Johns Manville
4.	High Load Fasteners	Insulation and membrane fastener	Various	Johns Manville
5.	Extra High Load Fasteners	Insulation and membrane fastener	Various	Johns Manville
6.	High Load Plates	Insulation Plate	Various	Johns Manville
7.	Extra High Load Plates	Insulation Plate	Various	Johns Manville
8.	JM TPO RhinoPlate	Insulation Plates	3.15" diameter, 0.028" thick	Johns Manville



EVIDENCE SUBMITTED:

<u>Test Agency</u>	<u>Test Identifier</u>	<u>Description</u>	<u>Date</u>
Factory Mutual Research Corporation	3032235	FM 4470	06/27/08
	3030259	FM 4470	06/02/08
	3031917	FM 4470	06/20/08
	3030383	FM 4470	05/13/08
	3033700	FM 4470	10/10/08
	3036842	FM 4470	10/02/09
	3036559	FM 4470	10/02/09
	3035538	FM 4470	10/02/09
Momentum Technologies	RX10A8A	ASTM D 6878/ TAS 131	03/29/10
	RX14C8A	ASTM D 6878/ TAS 131	03/29/10
	RX10A8B	ASTM D 6878/ TAS 131	03/29/10
Underwriters Laboratories, Inc.	02NK47751	UL 790	10/10/03
	04NK04226	UL 790	11/12/04
	07NK09830	UL 790	04/18/08



APPROVED ASSEMBLIES:

Membrane Type: Single Ply, Thermoplastic, TPO

Deck Type 3I: Concrete, Insulated

Deck Description: Min. 2500 psi structural concrete or concrete plank

System Type A(1): One or more layers of insulation adhered with approved adhesive; membrane fully adhered.

All General and System Limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft2
ENERGY 3, PSI-25, JM ISO 3, ValuTherm Minimum 1.5" thick	N/A	N/A

Note: All insulation shall be adhered in 3/4" wide ribbons of JM Urethane Insulation Adhesive spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Membrane: JM TPO adhered to insulation using JM TPO Membrane Adhesive (Solvent-Based), or JM TPO Membrane Adhesive (Low VOC) adhesive applied to both the membrane and substrate for a combined rate of 1.67 gal/sq. Side laps are sealed with a 1.5-inch wide heat weld.

Maximum Design Pressures: -217.5 psf. (See General Limitation #9)



Membrane Type: Single Ply, Thermoplastic, TPO
Deck Type 3I: Concrete, Insulated
Deck Description: Min. 2500 psi structural concrete or concrete plank
System Type A(2): One or more layers of insulation adhered with approved adhesive; membrane fully adhered.

All General and System Limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, PSI-25, JM ISO 3, ValuTherm Minimum 1.5" thick	N/A	N/A
Top Insulation Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
Invinsa Board, DensDeck Minimum 1/4" thick	N/A	N/A

Note: All insulation layers shall be adhered with 3/4" wide ribbons of JM Two Part Urethane Insulation Adhesive, spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Membrane: JM TPO adhered to insulation using JM TPO Membrane Adhesive (Solvent-Based) or JM TPO Membrane Adhesive (Low VOC) adhesive applied to both the membrane and substrate for a combined rate of 1.67 gal/sq. Side laps are sealed with a 1.5-inch wide heat weld.

Or

JM TPO adhered to insulation using JM TPO Membrane Adhesive (Water-Based) applied to substrate only at a rate of 0.84 gal/sq. Side laps are sealed with a 1.5-inch wide heat weld.

Maximum Design Pressures: -105 psf. (See General Limitation #9)



Membrane Type: Single Ply, Thermoplastic, TPO
Deck Type 3I: Concrete, Insulated
Deck Description: Min. 2500 psi structural concrete or concrete plank
System Type A(3): One or more layers of insulation adhered with approved adhesive; membrane fully adhered.

All General and System Limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, PSI-25, JM ISO 3, ValuTherm Minimum 1.5" thick	N/A	N/A
Top Insulation Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
Invinsa Board, DensDeck Minimum 1/4" thick	N/A	N/A

Note: All insulation layers shall be adhered in 3/4" wide ribbons of JM Urethane Insulation Adhesive, or Weather Tite One Step Foamable Adhesive, spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Membrane: JM TPO adhered to insulation using JM TPO Membrane Adhesive (Solvent-Based) or JM TPO Membrane Adhesive (Low VOC) adhesive applied to both the membrane and substrate for a combined rate of 1.67 gal/sq. Side laps are sealed with a 1.5-inch wide heat weld.

Or

JM TPO Membrane Adhesive (Water-Based) applied to substrate only at a rate of 0.84 gal/sq. Side laps are sealed with a 1.5-inch wide heat weld.

Maximum Design Pressures: -75 psf. (See General Limitation #9)



Membrane Type: Single Ply, Thermoplastic, TPO
Deck Type 3I: Concrete, Insulated
Deck Description: Min. 2500 psi structural concrete or concrete plank
System Type A(4): One or more layers of insulation adhered with approved adhesive; membrane fully adhered.

All General and System Limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
ENRGY 3, PSI-25, JM ISO 3, ValuTherm Minimum 1.5" thick	N/A	N/A

Note: All insulation shall be adhered with JM Two Part Urethane Insulation Adhesive, JM Green Two Part Urethane Insulation Adhesive, JM Urethane Insulation Adhesive or Weather-Tite One Step Foamable Adhesive applied in ¼" wide ribbons of spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Membrane: JM TPO FB adhered to insulation using JM TPO Membrane Adhesive (Water-Based) applied to substrate only at a rate of 0.84 gal/sq. Side laps are sealed with a 1.5-inch wide heat weld.

Maximum Design Pressures: -105 psf with JM Two Part Urethane Insulation Adhesive or JM Green Two Part Urethane Insulation Adhesive (See General Limitation #9)
-75 psf with JM Urethane Insulation Adhesive or Weather-Tite One Step Foamable Adhesive (See General Limitation #9)



Membrane Type: Single Ply, Thermoplastic, TPO
Deck Type 3I: Concrete, Insulated
Deck Description: Min. 2500 psi structural concrete or concrete plank
System Type A(5): One or more layers of insulation adhered with approved adhesive; membrane fully adhered.

All General and System Limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3 Minimum 1.5" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
SECUROCK Gypsum-Fiber Roof Board Minimum 1/4" thick	N/A	N/A

Note: All Insulation layers shall be adhered with approved asphalt within the EVT range and at a rate of 20-25 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Membrane: JM TPO FB adhered to insulation using JM TPO Membrane Adhesive (Water-Based) applied to substrate only at a rate of 0.84 gal/sq. Side laps are sealed with a 1.5-inch wide heat weld.

Maximum Design Pressures: -105 psf (See General Limitation #9)



Membrane Type: Single Ply, Thermoplastic, TPO
Deck Type 3I: Concrete, Insulated
Deck Description: Min. 2500 psi structural concrete or concrete plank
System Type A(6): One or more layers of insulation adhered with approved adhesive; membrane fully adhered.

All General and System Limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3 Minimum 2.0" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
SECUROCK Gypsum-Fiber Roof Board Minimum ¼" thick	N/A	N/A

Note: All Insulation layers shall be adhered with Insta-Stick Roofing Adhesive, OlyBond 500 Adhesive Fastener, JM Two Part Urethane Adhesive, TITSEET Roofing Adhesive or Weather-Tite One Step Foamable Adhesive applied in ¾" ribbons spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Membrane: JM TPO FB adhered to insulation using JM TPO Membrane Adhesive (Water-Based) applied to substrate only at a rate of 0.84 gal/sq. Side laps are sealed with a 1.5-inch wide heat weld.

Maximum Design Pressures: -105 psf (See General Limitation #9)



Membrane Type: Single Ply, Thermoplastic, TPO
Deck Type 3I: Concrete, Insulated
Deck Description: Min. 2500 psi structural concrete or concrete plank
System Type B: Base layer of insulation mechanically fastened, optional top layer adhered with approved adhesive, membrane fully adhered.

All General and System Limitations apply.

One or more layers of any of the following insulations.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, PSI-25, JM ISO 3, ValuTherm Minimum 1.5" thick	2, 3, 4	1:2 ft ²

Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, PSI-25, JM ISO 3, ValuTherm Minimum 1.5" thick	N/A	N/A

Note: Top layer of insulation shall be adhered with approved asphalt within the EVT range and at a rate of 20-25 lbs/100 ft², or JM Urethane Insulation Adhesive or JM Two Part Urethane Insulation Adhesive applied in 3/4" ribbons spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

Membrane: JM TPO FB adhered to insulation using JM TPO Membrane Adhesive (Water-Based) applied to substrate only at a rate of 0.84 gal/sq. Side laps are sealed with a 1.5-inch wide heat weld.

Maximum Design Pressures: -45.0 psf. (See General Limitation #9)



Membrane Type: Single Ply, Thermoplastic, TPO
Deck Type 3I: Concrete, Insulated
Deck Description: Min. 2500 psi structural concrete or concrete plank
System Type C(1): Top layer of insulation mechanically fastened, membrane fully adhered.
All General and System Limitations apply.

Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
ENRGY 3, PSI-25, JM ISO 3, ValuTherm Minimum 1.5" thick	2, 3, 4	1:1.78 ft ²

Note: All layers shall be simultaneously fastened; see above 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.

Membrane: JM TPO adhered to insulation using JM TPO Membrane Adhesive (Solvent-Based), or JM TPO Membrane Adhesive (Low VOC) adhesive applied to both the membrane and substrate for a combined rate of 1.67 gal/sq. Side laps are sealed with a 1.5-inch wide heat weld.

Maximum Design Pressures: -52.5 psf. (See General Limitation #7)



Membrane Type: Single Ply, Thermoplastic, TPO
Deck Type 2I: Concrete, Insulated
Deck Description: Min. 2500 psi structural concrete or concrete plank
System Type C(2): All layers of insulation simultaneously fastened; membrane fully adhered.

All General and System Limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, PSI-25, JM ISO 3, ValuTherm Minimum 1.5" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Plywood Minimum 19/32" thick	2, 3, 4	1:1.78 ft ²

Note: All layers shall be simultaneously fastened; see top layer above 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.

Membrane: JM TPO adhered to insulation using JM TPO Membrane Adhesive (Solvent-Based) applied to both the membrane and substrate for a combined rate of 1.67 gal/sq. Side laps are sealed with a 1.5-inch wide heat weld.

Maximum Design Pressures: -75 psf. (See General Limitation #7)



Membrane Type: Single Ply, Thermoplastic, TPO
Deck Type 2I: Concrete, Insulated
Deck Description: Min. 2500 psi structural concrete or concrete plank
System Type C(3): Top layer of insulation mechanically fastened, membrane fully adhered.

All General and System Limitations apply.

Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
ENRGY 3, PSI-25, JM ISO 3, ValuTherm Minimum 1.5" thick	2, 3, 4	1:2 ft ²

Note: All layers shall be simultaneously fastened; see above 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.

Membrane: JM TPO adhered to insulation using JM TPO Membrane Adhesive (Solvent-Based) or JM TPO Membrane Adhesive (Low VOC) adhesive applied to both the membrane and substrate for a combined rate of 1.67 gal/sq. Side laps are sealed with a 1.5-inch wide heat weld.

Or

JM TPO Membrane Adhesive (Water-Based) can also be applied to substrate only at a rate of 0.84 gal/sq. Side laps are sealed with a 1.5-inch wide heat weld.

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



Membrane Type: Single Ply, Thermoplastic, TPO
Deck Type 2I: Concrete, Insulated
Deck Description: Min. 2500 psi structural concrete or concrete plank
System Type C(4): All layers of insulation simultaneously fastened; membrane fully adhered.

All General and System Limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, PSI-25, JM ISO 3, ValuTherm Minimum 1.5" thick	N/A	N/A

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Plywood Minimum 19/32" thick	2, 3, 4	1:2 ft ²

Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The 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.

Membrane: JM TPO adhered to insulation using JM TPO Membrane Adhesive (Solvent-Based) or JM TPO Membrane Adhesive (Low VOC) adhesive applied to both the membrane and substrate for a combined rate of 1.67 gal/sq. Side laps are sealed with a 1.5-inch wide heat weld.

Or

JM TPO Membrane Adhesive (Water-Based) can also be applied to substrate only at a rate of 0.84 gal/sq. Side laps are sealed with a 1.5-inch wide heat weld.

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



Membrane Type: Single Ply, Thermoplastic, TPO
Deck Type 2I: Concrete, Insulated
Deck Description: Min. 2500 psi structural concrete or concrete plank
System Type C(5): All layers of insulation simultaneously fastened; membrane fully adhered.

All General and System Limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, PSI-25, JM ISO 3, ValuTherm Minimum 1.5" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Plywood Minimum 19/32" thick	2, 3, 4	1:2 ft ²

Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The 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.

Membrane: JM TPO FB adhered to insulation using JM TPO Membrane Adhesive (Water-Based) applied to substrate only at a rate of 0.84 gal/sq. Side laps are sealed with a 1.5-inch wide heat weld.

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



Membrane Type: Single Ply, Thermoplastic, TPO
Deck Type 3I: Concrete, Insulated
Deck Description: Min. 2500 psi structural concrete or concrete plank
System Type C(6): Top layer of insulation mechanically fastened, membrane fully adhered.

Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, PSI-25, JM ISO 3, ValuTherm Minimum 1.5" thick	2, 3, 4	1:2 ft ²

Note: All layers shall be simultaneously fastened; see above 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.

Membrane: JM TPO FB adhered to insulation using JM TPO Membrane Adhesive (Water-Based) applied to substrate only at a rate of 0.84 gal/sq. Side laps are sealed with a 1.5-inch wide heat weld.

Maximum Design Pressures: -45.0 psf. (See General Limitation #9)



Membrane Type: Single Ply, Thermoplastic, TPO
Deck Type 3I: Concrete, Insulated
Deck Description: Min. 2500 psi structural concrete or concrete plank
System Type C(7): Top layer of insulation mechanically fastened; membrane adhered to fastener plates.

All General and System Limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, PSI-25, JM ISO 3, ValuTherm Minimum 1.5" thick	4, 15	1:4 ft ²
Top Insulation Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
DensDeck, SECUROCK Gypsum-Fiber Roof Board or Invinsa Board Minimum 1/4" thick	4, 15	1:4 ft ²
Plywood Minimum 19/32" thick	4, 15	1:4 ft ²

Note: Top layer of insulation shall be mechanically attached using the fastener density listed above. The 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.

Membrane: JM TPO membrane bonded to JM TPO RhinoPlates fastened as specified above. Side laps are sealed with a 1.5-inch wide heat weld offset from the plates.
Maximum Design Pressures: -67.5 psf. (See General Limitation #7)



Membrane Type: Single Ply, Thermoplastic, TPO
Deck Type 2I: Concrete, Insulated
Deck Description: Min. 2500 psi structural concrete or concrete plank
System Type D(1): Membrane attached over preliminary fastened insulation.

All General and System Limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft2
ENRGY 3, PSI-25, JM ISO 3, ValuTherm Minimum 1.5" thick	N/A	N/A
Top Insulation Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft2
DensDeck, SECUROCK Gypsum-Fiber Roof Board, Invinsa Board Minimum 1/4" thick	N/A	N/A
Plywood Minimum 19/32" thick	N/A	N/A

Note: All insulation shall have preliminary attachment, prior to the installation of the roofing membrane 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.

Membrane: JM TPO mechanically fastened to the deck through the insulation as described below.

Fastening #1: JM TPO RhinoPlates and High Load Fasteners spaced 6" o.c. in fastener rows spaced 120". Laps are sealed with a minimum 1.5" heat weld.
Maximum Design Pressure -45.0 psf. (See General Limitations # 7)

Fastening #2: JM TPO RhinoPlates and High Load Fasteners spaced 12" o.c. in fastener rows spaced 60". Laps are sealed with a minimum 1.5" heat weld.
Maximum Design Pressure -52.5 psf. (See General Limitations # 7)

Fastening #3: JM TPO RhinoPlates and High Load Fasteners spaced 6" o.c. in fastener rows spaced 60". Laps are sealed with a minimum 1.5" heat weld.
Maximum Design Pressure -105.0 psf. (See General Limitations # 7)

Maximum Design Pressures: See Fastening Pattern. (See General Limitations # 7)



Membrane Type: Single Ply, Thermoplastic, TPO
Deck Type 2I: Concrete, Insulated
Deck Description: Min. 2500 psi structural concrete or concrete plank
System Type D(2): Membrane attached over preliminary fastened insulation.

All General and System Limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft2
ENRGY 3, PSI-25, JM ISO 3, ValuTherm Minimum 1.5" thick	N/A	N/A
Top Insulation Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft2
DensDeck, SECUROCK Gypsum-Fiber Roof Board, Invinsa Board Minimum 1/4" thick	N/A	N/A
Plywood Minimum 19/32" thick	N/A	N/A

Note: All insulation shall have preliminary attachment, prior to the installation of the roofing membrane 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.

Membrane: JM TPO is primed with JM TPO Primer or JM TPO Primer (Low VOC) and attached to the deck through the insulation with JM TPO 10" RPS membrane strips mechanically fastened as described below.

JM TPO 10" RPS membrane strips are secured to deck through the insulation with High Load Plates and High Load Fasteners in 14" rows, 6" o.c. The fasteners and plates are installed in the center down the middle of the JM TPO 10" RPS membrane strips. The primed JM TPO membrane is walked in over the self-adhering JM TPO 10" RPS membrane strips. The JM TPO membrane side laps are sealed with a minimum 1.5" heat welds offset from the RPS membrane strips.

Maximum Design Pressures: -52.5 psf. (See General Limitations # 7)



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 Engineer, 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 sidelap 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 with 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.)**

END OF THIS ACCEPTANCE



NOA No.: 09-1013.06
Expiration Date: 12/24/13
Approval Date: 10/13/11
Page 21 of 21