



**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)

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

DESCRIPTION: Johns Manville APP Modified Bitumen Roofing Systems Over Lightweight 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 consists of pages 1 through 25.

The submitted documentation was reviewed by Frank Zuloaga, RRC



**NOA No.: 03-0212.04
Expiration Date: 07/05/06
Approval Date: 07/17/03
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ROOFING ASSEMBLY APPROVAL

Category: Roofing
Sub-Category: APP Modified Bitumen
Deck Type: Lightweight Concrete
Maximum Design Pressure -82.5 psf
Fire Classification: See General Limitation #1

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 APP Base	150 sq. ft. roll	ASTM D 5147	APP modified asphalt, fiberglass reinforced, smooth surfaced base sheet.
APPeX 4S	32.8' x 3.28'; 90 lb. roll	ASTM D 6222, type I, grade S	APP modified asphalt, polyester reinforced, smooth surfaced membrane.
APPeX 4.5M	32.8' x 3.28'; 90 lb. roll	ASTM D 6222, type I grade G	APP modified asphalt, polyester reinforced, mineral surfaced membrane.
APPeX 4.5MFR	32.8' x 3.28'; 90 lb. roll	ASTM D 6222, type I grade G	APP modified asphalt, polyester reinforced, fire-retardant, mineral surfaced membrane.
APPeX 180	32.8' x 3.28'; 90 lb. roll	ASTM D 6222, type I, grade G	APP modified asphalt, polyester reinforced, smooth surfaced membrane.
Bicor MFR	39-3/8" x 34'	ASTM D 6223	APP modified asphalt, polyester / glass reinforced, granule surfaced membrane.
Tricor MFR	39-3/8" x 34'	ASTM D 6223	APP modified asphalt, polyester / glass reinforced, granule surfaced membrane.
Bicor S	39-3/8" x 34'	ASTM D 6223	APP modified asphalt, polyester / glass reinforced, smooth surfaced membrane.
Tricor S	39-3/8" x 34'	ASTM D 6223	APP modified asphalt, polyester / glass reinforced, smooth surfaced membrane.
GlasPly Premier	36" x 180'	ASTM D 2178 Type VI	Type VI asphalt impregnated glass felt for use in conventional and modified bitumen built-up roofing.
GlasPly IV	36" x 200'	ASTM D 4601 Type IV	Type IV asphalt impregnated glass felt for use in conventional and modified bitumen built-up roofing.



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<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
PermaPly 28	36' x 108'; 72 lb. roll	ASTM D 4601	Type II asphalt impregnated and coated glass fiber base sheet.
Ventsulation	36" x 36'	ASTM D 4897 Type II	Heavy duty fiber glass base sheet impregnated and coated on both sides with asphalt with or without fine mineral stabilizer.
JM Topgard Type B		ASTM D 1227	Fire rated, fibered, non-asbestos, clay water base asphalt emulsion.
JM Fibrated Aluminum Roof Coating		ASTM D 2824	Fire rated, fibered, non-asbestos aluminum coating.
JM Premium Fibered Aluminum Roof Coating		ASTM D 2824	Fire rated, fibered, non-asbestos asphalt aluminum coating.
MBR Insulation Adhesive		Proprietary	One part elastomeric insulation adhesive.
MBR Cold Application Adhesive		Proprietary	One part elastomeric interply adhesive for use with modified bitumen and BUR systems.

APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
ENRGY 2, ENERGY 3, PSI-25, ISO 3	Isocyanurate Insulation.	Johns Manville
ENRGY 2 Composite	Polyisocyanurate insulation laminated to perlite.	Johns Manville
ENRGY 2 Plus	Polyisocyanurate insulation laminated to wood fiber.	Johns Manville
Fesco Foam, DuraFoam	Isocyanurate Insulation with perlite facer	Johns Manville
Retro-Fit Board, DuraBoard	A high-density perlite roof insulation.	Johns Manville
Fesco Board	Rigid perlite roof insulation board.	Johns Manville
Fiber Glass Roof Insulation	Fiberglas roof insulation.	Johns Manville
Dens Deck	Silicon treated gypsum	G-P Products
Wood Fiberboard	Regular wood fiber insulation	Generic
High Density Wood Fiberboard	High Density Wood Fiber insulation board.	Generic



APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
Perlite Insulation Board	Perlite Insulation	Generic
Type X Gypsum	Gypsum Wallboard	Generic

APPROVED FASTENERS:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
1.	Twin Loc-Nail	Base sheet fastener with intergrated Plate.	2.7" dia. plate	ES Products, Inc.
2.	AccuTrac Plate	Galvalume AZ50 steel plate	3" square	ITW Buildex
3.	Lightweight Concrete (LWC) CR Base Fastener	Galvanized double spreading leg fastener for securing base sheets to lightweight insulating concrete.		Johns Manville
4.	UltraFast	Insulation fastener for wood, steel and concrete.		Johns Manville
5.	C-R Base Sheet Disc	Galvanized double spreading leg fastener for securing base sheets to lightweight insulating concrete.		Olympic Mfg. Group
6.	Base-Lok	Nylon base sheet fastener.		Simplex Nails & Fasteners

EVIDENCE SUBMITTED:

<u>Test Agency</u>	<u>Test Identifier</u>	<u>Description</u>	<u>Date</u>
Factory Mutual Research Corp.	J.I. 0X0A9.AM	Wind Uplift	03/25/94
	J.I. 0X7A4.AM	Wind Uplift	08/26/93
	J.I. 3001482		08/11/98
	J.I. 3002823		04/01/99
	J.I. 3003468		02/02/00
	J.I. 3007148		04/19/00
Underwriters Laboratories, Inc.	R-10400		Annually
Exterior Research & Design, LLC	#4361-2.04.97-1	PA 114(J)	04/15/97
	10390A.12.97-1	PA 114(J)	12/15/97
	10390A.10.97-1	PA 114(J)	10/15/97
	10391.01.03	TAS 114(J)	01/29/03



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APPROVED ASSEMBLIES

- Membrane Type:** APP
- Deck Type 4I:** Lightweight Concrete, Insulated, New Construction
- Deck Description:** Concrecel Cellular Lightweight Concrete
- System Type A(1):** Anchor sheet mechanically fastened; one or more layers of insulation adhered with approved asphalt.
- Deck :** 18-22 ga steel deck shall be secured 6" o.c. to structural supports spaced a maximum of 5 ft on centers with 5/8" puddle welds. Followed by Concrecel Bonding agent applied to the deck at rate 1200 sq. ft/gal using a compressed air sprayer. Rigid insulation panels shall be placed in a minimum 1/4" slurry-coat of insulating concrete and allowed to cure overnight. The following day the rigid insulation shall be covered with a minimum 2 1/4" topcoat cast of Concrecel. After an additional cure time of 24 hours Concrecel Curing Compound was roller applied at a rate of 300 sq. ft/gal.

All General and System limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 2, ENRGY 3 Minimum 1" thick	N/A	N/A
Fesco Foam, DuraFoam Minimum 1.5" thick	N/A	N/A
Fesco Board, Fiber Glass Minimum 3/4" thick	N/A	N/A
Retro-Fit Board Minimum 1/2" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Any listed insulation as Base Layer, above		
Tapered ENRGY 2, ENRGY 3 Minimum 1.3" thick	N/A	N/A
Tapered Fesco Board, Tapered Fiber Glass Minimum 3/4" thick	N/A	N/A



Note: All insulation shall be adhered to the anchor sheet in full mopping of approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². 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 may be used as a top layer placed with the polyisocyanurate side facing down.

- Anchor Sheet: One ply of Glasply Premier fastened to the deck as described below:
- Fastening: Fasten base sheet to deck with LWC CR Base Fasteners or Olympic CR Base Ply Fasteners at a 3" side lap 7" o.c. and 7" o.c. in two staggered rows in the center of the sheet
- Base Sheet: One ply of JM PermaPly 28 fully adhered to the insulated substrate with approved mopping asphalt at an application rate of 20-40 lbs./sq.
- Ply Sheet: (Optional) One or more plies of JM APP Base, APPeX 4S or APPeX 180 heat welded to base sheet.
- Membrane: One or more plies of APPeX 4S, APPeX 180, APPeX 4.5M or APPeX 4.5 MFR heat welded.
- Surfacing: (Optional) Install one of the following for all systems that do not achieve acceptable fire ratings through the use of FR membrane sheets.
1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at a rate of 60 lb./sq.
 2. Karnak 97, Karnak 97 AF, Monsey Premium Long Life Aluminum Roof Coating Asbestos Free or Monsey Prograde Aluminum, JM Topgard Type A, Topgard Type B, JM Aluminum RF CT, Grundy AL MB aluminum coating at a rate of 1-1/2 gal/sq Monsey Aquabrite, Gardner asphalt emulsion, APOC Sunbright 400 or Henry 229 Aluminum Emulsion at 2½ gal/sq or APOC 212 Aluminum Roof Coating at 3 gal/sq.
 3. Grundy 20 F asphalt emulsion, Endure Asphalt Emulsion, APOC 302 or 302 AF applied at 2½ gal/sq with optional 60 lbs./sq. of roofing granules embedded in wet coating.
- Maximum Design Pressure: -82.5 psf (See General Limitation #7)



Membrane Type: APPS

Deck Type 4I: Lightweight Concrete, Insulated, New Construction

Deck Description: Concrecel Cellular Lightweight Concrete

System Type A(2): Anchor sheet mechanically fastened; one or more layers of insulation adhered with approved asphalt.

Deck : Structural concrete. Followed by Concrecel Bonding agent applied to the deck at rate 1200 sq. ft/gal using a compressed air sprayer. Rigid insulation panels shall be placed in a minimum ¼” slurry-coat of insulating concrete and allowed to cure overnight. The following day the rigid insulation shall be covered with a minimum 2¼” topcoat cast of Concrecel. After an additional cure time of 24 hours Concrecel Curing Compound was roller applied at a rate of 300 sq. ft/gal.

All General and System limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 2, ENRGY 3 Minimum 1” thick	N/A	N/A
Fesco Foam, DuraFoam Minimum 1.5” thick	N/A	N/A
Fesco Board, Fiber Glass Minimum ¾” thick	N/A	N/A
Retro-Fit Board Minimum ½” thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Any listed insulation as Base Layer, above		
Tapered ENRGY 2, ENRGY 3 Minimum 1.3” thick	N/A	N/A
Tapered Fesco Board, Tapered Fiber Glass Minimum ¾” thick	N/A	N/A

Note: All insulation shall be adhered to the anchor sheet in full mopping of approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². 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 may be used as a top layer placed with the polyisocyanurate side facing down.

Anchor Sheet: One ply of Glasply Premier fastened to the deck as described below:



- Fastening: Fasten base sheet to deck with LWC CR Base Fasteners or Olympic CR Base Ply Fasteners at a 3" side lap 7" o.c. and 7" o.c. in two staggered rows in the center of the sheet
- Base Sheet: One ply of JM PermaPly 28 fully adhered to the insulated substrate with approved mopping asphalt at an application rate of 20-40 lbs./sq.
- Ply Sheet: (Optional) One or more plies of JM APP Base, APPeX 4S or APPeX 180 heat welded to base sheet.
- Membrane: One or more plies of APPeX 4S, APPeX 180, APPeX 4.5M or APPeX 4.5 MFR heat welded.
- Surfacing: (Optional) Install one of the following for all systems that do not achieve acceptable fire ratings through the use of FR membrane sheets.
1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at a rate of 60 lb./sq.
 2. Karnak 97, Karnak 97 AF, Monsey Premium Long Life Aluminum Roof Coating Asbestos Free or Monsey Prograde Aluminum, JM Topgard Type A, Topgard Type B, JM Aluminum RF CT, Grundy AL MB aluminum coating at a rate of 1-1/2 gal/sq Monsey Aquabrite, Gardner asphalt emulsion, APOC Sunbright 400 or Henry 229 Aluminum Emulsion at 2½ gal/sq or APOC 212 Aluminum Roof Coating at 3 gal/sq.
 3. Grundy 20 F asphalt emulsion, Endure Asphalt Emulsion, APOC 302 or 302 AF applied at 2½ gal/sq with optional 60 lbs./sq. of roofing granules embedded in wet coating.

Maximum Design Pressure: -82.5 psf (See General Limitation #7)



- Membrane Type:** APP
- Deck Type 4I:** Lightweight Concrete, Insulated, New Construction, Reroof
- Deck Description:** Approved Cellular Lightweight Concrete Deck (Minimum 300 psi).
- System Type A(3):** Anchor sheet mechanically fastened; one or more layers of insulation adhered with approved asphalt.
- Deck:** Min. 22 ga type BW slotted steel deck attached to ¼” steel supports spaced a maximum of 5 ft. o.c. with 5/8” puddle welds and washers spaced a maximum of 6” o.c. (at the bottom of each rib/flute). Side laps shall be fastened at 18” o.c. with Traxx/1 fasteners or #10 self-tapping screws.

All General and System Limitations apply.

Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 2, ENRGY 3 Minimum 1.4” thick	N/A	N/A
Fesco Foam, DuraFoam Minimum 1.5” thick	N/A	N/A
Fesco Board, Fiber Glass Minimum ¾” thick	N/A	N/A
Retro-Fit Board Minimum ½” thick	N/A	N/A

Note: All insulation shall be adhered to the anchor sheet in full mopping of approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². 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 may be used as a top layer placed with the polyisocyanurate side facing down.

- Anchor Sheet:** One ply of JM PermaPly 28, DynaBase GlasPly Premier or Ventsulation mechanically fastened to the deck as described below:
- Fastening #1:** Attach anchor sheet using JM CR Base Ply Fasteners spaced 7” o.c. in a 3” lap and 7” o.c. in two staggered rows in the center of the sheet.
(Maximum Design Pressure: -52.5 psf, See General Limitation #7.)
- Fastening #2:** Attach anchor sheet using JM UltraFast fasteners and Metal Plates through the lightweight concrete to the structural steel deck spaced 7” o.c. in a 4” lap and 7” o.c. in two staggered rows in the center of the sheet.
(Maximum Design Pressure: -75 psf, See General Limitation #7.)
- Base Sheet:** One ply of JM PermaPly 28 fully adhered to the insulated substrate with approved mopping asphalt at an application rate of 20-40 lbs./sq.



- Ply Sheet: (Optional) One or more plies of JM APP Base, APPeX 4S or APPeX 180 heat welded to base sheet.
- Membrane: One or more plies of APPeX 4S, APPeX 180, APPeX 4.5M or APPeX 4.5 MFR heat welded.
- Surfacing: (Optional) Install one of the following for all systems that do not achieve acceptable fire ratings through the use of FR membrane sheets.
1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at a rate of 60 lb./sq.
 2. Karnak 97, Karnak 97 AF, Monsey Premium Long Life Aluminum Roof Coating Asbestos Free or Monsey Prograde Aluminum, JM Topgard Type A, Topgard Type B, JM Aluminum RF CT, Grundy AL MB aluminum coating at a rate of 1-1/2 gal/sq Monsey Aquabrite, Gardner asphalt emulsion, APOC Sunbright 400 or Henry 229 Aluminum Emulsion at 2½ gal/sq or APOC 212 Aluminum Roof Coating at 3 gal/sq.
 3. Grundy 20 F asphalt emulsion, Endure Asphalt Emulsion, APOC 302 or 302 AF applied at 2½ gal/sq with optional 60 lbs./sq. of roofing granules embedded in wet coating.



Membrane Type: APP

Deck Type 4I: Lightweight Concrete, Insulated, New Construction, Reroof

Deck Description: Approved Cellular Lightweight Concrete Deck (Minimum 300 psi).

System Type A(4): Anchor sheet mechanically fastened; one or more layers of insulation adhered with approved asphalt.

Deck: Structural Concrete.

All General and System Limitations apply.

Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 2, ENRGY 3 Minimum 1.4" thick	N/A	N/A
Fesco Foam, DuraFoam Minimum 1.5" thick	N/A	N/A
Fesco Board, Fiber Glass Minimum ¾" thick	N/A	N/A
Retro-Fit Board Minimum ½" thick	N/A	N/A

Note: All insulation shall be adhered to the anchor sheet in full mopping of approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². 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 may be used as a top layer placed with the polyisocyanurate side facing down.

Anchor Sheet: One ply of JM PermaPly 28, DynaBase GlasPly Premier or Ventsulation mechanically fastened to the deck as described below:

Fastening #1: Attach anchor sheet using JM CR Base Ply Fasteners spaced 7" o.c. in a 3" lap and 7" o.c. in two staggered rows in the center of the sheet.
(Maximum Design Pressure: -52.5 psf, See General Limitation #7.)

Fastening #2: Attach anchor sheet using JM UltraFast fasteners and Metal Plates through the lightweight concrete to the structural concrete deck spaced 7" o.c. in a 4" lap and 7" o.c. in two staggered rows in the center of the sheet.
(Maximum Design Pressure: -75 psf, See General Limitation #7.)

Base Sheet: One ply of JM PermaPly 28 fully adhered to the insulated substrate with approved mopping asphalt at an application rate of 20-40 lbs./sq.

Ply Sheet: (Optional) One or more plies of JM APP Base, APPeX 4S or APPeX 180 heat welded to base sheet.



Membrane: One or more plies of APPeX 4S, APPeX 180, APPeX 4.5M or APPeX 4.5 MFR heat welded.

Surfacing: (Optional) Install one of the following for all systems that do not achieve acceptable fire ratings through the use of FR membrane sheets.

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at a rate of 60 lb./sq.
2. Karnak 97, Karnak 97 AF, Monsey Premium Long Life Aluminum Roof Coating Asbestos Free or Monsey Prograde Aluminum, JM Topgard Type A, Topgard Type B, JM Aluminum RF CT, Grundy AL MB aluminum coating at a rate of 1-1/2 gal/sq Monsey Aquabrite, Gardner asphalt emulsion, APOC Sunbright 400 or Henry 229 Aluminum Emulsion at 2½ gal/sq or APOC 212 Aluminum Roof Coating at 3 gal/sq.
3. Grundy 20 F asphalt emulsion, Endure Asphalt Emulsion, APOC 302 or 302 AF applied at 2½ gal/sq with optional 60 lbs./sq. of roofing granules embedded in wet coating.



- Membrane Type:** APP
- Deck Type 4I:** Lightweight Concrete, Insulated, New Construction, Reroof
- Deck Description:** Approved Cellular Lightweight Concrete Deck (Minimum 300 psi).
- System Type A(5):** Anchor sheet mechanically fastened; one or more layers of insulation adhered with approved asphalt.
- Deck:** Min. 22 ga type BW slotted steel deck attached to ¼” steel supports spaced a maximum of 5 ft. o.c. with 5/8” puddle welds and washers spaced a maximum of 6” o.c. (at the bottom of each rib/flute). Side laps shall be fastened at 18” o.c. with Traxx/I fasteners or #10 self-tapping screws.

All General and System Limitations apply.

Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
DuraFoam Minimum 1.5” thick	N/A	N/A
DuraBoard Minimum ½” thick	N/A	N/A

Note: All insulation shall be adhered to the anchor sheet in full mopping of approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². 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 may be used as a top layer placed with the polyisocyanurate side facing down.

- Anchor Sheet:** One ply of JM PermaPly 28, APP Base, DynaBase GlasPly Premier or Ventsulation mechanically fastened to the deck as described below:
- Fastening #1:** Attach anchor sheet using JM CR Base Ply Fasteners spaced 7” o.c. in a 4” lap and 7” o.c. in two staggered rows in the center of the sheet.
(Maximum Design Pressure: -52.5 psf, See General Limitation #7.)
- Fastening #2:** Attach anchor sheet using JM Ultrafast fasteners and Metal Plates through the lightweight concrete to the structural steel deck spaced 7” o.c. in a 4” lap and 7” o.c. in two staggered rows in the center of the sheet.
(Maximum Design Pressure: -75 psf, See General Limitation #7.)
- Base Sheet:** One or more plies of JM APP Base or APPeX 4S heat welded.
- Ply Sheet:** None.
- Membrane:** One or more plies of APPeX 4S, APPeX 180, APPeX 4.5M or APPeX 4.5 MFR heat welded.



Surfacing:

(Optional) Install one of the following for all systems that do not achieve acceptable fire ratings through the use of FR membrane sheets.

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at a rate of 60 lb./sq.
2. JM Topgard Type A, Topgard Type B or JM Aluminum Roof Coat.



Membrane Type: APP

Deck Type 4I: Lightweight Concrete, Insulated, New Construction, Reroof

Deck Description: Approved Cellular Lightweight Concrete Deck (Minimum 300 psi).

System Type A(6): Anchor sheet mechanically fastened; one or more layers of insulation adhered with approved asphalt.

Deck: Structural Concrete.

All General and System Limitations apply.

Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
DuraFoam Minimum 1.5" thick	N/A	N/A
DuraBoard Minimum ½" thick	N/A	N/A

Note: All insulation shall be adhered to the anchor sheet in full mopping of approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². 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 may be used as a top layer placed with the polyisocyanurate side facing down.

Anchor Sheet: One ply of JM PermaPly 28, APP Base, DynaBase GlasPly Premier or Ventsulation mechanically fastened to the deck as described below:

Fastening #1: Attach anchor sheet using JM CR Base Ply Fasteners spaced 7" o.c. in a 4" lap and 7" o.c. in two staggered rows in the center of the sheet.
(Maximum Design Pressure: -52.5 psf, See General Limitation #7.)

Fastening #2: Attach anchor sheet using JM Ultrafast fasteners and Metal Plates through the lightweight concrete to the structural concrete deck spaced 7" o.c. in a 4" lap and 7" o.c. in two staggered rows in the center of the sheet.
(Maximum Design Pressure: -75 psf, See General Limitation #7.)

Base Sheet: One or more plies of JM APP Base or APPeX 4S heat welded.

Ply Sheet: None.

Membrane: One or more plies of APPeX 4S, APPeX 180, APPeX 4.5M or APPeX 4.5 MFR heat welded.

Surfacing: (Optional) Install one of the following for all systems that do not achieve acceptable fire ratings through the use of FR membrane sheets.

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at a rate of 60 lb./sq.
2. JM Topgard Type A, Topgard Type B or JM Aluminum Roof Coat.



Membrane Type: APP

Deck Type 4: Lightweight Concrete, New Construction

Deck Description: Concrecel Cellular Lightweight Concrete

System Type E(1): Anchor sheet mechanically fastened to roof deck.

Deck : 18-22 ga steel deck shall be secured 6" o.c. to structural supports spaced a maximum of 5 ft on centers with 5/8" puddle welds. Followed by Concrecel Bonding agent applied to the deck at rate 1200 sq. ft/gal using a compressed air sprayer. Rigid insulation panels shall be placed in a minimum ¼" slurry-coat of insulating concrete and allowed to cure overnight. The following day the rigid insulation shall be covered with a minimum 2¼" topcoat cast of Concrecel. After an additional cure time of 24 hours Concrecel Curing Compound was roller applied at a rate of 300 sq. ft/gal.

All General and System limitations apply.

Anchor Sheet: One ply of Glasply Premier fastened to the deck as described below:

Fastening: Fasten base sheet to deck with LWC CR Base Fasteners or Olympic CR Base Ply Fasteners at a 3" side lap 7" o.c. and 7" o.c. in two staggered rows in the center of the sheet

Ply Sheet: (Optional) One or more plies of JM APP Base, APPeX 4S or APPeX 180 heat welded to base sheet.

Membrane: One or more plies of APPeX 4S, APPeX 180, APPeX 4.5M or APPeX 4.5 MFR heat welded.

Surfacing: (Optional) Install one of the following for all systems that do not achieve acceptable fire ratings through the use of FR membrane sheets.

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at a rate of 60 lb./sq.
2. Karnak 97, Karnak 97 AF, Monsey Premium Long Life Aluminum Roof Coating Asbestos Free or Monsey Prograde Aluminum, JM Topgard Type A, Topgard Type B, JM Aluminum RF CT, Grundy AL MB aluminum coating at a rate of 1-1/2 gal/sq Monsey Aquabrite, Gardner asphalt emulsion, APOC Sunbright 400 or Henry 229 Aluminum Emulsion at 2½ gal/sq or APOC 212 Aluminum Roof Coating at 3 gal/sq.
3. Grundy 20 F asphalt emulsion, Endure Asphalt Emulsion, APOC 302 or 302 AF applied at 2½ gal/sq with optional 60 lbs./sq. of roofing granules embedded in wet coating.

Maximum Design Pressure: -82.5 psf (See General Limitation #7)



- Membrane Type:** APP
- Deck Type 4:** Lightweight Concrete, New Construction
- Deck Description:** Concrecel Cellular Lightweight Concrete
- System Type E(2):** Anchor sheet mechanically fastened to roof deck.
- Deck :** Structural Concrete. Followed by Concrecel Bonding agent applied to the deck at rate 1200 sq. ft/gal using a compressed air sprayer. Rigid insulation panels shall be placed in a minimum ¼” slurry-coat of insulating concrete and allowed to cure overnight. The following day the rigid insulation shall be covered with a minimum 2¼” topcoat cast of Concrecel. After an additional cure time of 24 hours Concrecel Curing Compound was roller applied at a rate of 300 sq. ft/gal.

All General and System limitations apply.

- Anchor Sheet:** One ply of Glasply Premier fastened to the deck as described below:
- Fastening:** Fasten base sheet to deck with LWC CR Base Fasteners or Olympic CR Base Ply Fasteners at a 3" side lap 7" o.c. and 7" o.c. in two staggered rows in the center of the sheet
- Ply Sheet:** (Optional) One or more plies of JM APP Base, APPeX 4S or APPeX 180 heat welded to base sheet.
- Membrane:** One or more plies of APPeX 4S, APPeX 180, APPeX 4.5M or APPeX 4.5 MFR heat welded.
- Surfacing:** (Optional) Install one of the following for all systems that do not achieve acceptable fire ratings through the use of FR membrane sheets.
1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at a rate of 60 lb./sq.
 2. Karnak 97, Karnak 97 AF, Monsey Premium Long Life Aluminum Roof Coating Asbestos Free or Monsey Prograde Aluminum, JM Topgard Type A, Topgard Type B, JM Aluminum RF CT, Grundy AL MB aluminum coating at a rate of 1-1/2 gal/sq Monsey Aquabrite, Gardner asphalt emulsion, APOC Sunbright 400 or Henry 229 Aluminum Emulsion at 2½ gal/sq or APOC 212 Aluminum Roof Coating at 3 gal/sq.
 3. Grundy 20 F asphalt emulsion, Endure Asphalt Emulsion, APOC 302 or 302 AF applied at 2½ gal/sq with optional 60 lbs./sq. of roofing granules embedded in wet coating.

Maximum Design Pressure: -82.5 psf (See General Limitation #7)



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- Membrane Type:** APP
- Deck Type 4:** Lightweight Concrete, Non-insulated, New Construction, *Reroof*
- Deck Description:** Approved Cellular Lightweight Concrete Deck (Minimum 300 psi).
- System Type E(3):** Base sheet mechanically fastened.
- Deck:** Min. 22 ga type BW slotted steel deck attached to ¼” steel supports spaced a maximum of 5 ft. o.c. with 5/8” puddle welds and washers spaced a maximum of 6” o.c. (at the bottom of each rib/flute). Side laps shall be fastened at 18” o.c. with Traxx/1 fasteners or #10 self-tapping screws.

All General and System Limitations apply.

- Base Sheet:** One ply of JM PermaPly 28 or Vensulation mechanically fastened to the deck as described below:
- Fastening #1:** Attach anchor sheet using JM CR Base Ply Fasteners spaced 7” o.c. in a 3” lap and 7” o.c. in two staggered rows in the center of the sheet.
(Maximum Design Pressure: –52.5 psf, See General Limitation #7.)
- Fastening #2:** Attach anchor sheet using JM UltraFast fasteners and Metal Plates through the lightweight concrete to the structural steel deck spaced 7” o.c. in a 4” lap and 7” o.c. in two staggered rows in the center of the sheet.
(Maximum Design Pressure: –75 psf, See General Limitation #7.)
- Ply Sheet:** (Optional) One or more plies of JM APP Base, APPeX 4S or APPeX 180 heat welded to base sheet.
- Membrane:** One or more plies of APPeX 4S, APPeX 180, APPeX 4.5M or APPeX 4.5 MFR heat welded.
- Surfacing:** (Optional) Install one of the following for all systems that do not achieve acceptable fire ratings through the use of FR membrane sheets.
1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at a rate of 60 lb./sq.
 2. Karnak 97, Karnak 97 AF, Monsey Premium Long Life Aluminum Roof Coating Asbestos Free or Monsey Prograde Aluminum, JM Topgard Type A, Topgard Type B, JM Aluminum RF CT, Grundy AL MB aluminum coating at a rate of 1-1/2 gal/sq Monsey Aquabrite, Gardner asphalt emulsion, APOC Sunbright 400 or Henry 229 Aluminum Emulsion at 2½ gal/sq or APOC 212 Aluminum Roof Coating at 3 gal/sq.
 3. Grundy 20 F asphalt emulsion, Endure Asphalt Emulsion, APOC 302 or 302 AF applied at 2½ gal/sq with optional 60 lbs./sq. of roofing granules embedded in wet coating.



Membrane Type: APP

Deck Type 4: Lightweight Concrete, Non-insulated, New Construction, Reroof

Deck Description: Approved Cellular Lightweight Concrete Deck (Minimum 300 psi).

System Type E(4): Base sheet mechanically fastened.

Deck: Structural Concrete.

All General and System Limitations apply.

Base Sheet: One ply of JM PermaPly 28, DynaBase GlasPly Premier or Vensulation mechanically fastened to the deck as described below:

Fastening #1: Attach anchor sheet using JM CR Base Ply Fasteners spaced 7" o.c. in a 3" lap and 7" o.c. in two staggered rows in the center of the sheet.
(Maximum Design Pressure: -52.5 psf, See General Limitation #7.)

Fastening #2: Attach anchor sheet using JM UltraFast fasteners and Metal Plates through the lightweight concrete to the structural concrete deck spaced 7" o.c. in a 4" lap and 7" o.c. in two staggered rows in the center of the sheet.
(Maximum Design Pressure: -75 psf, See General Limitation #7.)

Ply Sheet: (Optional) One or more plies of JM APP Base, APPeX 4S or APPeX 180 heat welded to base sheet.

Membrane: One or more plies of APPeX 4S, APPeX 180, APPeX 4.5M or APPeX 4.5 MFR heat welded.

Surfacing: (Optional) Install one of the following for all systems that do not achieve acceptable fire ratings through the use of FR membrane sheets.

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at a rate of 60 lb./sq.
2. Karnak 97, Karnak 97 AF, Monsey Premium Long Life Aluminum Roof Coating Asbestos Free or Monsey Prograde Aluminum, JM Topgard Type A, Topgard Type B, JM Aluminum RF CT, Grundy AL MB aluminum coating at a rate of 1-1/2 gal/sq Monsey Aquabrite, Gardner asphalt emulsion, APOC Sunbright 400 or Henry 229 Aluminum Emulsion at 2½ gal/sq or APOC 212 Aluminum Roof Coating at 3 gal/sq.
3. Grundy 20 F asphalt emulsion, Endure Asphalt Emulsion, APOC 302 or 302 AF applied at 2½ gal/sq with optional 60 lbs./sq. of roofing granules embedded in wet coating.



Membrane Type: APP
Deck Type 4: Lightweight Concrete, New Construction, Reroof
Deck Description: Cellular or Aggregate Lightweight Concrete
System Type E(5): Base sheet mechanically attached to roof deck.
Deck : 18-22 ga steel deck shall be secured 6" o.c. to structural supports spaced a maximum of 5 ft on centers with 5/8" puddle welds.

All General and System Limitations apply.

Anchor Sheet: One ply of PermaPly 28 or DynaBase fastened to the deck as described below:
Fastening: ES Products Twin Loc-Nail at a fastener spacing of 9" o.c. at the 4" wide sidelaps and 9" o.c. in two equally spaced rows in the field of the base sheet.
Ply Sheet: (Optional) One or more plies of JM APP Base, APPeX 4S or APPeX 180 heat welded to base sheet.
Membrane: One or more plies of APPeX 4S, APPeX 180, APPeX 4.5M or APPeX 4.5 MFR heat welded.
Surfacing: (Optional) Install one of the following for all systems that do not achieve acceptable fire ratings through the use of FR membrane sheets.
1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at a rate of 60 lb./sq.
2. Karnak 97, Karnak 97 AF, Monsey Premium Long Life Aluminum Roof Coating Asbestos Free or Monsey Prograde Aluminum, JM Topgard Type A, Topgard Type B, JM Aluminum RF CT, Grundy AL MB aluminum coating at a rate of 1-1/2 gal/sq Monsey Aquabrite, Gardner asphalt emulsion, APOC Sunbright 400 or Henry 229 Aluminum Emulsion at 2½ gal/sq or APOC 212 Aluminum Roof Coating at 3 gal/sq.
3. Grundy 20 F asphalt emulsion, Endure Asphalt Emulsion, APOC 302 or 302 AF applied at 2½ gal/sq with optional 60 lbs./sq. of roofing granules embedded in wet coating.

Maximum Design Pressure: -60 psf, See General Limitation #7)



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Membrane Type: APP
Deck Type 4: Lightweight Concrete, New Construction, Reroof
Deck Description: Cellular or Aggregate Lightweight Concrete
System Type E(6): Base sheet mechanically attached to roof deck.
Deck : Structural Concrete..

All General and System Limitations apply.

Anchor Sheet: One ply of PermaPly 28 or DynaBase fastened to the deck as described below:
Fastening: ES Products Twin Loc-Nail at a fastener spacing of 9" o.c. at the 4" wide sidelaps and 9" o.c. in two equally spaced rows in the field of the base sheet.
Ply Sheet: (Optional) One or more plies of JM APP Base, APPeX 4S or APPeX 180 heat welded to base sheet.
Membrane: One or more plies of APPeX 4S, APPeX 180, APPeX 4.5M or APPeX 4.5 MFR heat welded.
Surfacing: (Optional) Install one of the following for all systems that do not achieve acceptable fire ratings through the use of FR membrane sheets.
1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at a rate of 60 lb./sq.
2. Karnak 97, Karnak 97 AF, Monsey Premium Long Life Aluminum Roof Coating Asbestos Free or Monsey Prograde Aluminum, JM Topgard Type A, Topgard Type B, JM Aluminum RF CT, Grundy AL MB aluminum coating at a rate of 1-1/2 gal/sq Monsey Aquabrite, Gardner asphalt emulsion, APOC Sunbright 400 or Henry 229 Aluminum Emulsion at 2½ gal/sq or APOC 212 Aluminum Roof Coating at 3 gal/sq.
3. Grundy 20 F asphalt emulsion, Endure Asphalt Emulsion, APOC 302 or 302 AF applied at 2½ gal/sq with optional 60 lbs./sq. of roofing granules embedded in wet coating.

Maximum Design Pressure: -60 psf, See General Limitation #7)



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Membrane Type: APP

Deck Type 4: Lightweight Concrete, New Construction

Deck Description: Celcore Lightweight Concrete

System Type E(9): Base sheet mechanically fastened.

Deck : 18-22 ga steel deck shall be secured 6" o.c. to structural supports spaced a maximum of 5 ft on centers with 5/8" puddle welds.

All General and System limitations apply.

Base Sheet: One ply of DynaBase, PermaPly28, GlasPly Premier or Ventsulation fastened to the deck as described below:

Fastening: Fasten base sheet with JM LWC CR Base Fasteners or Olympic CR Base Ply Fasteners at a 4" side lap 7" o.c. and 7" o.c. in two staggered rows in the center of the sheet.

Ply Sheet: (Optional) One or more plies of JM APP Base, APPeX 4S or APPeX 180 heat welded to base sheet.

Membrane: One or more plies of APPeX 4S, APPeX 180, APPeX 4.5M or APPeX 4.5 MFR heat welded.

Surfacing: (Optional) Install one of the following for all systems that do not achieve acceptable fire ratings through the use of FR membrane sheets.

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at a rate of 60 lb./sq.
2. Karnak 97, Karnak 97 AF, Monsey Premium Long Life Aluminum Roof Coating Asbestos Free or Monsey Prograde Aluminum, JM Topgard Type A, Topgard Type B, JM Aluminum RF CT, Grundy AL MB aluminum coating at a rate of 1-1/2 gal/sq Monsey Aquabrite, Gardner asphalt emulsion, APOC Sunbright 400 or Henry 229 Aluminum Emulsion at 2½ gal/sq or APOC 212 Aluminum Roof Coating at 3 gal/sq.
3. Grundy 20 F asphalt emulsion, Endure Asphalt Emulsion, APOC 302 or 302 AF applied at 2½ gal/sq with optional 60 lbs./sq. of roofing granules embedded in wet coating.

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



Membrane Type: APP
Deck Type 4: Lightweight Concrete, New Construction
Deck Description: Celcore Lightweight Concrete
System Type E(8): Base sheet mechanically fastened.
Deck : Structural concrete.

All General and System limitations apply.

Base Sheet: One ply of DynaBase, PermaPly28, GlasPly Premier or Ventsulation fastened to the deck as described below:

Fastening: Fasten base sheet with JM LWC CR Base Fasteners or Olympic CR Base Ply Fasteners at a 4" side lap 7" o.c. and 7" o.c. in two staggered rows in the center of the sheet.

Ply Sheet: (Optional) One or more plies of JM APP Base, APPeX 4S or APPeX 180 heat welded to base sheet.

Membrane: One or more plies of APPeX 4S, APPeX 180, APPeX 4.5M or APPeX 4.5 MFR heat welded.

Surfacing: (Optional) Install one of the following for all systems that do not achieve acceptable fire ratings through the use of FR membrane sheets.

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at a rate of 60 lb./sq.
2. Karnak 97, Karnak 97 AF, Monsey Premium Long Life Aluminum Roof Coating Asbestos Free or Monsey Prograde Aluminum, JM Topgard Type A, Topgard Type B, JM Aluminum RF CT, Grundy AL MB aluminum coating at a rate of 1-1/2 gal/sq Monsey Aquabrite, Gardner asphalt emulsion, APOC Sunbright 400 or Henry 229 Aluminum Emulsion at 2½ gal/sq or APOC 212 Aluminum Roof Coating at 3 gal/sq.
3. Grundy 20 F asphalt emulsion, Endure Asphalt Emulsion, APOC 302 or 302 AF applied at 2½ gal/sq with optional 60 lbs./sq. of roofing granules embedded in wet coating.

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



LIGHTWEIGHT INSULATING CONCRETE 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 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, calculations shall be signed and sealed by a Florida Registered Engineer, Architect, or Registered Roof Consultant.
2. For steel deck application where specific deck construction is not referenced: The deck shall be a minimum 22 gage attached with 5/8" puddle welds with weld washers at every flute with maximum deck spans of 5 ft. o.c.
3. For systems where specific lightweight insulating concrete is not referenced, the minimum design mix shall be a minimum of 300 psi.



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. **(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



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