



**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 Built-Up Roofing Systems Over Steel 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 23.

The submitted documentation was reviewed by Frank Zuloaga, RRC



**NOA No.: 03-0213.01
Expiration Date: 07/19/06
Approval Date: 07/17/03
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ROOFING ASSEMBLY APPROVAL

Category: Roofing
Sub-Category: Built-up Roofing
Deck Type: Steel
Maximum Design Pressure -97.5 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>
Bestile Flashing Cement		ASTM D 4586	A trowel grade, cutback bitumen flashing grade cement mixture including inorganic fibers and mineral stabilizers.
Dyna Clad	39-3/8" x 33' 6"	N/A	A foil surfaced fiberglass reinforced elastomeric modified bitumen membrane for use as a cap or flashing sheet.
DynaFlex	25' long	ASTM D 5147	SBS modified bitumen composite flashing with fiber glass scrim and two-ply polyester reinforcement, for use in conventional and modified bitumen built-up roofing assemblies for base flashings.
Expand-O-Flash	Various	N/A	Expansion joint covers manufactured from non-reinforced, form-supported elastomeric bellows with a bifurcated waterproof attachment to metal flanges. Available in various standard configurations and may be custom manufactured to specific dimensions.
Expand-O-Guard	Various	N/A	Elastomeric expansion joint cover for vertical expansion and seismic joints. Manufactured from non-reinforced, form-supported elastomeric bellows with a bifurcated waterproof attachment to metal flanges. Available in various standard configurations and may be custom manufactured to specific dimensions.
FP-10 Vents	10" deck flange, base diameter of 4" and a height of 6".	N/A	One-way roof vent, designed for use in various roof systems, for the release of pressure created by gases or moisture vapor trapped within the roofing system.



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<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
FesCant Plus Cant Strips, and Taper Edge.	Various	PA 110	Factory pre-fabricated cant strips and taper edge, manufactured from expanded perlite insulation.
Flex-I-Drain	Various sizes from 3" to 6"	BOCA 76-61 SBCCI 89204 UBC 3236	Two piece flexible drain system composed of a Noryl deck flange, a flexible neoprene bellows and no hub connection. Available in various sizes and styles for most retro-fit applications.
GlasBase Plus	36" x 108'; roll weight: 84 lbs.	ASTM D 4601	Type II asphalt impregnated and coated glass fiber base sheet for use in conventional and modified bitumen built-up roofing.
GlasKap	36" x 36'; Roll weight: 72 lbs.	ASTM D 3909	Asphalt impregnated and coated felt surfaced with mineral granules used as the top ply in conventional built-up roof membranes.
GlasKap Plus	393/8" x 34'	ASTM D 5147	SBS Modified Asphaltic cap sheet used as the top ply in conventional built-up roof membranes.
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.
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.
GlasTite Flexible	25' long	ASTM D 1668	Asphalt composite flashing with fiberglass scrim and two-ply polyester reinforcement, for use in conventional built-up roofing assemblies for base flashings.
Industrial Roof Cement	N/A	ASTM D 4586 Type II	General purpose medium trowel grade, cement cutback asphalt mastic reinforced with nonasbestos fibers and mineral stabilizers.
MBR Flashing Cement Activator	N/A	Proprietary	Activator component for use with MBR Flashing Cement Base
MBR Flashing Cement Base	N/A	Proprietary	A two-component elastomeric, cold application adhesive, consisting of a modified proprietary compound with an asphalt base.
MBR Utility Cement	N/A	ASTM D 4586	General purpose trowel grade, cutback bitumen cement mixture including inorganic fibers and mineral stabilizers.



<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
PermaPly 28	36" x 108'; roll weight: 72 lbs.	ASTM D 4601	Type II asphalt impregnated and coated glass fiber base sheet for use in conventional and modified bitumen built-up roofing.
Presto Lok Fascia and Flashing System	Various	PA 114	A multi-piece fascia and flashing system for built-up and modified bitumen roofing systems manufactured from aluminum or steel. Extender plates available for wide fascia applications. This assembly meets the criteria of FMRC 1-49 for wind resistance perimeter flashing.
Ventsulation Felt	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. Surfaced on the bottom side with coarse mineral granules embedded in asphaltic coating.

APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
ENRGY 2, ENERGY 3, PSI-25	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
Millox	Isocyanurate Insulation with wood fiberboard facer	Apache Products Co.
Pyrox, White Line	Isocyanurate Insulation	Apache Products Co.
ACFoam Composite	Isocyanurate Insulation with perlite facer	Atlas Roofing Corp.
ACFoam II	Isocyanurate Insulation	Atlas Roofing Corp.
Styrofoam	Extruded polystyrene insulation	Dow
Dens Deck	Silicon treated gypsum	G-P Products



APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
Sturdi-Top	Wood fiber insulation board.	G-P Products
Wood Fiberboard	Regular wood fiber insulation	Generic
High Density Wood Fiberboard	High Density Wood Fiber insulation board.	Generic
Perlite Insulation Board	Perlite Insulation	Generic
Perlite/Urethane Composite	Perlite / urethane composite board insulation	Generic
Type X Gypsum	Gypsum Wallboard	Generic
XPS	Extruded polystyrene	Generic
Structodeck	High Density Wood Fiber insulation board.	Masonite
Fiber Base	Asphalt coated wood fiber insulation	Temple Inland Forest Products Corp.

APPROVED FASTENERS:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
1.	#12 Roofgrip Fasteners	Insulation fastener for wood and steel.		ITW Buildex Corp.
2.	AccuTrac Hextra	Insulation fastener for wood and steel.		ITW Buildex Corp.
3.	AccuTrac Plate	Galvalume AZ 50 stress plate.	3" square	ITW Buildex Corp.
4.	Metal Plate	Galvalume stress plate.	3" round 3" square	ITW Buildex Corp.
5.	Gearlok Plastic Plate	Polypropylene round plate	3.2"	ITW Buildex Corp.
6.	UltraFast	Insulation fastener for wood and steel.		Johns Manville
7.	UltraFast ASAP	Pre-assembled Insulation fastener and plate		Johns Manville
8.	UltraFast Metal Plate	Galvalume AZ55 steel plate	3" round 3" square	Johns Manville
9.	UltraFast Plastic Plate	High Density Polyolefin round plate	3" round	Johns Manville



APPROVED FASTENERS:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
10.	Olympic Fastener #12 & #14	Insulation fastener		Olympic Mfg. Group
11.	Olympic Fastener ASAP	Pre-assembled Insulation fastener and plate		Olympic Mfg. Group
12.	Olympic Polypropylene	Polypropylene plastic plate	3.25" round	Olympic Mfg. Group
13.	Olympic G-2	3.5" round galvalume AZ55 steel plate	3.5" round	Olympic Mfg. Group
14.	Olympic Standard	3" round galvalume AZ50 steel plate	3" round	Olympic Mfg. Group

EVIDENCE SUBMITTED:

<u>Test Agency/Identifier</u>	<u>Name</u>	<u>Report</u>	<u>Date</u>
Factory Mutual Research Corp.	J.I. # 3000949	FM Approval Report	06.05.98
	J.I. # 3001485	FM Approval Report	08.11.98
	J.I. # 3001629	FM Approval Report	09.10.98
	J.I. # 3D4A4.AM	FM Approval Report	09.28.98
	FMRC 1999	Current Insulation Fastening Requirements	01.01.99
	J.I. # 3006346	Class 4450	08.15.00
	J.I. # 3014090	Class 4470	09.05.02
Underwriters Laboratories, Inc.	R 10167 (N)	Fire Classification -- see current directory	01.01.95
Dynatech Engineering, Inc.	4360.03.95-1	Wind Uplift Classification	3.95
	4360.03.95-2	Wind Uplift Classification	3.95
	4361.5.95-1	Wind Uplift Classification	5.95
Independent Roof Testing & Consultants of South Florida	IRT 99001	Uplift Resistance PA 114	1.20.99
	IRT 99010	Uplift Resistance	2.11.99
Independent Roof Testing & Consultants of South Florida	IRT 99011	PA 114	



APPROVED ASSEMBLIES

Membrane Type:	BUR
Deck Type 2I:	Steel, Insulated, New Construction, Reroof
Deck Description:	18-22 ga. steel
System Type B(1):	Base layer of insulation mechanically fastened, optional second layer adhered with approved asphalt.

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 2, ENRGY 3		
Minimum 1.4" thick	1, 2, 6, 7, 10 or 11	1:2.67 ft ²
Minimum 2" thick	1, 2, 6, 7, 10 or 11	1:4 ft ²
Fesco Foam		
Minimum 1.5" thick	1, 2, 6, 7, 10 or 11	1:4 ft ²
Fiber Glass		
Minimum 1 ⁵ / ₁₆ " thick	1, 2, 6, 7, 10 or 11	1:2.67 ft ²
Minimum 2- ¹ / ₄ " thick	1, 2, 6, 7, 10 or 11	1:4 ft ²
Fesco		
Minimum ³ / ₄ " thick	1, 2, 6, 7, 10 or 11	1:2 ft ²

Note: Base layer shall be mechanically attached with fasteners and density described. 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 (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
Any insulations listed for Base Layer, above		
Retro-Fit		
Minimum 1/2" thick	N/A	N/A
Fiber Glass, Tapered Fesco, Tapered Fiber Glass		
Minimum 3/4" thick	N/A	N/A
Tapered UltraGard		
Minimum 1.3" thick	N/A	N/A

Note: Apply top layer of insulation in a full mopping of any approved mopping 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.



- Base Sheet: (Optional) Install one ply of JM PermaPly 28 or GlasBase Plus directly to the insulated substrate. Adhere in a full mopping of hot asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.. If base sheet is applied directly to polyisocyanurate insulation only a spot or strip mopped application as detailed in this approval is approved; see General Limitation #4.
- Ply Sheet: Two or more plies of JM GlasPly IV or GlasPly Premier ply sheet adhered in a full mopping of hot asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
- Cap Sheet: (Optional) One ply of JM GlasKap or GlasKap Plus adhered in a full mopping of hot asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. (See JM application instructions for approved method of installation).
- Surfacing: (Required if no cap sheet is used) Install one of the following:
1. 2-3 gallons TopGard B emulsion/sq. or 2 gallons aluminum coating/sq.. Coatings shall be applied according to the manufacturers' recommendations regarding specific application rates and weathering.
 2. Flood coat and gravel/slag with an application rate of 60 lbs./sq. & 400 lbs./sq., respectively.
- Maximum Design Pressure: -52.5 psf (See General Limitation #9)



Membrane Type: BUR

Deck Type 2I: Steel, Insulated, New Construction, Reroof

Deck Description: 18-22 ga. steel

System Type B(2): Base layer of insulation mechanically fastened, optional second layer adhered with approved asphalt.

Deck : 18-22 ga Grade E 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.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 2, ENRGY 3, Fesco Foam, DuraFoam Minimum 1.5" thick	6, 7, 10 or 11	1:4 ft²
Fesco Board, DuraBoard Minimum 1" thick	6, 7, 10 or 11	1:2 ft²

Note: Base layer shall be mechanically attached with fasteners and density described. 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 (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
Any insulations listed for Base Layer, above		
Retro-Fit Board, DuraBoard Minimum ½" thick	N/A	N/A
Fiber Glass, Tapered Fesco, Tapered Fiber Glass, Fesco Board Minimum ¾" thick	N/A	N/A
Tapered ENRGY 2, Tapered ENRGY 3 Minimum 1.3" thick	N/A	N/A

Note: Apply top layer of insulation in a full mopping of any approved mopping 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.

Base Sheet: (Optional) Install one ply of JM PermaPly 28 or GlasBase Plus directly to the insulated substrate. Adhere in a full mopping of hot asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. If base sheet is applied directly to polyisocyanurate insulation only a spot or strip mopped application as detailed in this approval is approved; see General Limitation #4.



- Ply Sheet: Two or more plies of JM GlasPly IV or GlasPly Premier ply sheet adhered in a full mopping of hot asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
- Cap Sheet: (Optional) One ply of JM GlasKap or GlasKap Plus adhered in a full mopping of hot asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
- Surfacing: (Required if no cap sheet is used) Install one of the following:
1. 2-3 gallons TopGard B emulsion/sq. or 2 gallons aluminum coating/sq..
Coatings shall be applied according to the manufacturers' recommendations regarding specific application rates and weathering.
 2. Flood coat and gravel/slag with an application rate of 60 lbs./sq. & 400 lbs./sq., respectively.
- Maximum Design Pressure: -52.5 psf (See General Limitation #7)



- Membrane Type:** BUR
- Deck Type 2I:** Steel, Insulated, New Construction, Re-roof
- Deck Description:** 18-22 ga. type B steel decking over ¼” thick steel supports spaced maximum of 6 ft. o.c. attached 6” o.c. using Traxx/5 fasteners. Deck side laps are attached 24” o.c. using Traxx/1 fasteners.
- System Type B(3):** Base layer of insulation mechanically fastened, top layer fully adhered with approved asphalt.

All General and System limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
ENRGY 2, ENRGY 3, Fesco Foam, DuraFoam Minimum 1.5” thick	6, 7, 10 or 11	1:1.78 ft²

Note: Base layer shall be mechanically attached with fasteners and density described. 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/ft ²
Any insulations listed for Base Layer, above		
Retro-Fit Board, DuraBoard Minimum ½” thick	N/A	N/A
Fesco Board, DuraBoard Minimum ¾” 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 20-40 lbs/100 ft². 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.

- Base Sheet:** (Optional) One ply of PermaPly 28 or GlasBase Plus adhered to the insulated substrate in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
- Ply Sheet:** Three plies of JM GlasPly IV or GlasPly Premier adhered in a full mopping of hot asphalt if optional cap sheet is utilized or four plies of JM GlasPly IV or GlasPly Premier adhered in a full mopping of hot asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
- Cap Sheet:** (Optional) One ply of JM GlasKap or GlasKap Plus adhered in a full mopping of hot asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.



Surfacing:

(Required if no cap sheet is used) Install one of the following:

1. 2-3 gallons TopGard B emulsion/sq. or 2 gallons aluminum coating/sq..
Coatings shall be applied according to the manufacturers' recommendations regarding specific application rates and weathering.
2. Flood coat and gravel/slag with an application rate of 60 lbs./sq. & 400 lbs./sq., respectively.

Maximum Design
Pressure:

-60 (See general limitation #7).



Membrane Type: BUR

Deck Type 2I: Steel, Insulated, New Construction, Reroof

Deck Description: 18-22 ga. steel

System Type B(4): Base layer of insulation mechanically fastened, optional second layer 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.

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 2, ENRGY 3, Fesco Foam, DuraFoam Minimum 2" thick	6, 7, 10 or 11	1:1.45 ft²

Note: Base layer shall be mechanically attached with fasteners and density described. 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 (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
Retro-Fit Board, DuraBoard Minimum ½" thick	N/A	N/A

Note: Apply top layer of insulation in a full mopping of any approved mopping 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.

Base Sheet: (Optional) Install one ply of JM PermaPly 28 or GlasBase Plus directly to the insulated substrate. Adhere in a full mopping of hot asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.. If base sheet is applied directly to polyisocyanurate insulation only a spot or strip mopped application as detailed in this approval is approved; see General Limitation #4.

Ply Sheet: Three plies of JM GlasPly IV or GlasPly Premier adhered in a full mopping of hot asphalt if optional cap sheet is utilized or four plies of JM GlasPly IV or GlasPly Premier adhered in a full mopping of hot asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Cap Sheet: (Optional) One ply of JM GlasKap or GlasKap Plus adhered in a full mopping of hot asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.



Surfacing:

(Required if no cap sheet is used) Install one of the following:

1. 2-3 gallons TopGard B emulsion/sq. or 2 gallons aluminum coating/sq..
Coatings shall be applied according to the manufacturers' recommendations regarding specific application rates and weathering.
2. Flood coat and gravel/slag with an application rate of 60 lbs./sq. & 400 lbs./sq., respectively.

Maximum Design
Pressure:

-75 psf (See General Limitation #7)



- Membrane Type:** BUR
- Deck Type 2I:** Steel, Insulated, New Construction, Reroof
- Deck Description:** 18-22 ga. steel
- System Type B(5):** Base layer of insulation mechanically fastened, optional second layer 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.

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 2, ENRGY 3 Minimum 2" thick	6, 7, 10 or 11	1:5.33 ft²

Note: Base layer shall be mechanically attached with fasteners and density described. 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
Retro-Fit Board, DuraBoard Minimum ½" thick	N/A	N/A

Note: Apply top layer of insulation in a full mopping of any approved mopping 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.

- Base Sheet:** (Optional) Install one ply of JM PermaPly 28 or GlasBase Plus directly to the insulated substrate. Adhere in a full mopping of hot asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. If base sheet is applied directly to polyisocyanurate insulation only a spot or strip mopped application as detailed in this approval is approved; see General Limitation #4.
- Ply Sheet:** Three plies of JM GlasPly IV or GlasPly Premier adhered in a full mopping of hot asphalt if optional cap sheet is utilized or two or more plies of JM GlasPly IV or GlasPly Premier adhered in a full mopping of hot asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
- Cap Sheet:** (Optional) One ply of JM GlasKap or GlasKap Plus adhered in a full mopping of hot asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.



Surfacing:

(Required if no cap sheet is used) Install one of the following:

1. 2-3 gallons TopGard B emulsion/sq. or 2 gallons aluminum coating/sq..
Coatings shall be applied according to the manufacturers' recommendations regarding specific application rates and weathering.
2. Flood coat and gravel/slag with an application rate of 60 lbs./sq. & 400 lbs./sq., respectively.

Maximum Design
Pressure:

-45 psf (See General Limitation #9)



Membrane Type: BUR

Deck Type 2I: Steel, Insulated, New Construction, Reroof

Deck Description: 18-22 ga. steel

System Type C(1): One or more layers of insulation simultaneously attached.

Deck : 18-22 ga Grade E 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.

One or more layers of any of the following insulations:

Base 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
Fiber Glass Minimum 1⁵/₁₆" thick	N/A	N/A
Fesco Board, DuraBoard Minimum 3/4" 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/ft²
ENRGY 2 Minimum 1.5" thick	6	1:4 ft ²
Fesco Foam Minimum 1.5" thick	1, 2 or 6	1:4 ft ²
Fesco Minimum 1" thick	6	1:2 ft ²

Note: 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.

Base Sheet: (Optional) Install one ply of JM GlasBase Plus or PermaPly 28 directly over the top layer of insulation. Adhere in a full mopping of hot asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. If base sheet is applied directly to polyisocyanurate insulation only a spot or strip mopped application as detailed in this approval is approved; see General Limitation #4.



- Ply Sheet: Two or more plies of JM GlasPly IV or GlasPly Premier adhered in a full mopping of hot asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
- Cap Sheet: (Optional) One ply of JM GlasKap or GlasKap Plus adhered in a full mopping of hot asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
- Surfacing: (Required if no cap sheet is used) Install one of the following:
1. 2-3 gallons TopGard B emulsion/sq. or 2 gallons aluminum coating/sq..
Coatings shall be applied according to the manufacturers' recommendations regarding specific application rates and weathering.
 2. Flood coat and gravel/slag with an application rate of 60 lbs./sq. & 400 lbs./sq., respectively.
- Maximum Design Pressure: -52.5 psf (See General Limitation #7)



Membrane Type: BUR

Deck Type 2I: Steel, Insulated, New Construction, Reroof

Deck Description: 18-22 ga. steel

System Type C(2): One or more layers of insulation simultaneously attached.

Deck : 18-22 ga Grade C steel deck shall be secured 6" o.c. to structural supports with screws or puddle welds.

All General and System limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer (Optional)	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
Fiber Glass Minimum 1⁵/₁₆" thick	N/A	N/A
Fesco Board, DuraBoard Minimum 3/4" 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/ft²
Fesco Board, DuraBoard Minimum 3/4" thick	6	1:1.33 ft ²

Note: 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.

Base Sheet: (Optional) Install one ply of JM GlasBase Plus or PermaPly No. 28 directly over the top layer of insulation. Adhere in a full mopping of hot asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. If base sheet is applied directly to polyisocyanurate insulation only a spot or strip mopped application as detailed in this approval is approved; see General Limitation #4.

Ply Sheet: Two or more plies of JM GlasPly IV or GlasPly Premier adhered in a full mopping of hot asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Cap Sheet: (Optional) One ply of JM GlasKap or GlasKap Plus adhered in a full mopping of hot asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.



Surfacing:

(Required if no cap sheet is used) Install one of the following:

1. 2-3 gallons TopGard B emulsion/sq. or 2 gallons aluminum coating/sq..
Coatings shall be applied according to the manufacturers' recommendations regarding specific application rates and weathering.
2. Flood coat and gravel/slag with an application rate of 60 lbs./sq. & 400 lbs./sq., respectively.

Maximum Design
Pressure:

-75 psf (See General Limitation #7)



Membrane Type: BUR

Deck Type 2I: Steel, Insulated, New Construction, Reroof

Deck Description: 18-22 ga. steel

System Type D(1): All layers of insulation simultaneously mechanically fastened with base sheet.

All General and System limitations apply.

One or more layers of any of the following insulations:

Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 2, ENRGY 3 Minimum 1.3" 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, DuraBoard Minimum ½" thick	N/A	N/A

Note: All layers of insulation and base sheet shall be simultaneously attached. See base sheet below for fasteners and density. Refer to Roofing Application Standard RAS 117 for insulation attachment requirements. Insulation shall have preliminary attachment, prior to the installation of the roofing membrane. At an 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.

Base Sheet: One ply of JM PermaPly 28, DynaBase, GlasBase Plus, Dynabase or Ventsulation fastened to the deck through the insulation as described below:

Fastening: Fasten base sheet with Rawl #12 or #14 or UltraFast screw at a 4" side lap 9" o.c. and two rows staggered in the center of the sheet 18" o.c.

Ply Sheet: One or more plies of GlasPly Premier or GlasPly IV adhered to the base sheet with approved mopping of asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Cap Sheet: (Optional) One ply of JM GlasKap or GlasKap Plus adhered in a full mopping of hot asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Surfacing: (Required if no cap sheet is used) Install one of the following:

1. 2-3 gallons TopGard B emulsion/sq. or 2 gallons aluminum coating/sq. Coatings shall be applied according to the manufacturers' recommendations regarding specific application rates and weathering.
2. Flood coat and gravel/slag with an application rate of 60 lbs./sq. & 400 lbs./sq., respectively.

Maximum Design Pressure: -52.5 psf. (See General Limitation #9)



Membrane Type: BUR
Deck Type 2I: Steel, Insulated, New Construction, Reroof
Deck Description: 18-22 ga. steel
System Type D(2): All layers of insulation simultaneously mechanically fastened with base sheet.
Deck : 18-22 ga Grade C steel deck, to structural supports spaced a maximum of 5 ft on center.

All General and System limitations apply.

One or more layers of any of the following insulations:

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

Note: All layers of insulation and base sheet shall be simultaneously attached. See base sheet below for fasteners and density. Refer to Roofing Application Standard RAS 117 for insulation attachment requirements. Insulation shall have preliminary attachment, prior to the installation of the roofing membrane. At an 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.

Base Sheet: One ply of JM PermaPly 28, DynaBase, GlasBase Plus, Dynabase or Ventsulation fastened to the deck through the insulation as described below:

Fastening: Fasten base sheet with Rawl #12 or #14 or UltraFast screw at a 4" side lap 9" o.c. and two rows staggered in the center of the sheet 12" o.c..

Ply Sheet: One or more plies of GlasPly Premier or GlasPly IV adhered to the base sheet with approved mopping of asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Cap Sheet: (Optional) One ply of JM GlasKap or GlasKap Plus adhered in a full mopping of hot asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Surfacing: (Required if no cap sheet is used) Install one of the following:

1. 2-3 gallons TopGard B emulsion/sq. or 2 gallons aluminum coating/sq. Coatings shall be applied according to the manufacturers' recommendations regarding specific application rates and weathering.
2. Flood coat and gravel/slag with an application rate of 60 lbs./sq. & 400 lbs./sq., respectively.

Maximum Design Pressure: -97.5 psf. (See General Limitation #7)



STEEL 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 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.

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



NOA No.: 03-0213.01
Expiration Date: 07/19/06
Approval Date: 07/17/03
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