



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

DESCRIPTION: Johns Manville Built-Up 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 NOA revises NOA No. 07-1126.05 and consists of pages 1 through 22.
The submitted documentation was reviewed by Jorge L. Acebo.



**NOA No.: 08-0729.08
Expiration Date: 07/26/11
Approval Date: 10/23/08
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ROOFING ASSEMBLY APPROVAL

Category: Roofing
Sub-Category: Built-up Roofing
Deck Type: Lightweight Concrete
Maximum Design Pressure -277.5 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>
Bestile Flashing Cement		ASTM D 4586	A trowel grade, cutback bitumen flashing grade cement mixture including inorganic fibers and mineral stabilizers.
DynaClad	39-3/8" x 33' 10"	N/A	A foil surfaced fiberglass reinforced elastomeric modified bitumen membrane for use as a cap or flashing sheet.
DynaFlex	36" x 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.
FesCant Plus Cant Strips, and Taper Edge.	Various	TAS 110	Factory pre-fabricated cant strips and taper edge, manufactured from expanded perlite insulation.



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<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
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'	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'	ASTM D 3909	Asphalt impregnated and coated felt surfaced with mineral granules used as the top ply in conventional built-up roof membranes.
GlasKap CR	36" x 36'	ASTM D 3909	White mineral surfaced, white acrylic coated, fiber glass cap sheet for use as the top ply in conventional built-up roof membranes
GlasKap Plus	39-3/8" 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 177'	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 177'	ASTM D 2178 Type VI	Type VI asphalt impregnated glass felt for use in conventional and modified bitumen built-up roofing.
GlasTite Flexible	36" x 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.
Bestile Industrial Roof Cement	N/A	ASTM D 4586 Type II	General purpose medium trowel grade, cement cutback asphalt mastic reinforced with non-asbestos 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.
PermaPly 28	36" x 108'	ASTM D 4601	Type II asphalt impregnated and coated glass fiber base sheet for use in conventional and modified bitumen built-up roofing.



<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
Presto Lok Fascia and Flashing System	Various	TAS 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 3, JM ISO 3, PSI-25	Isocyanurate Insulation.	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
ACFoam Composite	Isocyanurate Insulation with perlite facer	Atlas Roofing Corp.
ACFoam II	Isocyanurate Insulation	Atlas Roofing Corp.
Styrofoam	Extruded polystyrene insulation	Dow
Hytherm, Hytherm AP	Isocyanurate Insulation	Dow
Dens Deck	Silicon treated gypsum	G-P Products
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



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APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
ISO 95+, ISO 95+ GL	Polyisocyanurate foam insulation	Firestone
Multi-Max, Multi-Max FA	Polyisocyanurate foam insulation	RMax, Inc.
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.	Twin Loc-Nail	Base sheet fastener with integrated Plate.	2.7" dia. plate	ES Products, Inc.
2.	LWC Base Sheet Fastener	Galvanized double spreading leg fastener for securing base sheets to lightweight insulating concrete.		Johns Manville
3.	UltraFast	Insulation fastener for wood and steel.		Johns Manville
4.	UltraFast ASAP	Pre-assembled Insulation fastener and plate		Johns Manville
5.	UltraFast Metal Plate	Galvalume AZ55 steel plate	3" round 3" square	Johns Manville
6.	Olympic Fastener #12 & #14	Insulation fastener		OMG
7.	Olympic Fastener ASAP	Pre-assembled Insulation fastener and plate		OMG
8.	Olympic G-2	Galvalume AZ55 steel plate	3.5" round	OMG
9.	Olympic Standard	Galvalume AZ50 steel plate	3" round	OMG
10.	C-R Base Sheet Disc	Galvanized double spreading leg fastener for securing base sheets to lightweight insulating concrete.		OMG



EVIDENCE SUBMITTED:

<u>Test Agency/Identifier</u>	<u>Name</u>	<u>Report</u>	<u>Date</u>
Factory Mutual Research Corp.	J.I. # 3000949	Class 4470	06.05.98
	J.I. # 3001485	Class 4470	08.11.98
	J.I. # 30016299	Class 4470	09.10.98
	J.I. # 3D4A4.AM	Class 4470	09.28.98
	FMRC 1999	Current Insulation Fastening Requirements	01.01.99
	3009499	Class 4470	04.04.01
	3014090	Class 4470	09.05.02
	3012974	Class 4450	06.03.02
	3011248	Class 4470	11.01.02
	3015444	Class 4450	07.11.03
	3011057	Class 4470	08/10/01
	3026130	Class 4470	04.26.06
	Trinity ERD	4361-02.04-1	TAS 114 / FM 4470
10390A.10.97-1		TAS 114 / FM 4470	10.97
10390A.12.97-1			12.97
10391.01.03		TAS 114 / FM 4470	01.03
J7670.06.08		ASTM D3909	06.16.08
Underwriters Laboratories, Inc.	R 10167 (N)	Fire Classification Listing	01.01.95
Dynatech Engineering, Inc.	4360.03.95-1	TAS 114	3.95
	4360.03.95-2		
	4361.5.95-1	TAS 114	5.95
Independent Roof Testing & Consultants of South Florida	IRT 99001	TAS 114	1.20.99
	IRT 99002		
	IRT 99003		
	IRT 99005	TAS 114	2.10.99
	IRT 99013		



APPROVED ASSEMBLIES

Membrane Type: BUR

Deck Type 4I: Lightweight Concrete, Insulated

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 3, JM ISO 3 Minimum 1" thick	N/A	N/A
Fesco Foam, DuraFoam Minimum 1.5" thick	N/A	N/A
Retro-Fit Board, DuraBoard Minimum 1/2" thick	N/A	N/A
Fesco Board Minimum 3/4" thick	N/A	N/A
Base or Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Deusity/ft²
Tapered Fesco Board Minimum 3/4" thick	N/A	N/A
ENRGY 3, JM ISO 3 Minimum 1.3" 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 Base Sheet Fasteners, Olympic CR Base Ply Fasteners, ES Base Sheet 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: Two or more plies of 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 GlasKap, GlasKap CR 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/sq. TopGard A or B emulsion or 2 gallons/sq. aluminum coating. 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: -82.5 psf (See General Limitation #7)



Membrane Type: BUR
Deck Type 4I: Lightweight Concrete, Insulated
Deck Description: Cellular or Aggregate Lightweight Concrete (250 psi Min.)
System Type A(2): 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 screws or puddle welds.

All General and System Limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
ENRGY 3, JM ISO 3 Minimum 1.5" thick	N/A	N/A
Fesco Foam, DuraFoam Minimum 1" thick	N/A	N/A
Retro-Fit Board, DuraBoard Minimum ½" thick	N/A	N/A
Fesco Board Minimum ¾" thick	N/A	N/A
Top Insulation Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft ²
Tapered Fesco Board Minimum ¾" thick	N/A	N/A
ENRGY 3, JM ISO 3 Minimum 1.3" 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 Base Sheet Fasteners, Olympic CR Base Ply Fasteners or ES Base Sheet Fasteners at a 3" side lap 9" o.c. and 12" o.c. in two staggered rows in the center of the sheet
Ply Sheet: Two or more plies of 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 GlasKap, GlasKap CR 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/sq. TopGard A or B emulsion or 2 gallons/sq. aluminum coating. 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 4I: Lightweight Concrete, Insulated
Deck Description: Cellular or Aggregate Lightweight Concrete
System Type A(3): 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 screws or puddle welds.

All General and System Limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 3, JM ISO 3 Minimum 1.3" thick	N/A	N/A
Fesco Foam, DuraFoam Minimum 1.5" thick	N/A	N/A
Retro-Fit Board, DuraBoard Minimum ½" thick	N/A	N/A
Fesco Board 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: Install one ply of DynaBase, Ventsulation Felt, GlasBase Plus or PermaPly 28 base sheet mechanically fastened as described below.

Fasteners: Attach anchor sheet using CR Base Ply Fasteners, Olympic CR Base Ply Fasteners or ES Base Sheet Fasteners spaced 7" o.c. in a 3" lap and 7" o.c. in two staggered rows in the center of the sheet.

Ply Sheet: Two or more plies of GlasPly IV, 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 GlasKap, GlasKap CR 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:

- 2-3 gallons/sq. TopGard A or B emulsion or 2 gallons/sq. aluminum coating. Coatings shall be applied according to the manufacturers' recommendations regarding specific application rates and weathering.
- 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 4I: Lightweight Concrete, Insulated
Deck Description: Lightweight Insulating Concrete, minimum 160 psi
System Type A(4): All layers of insulation adhered to deck.

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/ft ²
ENRGY 3, JM ISO 3, ACFoam II, Hy-Therm AP, ISO 95+ GL or Multi Max FA Minimum 1.5" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
Fesco Board Minimum 3/4" thick	N/A	N/A

Note: All layers of insulation shall be adhered with JM Urethane Insulation Adhesive in 1/2" wide beads at maximum spacing of 12" o.c. 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) PermaPly 28, GlasBase Plus, DynaBase, GlasPly Premier or GlasPly IV applied to the insulation in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: Two or more plies of 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 GlasKap, GlasKap CR 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:

- 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.
- Flood coat and gravel/slag with an application rate of 60 lbs./sq. & 400 lbs./sq., respectively.

Maximum Design Pressure: -112.5 psf (See General Limitation #9)



Membrane Type: BUR
Deck Type 4I: Lightweight Concrete, Insulated
Deck Description: Lightweight Insulating Concrete, minimum 160 psi
System Type A(5): All layers of insulation adhered to deck.

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, JM ISO 3, ACFoam II, Hy-Therm AP, ISO 95+ GL or Multi Max FA Minimum 1.5" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Dens-Deck, High Density Fiberboard, BP High Strength Fiberboard, Celotex Fiberboard Minimum ½" thick	N/A	N/A

Note: All layers of insulation shall be adhered with JM Urethane Insulation Adhesive in ½" wide beads at maximum spacing of 6" o.c. 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) PermaPly 28, GlasBase Plus, DynaBase, GlasPly Premier or GlasPly IV applied to the insulation in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: Two or more plies (three plies required if neither a base sheet nor a cap sheet is used) of 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 GlasKap, GlasKap CR 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: -217.5 psf (See General Limitation #9)



Membrane Type: BUR
Deck Type 4I: Lightweight Concrete, Insulated
Deck Description: Lightweight Insulating Concrete, minimum 160 psi
System Type A(6): All layers of insulation adhered to deck.

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/ft ²
ENERGY 3, JM ISO 3, AC Foam II, Hy-Therm AP, ISO 95+ GL or Multi Max FA Minimum 1.5" thick	N/A	N/A

Note: All layers of insulation shall be adhered with JM Urethane Insulation Adhesive in ½" wide beads at maximum spacing of 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Composite insulation panels may be used as a top layer placed with the polyisocyanurate side facing down.

Base Sheet: (Optional) PermaPly 28, GlasBase Plus, DynaBase, GlasPly Premier or GlasPly IV applied to the insulation in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: Two or more plies (three plies required if neither a base sheet nor a cap sheet is used) of 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 GlasKap, GlasKap CR 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: -187.5 psf (See General Limitation #9)



Membrane Type: BUR
Deck Type 4I: Lightweight Concrete, Insulated
Deck Description: Lightweight Insulating Concrete, minimum 160 psi
System Type A(7): All layers of insulation adhered to deck.

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/ft ²
ENRGY 3, JM ISO 3, ACFoam II, Hy-Therm AP, ISO 95+ GL or Multi Max FA Minimum 1.5" thick	N/A	N/A

Note: All layers of insulation shall be adhered with JM Urethane Insulation Adhesive in ½" wide beads at maximum spacing of 6" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Composite insulation panels may be used as a top layer placed with the polyisocyanurate side facing down.

Base Sheet: (Optional) PermaPly 28, GlasBase Plus, DynaBase, GlasPly Premier or GlasPly IV applied to the insulation in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: Two or more plies (three plies required if neither a base sheet nor a cap sheet is used) of 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 GlasKap, GlasKap CR 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: -277.5 psf (See General Limitation #9)



Membrane Type: BUR

Deck Type 4: Lightweight Concrete, Non-Insulated

Deck Description: Cellular or Aggregate Lightweight Concrete (250 psi Min.)

System Type E(1): 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 PermaPly 28, DynaBase, GlasPly Premier or Ventsulation Felt fastened to the deck as described below:

Fastening: *(Option #1)* Fasten base sheet with LWC Base Sheet Fasteners, Olympic CR Base Ply Fasteners or ES Base Sheet Fasteners at a 4" side lap 9" o.c. and 12" o.c. in two staggered rows in the center of the sheet.

(Maximum Design Pressure -52.5 psf, See General Limitation #7)

(Option #2) PermaPly 28 or DynaBase fasten ES Products Twin Loc-Nail at a fastener spacing of 9" o.c. at the 4" wide side laps and 9" o.c. in two equally spaced rows in the field of the base sheet.

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

(Option #3) DynaBase fastened with ES Products Twin Loc-Nail at a fastener spacing of 9" o.c. at the 4" wide side laps and 9" o.c. in two equally spaced rows in the field of the base sheet.

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

Ply Sheet: Two or more plies of 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 GlasKap, GlasKap CR 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/sq. TopGard A or B emulsion or 2 gallons/sq. aluminum coating. 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: See Fastening Options Above



Membrane Type: BUR
Deck Type 4: Lightweight Concrete, Non-insulated
Deck Description: Cellular or Aggregate Lightweight Concrete
System Type E(2): 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.

Anchor Sheet: Install one ply of DynaBase, Ventsulation, GlasBase Plus or PermaPly 28 base sheet mechanically fastened as described below.

Fasteners: Attach anchor sheet using CR Base Ply Fasteners, Olympic CR Base Sheet Fasteners, or ES Base Sheet Fasteners spaced 7" o.c. in a 3" lap and 7" o.c. in two staggered rows in the center of the sheet.

Ply Sheet: Two or more plies of 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 GlasKap, GlasKap CR 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/sq. TopGard A or B emulsion or 2 gallons/sq. aluminum coating. 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 4: Lightweight Concrete, Non-insulated
Deck Description: Cellular or Aggregate Lightweight Concrete (300 psi Min.)
System Type E(3): 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.

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

Fastening: Fasten base sheet with UltraFast or Olympic Fastener with 3" round plates or UltraFast ASAP or Olympic ASAP at a 4" side lap 7" o.c. and 7" o.c. in two staggered rows in the center of the sheet.

Ply Sheet Two or more plies of GlasBase Plus, PermaPly 28, GlasPly Premier or Glas Ply IV adhered to the base sheet in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Membrane: One ply of GlasKap, GlasKap CR 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: (Optional) Install one of the following:

1. 2-3 gallons/sq. TopGard A or B emulsion or 2 gallons/sq. aluminum coating. 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 4: Lightweight Concrete, Non-insulated
Deck Description: Celcore Lightweight Concrete
System Type E(4): 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, PermaPly 28, GlasPly Premier or Ventsulation Felt fastened to the deck as described below:

Fastening: Fasten base sheet with LWC Base Sheet Fasteners, Olympic CR Base Fasteners, or ES Base Sheet 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 One or more plies GlasPly IV or GlasPly Premier adhered to the base sheet in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Cap Sheet: One ply of GlasKap, GlasKap CR 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: (Optional) Install one of the following:

1. 2-3 gallons/sq. TopGard A or B emulsion or 2 gallons/sq. aluminum coating. 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: -75psf (See General Limitation #7)



Membrane Type: BUR

Deck Type 4: Lightweight Concrete, Non-Insulated

Deck Description: Concrecel Cellular Lightweight Concrete

System Type E(5): 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. 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 Sheet: One ply of GlasPly Premier fastened to the deck as described below:

Fastening: Fasten base sheet to deck with LWC Base Sheet Fasteners, Olympic CR Base Ply Fasteners, ES Base Sheet 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: If optional GlasKap sheet is utilized, one ply of 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. If optional GlasKap is not utilized, two plies of GlasPly Premier or GlasPly IV installed in the same manner.

Cap Sheet: (Optional) One ply of GlasKap, GlasKap CR 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/sq. TopGard A or B emulsion or 2 gallons/sq. aluminum coating. 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:

-82.5 psf (See General Limitation #7)



Membrane Type: BUR
Deck Type 4: Lightweight Concrete, Non-Insulated
Deck Description: Concrecel Lightweight Concrete
System Type F(1): Base sheet adhered in approved asphalt.

Deck : 18-22 ga steel deck shall be secured 6" o.c. to structural supports spaced a maximum of 5'6" 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.

Base Sheet: One ply of GlasPly Premier 50% strip mopped lightweight deck.
Fastening: Strip mopped with approved asphalt.
Ply Sheet: One or more plies of 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 GlasKap, GlasKap CR 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/sq. TopGard A or B emulsion or 2 gallons/sq. aluminum coating. 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: -67.5 psf (See General Limitation #9)



Membrane Type: BUR
Deck Type 4: Lightweight Concrete, Non-Insulated
Deck Description: Concrecel Lightweight Concrete
System Type F(2): Base sheet adhered and mechanically fastened.

Deck : 18-22 ga steel deck shall be secured 6" o.c. to structural supports spaced a maximum of 5'6" 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 Sheet: One ply of GlasPly Premier 50% strip mopped and mechanically.

Fastening: For field areas of the roof, strip mopped with approved asphalt.

In addition to the strip mopping, for perimeter and corners areas that do not exceed -146 psf., mechanically fasten anchor/base sheet with LWC Base Sheet Fasteners at a minimum spacing of 4" o.c. at the 4" side lap with four additional rows in field of the sheet fastened at 4" o.c.

Ply Sheet: One or more plies of GlasPly Premier or GlasPly IV 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 GlasKap, GlasKap CR 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/sq. TopGard A or B emulsion or 2 gallons/sq. aluminum coating. 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: -67.5 psf (See General Limitation #9 & fastening above)



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 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, 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 side lap and one down the center of the sheet allowing a continuous area of ventilation. Encircling of the strips is not acceptable. A 6" break shall be placed every 12' in each ribbon to allow cross ventilation. Asphalt application of either system shall be at a minimum rate of 12 lbs./sq.
Note: Spot attached systems shall be limited to a maximum design pressure of -45 psf.
5. Fastener spacing for insulation attachment is based on a Minimum Characteristic Force (F') value of 275 lbf., as tested in compliance with Testing Application Standard TAS 105. If the fastener value, as field-tested, are below 275 lbf. Insulation attachment shall not be acceptable.
6. Fastener spacing for mechanical attachment of anchor/base sheet or membrane attachment is based on a minimum fastener resistance value in conjunction with the maximum design value listed within a specific system. Should the fastener resistance be less than that required, as determined by the Building Official, a revised fastener spacing, prepared, signed and sealed by a Florida Registered Engineer, Architect, or Registered Roof Consultant may be submitted. Said revised fastener spacing shall utilize the withdrawal resistance value taken from Testing Application Standards TAS 105 and calculations in compliance with Roofing Application Standard RAS 117.
7. Perimeter and corner areas shall comply with the enhanced uplift pressure requirements of these areas. Fastener densities shall be increased for both insulation and base sheet as calculated in compliance with Roofing Application Standard RAS 117. Calculations prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant **(When this limitation is specifically referred within this NOA, General Limitation #9 will not be applicable.)**
8. All attachment and sizing of perimeter nailers, metal profile, and/or flashing termination designs shall conform to Roofing Application Standard RAS 111 and applicable wind load requirements.
9. The maximum designed pressure limitation listed shall be applicable to all roof pressure zones (i.e. field, perimeters, and corners). Neither rational analysis, nor extrapolation shall be permitted for enhanced fastening at enhanced pressure zones (i.e. perimeters, extended corners and corners). **(When this limitation is specifically referred within this NOA, General Limitation #7 will not be applicable.)**

END OF THIS ACCEPTANCE



NOA No.: 08-0729.08
Expiration Date: 07/26/11
Approval Date: 10/23/08
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