MIAMI-DADE COUNTY

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

MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION
11805 SW 26 Street, Room 208
Miami, Florida 33175-2474
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www.miamidade.gov/building

NOTICE OF ACCEPTANCE (NOA)

Johns Manville Corporation
717 17th Street
Denver, CO 80202

SCOPE:
This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed by Miami-Dade County Product Control Section 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 Section (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. BORA reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the Florida Building Code and the High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: Johns Manville CR 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 renews NOA No. 09-1013.04 and consists of pages 1 through 38.
The submitted documentation was reviewed by Jorge L. Acebo.

MIAMI-DADE COUNTY APPROVED

ROOFING ASSEMBLY APPROVAL

Category:	Roofing
Sub-Category:	SBS Modified Bitumen
Deck Type:	Lightweight Concrete
Maximum Design Pressure	-105 psf

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

Product	Dimensions	Test Specification	Product Description
DynaBase	54'-10" x 36"; roll weight: 88 lbs.	ASTM D 6163 Type I Grade S	An SBS modified bitumen coated, fiber glass reinforced base sheet.
DynaWeld Base	39'-3/8" x 32'-10"; roll weight: 90 lbs	ASTM D 6163 Type I Grade S	An SBS modified bitumen coated, fiberglass reinforced base sheet for heat welded applications.
DynaWeld Cap FR CR	39'-3/8" x 32'-10" roll weight: 120 lbs.	ASTM D 6163 Type I Grade G	A fire resistant, cool roof (CR), SBS modified bitumen membrane surfaced with granules for heat weld applications.
DynaGlas FR CR	39-3/8" x 32'-10"; roll weight: 101 lbs.	ASTM D 6163 Type I Grade G	A fire resistant, cool roof (CR), SBS modified bitumen membrane surfaced with granules for application in hot asphalt.
DynaLastic 180S	37" x 36'-9" roll weight: 90 lbs.	ASTM D 6164 Type I	A 180 gram polyester mat reinforced, modified bitumen cap sheet for use in fire-rated systems.
DynaPly	39-3/8" x 32'-10"; roll weight: 90 lbs.	ASTM D 6162 Type II, Grade S	A polyester reinforced SBS modified bitumen ply sheet for use in conventional and modified bitumen built-up roof systems.
DynaBase XT	39-3/8" x 49'-2"	ASTM D 6163 Type II Grade S	A heavyweight glass reinforced SBS Base/Ply sheet.
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.
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.
GlasPly IV	36" x 200'	ASTM D 2178 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.
PermaPly No. 28	36" x 108'; roll weight: 72 lbs.	ASTM D 4601 Type II	Type II asphalt impregnated and coated glass fiber base sheet for use in conventional and modified bitumen built-up roofing.
FesCant Plus Cant Strips, and Taper Edge	various	ASTM C 728	Factory pre-fabricated cant strips and taper edge, manufactured from expanded perlite insulation.

Product	Dimensions	Test Specification	Product Description
MBR Flashing Cement Base and Activator	N/A	Proprietary	A two component elastomeric, cold application adhesive, consisting of a modified proprietary compound with an asphalt base.
MBR Bonding Adhesive	N/A	proprietary	A two component urethane cold application adhesive.
Bestile Industrial Roof Cement	various	ASTM D 4586, type I	A trowel grade, cutback bitumen flashing grade cement mixture including inorganic fibers and mineral stabilizers.
Flex-I-Drain	various	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.
PC/PET RetroDrain	various	N/A	Engineered resin copolymer fabricated drain for retrofit applications.
USII RetroDrain	various	N/A	One piece, aluminum fabricated drain for retrofit applications.
SuperDome RetroDrain	various	N/A	Cast aluminum, heavy-duty drain for retrofit applications.
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.
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.
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.
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.
DynaTred & DynaTred Plus Roof Walkway	various	N/A	Preformed, skid-resistant boards.

APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
ENERGY 3, PSI-25	Polyisocyanurate Insulation.	Johns Manville
ENRGY 3 Plus	Polyisocyanurate insulation laminated to wood fiber.	Johns Manville
Fesco Foam, DuraFoam	Polyisocyanurate 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
Invinsa Roof Board	High density polyisocyanurate board	Johns Manville
ACFoam Composite	Polyisocyanurate Insulation with perlite facer	Atlas Roofing Corp.
ACFoam II	Polyisocyanurate Insulation	Atlas Roofing Corp.
Styrofoam	Extruded polystyrene 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
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.	Twin Loc-Nail	Base sheet fastener with integrated Plate.	2.7" dia. Plate	ES Products, Inc.
2.	AccuTrac Plate	Galvalume AZ50 steel plate	3" square	OMG, Inc.
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.		OMG, Inc.
6.	Base-Lok	Nylon base sheet fastener.		Simplex Nails & Fasteners
7.	Ultralok	Base sheet fastener with integral plate	2.7" dia. Plate	OMG, Inc.

EVIDENCE SUBMITTED:

Test Agency/Identifier	Name	Report	Date
Factory Mutual Research Corp.	J.I. # 3001482	FM Class 4470	08.11.98
	J.I. # 3001629	FM Class 4470	09.10.98
	J.I. # 0Z8A9.AM		
	J.I. # 3D4A4.AM	FM Class 4470	09.28.98
	J.I. # 3000949		
	J.I.H. 107A4.AM	FM Class 4470	11.09.98
	3007148	FM Class 4450	04.19.00
	3006346	FM Class 4450	09.15.00
	3001457	FM Class 4470	03.04.02
	3012974	FM Class 4450	06.03.02
	3014090	FM Class 4470	09.05.02
	3011248	FM Class 4470	11.01.02
Exterior Research & Design, LLC	#4361-2.04.97-1	TAS 114	04.28.97
	#4361-2.04. -1	TAS 114	04.00.97
	#10390A-10.97-1	TAS 114	10.00.97
	#10390A-12.97-1	TAS 114	12.00.97
	#4251.08.96-1	TAS 114	01.20.99
	10391.01.03	TAS 114	01/29/03
	02843.02.05-10	TAS 114	02/10/05
	00257.03.05-1	ASTM D6162/D6163 ASTM D6164/D6298	03/17/05
TrinityIERD	J13700.05.10-1-R1	ASTM D5147/D6163	01/25/11
	J13700.05.10-2	ASTM D5147/D6164	05/11/10
Independent Roof Testing & Consulting, Inc.	IRT99001.1.20.99 IRT99002.1.20.99 IRT99003.1.20.99 IRT99005.1.20.99 IRT99013.1.20.99	TAS 114	01.20.99
Atlantic & Caribbean Roof Consulting, LLC	ACRC 03012	TAS 114	12/04/03
	ACRC 03015		09/30/03
	ACRC 07-014		04/18/07
IRT-ARCON Inc	02-011	TAS 114	02/06/02

APPROVED ASSEMBLIES

Membrane Type: SBS

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 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/ft^2**
ENRGY 3 **Minimum 1" thick**	**N/A**	**N/A**
Fesco Foam, DuraFoam **Minimum 1.5" thick**	**N/A**	**N/A**
Fesco Board **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/ft^2**
Any listed insulation as Base Layer, above except ENRGY 3		
Tapered 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 ft^2. 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, PermaPly 28 or Ventsulation 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 the 3" 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 of GlasBase Plus, PermaPly No. 28, GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaBase, DynaBase XT or DynaPly adhered to the base sheet with approved mopping of asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Base heat welded.
Membrane:	One ply of DynaGlas FR CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Cap FR CR heat welded.
Surfacing:	(Optional) 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:	-82.5 psf (See General Limitation #7)

Membrane Type: SBS

Deck Type 4I: Lightweight Concrete, Insulated

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/ft^2**
ENRGY 3 **Minimum 1" thick**	**N/A**	**N/A**
Fesco Foam, DuraFoam **Minimum 1.5" thick**	**N/A**	**N/A**
Fesco Board **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/ft^2**
Any listed insulation as Base Layer, above except ENRGY 3		
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 ft^2. 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, PermaPly 28 or Ventsulation 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 the 3" 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 of GlasBase, GlasBase Plus, PermaPly No. 28, GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaBase, DynaBase XT or DynaPly adhered to the base sheet with approved mopping of asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply of DynaWeld Base heat welded.
Membrane:	One ply of DynaGlas FR CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply of DynaWeld Cap FR CR, heat welded.
Surfacing:	(Optional) 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:	-82.5 psf (See General Limitation #7)

Membrane Type: SBS

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/ft^2**
ENRGY 3 **Minimum 1.5" thick**	**N/A**	**N/A**
Fesco Foam, DuraFoam **Minimum 1" thick**	**N/A**	**N/A**
Fesco Board **Minimum ¾" thick**	**N/A**	**N/A**
Retro-Fit **Minimum ½" 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**

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 ft^2. 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 PermaPly 28, DynaBase, GlasPly Premier or Ventsulation fastened to the deck as described below:

Fastening : Fasten base sheet with Simplex Base-Lok Fasteners, LWC CR Base Fasteners or Olympic CR Base Ply Fasteners at the 4" side lap 9" o.c. and 12" o.c. in two staggered rows in the center of the sheet.

Ply Sheet: One or more plies of GlasBase Plus, PermaPly No. 28, GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaBase, DynaBase XT or DynaPly adhered to the base sheet with approved mopping of asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Base heat welded.

Membrane: One ply of DynaGlas FR CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply of DynaWeld Cap FR CR, heat welded.

Surfacing: (Optional) 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: SBS

Deck Type 4I: Lightweight Concrete, Insulated

Deck Description: Cellular or Aggregate Lightweight Concrete

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.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY 3 Minimum 1.5" thick	**N/A**	**N/A**
Fesco Foam, DuraFoam Minimum 1" thick	**N/A**	**N/A**
Fesco Board Minimum ¾" thick	**N/A**	**N/A**
Retro-Fit Minimum ½" 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**

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 ft^2. Please refer to Roofing Application Standard RAS 117 for iusulation attachmeut. 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 PermaPly 28, DynaBase, GlasPly Premier or Ventsulation fastened to the deck as described below:

Fastening : Fasten base sheet with Simplex Base-Lok Fasteners, LWC CR Base Fasteners or Olympic CR Base Ply Fasteners at the 4" side lap 9" o.c. and 12" o.c. in two staggered rows in the center of the sheet.

Ply Sheet: One or more plies of GlasBase Plus, PermaPly No. 28, GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaBase, DynaBase XT or DynaPly adhered to the base sheet with approved mopping of asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Base heat welded.

Membrane: One ply of DynaGlas FR CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply of DynaWeld Cap FR CR, heat welded.

Surfacing: (Optional) 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: SBS

Deck Type 4I: Lightweight Concrete, Insulated

Deck Description: Cellular or Aggregate Lightweight Concrete (300 psi Min.)

System Type A(5): 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 Minimum 1.5" thick	**N/A**	**N/A**
Fesco Foam, DuraFoam Minimum 1" thick	**N/A**	**N/A**
Fesco Board Minimum ¾" thick	**N/A**	**N/A**
Retro-Fit Minimum ½" 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**

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 ft^2. 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 DynaBase, GlasPly Premier or Ventsulation fastened to the deck as described below:

Fastening: Fasten anchor sheet with to through LWC to steel deck with UltraFast fasteners and AccuTrac (Buildex) 3"x3" square plates at the 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 of GlasBase Plus, PermaPly No. 28, GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaBase, DynaBase XT or DynaPly adhered to the base sheet with approved mopping of asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Base heat welded.

Membrane: One ply of DynaGlas FR CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply of DynaWeld Cap FR CR, heat welded.

Surfacing: (Optional) 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: SBS

Deck Type 4I: Lightweight Concrete, Insulated

Deck Description: Cellular or Aggregate Lightweight Concrete (300 psi Min.)

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.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY 3 Minimum 1.5" thick	**N/A**	**N/A**
Fesco Foam, DuraFoam Minimum 1" thick	**N/A**	**N/A**
Fesco Board Minimum ¾" thick	**N/A**	**N/A**
Retro-Fit Minimum ½" thick	**N/A**	**N/A**

Top Insulation Layer (Optional)	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
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 ft^2. 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 DynaBase, GlasPly Premier or Ventsulation fastened to the deck as described below:

Fastening: Fasten anchor sheet with to through LWC to concrete deck with UltraFast fasteners and AccuTrac (Buildex) 3"x3" square plates at the 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 of GlasBase Plus, PermaPly No. 28, GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaBase, DynaBase XT or DynaPly adhered to the base sheet with approved mopping of asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Base heat welded.

Membrane: One ply of DynaGlas FR CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply of DynaWeld Cap FR CR, heat welded.

Surfacing: (Optional) 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: SBS

Deck Type 4: Lightweight Concrete

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, PermaPly 28 or Ventsulation 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 the 3" 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 of GlasBase Plus, PermaPly No. 28, GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaBase, DynaBase XT or DynaPly adhered to the base sheet with approved mopping of asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Base heat welded.

Membrane: One ply of DynaGlas FR CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply of DynaWeld Cap FR CR, heat welded.

Surfacing: (Optional) 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: -82.5 psf (See General Limitation #7)

Membrane Type: SBS

Deck Type 4: Lightweight Concrete

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, PermaPly 28 or Ventsulation 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 the 3" 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 of GlasBase Plus, PermaPly No. 28, GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaBase, DynaBase XT or DynaPly adhered to the base sheet with approved mopping of asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Base heat welded.

Membrane: One ply of DynaGlas FR CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Cap FR CR, heat welded.

Surfacing: (Optional) 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: -82.5 psf (See General Limitation #7)

Membrane Type: SBS

Deck Type 4: Lightweight Concrete

Deck Description: Cellular or Aggregate Lightweight Concrete

System Type E(3): 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 screws or puddle welds.

All General and System limitations apply.

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

Fastening : Fasten base sheet with Simplex Base-Lok Fasteners, LWC CR Base Fasteners or Olympic CR Base Ply Fasteners at the 4" side lap 9" o.c. and 12" o.c. in two staggered rows in the center of the sheet.

Ply Sheet: (Optional) One or more plies of GlasBase Plus, PermaPly No. 28, GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaBase, DynaBase XT or DynaPly adhered to the base sheet with approved mopping of asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Base heat welded.

Membrane: One ply of DynaGlas FR CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Cap FR CR, heat welded.

Surfacing: (Optional) 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: SBS

Deck Type 4: Lightweight Concrete

Deck Description: Cellular or Aggregate Lightweight Concrete

System Type E(4): Anchor sheet mechanically fastened to roof deck.

Deck : Structural concrete.

All General and System limitations apply.

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

Fastening : Fasten base sheet with Simplex Base-Lok Fasteners, LWC CR Base Fasteners or Olympic CR Base Ply Fasteners at the 4" side lap 9" o.c. and 12" o.c. in two staggered rows in the center of the sheet.

Ply Sheet: (Optional) One or more plies of GlasBase Plus, PermaPly No. 28, GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaBase, DynaBase XT or DynaPly adhered to the base sheet with approved mopping of asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Base heat welded.

Membrane: One ply of DynaGlas FR CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Cap FR CR, heat welded.

Surfacing: (Optional) 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: SBS

Deck Type 4: Lightweight Concrete

Deck Description: Cellular or Aggregate Lightweight Concrete (300 psi Min.)

System Type E(5): 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.

All General and System limitations apply.

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

Fastening: Fasten anchor sheet with to through LWC to steel deck with UltraFast fasteners and AccuTrac (Buildex) 3"x3" square plates at the 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 GlasBase Plus, PermaPly No. 28, GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaBase, DynaBase XT or DynaPly adhered to the base sheet with approved mopping of asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Base heat welded.

Membrane: One ply of DynaGlas FR CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Cap FR CR, heat welded.

Surfacing: (Optional) 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: SBS

Deck Type 4: Lightweight Concrete

Deck Description: Cellular or Aggregate Lightweight Concrete (300 psi Min.)

System Type E(6): Anchor sheet mechanically fastened to roof deck.

Deck : Structural concrete.

All General and System limitations apply.

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

Fastening: Fasten anchor sheet with to through LWC to concrete deck with UltraFast fasteners and AccuTrac (Buildex) 3"x3" square plates at the 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 GlasBase Plus, PermaPly No. 28, GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaBase, DynaBase XT or DynaPly adhered to the base sheet with approved mopping of asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Base heat welded.

Membrane: One ply of DynaGlas FR CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Cap FR CR, heat welded.

Surfacing: (Optional) 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: SBS

Deck Type 4: Lightweight Concrete

Deck Description: Cellular or Aggregate Lightweight Concrete

System Type E(7): Anchor 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, DynaBase, GlasPly Premier or Ventsulation fastened to the deck as described below:

Fastening: ***(Option #1)*** Fasten base sheet with LWC CR Base Fasteners or OMG CR Base Ply Fasteners at the 4" side laps 7" o.c. and two staggered rows in the center of the sheet, 9" o.c.

(Option #2) Fasten base sheet with ES Products Twin Loc-Nail or Ultralok at 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) Fasten DynaBase only with ES Products Twin Loc-Nail or Ultralok at 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: (Optional) One or more plies of GlasBase Plus, PermaPly 28, GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaBase, DynaBase XT or DynaPly adhered to the base sheet with approved mopping of asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Base heat welded.

Membrane: One ply of DynaGlas FR CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Cap FR CR, heat welded.

Surfacing: (Optional) 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: See Fastening Options Above

Membrane Type: SBS

Deck Type 4: Lightweight Concrete

Deck Description: Cellular or Aggregate Lightweight Concrete

System Type E(8): Anchor sheet mechanically attached to roof deck.

Deck : Structural concrete.

All General and System limitations apply.

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

Fastening: ***(Option #1)*** Fasten base sheet with LWC CR Base Fasteners or OMG CR Base Ply Fasteners at the 4" side laps 7" o.c. and two staggered rows in the center of the sheet, 9" o.c.

(Option #2) Fasten base sheet with ES Products Twin Loc-Nail or Ultralok at 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) Fasten DynaBase only with ES Products Twin Loc-Nail or Ultralok at 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: (Optional) One or more plies of GlasBase Plus, PermaPly 28, GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaBase, DynaBase XT or DynaPly adhered to the base sheet with approved mopping of asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Base heat welded.

Membrane: One ply of DynaGlas FR CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Cap FR CR, heat welded.

Surfacing: (Optional) 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: See Fastening Options Above

Membrane Type: SBS

Deck Type 4: Lightweight Concrete

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 the 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 GlasBase Plus, PermaPly 28, GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaBase, DynaBase XT or DynaPly adhered to the base sheet with approved mopping of asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Base heat welded.

Membrane: One ply of DynaGlas FR CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Cap FR CR, heat welded.

Surfacing: (Optional) 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: SBS

Deck Type 4: Lightweight Concrete

Deck Description: Celcore Lightweight Concrete

System Type E(10): 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 the 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 GlasBase Plus, PermaPly 28, GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaBase, DynaBase XT or DynaPly adhered to the base sheet with approved mopping of asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Base heat welded.

Membrane: One ply of DynaGlas FR CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Cap FR CR, heat welded.

Surfacing: (Optional) 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: SBS

Deck Type 4: Lightweight Concrete

Deck Description: Elastizell Lightweight Insulating Concrete (min 200 psi)

System Type E(11): Anchor sheet mechanically fastened to roof deck.

Deck : Minimum 22 ga., Marlyn Type 'BV", G-90 steel deck over structural supports having maximum 6 ft spans. Deck shall be fastened with $^5/_8$" puddle welds at every flute at maximum spacing of 6"o.c. Deck side laps shall be secured with #14 TEK screws spaced at a maximum 6" o.c. Followed by a minimum a minimum 2" topcoat cast of Elastizell lightweight insulating concrete with Zell Crete Fibers.

All General and System limitations apply.

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

Fastening: Fasten base sheet to deck with LWC CR 1.75" Base Sheet Fasteners or Olympic CR 1.75" Base Ply Fasteners at the 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 GlasBase Plus, PermaPly No. 28, GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaBase, DynaBase XT or DynaPly adhered to the base sheet with approved mopping of asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Base heat welded.

Membrane: One ply of DynaGlas FR CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Cap FR CR, heat welded.

Surfacing: (Optional) 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: -105 psf (See General Limitation #7)

Membrane Type: SBS

Deck Type 4: Lightweight Concrete

Deck Description: Elastizell Lightweight Insulating Concrete (min 200 psi)

System Type E(12): Anchor sheet mechanically fastened to roof deck.

Deck : Structural concrete. Followed by a minimum a minimum 2" topcoat cast of Elastizell lightweight insulating concrete with Zell Crete Fibers.

All General and System limitations apply.

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

Fastening: Fasten base sheet to deck with LWC CR 1.75" Base Sheet Fasteners or Olympic CR 1.75" Base Ply Fasteners at the 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 GlasBase Plus, PermaPly No. 28, GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaBase, DynaBase XT or DynaPly adhered to the base sheet with approved mopping of asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Base heat welded.

Membrane: One ply of DynaGlas FR CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Cap FR CR, heat welded.

Surfacing: (Optional) 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: -105 psf (See General Limitation #7)

Membrane Type: SBS

Deck Type 4: Lightweight Concrete

Deck Description: Mearlcrete Lightweight Insulating Concrete (min 200 psi)

System Type E(13): Anchor sheet mechanically fastened to roof deck.

Deck : Minimum 22 ga., Marlyn Type 'BV", G-90 steel deck over structural supports having maximum 5 ft spans. Deck shall be fastened #14 TEK screws at every flute at maximum spacing of 6"o.c. Deck side laps shall be secured with #14 TEK screws spaced at a maximum 6" o.c. Minimum 1" Apache Holey Board Polystyrene Insulation panels shall be placed in a minimum 1/8" slurry-coat of Mearlcrete Cellular concrete and allowed to cure overnight. The following day the rigid insulation shall be covered with a minimum 2" topcoat cast of Mearlcrete Cellular insulating concrete.

All General and System limitations apply.

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

Fastening: Fasten base sheet to deck with LWC CR 1.75" Base Sheet Fasteners or Olympic CR 1.75" Base Ply Fasteners at the 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 GlasBase Plus, PermaPly No. 28, GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaBase, DynaBase XT or DynaPly adhered to the base sheet with approved mopping of asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Base heat welded.

Membrane: One ply of DynaGlas FR CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Cap FR CR, heat welded.

Surfacing: (Optional) 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 psf (See General Limitation #7)

Membrane Type: SBS

Deck Type 4: Lightweight Concrete

Deck Description: Mearlcrete Lightweight Insulating Concrete (min 200 psi)

System Type E(14): Anchor sheet mechanically fastened to roof deck.

Deck : Structural concrete. Minimum 1" Apache Holey Board Polystyrene Insulation panels shall be placed in a minimum 1/8" slurry-coat of Mearlcrete Cellular concrete and allowed to cure overnight. The following day the rigid insulation shall be covered with a minimum 2" topcoat cast of Mearlcrete Cellular insulating concrete.

All General and System limitations apply.

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

Fastening: Fasten base sheet to deck with LWC CR 1.75" Base Sheet Fasteners or Olympic CR 1.75" Base Ply Fasteners at the 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 GlasBase Plus, PermaPly No. 28, GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaBase, DynaBase XT or DynaPly adhered to the base sheet with approved mopping of asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Base heat welded.

Membrane: One ply of DynaGlas FR CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Cap FR CR, heat welded.

Surfacing: (Optional) 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 psf (See General Limitation #7)

Membrane Type: SBS

Deck Type 4: Lightweight Concrete

Deck Description: Lightweight Insulating Concrete (min 250-300 psi)

System Type E(15): Anchor sheet mechanically fastened to roof deck.

Deck : Minimum 22 ga., vented corrugated 1.5" WR Type B steel decking fastened to supports having maximum 6 ft spans. Deck shall be fastened with 5/8" puddle welds, one (1) weld per every flute (6"). Deck side laps shall be secured with #12 SD screws spaced at a maximum 12" o.c. EPS Dyplast insulation board with a 1.0 density placed in minimum ¼" slurry, followed by minimum 2" topcoat.

All General and System limitations apply.

Anchor Sheet: One ply of PermaPly 28 fastened to the deck as described below:

Fastening: Fasten base sheet to deck with J.M. 1.7" LWC Base Sheet fasteners spaced maximum 7" o.c. in a minimum 3" wide side lap and maximum 7" o.c. in two equally spaced staggered rows in the field of the sheet.

Ply Sheet: One or more plies of One or more plies of GlasBase Plus, PermaPly No. 28, GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaBase, DynaBase XT or DynaPly adhered to the base sheet with approved mopping of asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Membrane: One ply of DynaGlas FR CR adhered in a full mopping of approved 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 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: -67.5 psf (See General Limitation #7)

Membrane Type: SBS

Deck Type 4: Lightweight Concrete

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 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.

Base Sheet: One ply of GlasPly Premier 50% strip mopped lightweight deck.

Fastening: Strip mopped with approved asphalt.

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

Membrane: One ply of DynaGlas FR CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Cap FR CR, heat welded.

Surfacing: (Optional) 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: -67.5 psf (See General Limitation #9)

Membrane Type: SBS

Deck Type 4: Lightweight Concrete

Deck Description: Concrecel Lightweight Concrete

System Type F(2): Base sheet adhered in 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 Sheet: One ply of GlasPly Premier 50% strip mopped lightweight deck.

Fastening: Strip mopped with approved asphalt.

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

Membrane: One ply of DynaGlas FR CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Cap FR CR, heat welded.

Surfacing: (Optional) 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: -67.5 psf (See General Limitation #9)

Membrane Type: SBS

Deck Type 4: Lightweight Concrete

Deck Description: Concrecel Lightweight Concrete

System Type F(3): 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 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 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 Simplex Base-Lok 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, GlasPly IV, DynaBase, DynaBase XT, DynaPly, DynaLastic 180 S or PermaPly 28 adhered in a full mopping of hot asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Base heat welded.

Membrane: One ply of DynaGlas FR CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Cap FR CR, heat welded.

Surfacing: (Optional) 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: -67.5 psf (See General Limitation #9 & fastening above)

Membrane Type: SBS

Deck Type 4: Lightweight Concrete

Deck Description: Concrecel Lightweight Concrete

System Type F(4): Base sheet adhered and mechanically fastened.

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 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 Simplex Base-Lok 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, GlasPly 1V, DynaBase, DynaBase XT, DynaPly, DynaLastic 180 S or PermaPly 28 adhered in a full mopping of hot asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Base heat welded.

Membrane: One ply of DynaGlas FR CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply DynaWeld Cap FR CR, heat welded.

Surfacing: (Optional) 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: -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.)**
10. All products listed herein shall have a quality assurance audit in accordance with the Florida Building Code and Rule 9B-72 of the Florida Administrative Code.

END OF THIS ACCEPTANCE