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 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. 09-1013.03 and consists of pages 1 through 39.
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:	Concrete
Maximum Design Pressure	-536.5 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 180 S	37" x 36'-9" roll weight: 90 lbs.	ASTM D 6164 Type I Grade S	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 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.
Urethane Insulation Adhesive	N/A	Proprietary	A one-part urethane cold applied adhesive
Two Part Urethane Insulation Adhesive	N/A	Proprietary	A two-part urethane insulation 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
DensDeck, DensDeck Prime	Silicon treated gypsum	G-P Gypsum
SECUROCK™ Roof Board	Rigid, gypsum-based board stock	USG Corp.
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
Multi-Max-3	Polyisocyanurate 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.	UltraFast (#14 Only)	Insulation fastener for concrete decks.		Johns Manville
2.	JM CD-10	Insulation fastener for concrete decks.		Johns Manville
3.	JM Standard Metal Plate	Galvalume AZ55 steel plate	3" round	Johns Manville
4.	JM Plastic Plate	Polypropylene round plate	3.25" round	Johns Manville
5.	UltraFast Metal Plate	Galvalume AZ55 steel plate	3" round 3" square	Johns Manville
6.	UltraFast Plastic Plate	Polypropylene round plate	3" round	Johns Manville
7.	CD-10	Insulation fastener for concrete decks.		OMG, Inc.
8.	OMG Fastener #14	Insulation fastener		OMG, Inc.
9.	OMG Fastener ASAP	Pre-assembled Insulation fastener and plate		OMG, Inc.
10.	OMG Standard	Galvalume AZ55 steel plate.	3" round	OMG, Inc.
11.	OMG G-2	Galvalume AZ55 steel plate.	3.5" round	OMG, Inc.
12.	OMG Polypropylene	Polypropylene plastic plate	3" round	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		
	3007148	FM Class 4450	04.19.00
	3006346	FM Class 4450	09.15.00
	3001457	FM Class 4470	03.04.02
	3009499	FM Class 4470	04.04.01
	3011248	FM Class 4470	11.01.02
	3014090	FM Class 4470	09.05.02
	3012974	FM Class 4450	06.03.02
	3020703	FM Class 4470	07/30/04
Dynatech Engineering, Inc.	4360.03.95-1	TAS 114	3.95
	4360.03.95-2		
	4361.5.95-1	TAS 114	5.95
Underwriters Laboratories, Inc.	R-10167 (N)	Fire Classification Listing	01.01.95
Exterior Research & Design, LLC	#4361-2.04.97-1	TAS 114	04.28.97
	#10390A-10.97-1	TAS 114	10.97
	#10390A-12.97-1		12.97
	#4251.08.96-1	TAS 114	01.20.99
	10391.01.03		01.29.03
	02843.02.05-10	TAS 114	02/10/05
	00257.03.05-1	ASTM D6162/D6163	03/17/05
		ASTM D6164/D6298	
Trinity|ERD	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.	# 99006.1.20.99	TAS 114	01.20.99
	#99007.1.20.99		
	#99008.1.20.99	TAS 114	03.99
	#99009.1.20.99		
	#99016.1.20.99		
IRT-ARCON Inc	02-026	TAS 114	07/26/02
	02-011		02/06/02

APPROVED ASSEMBLIES

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(1): All layer of insulation adhered to deck. Membrane is subsequently fully adhered.

All General and System limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft^2
ENRGY 3 **Max. 4 ft x 4 ft x Minimum 1.5" thick**	**N/A**	**N/A**
Fesco Foam, DuraFoam **Minimum 1.5" thick**	**N/A**	**N/A**

Top Insulation Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft^2
Fesco Board, DuraBoard **Minimum ¾" thick**	**N/A**	**N/A**
Retro-Fit **Minimum ½" thick**	**N/A**	**N/A**

Note: All insulation shall be adhered to the primed deck 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.

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

Ply Sheet: 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.

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. (See application instructions for approved method of installation).

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: -305 psf (See General Limitation #9).

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(2): Optional anchor sheet bonded in hot asphalt or heat welded; One or more layers of insulation fully adhered with approved asphalt.

Anchor Sheet: (Optional) One or more plies of GlasBase Plus, DynaBase, DynaBase XT, DynaPly, GlasPly Premier, PermaPly 28 or GlasPly IV adhered to the properly primed concrete deck with a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or DynaWeld Base, heat welded.

All General and System limitations apply.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY 3 **Max. 4 ft x 4 ft x Minimum 1.5" thick**	**N/A**	**N/A**
Fesco Foam, DuraFoam **Minimum 1.5" thick**	**N/A**	**N/A**
Fesco Board, DuraBoard **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, DuraBoard **Minimum ¾" thick**	**N/A**	**N/A**
Retro-Fit **Minimum ½" thick**	**N/A**	**N/A**

Note: All insulation shall be adhered to the anchor sheet or primed deck 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 Roofiug 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) One ply of PermaPly 28, DynaBase, DynaBase XT or GlasBase Plus adhered to the insulated substrate in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: 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 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. (See application instructions for approved method of installation).
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:	-167.5 psf (See General Limitation #9).

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(3): Optional anchor sheet bonded in hot asphalt or heat welded; One or more layers of insulation fully adhered with approved asphalt.

All General and System limitations apply.

Anchor Sheet: (Optional) One or more plies of GlasBase Plus, DynaBase, DynaBase XT, DynaPly, GlasPly Premier, PermaPly 28 or GlasPly IV adhered to the properly primed concrete deck with a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or DynaWeld Base, heat welded.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY 3 **Max. 4 ft x 4 ft x Minimum 1.5" thick**	**N/A**	**N/A**
Fesco Foam, DuraFoam **Minimum 1.5" thick**	**N/A**	**N/A**
Fesco Board, DuraBoard **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, DuraBoard **Minimum ¾" thick**	**N/A**	**N/A**
Retro-Fit **Minimum ½" thick**	**N/A**	**N/A**

Note: All insulation shall be adhered to the anchor sheet or primed deck 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.

Base Sheet: (Optional) One ply of PermaPly 28, DynaBase, DynaBase XT or GlasBase Plus adhered to the insulated substrate in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: 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 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. (See application instructions for approved method of installation).
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:	-150 psf (See General Limitation #9)

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(4): All layer of insulation adhered to deck. Membrane is subsequently fully adhered.

All General and System limitations apply.

One or more layers of the following insulations:

Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY 3 **Max. 4 ft x 4 ft x Minimum 1.5 thick**	**N/A**	**N/A**
Fesco Board, DuraBoard **Minimum ¾" thick**	**N/A**	**N/A**

Note: All layers of insulation shall be adhered with MBR Bonding Adhesive at an application rate of 1.5 gal./ 100 ft^2. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

Base Sheet: GlasBase Plus, PermaPly 28, DynaBase, DynaBase XT, GlasPly Premier or GlasPly IV applied to the insulation in MBR Bonding Adhesive at an application rate of 1.5 gal./sq.

Ply Sheet: (Optional) One or more plies of GlasPly Premier or GlasPly IV fiber glass felts adhered in MBR Bonding Adhesive at an application rate of 1.5 gal./sq.

Membrane: One ply of DynaGlas FR CR adhered in MBR Bonding Adhesive at an application rate of 1.5 gal./sq.

Surfacing: (Optional) Install one of the following:

1. 1¾ -2 gal./sq. TopGard A or B emulsion or 2 gal./sq. aluminum coating.
2. Flood coat and gravel/slag with an application rate of 60 lbs./sq. and 400 lbs./sq., respectively.

Maximum Design Pressure: -187.5 psf (for Fesco Board or DuraBoard) (See General Limitation #9).
-375 psf (for ENRGY 3) (See General Limitation #9).

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(5): All layer of insulation adhered to a primed deck. Membrane is subsequently fully adhered.

All General and System limitations apply.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Fesco Foam, DuraFoam Minimum 1.5" thick	**N/A**	**N/A**
ENRGY 3 Max. 4 ft x 4 ft x Minimum 1.4" thick	**N/A**	**N/A**

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Retro-Fit, DuraBoard Minimum ½" thick	**N/A**	**N/A**

Note: All layers of insulation shall be adhered with approved 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. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

Base Sheet: GlasBase Plus, PermaPly 28, DynaBase, DynaBase XT, 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: (Optional) One or more plies of GlasPly Premier or GlasPly IV fiber glass felts adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or 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. (See application instructions for approved method of installation).

Surfacing: (Optional) Install one of the following:
1. 1¾ -2 gal./sq. TopGard A or B emulsion or 2 gal./sq. aluminum coating.
2. Flood coat and gravel/slag with an application rate of 60 lbs./sq. and 400 lbs./sq., respectively.

Maximum Design Pressure: -155 psf (See General Limitation #9).

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(6): All layer of insulation adhered to a primed deck. Membrane is subsequently fully adhered.

All General and System limitations apply.

Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft^2
Fesco Foam, DuraFoam Minimum 1.5" thick	**N/A**	**N/A**
Fesco Board, DuraBoard Minimum ¾" thick	**N/A**	**N/A**

Note: All layers of insulation shall be adhered with approved 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. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

Base Sheet: GlasBase Plus, PermaPly 28 DynaBase, DynaBase XT, 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: (Optional) One or more plies of GlasPly Premier, PermaPly 28 or GlasPly IV fiber glass felts adhered 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 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. (See application instructions for approved method of installation).

Surfacing: (Optional) Install one of the following:

1. 1¾ -2 gal./sq. TopGard A or B emulsion or 2 gal./sq. aluminum coating.
2. Flood coat and gravel/slag with an application rate of 60 lbs./sq. and 400 lbs./sq., respectively.

Maximum Design Pressure: -130 psf (See General Limitation #9).

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(7): All layer of insulation adhered to a primed deck. Membrane is subsequently fully adhered.

All General and System limitations apply.

Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY 3 **Max. 4 ft x 4 ft x Minimum 1.4" thick**	**N/A**	**N/A**
Fesco Board, DuraBoard **Minimum ¾" thick**	**N/A**	**N/A**

Note: All layers of insulation shall be adhered with approved asphalt within the EVT range aud at a rate of 20-40 lbs/100 ft^2. Please refer to Roofing Application Staudard RAS 117 for insulation attachment. Composite iusulation boards used as a top layer shall be installed with the polyisocyanurate face down.

Base Sheet: GlasBase Plus, PermaPly 28, DynaBase, DynaBase XT, 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: (Optional) One or more plies of GlasPly Premier or GlasPly IV fiber glass felts adhered 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 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. (See application instructions for approved method of installation).

Surfacing: (Optional) Install one of the following:

1. 1¾ -2 gal./sq. TopGard A or B emulsion or 2 gal./sq. aluminum coating.
2. Flood coat and gravel/slag with an application rate of 60 lbs./sq. and 400 lbs./sq., respectively.

Maximum Design Pressure: -107 psf (See General Limitation #9).

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(8): All layer of insulation adhered to deck. Membrane is subsequently fully adhered.

All General and System limitations apply.

One or more layers of the following insulations:

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY 3 **Max. 4 ft x 4 ft x Minimum 1.5 thick**	**N/A**	**N/A**

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Fesco Board, DuraBoard **Minimum ½" thick**	**N/A**	**N/A**

Note: All layers of insulation shall be adhered to primed deck with approved 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. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

Base Sheet: GlasBase Plus, PermaPly 28, DynaBase, DynaBase XT, GlasPly Premier or GlasPly IV applied to the insulation in MBR Bonding Adhesive at an application rate of 1.5 gal./sq.

Ply Sheet: (Optional) One or more plies of GlasPly Premier or GlasPly IV fiber glass felts adhered in MBR Bonding Adhesive at an application rate of 1.5 gal./sq.

Membrane: One ply of DynaGlas FR CR adhered in MBR Bonding Adhesive at an application rate of 1.5 gal./sq.

Surfacing: (Optional) Install one of the following:

1. 1¾ -2 gal./sq. TopGard A or B emulsion or 2 gal./sq. aluminum coating.
2. Flood coat and gravel/slag with an application rate of 60 lbs./sq. and 400 lbs./sq., respectively.

Maximum Design Pressure: -82.5 psf (See General Limitation #9).

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(9): Insulation adhered to deck in insulation adhesive. Membrane is subsequently fully adhered.

All General and System limitations apply.

Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Fesco Board Minimum ¾" thick	**N/A**	**N/A**
DuraBoard Minimum ½" thick	**N/A**	**N/A**
RetroFit Board Minimum ½" thick	**N/A**	**N/A**

Note: Insnlation shall be adhered with OlyBond 500 (SpotShot) or JM Two Part Urethane Insulation Adhesive in ¾" to 1" wide beads at maximum spacing of 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: (Optional) One ply of PermaPly 28, DynaBase, DynaBase XT or GlasBase Plus adhered to the insulated substrate in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: 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 DynaWeld Base, heat-welded (to DuraBoard only).

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. (See application instructions for approved method of installation).

Surfacing: (Optional) Install one of the following:

1. 1¾ -2 gal./sq. TopGard A or B emulsion or 2 gal./sq. aluminum coating.
2. Flood coat and gravel/slag with an application rate of 60 lbs./sq. and 400 lbs./sq., respectively.

Maximum Design Pressure: -285 psf for Fesco Board (See General Limitation #9).
-305 psf for DuraBoard or RetroFit Board (See General Limitation #9).

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(10): Insulation adhered to deck in insulation adhesive. Membrane is subsequently fully adhered.

All General and System limitations apply.

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

Note: Insulation shall be adhered with OlyBond 500 (SpotShot) or JM Two Part Urethane Insulation Adhesive in ¾" to 1" wide beads at maximum spacing of 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: (Optional) One ply of PermaPly 28, DynaBase, DynaBase XT or GlasBase Plus adhered in MBR Bonding Adhesive at an application rate of 1.5 gal./sq.

Ply Sheet: One or more plies of GlasBase Plus, PermaPly 28, GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaBase, DynaBase XT or DynaPly adhered in MBR Bonding Adhesive at an application rate of 1.5 gal./sq. or DynaWeld Base, heat welded.

Membrane: One ply of DynaGlas FR CR adhered in MBR Bonding Adhesive at an application rate of 1.5 gal./sq.

Surfacing: (Optional) Install one of the following:

1. 1¾ -2 gal./sq. TopGard A or B emulsion or 2 gal./sq. aluminum coating.
2. Flood coat and gravel/slag with an application rate of 60 lbs./sq. and 400 lbs./sq., respectively.

Maximum Design Pressure: -187.5 psf (See General Limitation #9).

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(11): Insulation adhered to deck in insulation adhesive. Membrane is subsequently fully adhered.

All General and System limitations apply.

One or more layers of the following insulations:

Insulation Base Layer (Optional)	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY 3		
Max. 4 ft x 4 ft x Minimum 2" thick	**N/A**	**N/A**

Insulation Top Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
SECUROCK™ Roof Board		
Minimum ¼" thick	**N/A**	**N/A**

Note: Insulation shall be adhered with OlyBond 500 (SpotShot) or JM Two Part Urethane Insulation Adhesive in ¾" to 1" wide beads at maximum spacing of 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: (Optional) One ply of PermaPly 28, DynaBase, DynaBase XT or GlasBase Plus adhered to the insulated substrate in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: 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 DynaWeld Base.

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. 1¾ -2 gal./sq. TopGard A or B emulsion or 2 gal./sq. aluminum coating.
2. Flood coat and gravel/slag with an application rate of 60 lbs./sq. and 400 lbs./sq., respectively.

Maximum Design Pressure: -442.5 psf (See General Limitation #9).

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(12): Insulation adhered to primed deck in approved asphalt or to unprimed deck in insulation adhesive. Membrane is subsequently fully adhered.

All General and System limitations apply.

One or more layers of the following insulations:

Insulation Base Layer (Optional)	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY 3		
Max. 4 ft x 4 ft x min. 2" thick	**N/A**	**N/A**

Insulation Top Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
SECUROCK™ Roof Board		
Minimum ¼" thick	**N/A**	**N/A**

Note: All layers of insulation shall be adhered to primed deck with approved asphalt within the EVT range and at a rate of 20-40 lbs/100 ft^2 or to unprimed deck in OlyBond Classic in full coverage at 1 gal/square Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: (Optional) One ply of PermaPly 28, DynaBase, DynaBase XT or GlasBase Plus adhered to the insulated substrate in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: 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.

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. 1¾ -2 gal./sq. TopGard A or B emulsion or 2 gal./sq. aluminum coating.
2. Flood coat and gravel/slag with an application rate of 60 lbs./sq. and 400 lbs./sq., respectively.

Maximum Design Pressure: -495 psf (See General Limitation #9).

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(13): Insulation adhered to primed deck in approved asphalt or to unprimed deck in insulation adhesive. Membrane is subsequently fully adhered.

All General and System limitations apply.

One or more layers of the following insulations:

Insulation Base Layer (Optional)	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY 3		
Max. 4 ft x 4 ft x min. 2" thick	**N/A**	**N/A**

Insulation Top Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
SECUROCK™ Roof Board		
Minimum ¼" thick	**N/A**	**N/A**

Note: All layers of insulation shall be adhered to primed deck with approved asphalt within the EVT range and at a rate of 20-40 lbs/100 ft^2 or to unprimed deck in OlyBond Classic in full coverage at 1 gal/square. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One or more plies of DynaWeld Base heat welded.

Ply Sheet: None

Membrane: One ply DynaWeld Cap FR CR heat welded.

Maximum Design Pressure: -536.5 psf (See General Limitation #9).

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(14): All layer of insulation adhered to deck. Membrane is subsequently fully adhered.

All General and System limitations apply.

One or more layers of the following insulations:

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY 3 **Max. 4 ft x 4 ft x Minimum 1.5 thick**	**N/A**	**N/A**

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
DuraBoard **Minimum ½" thick**	**N/A**	**N/A**

Note: All layers of insulation shall be adhered with MBR Bonding Adhesive or OlyBond 500 (Spot Shot) or JM Two Part Urethane Insulation Adhesive in ¾" to 1" wide beads at maximum spacing of 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: (Optional) GlasBase Plus, PermaPly 28, DynaBase, DynaBase XT, GlasPly Premier or GlasPly IV applied to the insulation in MBR Bonding Adhesive at an application rate of 1.5 gal./sq.

Ply Sheet: One ply of GlasBase Plus, PermaPly 28, GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaBase, DynaBase XT or DynaPly adhered in MBR Bonding Adhesive at an application rate of 1.5 gal./sq or DynaWeld Base, heat welded.

Membrane: One ply of DynaGlas FR CR adhered in MBR Bonding Adhesive at an application rate of 1.5 gal./sq.

Surfacing: (Optional) Install one of the following:

1. 1¾ -2 gal./sq. TopGard A or B emulsion or 2 gal./sq. aluminum coating.
2. Flood coat and gravel/slag with an application rate of 60 lbs./sq. and 400 lbs./sq., respectively.

Maximum Design Pressure: -147.5 psf (See General Limitation #9).

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(15): Anchor sheet heat welded; One or more layers of insulation adhered with insulation adhesive.

Anchor Sheet: DynaWeld Base, heat welded.

All General and System limitations apply.

Base and/or Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft^2
ENRGY 3		
Max. 4 ft x 4 ft x Minimum 1.5" thick	**N/A**	**N/A**

Note: All layers of insulation shall be adhered with MBR Bonding Adhesive in ¾" to 1" wide beads at maximum spacing of 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: (Optional) GlasBase Plus, PermaPly 28, DynaBase, DynaBase XT, GlasPly Premier or GlasPly IV applied to the insulation in MBR Bonding Adhesive at an application rate of 1.5 gal./sq.

Ply Sheet: One ply of GlasBase Plus, PermaPly 28, GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaBase, DynaBase XT or DynaPly adhered in MBR Bonding Adhesive at an application rate of 1.5 gal./sq or DynaWeld Base, heat welded.

Membrane: One ply of DynaGlas FR CR adhered in MBR Bonding Adhesive at an application rate of 1.5 gal./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: -147.5 psf (See General Limitation #9).

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(16): One or more layers of insulation adhered with approved adhesive.

All General and System limitations apply.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY 3 **Max. 4 ft x 4 ft x Minimum 1.5" thick**	**N/A**	**N/A**

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Fesco Board **Minimum ¾" 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.

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

Ply Sheet: 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.

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. (See application instructions for approved method of installation).

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: -112.5 psf (See General Limitation #9).

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(17): All layer of insulation adhered to deck. Membrane is subsequently fully adhered.

All General and System limitations apply.

One or more layers of the following insulations:

Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY 3 **Max. 4 ft x 4 ft x Minimum 1.5 thick**	**N/A**	**N/A**
Fesco Board **Minimum ¾" 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.

Base Sheet:	GlasBase Plus, PermaPly 28, DynaBase, DynaBase XT, GlasPly Premier or GlasPly IV applied to the insulation in MBR Bonding Adhesive at an application rate of 1.5 gal./sq.
Ply Sheet:	(Optional) One or more plies of GlasPly Premier or GlasPly IV fiber glass felts adhered in MBR Bonding Adhesive at an application rate of 1.5 gal./sq.
Membrane:	One ply of DynaGlas FR CR adhered in MBR Bonding Adhesive at an application rate of 1.5 gal./sq.
Surfacing:	(Optional) Install one of the following: 1. 1¾ -2 gal./sq. TopGard A or B emulsion or 2 gal./sq. aluminum coating. 2. Flood coat and gravel/slag with an application rate of 60 lbs./sq. and 400 lbs./sq., respectively.
Maximum Design Pressure:	-112.5 psf (See General Limitation #9).

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type C(1): All layers of insulation simultaneously mechanically fastened.

All General and System limitations apply.

Base Insulation Layer (Optional)	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY 3 **Minimum 1.5" thick**	**N/A**	**N/A**

Note: Both layers of insulation shall be simultaneously mechanically fastened; see top layer below for fasteners and density.

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Fesco Board, DuraBoard **Minimum ¾" thick**	1 or 8	**1:1.33 ft^2**

Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Insulation fasteners shall be tested for withdrawal resistance in compliance with Testing Application Standard TAS 105 to confirm compliance with the wind load requirements. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One or more plies of DynaWeld Base heat welded.

Membrane: One ply of DynaWeld Cap FR CR heat welded.

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

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type C(2): All layers of insulation simultaneously mechanically fastened.

All General and System limitations apply.

Base Insulation Layer (Optional)	**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, DuraBoard **Minimum ¾" thick**	**N/A**	**N/A**

Note: Both layers of insulation shall be simultaneously mechanically fastened; see top layer below for fasteners and density.

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Fesco Foam, DuraFoam **Minimum 1.5" thick**	**1, 2, 7 or 8**	**1:2 ft^2**
Fesco Board, DuraBoard **Minimum ¾" thick**	**1, 2, 7 or 8**	**1:2 ft^2**
Retro-Fit **Minimum ½" thick**	**1, 2, 7 or 8**	**1:2 ft^2**

Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Insulation fasteners shall be tested for withdrawal resistance in compliance with Testing Application Standard TAS 105 to confirm compliance with the wind load requirements. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet:	(Optional) One ply of PermaPly 28, DynaBase or GlasBase Plus adhered to the insulated substrate in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Ply Sheet:	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.
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. (See application instructions for approved method of installation).

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

Membrane Type: SBS

Deck Type 2I: Concrete, Insulated

Deck Description: 2,500 psi structural concrete or concrete plank

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

All General and System limitations apply.

One or more layers of any of the following insulations:

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

Insulation Top Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
RetroFit Board		
Minimum 4 ft x 8 ft x ½" thick	**N/A**	**N/A**

Note: Top layer shall have preliminary attachment prior to the iustallation of the base sheet at a minimum application rate of five (5) fasteners per 4 x 8 ft board. All layers of insulatiou and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: DynaLastic 180 S fastened to the deck as described below:

Fastening: Fasten base sheet over the 4-inch wide laps using JM CD-10 Fasteners and High Load Plates spaced 6" o.c.

Ply Sheet: DynaWeld Base, heat welded.

Membrane: DynaWeld Cap FR CR, heat welded.

Maximum Design Pressure: -112.5 (See General Limitation #7).

Membrane Type: SBS

Deck Type 2I: Concrete, Insulated

Deck Description: 2,500 psi structural concrete or concrete plank

System Type D(2): All layers of insulation simultaneously mechanically fastened with base sheet.

All General and System limitations apply.

One or more layers of any of the following insulations:

Insulation Base Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY 3		
Minimum 4 ft x 8 ft x 1.5" thick	**N/A**	**N/A**

Insulation Top Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
RetroFit Board		
Minimum 4 ft x 8 ft x ½" thick	**N/A**	**N/A**

Note: Top layer shall have preliminary attachment prior to the installatiou of the base sheet at a minimum application rate of five (5) fasteners per 4 x 8 ft board. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet:	DynaLastic 180 S fastened to the deck as described below:
Fastening:	Fasten base sheet within the 5-inch wide laps using JM CD-10 Fasteners and High Load Plates spaced 6" o.c. The lap is heat welded.
Ply Sheet:	(Optional) DynaWeld Base, heat welded.
Membrane:	DynaWeld Cap FR CR, heat welded.
Maximum Design Pressure:	-112.5 (See General Limitation #7).

Membrane Type: SBS

Deck Type 2I: Concrete, Insulated

Deck Description: 2,500 psi structural concrete or concrete plank

System Type D(3): All layers of insulation simultaneously mechanically fastened with base sheet.

All General and System limitations apply.

One or more layers of any of the following insulations:

Insulation Base Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Fesco Board		
Minimum ¾" thick	**N/A**	**N/A**

Insulation Top Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
NAILBOARD		
Minimum 4 ft x 8 ft x 1.5" thick	**N/A**	**N/A**

Note: Top layer shall have preliminary attachment prior to the installation of the base sheet at a minimum application rate of five (5) fasteners per 4 x 8 ft board. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet:	DynaLastic 180 S fastened to the deck as described below:
Fastening:	Fasten base sheet within the 5-inch wide laps using JM CD-10 Fasteners and High Load Plates spaced 6" o.c. The lap is heat welded.
Ply Sheet:	(Optional) DynaWeld Base, heat welded.
Membrane:	DynaWeld Cap FR CR, heat welded.
Maximum Design Pressure:	-135 (See General Limitation #7).

Membrane Type: SBS

Deck Type 2I: Concrete, Insulated

Deck Description: 2,500 psi structural concrete or concrete plank

System Type D(4): All layers of insulation simultaneously mechanically fastened with base sheet.

All General and System limitations apply.

One or more layers of any of the following insulations:

Insulation Base Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY 3		
Minimum 4 ft x 8 ft x 1.5" thick	**N/A**	**N/A**

Insulation Top Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
RetroFit Board		
Minimum 4 ft x 8 ft x ½" thick	**N/A**	**N/A**

Note: Top layer shall have preliminary attachment prior to the installation of the base sheet at a minimum application rate of five (5) fasteners per 4 x 8 ft board. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet:	DynaLastic 180 S fastened to the deck as described below:
Fastening:	Fasten base sheet within the 5-inch wide laps using JM CD-10 Fasteners and High Load Plates spaced 6" o.c. The lap is heat welded.
Ply Sheet:	(Optional) DynaWeld Base, heat welded.
Membrane:	DynaWeld Cap FR CR, heat welded.
Maximum Design Pressure:	-135 (See General Limitation #7).

Membrane Type: SBS

Deck Type 2I: Concrete, Insulated

Deck Description: 2,500 psi structural concrete or concrete plank

System Type D(5): All layers of insulation simultaneously mechanically fastened with base sheet.

All General and System limitations apply.

One or more layers of any of the following insulations:

Insulation Base Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Fesco Board		
Minimum ¾" thick	**N/A**	**N/A**

Insulation Top Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
NAILBOARD		
Minimum 4 ft x 8 ft x 1.5" thick	**N/A**	**N/A**

Note: Top layer shall have preliminary attachment prior to the installation of the base sheet at a minimum application rate of five (5) fasteners per 4 x 8 ft board. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet:	DynaLastic 180 S fastened to the deck as described below:
Fastening:	Fasten base sheet over the 4-inch wide laps using JM CD-10 Fasteners and High Load Plates spaced 6" o.c.
Ply Sheet:	DynaWeld Base, heat welded.
Membrane:	DynaWeld Cap FR CR, heat welded.
Maximum Design Pressure:	-150 (See General Limitation #7).

Membrane Type: SBS

Deck Type 2I: Concrete, Insulated

Deck Description: 2,500 psi structural concrete or concrete plank

System Type D(6): All layers of insulation simultaneously mechanically fastened with base sheet.

All General and System limitations apply.

One or more layers of any of the following insulations:

Insulation Base Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY 3		
Minimum 4 ft x 8 ft x 1.5" thick	**N/A**	**N/A**

Insulation Top Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
RetroFit Board		
Minimum 4 ft x 8 ft x ½" thick	**N/A**	**N/A**

Note: Top layer shall have preliminary attachment prior to the installation of the base sheet at a minimum application rate of five (5) fasteners per 4 x 8 ft board. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet:	DynaLastic 180 S fastened to the deck as described below:
Fastening:	Fasten base sheet over the 4-inch wide laps using JM CD-10 Fasteners and High Load Plates spaced 6" o.c.
Ply Sheet:	DynaWeld Base, heat welded.
Membrane:	DynaWeld Cap FR CR, heat welded.
Maximum Design Pressure:	-150 (See General Limitation #7).

Membrane Type: SBS

Deck Type 3: Concrete Decks, Non-Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type F(1): Base sheet fully adhered.

All General and System limitations apply.

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of anchor sheet.

Base Sheet:	One or more plies of One ply of DynaBase, DynaBase XT or Ventsulation applied to the deck in MBR Bonding Adhesive at an application rate of 1.5 gal./sq.
Ply Sheet:	(Optional) One or more plies of GlasPly Premier or GlasPly IV fiber glass felts adhered in MBR Bonding Adhesive at an application rate of 1.5 gal./sq.
Membrane:	One ply of DynaGlas FR CR adhered in MBR Bonding Adhesive at an application rate of 1.5 gal./sq.
Surfacing:	(Optional) Install one of the following: 1. 1¾ -2 gal./sq. TopGard A or B emulsion or 2 gal./sq. aluminum coating. 2. Flood coat and gravel/slag with an application rate of 60 lbs./sq. and 400 lbs./sq., respectively.
Maximum Design Pressure:	-495 psf (See General Limitation #9).

Membrane Type: SBS

Deck Type 3: Concrete Decks, Non-Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type F(2): Base sheet heat welded to primed deck.

All General and System limitations apply.

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of anchor sheet.

Base Sheet:	One or more plies of DynaWeld Base or DynaWeld 180 S heat welded to concrete deck.
Membrane:	One ply of DynaWeld Cap FR CR heat welded to the base sheet.
Maximum Design Pressure:	-315 psf (See General Limitation #9).

Membrane Type: SBS

Deck Type 3: Concrete Decks, Non-Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type F(2): Base sheet fully adhered.

All General and System limitations apply.

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of anchor sheet.

Base Sheet: One ply of PermaPly 28, DynaBase, DynaBase XT, DynaPly or GlasBase Plus adhered to the properly primed concrete deck in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

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.

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. (See application instructions for approved method of installation).

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: -275 psf (See General Limitation #9).

CONCRETE DECK SYSTEM LIMITATIONS:

1. If mechanical attachment to the structural deck through the lightweight insulating concrete is proposed, a field withdrawal resistance testing shall be performed to determine equivalent or enhanced fastener patterns and density. All testing and fastening design shall be in compliance with Testing Application Standard TAS 105 and Roofing Application Standard RAS 117, calculations shall be signed and sealed by a Florida Registered Engineer, Architect, or Registered Roof Consultant.

GENERAL LIMITATIONS:

1. Fire classification is not part of this acceptance, refer to a current Approved Roofing Materials Directory for fire ratings of this product.
2. Insulation may be installed in multiple layers. The first layer shall be attached in compliance with Product Control Approval guidelines. All other layers shall be adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq., or mechanically attached using the fastening pattern of the top layer
3. All standard panel sizes are acceptable for mechanical attachment. When applied in approved asphalt, panel size shall be 4' x 4' maximum.
4. An overlay and/or recovery board insulation panel is required on all applications over closed cell foam insulations when the base sheet is fully mopped. If no recovery board is used the base sheet shall be applied using spot mopping with approved asphalt, 12" diameter circles, 24" o.c.; or strip mopped 8" ribbons in three rows, one at each 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