MIAMI-DADE COUNTY

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

MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION
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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 and accepted by Miami-Dade County BNC - Product Control Section 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. BNC 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 Modified Bitumen Roofing Systems Over Steel Decks

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, city, state and following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA revises NOA No. 07-0228.04 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:	Steel
Maximum Design Pressure	-195 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 180 S Base	39-3/8" x 32'-10"; roll weight: 82 lbs	ASTM D 6164 Type I Grade S	An elastomeric modified bitumen coated, 180 gram, nonwoven polyester mat and bi-directional glass scrim reinforced, base sheet for heat welded applications.
DynaFlex	3 x 25	ASTM D 6163 Type I Grade S	A flexible polyester/glass scrim reinforced, granular-surfaced flashing sheet.
DynaGlas	39-3/8" x 32'-10"; roll weight: 100 lbs.	ASTM D 6163 Type I Grade G	An SBS modified bitumen membrane surfaced with granules for application in hot asphalt.
DynaWeld Cap FR	39'-3/8" x 32'-10" roll weight: 110 lbs.	ASTM D 6163 Type I Grade G	A fire resistant SBS modified bitumen membrane surfaced with granules for heat weld applications.
DynaWeld Cap 180 FR	39-3/8" x 32'-10" roll weight: 100 lbs	ASTM D 6164 Type I Grade G	A fire resistant, 180 gram polyester reinforced, SBS modified bitumen sheet.
DynaGlas 30 FR	39-3/8" x 32'-10"; roll weight: 90 lbs.	ASTM D 6163 Type I Grade G	A fire resistant SBS modified bitumen membrane surfaced with granules for application in hot asphalt.
DynaGlas FR	39-3/8" x 32'-10"; roll weight: 101 lbs.	ASTM D 6163 Type I Grade G	A fire resistant SBS modified bitumen membrane surfaced with granules for application in hot asphalt.
DynaKap	39-3/8" x 32'-10"; roll weight: 115 lbs.	ASTM D 6162 Type II Grade G	A fiberglass/polyester reinforced SBS modified bitumen membrane surfaced with granules for application in hot asphalt.
DynaKap FR	39-3/8" x 32'-10"; roll weight: 115 lbs.	ASTM D 6162 Type II Grade G	A fire resistant, fiberglass/ polyester reinforced SBS modified bitumen membrane surfaced with granules for application in hot asphalt.
DynaLastic 180	39-3/8" x 32'-10"; roll weight: 101 lbs.	ASTM D 6164 Type I Grade G	A 180 gram polyester reinforced SBS modified bitumen membrane surfaced with granules for application in hot asphalt.
DynaLastic 180 FR	39-3/8" x 32'-10"; roll weight: 101 lbs.	ASTM D 6164 Type I Grade S	A 180 gram polyester mat reinforced, granular-surfaced, modified bitumen cap sheet for use in fire-rated systems.

Product	Dimensions	Test Specification	Product Description
DynaLastic 180S	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.
DynaLastic 250	39-3/8" x 32'-10"; rollweight: 114 lbs.	ASTM D 6164 Type II Grade G	A 250 gram polyester mat reinforced, granular-surfaced, modified bitumen cap sheet.
DynaLastic 250 FR	39-3/8" x 32'-10"; roll weight: 115 lbs.	ASTM D 6164 Type II Grade G	A 250 gram polyester mat reinforced, granular-surfaced, modified bitumen cap sheet for use in fire-rated systems.
DynaLastic 250 S	39-3/8" x 32'-10"; roll weight: 90 lbs	ASTM D 6164 Type II Grade S	A 250 gram polyester reinforced, SBS modified bitumen Base/Ply sheet for use as a base or ply sheet only .
DynaMax	39-3/8" x 32'-10"; roll weight: 99 lbs.	ASTM D 6162 Type III Grade G	A fiberglass/polyester reinforced SBS modified bitumen membrane surfaced with granules for application in hot asphalt or heat weld.
DynaMax FR	39-3/8" x 32'-10" roll weight: 116 lbs.	ASTM D 6162 Type III Grade G	A fire resistant, fiberglass/ polyester reinforced SBS modified bitumen membrane surfaced with granules for application in hot asphalt.
DynaClad	39-3/8" x 33'-6"; roll weight: 101 lbs.	ASTM D 6298	An aluminum foil faced, glass reinforced, SBS modified membrane for application in hot asphalt.
DynaBase XT	39-3/8" x 49'-2"	ASTM D 6163 Type II Grade S	A heavyweight glass reinforced SBS Base/Ply sheet.
DynaGlas FR XT	39-3/8" x 32'-10";	ASTM D 6163 Type II Grade S	A heavyweight glass reinforced granular surfaced SBS Cap sheet.
GlasKap	36" x 36' roll weight: 72 lbs	ASTM 3909	A mineral surfaced, asphalt coated, fiberglass cap sheet.
GlasKap CR	36" x 36'; roll weight: 72 lbs	ASTM 3909	A white mineral surfaced, white acrylic coated, fiberglass cap 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.

Product	Dimensions	Test Specification	Product Description
FesCant Plus Cant Strips, and Taper Edge	various	ASTM C 728	Factory pre-fabricated cant strips and taper edge, manufactured from expanded perlite insulation.
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.
JM 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)
ENRGY 3	Polyisocyanurate Insulation.	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
DensDeck, DensDeck Prime	Silicon treated gypsum	G-P Gypsum
SECUROCK Gypsum-Fiber Roof Board	Rigid, gypsum-based board stock	USG Corp.
Structodeck	High Density Wood Fiber insulation board.	Blue Ridge Fiberboard

APPROVED FASTENERS:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
1.	UltraFast	Insulation fastener for wood and steel.	Various	Johns Manville
2.	UltraFast ASAP	Pre-assembled Insulation fastener and plate	Various	Johns Manville
3.	UltraFast Metal Plate	Galvalume AZ55 steel plate	3" square	Johns Manville
4.	UltraFast Plastic Plate	High Density Polyolefin round plate	3" round	Johns Manville
5.	#12 Roofgrip Fasteners	Insulation fastener for wood and steel.	Various	OMG, Inc.
6.	Metal Plate	Galvalume stress plate.	3" round 3" square	OMG, Inc.
7.	OMG Fastener #12 & #14	Insulation fastener	Various	OMG, Inc.
8.	OMG Fastener ASAP	Pre-assembled Insulation fastener and plate	Various	OMG, Inc.
9.	OMG Polypropylene	Polypropylene plastic plate	3.25" round	OMG, Inc.
10.	OMG G-2	3.5" round galvalume AZ55 steel plate	3.5" round	OMG, Inc.
11.	OMG Standard	3" round galvalume AZ50 steel plate	3" round	OMG, Inc.
12.	High Load Fasteners and Plates	#15 fasteners and 20 gauge metal plates	2-3/8" round	Johns Manville

EVIDENCE SUBMITTED:

Test Agency/Identifier	Name	Report	Date
Factory Mutual Research	J.I. #3001002	Fire Classification	05.11.98
	JI #3002823	FM Class 4470	05.11.98
	3007148	FM Class 4450	04.19.00
	3009499	FM Class 4470	04.04.01
	3011248	FM Class 4470	11.01.02
	3001457	FM Class 4470	04.04.02
	3014090	FM Class 4470	09.05.02
	3012974	FM Class 4450	06.03.02
	3020600	FM Class 4470	01/21/05
	3026130	FM Class 4470	04/26/06
	3026151	FM Class 4470	08/15/06
	3026728	FM Class 4470	11/22/06
	163479-48573-0	FM Class 4470	01/09/07
	3037222	FM Class 4470	10/02/09
	3026130	FM Class 4470	04/26/09
	3036559	FM Class 4470	10/02/09
Dynatech Engineering,	4360.03.95-1	TAS 114	3.95
	4360.03.95-2	TAS 114	3.95
	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
	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
Trinity|ERD	02843.02.07	TAS 114	02/07/07
	J7670.06.08	ASTM D3909	06/16/08
	J6990.12.07	ASTM D6162/D6164	12/03/07
	J17040.11.09	ASTM D6164	11/16/09
	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.	# 99010 #99011	TAS 114	01.20.99
IRT-ARCON Inc	02-026	TAS 114	07/26/02
	02-011		02/06/02
Atlantic & Caribbean Roof Consulting, LLC.	ACRC 06-003	TAS 114	03/27/06

APPROVED ASSEMBLIES

Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type B(1): Base layer of insulation mechanically fastened, top layer fully adhered with approved asphalt.

Deck : Deck shall be secured 6" o.c. to structural supports with screw or puddle welds.

All General and System limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft^2
ENRGY 3, Fesco Foam, DuraFoam Minimum 2" thick	**1, 2, 7 or 8**	**1:1.45 ft^2**

Note: Base layer shall be mechanically attached with fasteners and density described. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

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

Note: Top layer of insulation shall be adhered with approved asphalt within the EVT range and at a rate of 20-40 lbs/100 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: (Optional if base sheet used) One ply of PermaPly No. 28, DynaBase, DynaBase XT, GlasBase, 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: (Optional if ply sheet used) One or more plies of 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 or more plies of DynaKap, DynaKap FR, DynaMax, DynaMax FR, DynaGlas, DynaGlas FR, DynaGlas 30 FR, DynaGlas 30 FR XT, DynaLastic 180, DynaLastic 180 FR, DynaLastic 180 S, DynaLastic 250, DynaLastic 250 FR or DynaPly 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 heat welded. Or (Only with a modified Base or Ply sheet) GlasKap or GlasKap 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. 3. GlasKap or GlasKap CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Maximum Design Pressure:	-75 (See general limitation #7).

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

All General and System limitations apply.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY 3, Fesco Foam, DuraFoam Miuimum 1.5" thick	**1, 2, 7 or 8**	**1:1.78 ft^2**

Note: Base layer shall be mechanically attached with fasteners and density described. Insulation panels listed are minimnm sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

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

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

Base Sheet:	(Optional if ply sheet used) One ply of PermaPly No. 28, DynaBase, DynaBase XT, GlasBase, 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:	(Optional if base sheet used) One or more plies of 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 or more plies of DynaKap, DynaKap FR, DynaMax, DynaMax FR, DynaGlas, DynaGlas FR, DynaGlas 30 FR, DynaGlas 30 FR XT, DynaLastic 180, DynaLastic 180 FR, DynaLastic 180 S, DynaLastic 250, DynaLastic 250 FR or DynaPly 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 heat welded. Or (Only with a modified Base or Ply sheet) GlasKap or GlasKap 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. 3. GlasKap or GlasKap CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Maximum Design Pressure:	-60 (See general limitation #7).

Membrane Type:	SBS
Deck Type 2I:	Steel, Insulated
Deck Description:	18-22 ga. steel
System Type B(3):	Base layer of insulation mechanically fastened, top layer fully adhered with approved asphalt.
Deck :	18-22 ga Grade E steel deck shall be secured 6" o.c. to structural supports spaced a maximum of 5 ft on centers with 5/8" puddle welds.

All General and System limitations apply.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY 3, Fesco Foam, DuraFoam Minimum 1.5" thick	**1, 2, 7 or 8**	**1:2 ft^2**
Fesco Board, DuraBoard Minimum 1" thick	**1, 2, 7 or 8**	**1:2 ft^2**

Note: Base layer shall be mechanically attached with fasteners and density described. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

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

Note: Apply top layer of insulation in a full mopping of any approved mopping asphalt within the EVT range and at a rate of 20-40 lbs/100 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 No. 28, DynaBase, DynaBase XT, GlasBase 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 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 or more plies of DynaKap, DynaKap FR, DynaMax, DynaMax FR, DynaGlas, DynaGlas FR, DynaGlas 30 FR, DynaGlas 30 FR XT, DynaLastic 180, DynaLastic 180 FR, DynaLastic 180 S, DynaLastic 250, DynaLastic 250 FR or DynaPly 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 heat welded. Or (Only with a modified Base or Ply sheet) GlasKap or GlasKap 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. 3. GlasKap or GlasKap CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Maximum Design Pressure:	-52.5 psf (See General Limitation #7)

Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type B(4): Base layer of insulation mechanically fastened, top layer fully adhered with approved asphalt or adhesive.

Deck : Deck shall be secured to structural supports spaced max. 6 ft o.c. with screw or puddle welds spaced 6" o.c.

All General and System limitations apply.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY 3 **Minimum 2" thick**	**1, 2, 7 or 8**	**1:2 ft^2**

Note: Base layer shall be mechanically attached with fasteners and density described. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
SECUROCK Gypsum-Fiber Roof Board **Minimum 3/8" thick**	**N/A**	**N/A**

Note: Apply top layer of insulation in a full mopping of any approved mopping asphalt within the EVT range and at a rate of 20-40 lbs/100 ft^2 or in continuous ¾-inch diameter beads of OlyBond 500 (SpotShot) or JM Two Part Urethane Insulation Adhesive spaced 12-inch o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: (Optional) One ply of PermaPly No. 28, DynaBase, DynaBase XT, GlasBase 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. or with MBR Bonding Adhesive at an application rate of 1.5 gal./sq.

Ply Sheet: Two or more plies of GlasPly Premier, GlasPly IV, GlasBase, GlasBase Plus, 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 with MBR Bonding Adhesive at an application rate of 1.5 gal./sq. or one ply DynaWeld Base heat welded.

Membrane:	One or more plies of DynaKap, DynaKap FR, DynaMax, DynaMax FR, DynaGlas, DynaGlas FR, DynaGlas 30 FR, DynaGlas 30 FR XT, DynaLastic 180, DynaLastic 180 FR, DynaLastic 180 S, DynaLastic 250, DynaLastic 250 FR or DynaPly adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or with MBR Bonding Adhesive at an application rate of 1.5 gal./sq. or one ply DynaWeld Cap FR heat welded. Or (Only with a modified Base or Ply sheet) GlasKap or GlasKap 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. 3. GlasKap or GlasKap CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Maximum Design Pressure:	-60 psf (See General Limitation #7)

Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

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

Deck : Deck shall be secured 6" o.c. to structural supports with screw or welds.

All General and System limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft^2
ENRGY 3, 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
DuraBoard Minimum ¾" thick	**1, 2, 7 or 8**	**1:1.4 ft^2**
Fesco Board Minimum ¾" thick	**1, 2, 7 or 8**	**1:1.3 ft^2**
Retro-Fit Minimum ½" thick	**1, 2, 7 or 8**	**1:1.3 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. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: (Optional if ply sheet used) One ply of PermaPly No. 28, DynaBase, DynaBase XT, GlasBase, 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: (Optional if base sheet used) One or more plies of 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 or more plies of DynaKap, DynaKap FR, DynaMax, DynaMax FR, DynaGlas, DynaGlas FR, DynaGlas 30 FR, DynaGlas 30 FR XT, DynaLastic 180, DynaLastic 180 FR, DynaLastic 180 S, DynaLastic 250, DynaLastic 250 FR or DynaPly 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 heat welded. Or (Only with a modified Base or Ply sheet) GlasKap or GlasKap 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. 3. GlasKap or GlasKap CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Maximum Design Pressure:	-75 psf (See General Limitation #7).

Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

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

Deck : Deck shall be secured 6" o.c. to structural supports with screw or 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**

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**
DuraBoard **Minimum ¾" thick**	**1, 2, 7 or 8**	**1:1.3 ft^2**

Note: All layers of insulatiou shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes aud dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

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

Membrane: One ply of DynaWeld FR or DynaWeld Cap 180 FR heat welded.

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

Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. ASTM A 1008 Grade 80 Type B steel decking over ¼" thick steel supports spaced maximum of 6 ft. o.c. attached 6" o.c. using Traxx/5 fasteners. Deck side laps are attached 24" o.c. using Traxx/1 fasteners.

System Type C(3): All layers of insulation simultaneously mechanically fastened.

All General and System limitations apply.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
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**
ENRGY 3 Minimum 1.5" thick	**5**	**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. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One ply of DynaBase, DynaBase XT or Ventsulation adhered to the insulated substrate with MBR Bonding Adhesive at an application rate of 1.5 gal./sq.

Ply Sheet: (Optional) One or more plies of GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaLastic 250 S, DynaBase, DynaBase XT or DynaPly adhered to the base sheet with MBR Bonding Adhesive at an application rate of 1.5 gal./sq.

Membrane: One or more plies of DynaKap, DynaKap FR, DynaMax, DynaMax FR, DynaGlas, DynaGlas FR, DynaGlas 30 FR, DynaGlas 30 FR XT, DynaLastic 180, DynaLastic 180 FR, DynaLastic 180 S, DynaLastic 250, DynaLastic 250 FR or DynaPly adhered with 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.
3. GlasKap or GlasKap CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Maximum Design Pressure: -67.5 psf (See General Limitation #7).

Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type C(4): All layers of insulation simultaneously mechanically fastened.

All General and System limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft^2
ENRGY 3 Minimum 1.3" 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 Board, DuraBoard 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. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: (Optional if ply sheet used) One ply of PermaPly No. 28, DynaBase, DynaBase XT, GlasBase, 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: (Optional if base sheet used) One or more plies of GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaLastic 250 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 or more plies of DynaKap, DynaKap FR, DynaMax, DynaMax FR, DynaGlas, DynaGlas FR, DynaGlas 30 FR, DynaGlas 30 FR XT, DynaLastic 180, DynaLastic 180 FR, DynaLastic 180 S, DynaLastic 250, DynaLastic 250 FR or DynaPly 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 heat welded. Or (Only with a modified Base or Ply sheet) GlasKap or GlasKap 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. 3. GlasKap or GlasKap CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Maximum Design Pressure:	-60 psf (See general limitation #9).

Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type C(5): All layers of insulation simultaneously mechanically fastened.

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

All General and System limitations apply.

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

Note: All layers of insulation shall be mechanically attached usiug 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 maintaiuing the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: (Optional if ply sheet used) One ply of PermaPly No. 28, DynaBase, DynaBase XT, GlasBase, 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: (Optional if base sheet used) One or more plies of GlasPly Premier, GlasPly IV,. DynaLastic 180 S, DynaLastic 250 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 or more plies of DynaKap, DynaKap FR, DynaMax, DynaMax FR, DynaGlas, DynaGlas FR, DynaGlas 30 FR, DynaGlas 30 FR XT, DynaLastic 180, DynaLastic 180 FR, DynaLastic 180 S, DynaLastic 250, DynaLastic 250 FR or DynaPly 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 heat welded. Or (Only with a modified Base or Ply sheet) GlasKap or GlasKap 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. 3. GlasKap or GlasKap CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Maximum Design Pressure:	-52.5 psf (See general limitation #7).

Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type C(6): All layers of insulation simultaneously mechanically fastened.

Deck : 18-22 ga, type B, Grade 80 steel deck shall be secured 6" o.c. to structural supports spaced a maximum of 6 ft on centers with Traxx/5 screws.

All General and System limitations apply.

Base Insulation Layer (Optional)	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY 3, 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 insnlation shall be simultaneously mechanically fastened; see top layer below for fasteners and density.

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
SECUROCK Gypsum-Fiber Roof Board Minimum ½" thick	**1, 2, 7 or 8 with metal plates**	**1:1.78 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. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: (Optional if Ply Sheet used) One ply of PermaPly No. 28, DynaBase, DynaBase XT, GlasBase 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. or with MBR Bonding Adhesive at an application rate of 1.5 gal./sq.

Ply Sheet: (Optional if Base Sheet used) One or more plies of GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaLastic 250 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 with MBR Bonding Adhesive at an application rate of 1.5 gal./sq. or one ply DynaWeld Base heat welded.

Membrane:	One or more plies of DynaKap, DynaKap FR, DynaMax, DynaMax FR, DynaGlas, DynaGlas FR, DynaGlas 30 FR, DynaGlas 30 FR XT, DynaLastic 180, DynaLastic 180 FR, DynaLastic 180 S, DynaLastic 250, DynaLastic 250 FR or DynaPly adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or with MBR Bonding Adhesive at an application rate of 1.5 gal./sq. or one ply DynaWeld Cap FR heat welded. Or (Only with a modified Base or Ply sheet) GlasKap or GlasKap 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. 3. GlasKap or GlasKap CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Maximum Design Pressure:	-75 psf (See general limitation #7).

Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

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

All General and System limitations apply.

One or more layers of any of the following insulations:

Base or Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY 3 **Minimum 1.3" 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 (Optional)	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
DensDeck, DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board, Invinsa Roof Board **Minimum ¼" 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 two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: One or two plies of PermaPly No. 28, GlasBase, GlasBase Plus, DynaBase, DynaBase XT or Ventsulation fastened to the deck through the insulation as described below:

Fastening: Fasten base sheet with UltraFast screws and Plates at a 4" side lap 9" o.c. and two rows staggered in the center of the sheet 18" o.c.

Ply Sheet: (Optional) One or more plies of GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaLastic 250 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 with MBR Bonding Adhesive at an application rate of 1.5 gal./sq. or one ply DynaWeld Base heat welded.

Membrane:	One or more plies of DynaKap, DynaKap FR, DynaMax, DynaMax FR, DynaGlas, DynaGlas FR, DynaGlas 30 FR, DynaGlas 30 FR XT, DynaLastic 180, DynaLastic 180 FR, DynaLastic 180 S, DynaLastic 250, DynaLastic 250 FR or DynaPly adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or with MBR Bonding Adhesive at an application rate of 1.5 gal./sq.or one ply DynaWeld Cap FR heat welded. Or (Only with a modified Base or Ply sheet) GlasKap or GlasKap 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. 3. GlasKap or GlasKap CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Maximum Design Pressure:	-60 psf (See general limitation #9).

Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

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

Deck : 18-22 ga., Type B, Grade 33 steel deck with maximum 6 ft spans. Deck secured to structure at every rib (6" o.c.) with Tek/5 screws. Side laps attached with Tek/1 screws, 24" o.c.

All General and System limitations apply.

One or more layers of any of the following insulations:

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

Top Insulation Layer (Optional if using 2" base layer)	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Retro-Fit Board **Minimum 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 or DynaLastic 250 S fastened to the deck as described below:

Fastening: Fasten base sheet within the 5-inch wide laps using High Load Fasteners and Plates spaced 12" o.c. The lap is heat welded.

Ply Sheet: (Optional) One or more plies of GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaLastic 250 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 with MBR Bonding Adhesive at an application rate of 1.5 gal./sq. or one ply DynaWeld Base heat welded.

Membrane: One or more plies of DynaKap, DynaKap FR, DynaMax, DynaMax FR, DynaGlas, DynaGlas FR, DynaGlas 30 FR, DynaGlas 30 FR XT, DynaLastic 180, DynaLastic 180 FR, DynaLastic 180 S, DynaLastic 250, DynaLastic 250 FR or DynaPly adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or with MBR Bonding Adhesive at an application rate of I.5 gal./sq. or one ply DynaWeld Cap FR heat welded.
Or
(Only with a modified Base or Ply sheet) GlasKap or GlasKap 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. 3. GlasKap or GlasKap CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Maximum Design Pressure:	-67.5 psf (See General Limitation #7).

Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

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

Deck : 18-22 ga., Type B WR, Grade 33 steel deck with maximum 6 ft spans. Deck secured to structure at every rib (6" o.c.) with Tek/5 screws. Side laps attached with Tek/1 screws, 12" o.c.

All General and System limitations apply.

One or more layers of any of the following insulations:

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

Top Insulation Layer (Optional):	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
DensDeck, DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board, Invinsa Roof Board		
Minimum ¼" 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 two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: PermaPly No. 28 fastened to the deck through the insulation as described below:

Fastening: Fasten base sheet with UltraFast #12 screws and UltraFast Metal Plates at a 4" side lap 9" o.c. and two rows staggered in the center of the sheet 12" o.c.

Ply Sheet: One or more plies of GlasPly Premier, GlasPly IV, DynaLastic 180 S, DynaLastic 250 S, DynaBase, DynaBase XT or DynaPly adhered to the base sheet with approved mopping of asphalt or OC Trumbull Permamop applied within the EVT range and at a rate of 20-40 lbs./sq. or with MBR Bonding Adhesive at an application rate of 1.5 gal./sq.

Membrane:	One or more plies of DynaKap, DynaKap FR, DynaMax, DynaMax FR, DynaGlas, DynaGlas FR, DynaGlas 30 FR, DynaGlas 30 FR XT, DynaLastic 180, DynaLastic 180 FR, DynaLastic 180 S, DynaLastic 250, DynaLastic 250 FR or DynaPly adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or with MBR Bonding Adhesive at an application rate of 1.5 gal./sq. Or (Only with a modified Base or Ply sheet) GlasKap or GlasKap 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. 3. GlasKap or GlasKap CR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Maximum Design Pressure:	-82.5 psf (See General Limitation #7).

Membrane Type:	SBS
Deck Type 2I:	Steel, Insulated
Deck Description:	18-22 ga. steel
System Type D(4):	All layers of insulation simultaneously mechanically fastened with base sheet.
Deck :	18-22 ga., Type B, Grade 33 steel deck with maximum 6 ft spans. Deck secured to structure at every rib (6" o.c.) with two Tek/5 screws and ¾" diameter washers. Side laps attached with four Tek/1 screws evenly spaced between supports.

All General and System limitations apply.

One or more layers of any of the following insulations:

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

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
RetroFit Board **Miuimum 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 High Load Fasteners and Plates spaced 6" o.c.
Ply Sheet:	DynaWeld Base, heat welded.
Membrane:	DynaWeld Cap FR or DynaWeld Cap 180 FR, heat welded.
Maximum Design Pressure:	-112.5 psf (See General Limitation #7).

Membrane Type:	SBS
Deck Type 2I:	Steel, Insulated
Deck Description:	18-22 ga. steel
System Type D(5):	All layers of insulation simultaneously mechanically fastened with base sheet.
Deck :	18-22 ga., Type B, Grade 33 steel deck with maximum 6 ft spans. Deck secured to structure at every rib (6" o.c.) with two Tek/5 screws and ¾" diameter washers. Side laps attached with four Tek/1 screws evenly spaced between supports.

All General and System limitations apply.

One or more layers of any of the following insulations:

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

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
RetroFit Board **Minimum 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 High Load Fasteners and Plates spaced 6" o.c. The lap is heat welded.
Ply Sheet:	(Optional) DynaWeld Base, heat welded.
Membrane:	DynaWeld Cap FR or DynaWeld Cap 180 FR, heat welded.
Maximum Design Pressure:	-112.5 psf (See General Limitation #7).

Membrane Type:	SBS
Deck Type 2I:	Steel, Insulated
Deck Description:	18-22 ga. steel
System Type D(6):	All layers of insulation simultaneously mechanically fastened with base sheet.
Deck :	18-22 ga., Type B, Grade 33 steel deck with maximum 6 ft spans. Deck secured to structure at every rib (6" o.c.) with two Tek/5 screws and ¾" diameter washers. Side laps attached with four Tek/1 screws evenly spaced between supports.

All General and System limitations apply.

One or more layers of any of the following insulations:

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

Middle Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY 3 Minimum 1" thick		

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Plywood Minimum 5/8" 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 High Load Fasteners and Plates spaced 6" o.c. The lap is heat welded.
Ply Sheet:	(Optional) DynaWeld Base, heat welded.
Membrane:	DynaWeld Cap FR or DynaWeld Cap 180 FR, heat welded.
Maximum Design Pressure:	-135 psf (See General Limitation #7).

Membrane Type:	SBS
Deck Type 2I:	Steel, Insulated
Deck Description:	18-22 ga. steel
System Type D(7):	All layers of insulation simultaneously mechanically fastened with base sheet.
Deck :	18-22 ga., Type B, Grade 33 steel deck with maximum 6 ft spans. Deck secured to structure at every rib (6" o.c.) with two Tek/5 screws and ¾" diameter washers. Side laps attached with four Tek/1 screws evenly spaced between supports.

All General and System limitations apply.

One or more layers of any of the following insulations:

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

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
RetroFit Board **Minimum 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 High Load Fasteners and Plates spaced 6" o.c. The lap is heat welded.
Ply Sheet:	(Optional) DynaWeld Base, heat welded.
Membrane:	DynaWeld Cap FR or DynaWeld Cap 180 FR, heat welded.
Maximum Design Pressure:	-135 psf (See General Limitation #7).

Membrane Type:	SBS
Deck Type 2I:	Steel, Insulated
Deck Description:	18-22 ga. steel
System Type D(8):	All layers of insulation simultaneously mechanically fastened with base sheet.
Deck :	18-22 ga., Type B, Grade 33 steel deck with maximum 6 ft spans. Deck secured to structure at every rib (6" o.c.) with two Tek/5 screws and ¾" diameter washers. Side laps attached with four Tek/1 screws evenly spaced between supports.

All General and System limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Fesco Board Minimum ¾" thick	**N/A**	**N/A**
Middle Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY 3 Minimum 1" thick	**N/A**	**N/A**
Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Plywood Minimum 5/8" 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 High Load Fasteners and Plates spaced 6" o.c.
Ply Sheet:	DynaWeld Base, heat welded.
Membrane:	DynaWeld Cap FR or DynaWeld Cap 180 FR, heat welded.
Maximum Design Pressure:	-150 psf (See General Limitation #7).

Membrane Type:	SBS
Deck Type 2I:	Steel, Insulated
Deck Description:	18-22 ga. steel
System Type D(9):	All layers of insulation simultaneously mechanically fastened with base sheet.
Deck :	18-22 ga., Type B, Grade 33 steel deck with maximum 6 ft spans. Deck secured to structure at every rib (6" o.c.) with two Tek/5 screws and ¾" diameter washers. Side laps attached with four Tek/1 screws evenly spaced between supports.

All General and System limitations apply.

One or more layers of any of the following insulations:

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

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
RetroFit Board **Minimum 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 High Load Fasteners and Plates spaced 6" o.c.
Ply Sheet:	DynaWeld Base, heat welded.
Membrane:	DynaWeld Cap FR or DynaWeld Cap 180 FR, heat welded.
Maximum Design Pressure:	-150 psf (See General Limitation #7).

Membrane Type: SBS

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type D(10): All layers of insulation simultaneously mechanically fastened with base sheet.

Deck : 18-22 ga., Type B, Grade 33 steel deck with maximum 6 ft spans. Deck secured to structure at every rib (6" o.c.) with two Tek/5 screws and ¾" diameter washers. Side laps attached with four Tek/1 screws evenly spaced between supports.

All General and System limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
FescoBoard		
Minimum ¾" thick	**N/A**	**N/A**
DensDeck, DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board		
Minimum ½" thick	**N/A**	**N/A**

Middle Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY 3		
Minimum 1" thick		

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Plywood		
Minimum 5/8" 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 High Load Fasteners and Plates spaced 12" o.c. and in three, equally spaced, staggered rows in the field of the sheet at 12" o.c.

Ply Sheet: DynaWeld Base, heat welded.

Membrane: DynaWeld Cap FR or DynaWeld Cap 180 FR, heat welded.

Maximum Design Pressure: -195 psf (See General Limitation #7).

STEEL DECK SYSTEM LIMITATIONS:

1. If mechanical attachment to the structural deck through the lightweight insulating concrete is proposed, a field withdrawal resistance testing shall be performed to determine 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.

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