



DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER)  
BOARD AND CODE ADMINISTRATION DIVISION

## NOTICE OF ACCEPTANCE (NOA)

MIAMI-DADE COUNTY  
PRODUCT CONTROL SECTION  
11805 SW 26 Street, Room 208  
Miami, Florida 33175-2474  
T (786)315-2590 F (786) 31525-99  
[www.miamidade.gov/economy](http://www.miamidade.gov/economy)

The Garland Company, Inc.  
3800 East 91<sup>st</sup> Street  
Cleveland, OH 44105-2197

### 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 RER - 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. RER 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 including the High Velocity Hurricane Zone of the Florida Building Code.

### DESCRIPTION: Garland Modified Bitumen Roofing 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# 22-0628.07 and consists of pages 1 through 70.  
The submitted documentation was reviewed by Alex Tigera.



NOA No.: 23-1011.18  
Expiration Date: 12/02/24  
Approval Date: 11/16/23  
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## ROOFING SYSTEM APPROVAL

**Category:** Roofing  
**Sub-Category:** Modified Bitumen  
**Material:** SBS/SIS/SEBS  
**Deck Type:** Concrete  
**Maximum Design Pressure:** -472 psf.

### TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1			
<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
HPR Tri-Base Premium	36" x 72'	ASTM D4601	Double asphalt coated, polyester/fiberglass/polyester scrim reinforced base sheet.
HPR Glasfelt	36" x 180'	ASTM D2178, Type IV	Asphalt impregnated glass felt
HPR Premium Glasfelt	36" x 180'	ASTM D2178, Type VI	Asphalt impregnated glass felt
HPR Glasbase	36" x 108'	ASTM D4601, Type II	Asphalt coated fiberglass base sheet.
HPR Premium Glasbase	36" x 72'	ASTM D4601, Type II	Asphalt coated fiberglass base sheet.
Millennium Base	39" x 51'5"	ASTM D6162	Smooth surfaced, SBS modified coal tar, fiberglass/polyester reinforced base sheet.
HPR Torch Base Sheet	39" x 34'8"	ASTM D6163	SBS modified, fiberglass reinforced, torch applied base sheet.
FlexBase Plus 80	39" x 34'8"	ASTM D6162, Type III	SBS modified, fiberglass/polyester reinforced base sheet
FlexBase E 80	39" x 34'8"	ASTM D6162, Type III	SBS/SIS modified, fiberglass/polyester reinforced base sheet.
StressBase 80	39" x 52'	ASTM D6163, Type I	SBS modified, fiberglass reinforced base sheet.
StressBase 120	39" x 52'	ASTM D6163, Type I	SBS modified, fiberglass reinforced base sheet.
FlexBase 80	39" x 34'8"	ASTM D6163, Type III	SBS modified, fiberglass reinforced base sheet.



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## TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1			
<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
HPR Polyscrim Plus	40" x 324'	ASTM D5726	Polyester felt
Millennium Mineral	39" x 26'	ASTM D6162	Mineral surfaced, SBS modified coal tar, fiberglass/polyester reinforced membrane.
Millennium FR Mineral	39" x 26'	ASTM D6162	Mineral surfaced, SBS modified coal tar, fiberglass/polyester reinforced membrane.
StressPly EUV FR Mineral	39" x 26'2"	ASTM D6162, Type III	Mineral surfaced, SBS/SIS modified, fiberglass/polyester reinforced membrane.
StressPly Plus	39" x 34'8"	ASTM D6162, Type III	Smooth surfaced, SBS modified, fiberglass/polyester scrim membrane.
StressPly Plus FR Mineral	39" x 26'2"	ASTM D6162, Type III	Mineral surfaced, SBS modified, fire retardant, UV resistant, fiberglass/polyester scrim membrane.
StressPly E FR Mineral	39" x 26'2"	ASTM D6162, Type III	Mineral surfaced, SBS/SIS modified, fire retardant, fiberglass/polyester reinforced membrane.
StressPly IV Plus	39" x 26'2"	ASTM D6162, Type III	Smooth surfaced, SBS modified, fiberglass/polyester reinforced, torch applied cap sheet.
StressPly IV Plus Mineral	39" x 26'2"	ASTM D6162, Type III	Mineral surfaced, SBS modified, fiberglass/polyester reinforced, torch applied cap sheet.
StressPly IV Plus UV Mineral	39" x 26'2"	ASTM D6162, Type III	Mineral surfaced, SBS modified, fiberglass/polyester reinforced, torch applied cap sheet.
BiFlex Mineral	39" x 34'8"	ASTM D6163, Type I	Mineral surfaced, SBS modified, fiberglass reinforced, cap sheet.
StressPly FR Mineral	39" x 26'2"	ASTM D6163, Type III	Mineral surfaced, SBS modified, fire retardant, fiberglass scrim membrane.
VersiPly Mineral	39" x 26'2"	ASTM D6163, Type III	Mineral surfaced, SBS modified, fiberglass scrim reinforced roofing membrane.
StressPly IV Mineral	39" x 26'2"	ASTM D6163, Type III	Mineral surfaced, SBS modified, fiberglass reinforced, torch applied cap sheet.



# TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
StressPly IV UV Mineral	39" x 26'2"	ASTM D6163, Type III	Mineral surfaced, SBS modified, fiberglass reinforced, torch applied cap sheet.
OptiMax FR Mineral	39" x 26'2"	ASTM D6163, Type III	Mineral surfaced, SBS modified, fiberglass reinforced, cap sheet.
Garla-Prime VOC	5, 55 gallon	ASTM D41	Non-fibered, quick drying asphalt roof primer
Insul-Lock HR	1.5 liters	Proprietary	Polyurethane two component high rise insulation adhesive
Black-Knight	70 lb. keg	Proprietary	Polymer modified coal tar pitch.
Black-Knight Cold	5, 55 gallon	Proprietary	Polymer modified coal tar pitch.
Green-Lock Plus Membrane Adhesive	5 gallon	proprietary	Cold Process roof coating and adhesive
Weatherking	5, 55 gallon	ASTM D3019, Type III	Cold process roof coating and adhesive.
Weatherking Plus WC	5, 55 gallon	ASTM D3019, Type III	Cold process roof coating and adhesive.
Weatherking Flashing Adhesive	5, 55 gallon	ASTM D3019, Type III	Cold process roof flashing adhesive.
Garlastic KM Plus	60 lb. keg	TAS 121	SEBS modified, hot applied asphalt.
HPR All Temp Asphalt	100 lb. keg	TAS 121	Hot asphalt adhesive for modified bitumen and BUR roof systems.
GarMesh	6" x 150'	ASTM D1668	SBR coated woven fiberglass reinforcing membrane.
Grip Polyester Firm	10 sq.	ASTM D1682	Polyester reinforcing fabric for use in cold applied systems.
Grip Polyester Soft	10 sq.	ASTM D1682	Polyester reinforcing fabric, for use in cold applied systems.
Silver-Shield	5, 55 gallon	ASTM D2824, Type III	High solids, aluminized roof coating.



**TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:****TABLE 1**

<b><u>Product</u></b>	<b><u>Dimensions</u></b>	<b><u>Test Specification</u></b>	<b><u>Product Description</u></b>
WeatherScreen	5, 55 gallon	ASTM D4479, Type I	Asbestos-free, heavy-bodied, fiber-reinforced, fire-rated asphalt roof coating.
Garla-Brite	5, 55 gallon	ASTM D4479, Type I	Asbestos-free, heavy-bodied, fiber-reinforced, fire-rated asphalt roof coating.
Energizer K Plus FR	5, 55 gallon	ASTM D4479, Type I	Multipurpose, rubberized, liquid waterproofing membrane.
Green-Lock Flashing Adhesive	3.5 gallon	Proprietary	Trowel grade, roofing mastic for use in repair and patching against leaks in built-up roofs.
Black-Knight Mastic	5 gallon	Proprietary	Trowel grade, tar based roofing mastic for use in repair and patching.
Flashing Bond	5 gallon	ASTM D4586	Trowel grade, asphalt based roofing mastic for use in repair and patching against leaks in built-up asphalt roofs.
Silver-Flash	5 gallon	ASTM D4586	Trowel grade, asphalt based roofing mastic for use in repair and patching against leaks in built-up asphalt roofs.
Garla-Flex	2, 5 gallon pail	ASTM D4586	Elastomeric, asphaltic compound formulated from a special weather and ozone-resistant thermoplastic rubber, plasticizing oils and bitumen. Asbestos free.

**APPROVED INSULATIONS:****TABLE 2**

<b><u>Product Name</u></b>	<b><u>Product Description</u></b>	<b><u>Manufacturer (With Current NOA)</u></b>
ACFoam-II	Polyisocyanurate foam insulation	Atlas Roofing Corporation
ISO 95+ GL	Polyisocyanurate foam insulation	Firestone Building Products Company, LLC
DensDeck, DensDeck Prime	Water resistant gypsum board	Georgia Pacific Gypsum LLC
H-Shield	Polyisocyanurate foam insulation	Hunter Panels, LLC.
Fesco Board	Expanded perlite and fiber insulation	Johns Manville Corp.



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**APPROVED INSULATIONS:****TABLE 2**

<b><u>Product Name</u></b>	<b><u>Product Description</u></b>	<b><u>Manufacturer (With Current NOA)</u></b>
ENRGY 3, ENRGY 3 25 PSI	Polyisocyanurate foam insulation	Johns Manville Corp.
Retro-Fit Board	Expanded perlite and fiber insulation	Johns Manville Corp.
Ultra-Max, Multi-Max FA-3	Polyisocyanurate foam insulation	RMax Operating, LLC
SECUROCK Gypsum-Fiber Roof Board	Gypsum board	United States Gypsum Corp.
Structodek High Density Fiberboard Roof Insulation	High Density wood fiber insulation board	Blue Ridge Fiberboard, Inc.
Insulfoam EPS	Expanded polystyrene insulation board	Insulfoam, a Div. of Carlisle Const. Materials
STYROFOAM ROOFMATE	Extruded polystyrene insulation board	The Dow Chemical Company

**APPROVED FASTENERS/ADHESIVES:****TABLE 3**

<b><u>Fastener Number</u></b>	<b><u>Product Name</u></b>	<b><u>Product Description</u></b>	<b><u>Dimensions</u></b>	<b><u>Manufacturer (With Current NOA)</u></b>
1.	Dekfast 14	Insulation fastener for wood, steel and concrete decks	Various	SFS Intec, Inc.
2.	Dekfast 15 HS	Insulation fastener for wood, steel and concrete decks	Various	SFS Intec, Inc.
3.	Dekfast Galvalume Steel Hex Plate	Galvalume hex stress plate.	2 7/8" x 3 1/4"	SFS Intec, Inc.
4.	#14 Roofgrip Fasteners	Insulation fastener for wood, steel and concrete.	Various	OMG, Inc.
5.	#15 Roofgrip Fasteners	Insulation fastener for wood, steel and concrete.	Various	OMG, Inc.
6.	AccuTrac Plate	Galvalume stress plate.	3" round	OMG, Inc.
7.	CD-10	Insulation fastener for concrete deck.	Various	OMG, Inc.
8.	Fluted Nail	Insulation fastener for concrete deck.	Various	OMG, Inc.



**APPROVED FASTENERS/ADHESIVES:****TABLE 3**

<b><u>Fastener Number</u></b>	<b><u>Product Name</u></b>	<b><u>Product Description</u></b>	<b><u>Dimensions</u></b>	<b><u>Manufacturer (With Current NOA)</u></b>
9.	3 in. Round Metal Plate	3" round galvalume AZ50 steel plate	3" round	OMG, Inc.
10.	Trufast #14 HD Fastener	Insulation fastener for concrete, steel and wood decks	Various	Altenloh, Brinck & Co. U.S., Inc.
11.	Trufast 3" Metal Insulation Plates	3" round galvalume AZ50 steel plate	3" round	Altenloh, Brinck & Co. U.S., Inc.
12.	OMG Heavy Duty	Insulation fastener for wood, steel and concrete.	Various	OMG, Inc.
13.	Flat Bottom Metal Plate	Galvalume stress plate	3" square	OMG, Inc.
14.	Dekfast Galvalume Steel 3 in. Round Insulation Plate	3" round galvalume AZ50 steel plate	3" round	SFS Intec, Inc.
15.	Millennium One Step Foamable Insulation Adhesive	A two component, low rise, polyurethane foam adhesive		Adco Products, Inc. dba Royal Adhesives & Sealants
16.	Insta Stick Quik Set Insulation Adhesive	A single component urethane foam adhesive		The Dow Chemical Co.



**EVIDENCE SUBMITTED:**

<u>Test Agency</u>	<u>Test Identifier</u>	<u>Description</u>	<u>Date</u>
NEMO ETC, LLC.	4p-GRL-21-SSLAP-01.A	Physical Properties	07/23/21
Dynatech Engineering Corporation	#4530.05.95-1	TAS 114	05/31/95
Factory Mutual Research Corporation	IVOA7.AM	FM 4470	02/21/95
	0Y5A6.AM	FM 4470	09/08/97
	1B4A7.AM	FM 4470	12/15/97
	4B4A9.AM	FM 4470	12/31/97
	3D3A5.AM	FM 4470	09/15/98
	3004392	FM 4470	09/21/99
	0D9A0.AM	FM 4470	05/02/00
	3004907	FM 4470	05/16/00
	3009117	FM 4470	12/21/00
	3010113	FM 4470	11/18/02
	3014751	FM 4470	08/27/03
	3019046	FM 4470	03/04/05
	3021718	FM 4470	04/11/05
	3023724	FM 4470	07/05/06
	3032165	FM 4470	04/22/08
	3032163	FM 4470	07/21/08
	3032647	FM 4470	07/28/08
	3033444	FM 4470	08/28/08
	3054493	FM 4470	01/04/16
Momentum Technologies, Inc.	TX21G5A	ASTM D5147	04/25/06
	DX14C7A	ASTM D6163	03/16/07
	EX11L5A	ASTM D5147	03/19/07
	EX22B7A	ASTM D6162	04/11/07
	RX18C8A-R	ASTM D6162/D6163	03/28/08
PRI Construction Materials Technologies, LLC	GRD-051-02-01	ASTM D2178	10/28/11
	GRD-052-02-01	ASTM D2178	10/28/11
	GRD-054-02-01	ASTM D2626	11/17/11
Trinity   ERD	4544.11.06	TAS 114	11/02/06
	C8500SC.11.07-R1	TAS 117/ASTM D6862	08/07/09
	G15080.10.09	TAS 114 (D)	10/14/09
	G32950.06.10	ASTM D4601	06/11/10
	4533.05.98-1-R1	TAS 114 (J)	09/09/11
	G32700.09.11-1	ASTM D4601	09/16/11
	G39620.07.12	ASTM D4990	07/02/12
	G39630.07.12	Physical Properties	07/12/12
	G37200.10.12-1-R1	ASTM D6163/D4798	12/05/12
	G37200.10.12-4-R1	ASTM D6162	12/05/12
	G37200.10.12-7-R1	ASTM D6162	12/05/12
	G37200.10.12-9-R1	ASTM D6162/D4798	12/05/12
	G37200.10.12-10-R1	ASTM D6163/D4798	12/05/12





**EVIDENCE SUBMITTED:**

<u>Test Agency</u>	<u>Test Identifier</u>	<u>Description</u>	<u>Date</u>
Trinity   ERD	G37200.10.12-5-R2	ASTM D6162	09/23/13
	G37200.10.12-6-R2	ASTM D6162/D4798	09/23/13
	G37200.10.12-2-R2	ASTM D6162/D4798	09/24/13
	G37200.10.12-3-R2	ASTM D6162/D4798	09/24/13
	G37200.10.12-11-R2	ASTM D6163/D4798	09/24/13
	G37200.10.12-12-R2	ASTM D6163/D4798	09/24/13
	G37200.09.13-10	ASTM D6163/D4798	09/24/13
	G37200.09.13-1	ASTM D6163/D4798	09/24/13
	G37200.08.12-13-R2	ASTM D6162/D4798	09/26/13
	GRL-SC8185.05.16	ASTM D6163/D4798	05/31/16
Atlantic & Caribbean Roof Consulting, LLC	ACRC 08-026	TAS 114-95	04/22/08
	ACRC 08-029	TAS 114-95	04/24/08



## APPROVED ASSEMBLIES:

**Membrane Type:** SBS/SIS/SEBS  
**Deck Type 3I:** Concrete Decks, Insulated  
**Deck Description:** 2500 psi structural concrete or concrete plank  
**System Type A(1):** One or more layers of insulation adhered to spot mopped anchor sheet with approved asphalt.

**All General and System Limitations apply.**

**Deck Primer:** Deck is primed with ASTM D 41 primer.

**Anchor Sheet:** An ASTM D4897, Type II approved base sheet is spot mopped to deck with hot asphalt using 12" diameter circles 24" o.c.

One or more layers of any of the following insulations.

### Base Insulation Layer (Optional):

ACFoam-II, ENRGY 3, ENRGY 3 25 PSI, ISO-95+ GL, H-Shield  
Minimum 1" thick

### Insulation Fasteners (Table 3)

N/A

### Fastener Density/ft<sup>2</sup>

N/A

### Top Insulation Layer:

Structodek High Density Fiberboard Roof Insulation  
Minimum ½" thick

### Insulation Fasteners (Table 3)

N/A

### Fastener Density/ft<sup>2</sup>

N/A

DensDeck, DensDeck Prime  
Minimum ¼" thick

N/A

N/A

**Note:** Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of vapor barrier or insulation. All insulation shall be adhered to the vapor barrier or deck in full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./100 ft<sup>2</sup>. 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 used as a top layer shall be placed with the polyisocyanurate side facing down.

**Base/Ply Sheet:** One or more plies of HPR Glasbase, HPR Premium Glasbase, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt, HPR Polyscrim Plus adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq.

**Membrane:** One ply of StressPly E FR Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV FR Mineral or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq.



**Surfacing:**

Optional for FR or mineral surfaced Membranes. Required for non-FR or smooth surfaced membranes. Apply one of the below or any approved coatings:

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq. or in Black-Knight at 70 lb./sq. or Black-Knight Cold at 5 gal./sq.
2. Minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
3. Energizer K Plus FR applied at 3.5 gal./sq. with minimum two coats of Garla-Brite applied at min 0.5 gal./sq./coat
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
5. WeatherScreen applied at min. 4 gal./sq. with #11 roofing granules at 60 lb./sq.
6. WeatherScreen applied at applied at min. 4 gal./sq. with roofing gravel applied at 400 lb./sq.
7. Green-Lock Plus Membrane Adhesive applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design  
Pressure:**

-45 psf. (See General Limitation #9)



**Membrane Type:** SBS/SIS/SEBS  
**Deck Type 3I:** Concrete Decks, Insulated  
**Deck Description:** 2500 psi structural concrete or concrete plank  
**System Type A(2):** One or more layers of insulation adhered with approved adhesive.

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

<b><u>Base Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
ENRGY 3, Ultra-Max Minimum 2" thick	N/A	N/A
<b><u>Top Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
Structodek High Density Fiberboard Roof Insulation Minimum 0.5" thick	N/A	N/A
DensDeck Prime Minimum 0.5" thick	N/A	N/A
SECUROCK Gypsum-Fiber Roof Board Minimum 0.5" thick	N/A	N/A

**Note:** All insulation shall be adhered to the deck in ¾"-1" wide beads 8" o.c. of Millennium One Step Foamable Insulation Adhesive or Insul-Lock HR. 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.

**Base/Ply:** One ply of Millennium Base adhered with Green-Lock Plus Membrane Adhesive at a rate of 1.5 gal./sq.

**Membrane:** One ply of Millennium Mineral or Millennium FR Mineral adhered with Green-Lock Plus Membrane Adhesive at a rate of 1.5 gal./sq.

**Surfacing:** Optional for FR or mineral surfaced Membranes. Required for non-FR or smooth surfaced membranes. Apply one of the below or any approved coatings:

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq. or in Black-Knight at 70 lb./sq. or Black-Knight Cold at 5 gal./sq.
2. Minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
3. Green-Lock Plus Membrane Adhesive applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design Pressure:** -60 psf. (Top Insulation Layer with Structodek High Density Fiberboard)  
(See General Limitation #9)  
-262.5 psf. (Top Insulation Layer with DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board) (See General Limitation #9)



**Membrane Type:** SBS/SIS/SEBS  
**Deck Type 3I:** Concrete, Insulated  
**Deck Description:** Min. 2500 psi concrete or concrete plank  
**System Type A(3):** All layers of insulation set in approved adhesive.

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

<b><u>Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
<b>ACFoam-II Minimum 1.5" thick</b>	N/A	N/A

**Note: All layers of insulation adhered to the deck in Insta Stick Quik Set Insulation Adhesive applied in continuous ¾ inch wide beads spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulations listed as the base layer shall only be used as the base layer with a second layer of approved top layer insulation installed as the final membrane substrate.**

**Base/Ply Sheet:** One ply of StressBase 80, StressBase 120, FlexBase 80, FlexBase Plus 80, FlexBase E 80, base sheet adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 25 lbs./sq. or Green-Lock Plus Membrane Adhesive applied at 1.5 gal./sq.

**Membrane:** One ply of BiFlex Mineral, OptiMax FR Mineral, StressPly E FR Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV FR Mineral or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 25 lbs./sq. or Green-Lock Plus Membrane Adhesive applied at 1.5 gal./sq.

**Surfacing:** Optional for FR or mineral surfaced Membranes. Required for non-FR or smooth surfaced membranes. Apply one of the below or any approved coatings:

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq. or in Black-Knight at 70 lb./sq. or Black-Knight Cold at 5 gal./sq.
2. Minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
3. Energizer K Plus FR applied at 3.5 gal./sq. with minimum two coats of Garla-Brite applied at min 0.5 gal./sq./coat
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
5. WeatherScreen applied at applied at min. 4 gal./sq. with roofing gravel applied at 400 lb./sq.
6. Green-Lock Plus Membrane Adhesive applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design Pressure:** -67.5 psf. (See General Limitation #9)



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**Expiration Date: 12/02/24**  
**Approval Date: 11/16/23**  
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<b>Membrane Type:</b>	SBS/SIS/SEBS
<b>Deck Type 3I:</b>	Concrete, Insulated
<b>Deck Description:</b>	Min. 2500 psi concrete or concrete plank
<b>System Type A(4):</b>	All layers of insulation adhered with approved adhesive, membrane fully adhered

**All General and System Limitations apply.**

<b>Vapor Barrier: (Optional)</b>	One ply of HPR Torch Base Sheet torch applied over the primed concrete deck. (See Maximum Design Pressure)
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One or more layers of the following insulations:

<b><u>Base Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
<b>ENRGY 3, H-Shield Minimum 1.5" thick</b>	N/A	N/A
<b><u>Top Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
<b>SECUROCK Gypsum-Fiber Roof Board Minimum 1/4" thick</b>	N/A	N/A

**Note: All layers of insulation adhered in Insul-Lock HR or Millennium One Step Foamable Insulation Adhesive applied in min 1/4"- 1/2" wide ribbons spaced 12" o.c. to the vapor barrier or deck. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulations listed as the base layer shall only be used as the base layer 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 face down.**

<b>Primer:</b>	Prime SECUROCK Gypsum-Fiber Roof Board insulation board with ASTM D-41 asphalt primer at 1 gallon per square
<b>Base/Ply Sheet:</b>	One or more plies of HPR Torch Base Sheet torch applied onto insulation layer.
<b>Membrane:</b>	One ply of StressPly IV UV Mineral, StressPly IV Mineral, StressPly IV Plus, StressPly IV Plus UV Mineral or StressPly IV Plus Mineral torch applied.



**Surfacing:**

Optional for FR or mineral surfaced Membranes. Required for non-FR or smooth surfaced membranes. Apply one of the below or any approved coatings:

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq. or in Black-Knight at 70 lb/sq. or Black-Knight Cold at 5 gal./sq.
2. Minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
3. Energizer K Plus FR applied at 3.5 gal./sq. with minimum two coats of Garla-Brite applied at min 0.5 gal./sq./coat
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
5. WeatherScreen applied at min. 4 gal./sq. with #11 roofing granules at 60 lb./sq.
6. WeatherScreen applied at applied at min. 4 gal./sq. with roofing gravel applied at 400 lb./sq.
7. Green-Lock Plus Membrane Adhesive applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design Pressure:**

-70 psf. (without Vapor Barrier ) (See General Limitation #9)  
-220 psf. (with Vapor Barrier ) (See General Limitation #9)



**Membrane Type:** SBS/SIS/SEBS  
**Deck Type 3I:** Concrete Decks, Insulated  
**Deck Description:** Min. 2500 psi structural concrete or concrete plank  
**System Type A(5):** One or more layers of insulation adhered with approved adhesive, membrane fully adhered

**All General and System Limitations apply.**

One or more layers of the following insulations:

<b>Base Insulation Layer:</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>ACFoam-II, ENRGY 3, H-Shield Minimum 1.5" thick</b>	N/A	N/A
<b>Top Insulation Layer:</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>DensDeck, DensDeck Prime Minimum 0.25" thick</b>	N/A	N/A

**Note:** All insulation shall be adhered to the deck in ½" to ¾" wide beads 12" o.c. of Insul-Lock HR. 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.

**Base/Ply:** One or more plies of HPR Glasbase, HPR Premium Glasbase, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt or HPR Polyscrim Plus adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq.  
 Or  
 One or more plies of HPR Glasbase, HPR Premium Glasbase or HPR Tri-Base Premium adhered with Weatherking or Weatherking Plus WC applied at 2½ gal./sq.  
 Or  
 One ply of HPR Torch Base Sheet torch applied to coverboard.

**Membrane:** One ply of StressPly E FR Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV FR Mineral or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq. or with Weatherking or Weatherking Plus WC applied at 2½ gal./sq.  
 Or  
 One ply of StressPly IV UV Mineral, StressPly IV Mineral, StressPly IV Plus, StressPly IV Plus UV Mineral or StressPly IV Plus Mineral torch applied.





**Surfacing:**

Optional for FR or mineral surfaced Membranes. Required for non-FR or smooth surfaced membranes. Apply one of the below or any approved coatings:

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq. or in Black-Knight or Black-Knight Cold at 5 gal./sq. (asphalt applied systems only, Not compatible with Weatherking and Weatherking Plus WC applied systems)
2. Minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
3. Energizer K Plus FR applied at 3.5 gal./sq. with minimum two coats of Garla-Brite applied at min 0.5 gal./sq./coat
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
5. WeatherScreen applied at min. 4 gal./sq. with #11 roofing granules at 60 lb./sq.
6. WeatherScreen applied at applied at min. 4 gal./sq. with roofing gravel applied at 400 lb./sq.
7. Green-Lock Plus Membrane Adhesive applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design  
Pressure:**

-75 psf. (See General Limitation #9)



**Membrane Type:** SBS/SIS/SEBS

**Deck Type 3I:** Concrete Decks, Insulated

**Deck Description:** 2500 psi structural concrete or concrete plank

**System Type A(6):** One or more layers of insulation adhered with approved asphalt or adhesive.

**All General and System Limitations apply.**

**Deck Primer:** Deck is primed with ASTM D 41 primer.

One or more layers of any of the following insulations.

<b><u>Base Insulation Layer (Optional):</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
ACFoam-II Minimum 1.5" thick	N/A	N/A
<b><u>Top Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
Structodek High Density Fiberboard Roof Insulation Minimum 0.5" thick	N/A	N/A

**Note:** Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of insulation. All insulation shall be adhered to the deck in full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./100 ft<sup>2</sup>, or in ½" – ¾" wide beads of Insul-Lock HR spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

**System 1:**

**Base/Ply Sheet:** Two to four plies HPR Polyscrim Plus adhered in full mopping of Black-Knight or approved Type I or Type III Coal Tar Pitch at a rate of 30 lbs./sq.

**Cap Sheet:** One ply of Millennium Mineral or Millennium FR Mineral adhered in full mopping of Black-Knight or approved Type I or Type III Coal Tar Pitch at a rate of 30 lbs./sq.

**System 2:**

**Base Sheet:** One ply HPR Glasbase, HPR Premium Glasbase adhered in full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus at a rate of 25 lbs./sq.  
Or  
One ply Millennium Base adhered in full mopping of Black-Knight or approved Type I or Type III Coal Tar Pitch at a rate of 30 lbs./sq.

**Ply Sheet:** Two to three plies HPR Polyscrim Plus adhered in full mopping of Black-Knight or approved Type I or Type III Coal Tar Pitch at a rate of 30 lbs./sq.

**Cap Sheet:** One ply of Millennium Mineral or Millennium FR Mineral adhered in full mopping of Black-Knight or approved Type I or Type III Coal Tar Pitch at a rate of 30 lbs./sq.



<b>System 3:</b>	<b>Base Sheet:</b>	One ply HPR Glasbase, HPR Premium Glasbase adhered in full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus at a rate of 25 lbs./sq. Or One ply Millennium Base adhered in full mopping of Black-Knight or approved Type I or Type III Coal Tar Pitch at a rate of 30 lbs./sq. or adhered in Black-Knight Cold applied at 1.5-2 gal./sq.
	<b>Ply Sheet:</b>	One ply Millennium Base adhered in full mopping of Black-Knight or approved Type I or Type III Coal Tar Pitch at a rate of 30 lbs./sq. Or One ply Millennium Base adhered in Black-Knight Cold applied at 1.5-2 gal./sq. (to base layer of Millennium Base only)
	<b>Cap Sheet:</b>	One ply of Millennium Mineral or Millennium FR Mineral adhered in full mopping of Black-Knight or approved Type I or Type III Coal Tar Pitch at a rate of 30 lbs./sq. Or One ply of Millennium Mineral or Millennium FR Mineral adhered in Black-Knight Cold applied at 1.5-2 gal./sq. (to Millennium Base only)
<b>Surfacing:</b>	(Required if no mineral cap sheet is used) Install one of the following: <ol style="list-style-type: none"> <li>1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq. or in Black-Knight at 70 lb/sq. or Black-Knight Cold 5 gal./sq.</li> <li>2. Minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat</li> <li>3. Green-Lock Plus Membrane Adhesive applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.</li> </ol>	
<b>Maximum Design Pressure:</b>		-82.5 psf. (no base insulation, coverboard in Insul-Lock HR) (See General Limitation #9) -127.5 psf. (base insulation in Insul-Lock HR, coverboard in asphalt) (See General Limitation #9) -202.5 psf. (roof cover in Black-Knight Cold) (See General Limitation #9) -270 psf. (roof cover in coal tar or hot asphalt) (See General Limitation #9)



**Membrane Type:** SBS/SIS/SEBS  
**Deck Type 3I:** Concrete Decks, Insulated  
**Deck Description:** 2500 psi structural concrete or concrete plank  
**System Type A(7):** One or more layers of insulation adhered to deck with approved asphalt or adhesive.

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

<b><u>Base Insulation Layer (Optional):</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
ACFoam-II, ENRGY 3, ENRGY 3 25 PSI, ISO-95+ GL, H-Shield (Hot Asphalt only) Minimum 1" thick	N/A	N/A
ACFoam-II, ENRGY 3, ENRGY 3 25 PSI, ISO-95+ GL, H-Shield (Insta Stick or Hot Asphalt only) Minimum 1.5" thick	N/A	N/A
<b><u>Top Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
Structodek High Density Fiberboard Roof Insulation (Hot Asphalt only) Minimum ½" thick	N/A	N/A
Structodek High Density Fiberboard Roof Insulation, Retro-Fit Board (Insta Stick or Hot Asphalt only) Minimum ½" thick	N/A	N/A
Fesco Board Minimum ¾" thick	N/A	N/A
DensDeck, DensDeck Prime (Insta Stick or Hot Asphalt only) Minimum ¼" thick	N/A	N/A

**Note:** Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of insulation. All insulation shall be adhered to the deck in full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./100 ft<sup>2</sup> or Insta Stick Quik Set Insulation Adhesive applied in continuous ¾" to 1" wide beads, 12" o.c. (primer optional). 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 used as a top layer shall be placed with the polyisocyanurate side facing down.

**Base/Ply Sheet:** One or more plies of HPR Glasbase, HPR Premium Glasbase, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt, HPR Polyscrim Plus adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq.

**Membrane:** One ply of StressPly E FR Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV FR Mineral or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq.



**Surfacing:**

Optional for FR or mineral surfaced Membranes. Required for non-FR or smooth surfaced membranes. Apply one of the below or any approved coatings:

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq. or in Black-Knight at 70 lb./sq. or Black-Knight Cold at 5 gal./sq.
2. Minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
3. Energizer K Plus FR applied at 3.5 gal./sq. with minimum two coats of Garla-Brite applied at min 0.5 gal./sq./coat
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
5. WeatherScreen applied at min. 4 gal./sq. with #11 roofing granules at 60 lb./sq.
6. WeatherScreen applied at applied at min. 4 gal./sq. with roofing gravel applied at 400 lb./sq.
7. Green-Lock Plus Membrane Adhesive applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design****Pressure:**

- 45 psf. (for all other applications) (See General Limitation #9)
- 90 psf. (for all Insta Stick Quik Set Insulation Adhesive applications with asphalt applied membranes)  
(See General Limitation #9)
- 145 psf. (for minimum 1.5" thick ENRGY 3 followed by minimum ¾" Fesco Board applied in hot asphalt with asphalt applied membranes)  
(See General Limitation #9)
- 237.5 psf. (for minimum 1.5" thick ENRGY 3 followed by minimum ¼" DensDeck, ¼" DensDeck Prime or minimum ½" Structodek High Density Fiberboard applied in hot asphalt with asphalt applied membranes.) (See General Limitation #9)



**Membrane Type:** SBS/SIS/SEBS  
**Deck Type 3I:** Concrete Decks, Insulated  
**Deck Description:** 2500 psi structural concrete or concrete plank  
**System Type A(8):** One or more layers of insulation adhered to deck with approved asphalt or adhesive.

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

<b><u>Base Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
ACFoam-II, ENRGY 3, ENRGY 3 25 PSI, ISO-95+ GL, H-Shield (Hot Asphalt only) Minimum 1.5" thick	N/A	N/A
ACFoam-II, ENRGY 3, ENRGY 3 25 PSI, ISO-95+ GL, H-Shield (Insta-Stick or Hot Asphalt only) Minimum 1.5" thick	N/A	N/A
<b><u>Top Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
Structodek High Density Fiberboard Roof Insulation (Hot Asphalt only) Minimum ½" thick	N/A	N/A
DensDeck, DensDeck Prime (Insta-Stick or Hot Asphalt only) Minimum ¼" thick	N/A	N/A

**Note:** Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of insulation. All insulation shall be adhered to the deck in full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./100 ft<sup>2</sup> or Insta Stick Quik Set Insulation Adhesive applied in continuous ¾" to 1" wide beads, 12" o.c. (primer optional). 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 used as a top layer shall be placed with the polyisocyanurate side facing down.

**Base/Ply Sheet:** One or more plies of HPR Glasbase, HPR Premium Glasbase, HPR Tri-Base Premium, HPR Glasfelt or HPR Premium Glasfelt adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq.  
 Or  
 One ply of HPR Torch Base Sheet torch applied to coverboard.

**Membrane:** One ply of StressPly IV UV Mineral, StressPly IV Mineral, StressPly IV Plus, StressPly IV Plus UV Mineral or StressPly IV Plus Mineral torch applied.



**Surfacing:**

Optional for FR or mineral surfaced Membranes. Required for non-FR or smooth surfaced membranes. Apply one of the below or any approved coatings:

1. Minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
2. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq. or in Black-Knight at 70 lb./sq. or Black-Knight Cold at 5 gal./sq.
3. Green-Lock Plus Membrane Adhesive applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design Pressure**

- 45 psf. (for all other applications) (See General Limitation #9)
- 90 psf. (for all Insta Stick Quik Set Insulation Adhesive applications with asphalt applied membranes) (See General Limitation #9)
- 237.5 psf. (for minimum 1.5" thick ENRGY 3 followed by minimum ¼" DensDeck, ¼" DensDeck Prime or minimum ½" Structodek High Density Fiberboard applied in hot asphalt with asphalt applied membranes.) (See General Limitation #9)



**Membrane Type:** SBS/SIS/SEBS  
**Deck Type 3I:** Concrete Decks, Insulated  
**Deck Description:** Min. 2500 psi structural concrete or concrete plank  
**System Type A(9):** One or more layers of insulation adhered with approved adhesive, membrane fully adhered

**All General and System Limitations apply.**

One or more layers of the following insulations:

<b><u>Base Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
ACFoam-II, ENRGY 3, H-Shield Minimum 1.5" thick	N/A	N/A
<b><u>Top Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
Structodek High Density Fiberboard Roof Insulation Minimum 0.25" thick	N/A	N/A

**Note:** All insulation shall be adhered to the deck in ½" to ¾" wide beads 12" o.c. of Insul-Lock HR. 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.

**Base/Ply:** One or more plies of HPR Glasbase, HPR Premium Glasbase, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt or HPR Polyscrim Plus adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq.  
 Or  
 One or more plies of HPR Glasbase, HPR Premium Glasbase or HPR Tri-Base Premium adhered with Weatherking or Weatherking Plus WC applied at 2½ gal./sq.  
 Or  
 One ply of HPR Torch Base Sheet torch applied to coverboard.

**Membrane:** One ply of StressPly E FR Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV FR Mineral or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq. or with Weatherking or Weatherking Plus WC applied at 2½ gal./sq.  
 Or  
 One ply of StressPly IV UV Mineral, StressPly IV Mineral, StressPly IV Plus, StressPly IV Plus UV Mineral or StressPly IV Mineral torch applied.





**Surfacing:**

Optional for FR or mineral surfaced Membranes. Required for non-FR or smooth surfaced membranes. Apply one of the below or any approved coatings:

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq. or in Black-Knight at 70 lb/sq. or Black-Knight Cold at 5 gal./sq. (asphalt applied systems only, Not compatible with Weatherking and Weatherking Plus WC applied systems)
2. Minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
3. Energizer K Plus FR applied at 3.5 gal./sq. with minimum two coats of Garla-Brite applied at min 0.5 gal./sq./coat
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
5. WeatherScreen applied at min. 4 gal./sq. with #11 roofing granules at 60 lb./sq.
6. WeatherScreen applied at applied at min. 4 gal./sq. with roofing gravel applied at 400 lb./sq.
7. Green-Lock Plus Membrane Adhesive applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design  
Pressure:**

-127.5 psf. (See General Limitation #9)



<b>Membrane Type:</b>	SBS/SIS/SEBS
<b>Deck Type 3I:</b>	Concrete Decks, Insulated
<b>Deck Description:</b>	Min. 2500 psi structural concrete or concrete plank
<b>System Type A(10):</b>	One or more layers of insulation adhered with approved adhesive, membrane fully adhered

**All General and System Limitations apply.**

One or more layers of the following insulations:

<b><u>Base Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
ACFoam II, Ultra-Max, ENRGY 3, H-Shield Minimum 1.5" thick	N/A	N/A
<b><u>Top Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
DensDeck, DensDeck Prime Minimum 0.25" thick	N/A	N/A

**Note:** All insulation shall be adhered to the deck in ½" to ¾" wide beads 12" o.c. of Insul-Lock HR. 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.

**Vapor Retarders:** Any UL or FM approved asphaltic vapor retarder may be installed over the deck or the base layer of insulation  
(Optional)

**Base/Ply:** One or more plies of HPR Glasbase, HPR Premium Glasbase, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt or HPR Polyscrim Plus adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq.  
Or  
One or more plies of HPR Glasbase, HPR Premium Glasbase or HPR Tri-Base Premium adhered with Weatherking or Weatherking Plus WC applied at 2½ gal./sq.  
Or  
One ply of HPR Torch Base Sheet torch applied to coverboard.

**Membrane:** One ply of StressPly E FR Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV FR Mineral or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq. or with Weatherking or Weatherking Plus WC applied at 2½ gal./sq.  
Or  
One ply of StressPly IV UV Mineral, StressPly IV Mineral, StressPly IV Plus, StressPly IV Plus UV Mineral or StressPly IV Plus Mineral torch applied.



**Surfacing:**

Optional for FR or mineral surfaced Membranes. Required for non-FR or smooth surfaced membranes. Apply one of the below or any approved coatings:

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq. or in Black-Knight at 70 lb/sq. or Black-Knight Cold at 5 gal./sq. (asphalt applied systems only, Not compatible with Weatherking and Weatherking Plus WC applied systems)
2. Minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
3. Energizer K Plus FR applied at 3.5 gal./sq. with minimum two coats of Garla-Brite applied at min 0.5 gal./sq./coat
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
5. WeatherScreen applied at min. 4 gal./sq. with #11 roofing granules at 60 lb./sq.
6. WeatherScreen applied at applied at min. 4 gal./sq. with roofing gravel applied at 400 lb./sq.
7. Green-Lock Plus Membrane Adhesive applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design  
Pressure:**

-135 psf. (See General Limitation #9)



<b>Membrane Type:</b>	SBS/SIS/SEBS
<b>Deck Type 3I:</b>	Concrete Decks, Insulated
<b>Deck Description:</b>	Min. 2500 psi structural concrete or concrete plank
<b>System Type A(11):</b>	One or more layers of insulation adhered with approved adhesive, membrane fully adhered

**All General and System Limitations apply.**

One or more layers of the following insulations:

<b><u>Base Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
<b>Insulfoam EPS Minimum 1.5" thick</b>	N/A	N/A
<b><u>Top Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
<b>Structodek High Density Fiberboard Roof Insulation Minimum 0.5" thick</b>	N/A	N/A
<b>DensDeck, DensDeck Prime Minimum 0.25" thick</b>	N/A	N/A

**Note:** All insulation shall be adhered to the deck in ½" to ¾" wide beads 12" o.c. of Insul-Lock HR. 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.

<b>Base/Ply:</b>	<p>One or more plies of HPR Glasbase, HPR Premium Glasbase, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt or HPR Polyscrim Plus adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq.</p> <p>Or</p> <p>One or more plies of HPR Glasbase, HPR Premium Glasbase or HPR Tri-Base Premium adhered with Weatherking or Weatherking Plus WC applied at 2½ gal./sq.</p> <p>Or</p> <p>One ply of HPR Torch Base Sheet torch applied to coverboard.</p>
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<b>Membrane:</b>	<p>One ply of StressPly E FR Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV FR Mineral or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq. or with Weatherking or Weatherking Plus WC applied at 2½ gal./sq.</p> <p>Or</p> <p>One ply of StressPly IV UV Mineral, StressPly IV Mineral, StressPly IV Plus, StressPly IV Plus UV Mineral or StressPly IV Plus Mineral torch applied.</p>
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**Surfacing:**

Optional for FR or mineral surfaced Membranes. Required for non-FR or smooth surfaced membranes. Apply one of the below or any approved coatings:

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq. or in Black-Knight at 70 lb/sq. or Black-Knight Cold at 5 gal./sq. (asphalt applied systems only, Not compatible with Weatherking and Weatherking Plus WC applied systems)
2. Minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
3. Energizer K Plus FR applied at 3.5 gal./sq. with minimum two coats of Garla-Brite applied at min 0.5 gal./sq./coat
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
5. WeatherScreen applied at min. 4 gal./sq. with #11 roofing granules at 60 lb./sq.
6. WeatherScreen applied at applied at min. 4 gal./sq. with roofing gravel applied at 400 lb./sq.
7. Green-Lock Plus Membrane Adhesive applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design Pressure:**

- 142.5 psf. (for Weatherking or Weatherking Plus WC applied roof covers) (See General Limitation #9)
- 150 psf. (with Structodek High Density Fiberboard)  
(See General Limitation #9)
- 157.5 psf. (with DensDeck or DensDeck Prime) (See General Limitation #9)



**Membrane Type:** SBS/SIS/SEBS  
**Deck Type 3I:** Concrete Decks, Insulated  
**Deck Description:** 2500 psi structural concrete or concrete plank  
**System Type A(12):** One or more layers of insulation adhered with approved asphalt.

**All General and System Limitations apply.**

**Deck Primer:** Deck is primed with ASTM D 41 primer.

One or more layers of any of the following insulations.

<b><u>Base Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
ACFoam-II, ISO 95+ GL, H-Shield, ENRGY 3, ENRGY 3 25 PSI, Ultra-Max, Multi-Max FA-3 Minimum 1.5" thick	N/A	N/A
<b><u>Top Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
Structodek High Density Fiberboard Roof Insulation Minimum ½" thick	N/A	N/A
Fesco Board, Retro-Fit Board Minimum ¾" thick	N/A	N/A
DensDeck, DensDeck Prime Minimum ¼" thick	N/A	N/A

**Note:** Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of insulation. All insulation shall be adhered in full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./100 ft<sup>2</sup>. 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 used as a top layer shall be placed with the polyisocyanurate side facing down.

**Base/Ply Sheet:** One or more plies of HPR Glasbase, HPR Premium Glasbase, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt or HPR Polyscrim Plus adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq.  
 Or  
 One or more plies of HPR Glasbase, HPR Premium Glasbase or HPR Tri-Base Premium adhered with Weatherking or Weatherking Plus WC applied at 2½ gal./sq.  
 Or  
 One ply of HPR TorchBase torch applied to coverboard.



<b>Membrane:</b>	<p>One ply of StressPly E FR Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV FR Mineral or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq. or with Weatherking or Weatherking Plus WC applied at 2½ gal./sq.</p> <p>Or</p> <p>One ply of StressPly IV UV Mineral, StressPly IV Mineral, StressPly IV Plus, StressPly IV Plus UV Mineral or StressPly IV Plus Mineral torch applied.</p>
<b>Surfacing:</b>	<p>Optional for FR or mineral surfaced Membranes. Required for non-FR or smooth surfaced membranes. Apply one of the below or any approved coatings:</p> <ol style="list-style-type: none"> <li>1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq. or in Black-Knight at 70 lb/sq. or Black-Knight Cold at 5 gal./sq. (asphalt applied systems only, Not compatable with Weatherking and Weatherking Plus WC applied systems)</li> <li>2. Minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat</li> <li>3. Energizer K Plus FR applied at 3.5 gal./sq. with minimum two coats of Garla-Brite applied at min 0.5 gal./sq./coat</li> <li>4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat</li> <li>5. WeatherScreen applied at min. 4 gal./sq. with #11 roofing granules at 60 lb./sq.</li> <li>6. WeatherScreen applied at applied at min. 4 gal./sq. with roofing gravel applied at 400 lb./sq.</li> <li>7. Green-Lock Plus Membrane Adhesive applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.</li> </ol>
<b>Maximum Design Pressure:</b>	<p>-142.5 psf. {Weatherking or Weatherking Plus WC applied roof cover} (See General Limitation #9)</p> <p>-157.5 psf. {hot asphalt or torch applied roof cover}{See General Limitation #9}</p>



**Membrane Type:** SBS/SIS/SEBS  
**Deck Type 3I:** Concrete Decks, Insulated  
**Deck Description:** Min. 2500 psi structural concrete or concrete plank  
**System Type A(13):** One or more layers of insulation adhered with approved adhesive, membrane fully adhered

**All General and System Limitations apply.**

One or more layers of the following insulations:

<b><u>Base Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
<b>STYROFOAM ROOFMATE Minimum 1" thick</b>	N/A	N/A
<b><u>Top Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
<b>Structodek High Density Fiberboard Roof Insulation Minimum 0.5" thick</b>	N/A	N/A
<b>DensDeck, DensDeck Prime Minimum 0.25" thick</b>	N/A	N/A

**Note:** All insulation shall be adhered to the deck in ½" to ¾" wide beads 12" o.c. of Insul-Lock HR. 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.

**Base/Ply:** One or more plies of HPR Glasbase, HPR Premium Glasbase, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt or HPR Polyscrim Plus adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq.  
 Or  
 One or more plies of HPR Glasbase, HPR Premium Glasbase or HPR Tri-Base Premium adhered with Weatherking or Weatherking Plus WC applied at 2½ gal./sq.  
 Or  
 One ply of HPR Torch Base Sheet torch applied to coverboard.

**Membrane:** One ply of StressPly E FR Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV FR Mineral or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq. or with Weatherking or Weatherking Plus WC applied at 2½ gal./sq.  
 Or  
 One ply of StressPly IV UV Mineral, StressPly IV Mineral, StressPly IV Plus, StressPly IV Plus UV Mineral or StressPly IV Plus Mineral torch applied.





**Surfacing:**

Optional for FR or mineral surfaced Membranes. Required for non-FR or smooth surfaced membranes. Apply one of the below or any approved coatings:

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq. or in Black-Knight at 70 lb/sq. or Black-Knight Cold at 5 gal./sq. (asphalt applied systems only, Not compatible with Weatherking and Weatherking Plus WC applied systems)
2. Minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
3. Energizer K Plus FR applied at 3.5 gal./sq. with minimum two coats of Garla-Brite applied at min 0.5 gal./sq./coat
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
5. WeatherScreen applied at min. 4 gal./sq. with #11 roofing granules at 60 lb./sq.
6. WeatherScreen applied at applied at min. 4 gal./sq. with roofing gravel applied at 400 lb./sq.
7. Green-Lock Plus Membrane Adhesive applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design Pressure:**

- 142.5 psf. (for Weatherking or Weatherking Plus WC applied roof covers Systems) (See General Limitation #9)
- 157.5 psf. (for torch or hot applied roof covers) (See General Limitation #9)



**Membrane Type:** SBS/SIS/SEBS  
**Deck Type 3I:** Concrete Decks, Insulated  
**Deck Description:** 2500 psi structural concrete or concrete plank  
**System Type A(14):** One or more layers of insulation adhered to deck with Insta-Stick Roofing Adhesive.

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

<b><u>Base Insulation Layer :</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
<b>ACFoam-II, ENRGY 3, ENRGY 3 25 PSI, ISO-95+ GL, H-Shield Minimum 2” thick</b>	N/A	N/A
<b><u>Top Insulation Layer (Optional):</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
<b>Structodek High Density Fiberboard Roof Insulation Minimum ½” thick</b>	N/A	N/A

**Note:** Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of insulation. All insulation shall be adhered to the deck with Insta Stick Quik Set Insulation Adhesive applied in continuous ¾ to 1 inch wide beads spaced 12” o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels used as a top layer shall be placed with the polyisocyanurate side facing down.

**Base/Ply Sheet:** Two plies of HPR Glasbase, HPR Premium Glasbase or HPR Tri-Base Premium adhered with Weatherking or Weatherking Plus WC applied at 2½ gal./sq.

**Membrane:** One ply of StressPly E FR Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV FR Mineral or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq. or with Weatherking or Weatherking Plus WC applied at 2½ gal./sq.



**Surfacing:**

Optional for FR or mineral surfaced Membranes. Required for non-FR or smooth surfaced membranes. Apply one of the below or any approved coatings:

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq. or in Black-Knight at 70 lb./sq. or Black-Knight Cold at 5 gal./sq. (asphalt applied systems only, Not compatible with Weatherking and Weatherking Plus WC applied systems)
2. Minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
3. Energizer K Plus FR applied at 3.5 gal./sq. with minimum two coats of Garla-Brite applied at min 0.5 gal./sq./coat
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
5. WeatherScreen applied at min. 4 gal./sq. with #11 roofing granules at 60 lb./sq.
6. WeatherScreen applied at applied at min. 4 gal./sq. with roofing gravel applied at 400 lb./sq.
7. Green-Lock Plus Membrane Adhesive applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design Pressure:**

- 142.5 psf (for systems including Structodek High Density Fiberboard) (See General Limitation #9)
- 217.5 psf (with polyisocyanurate with no Structodek High Density Fiberboard) (See General Limitation #9)



**Membrane Type:** SBS/SIS/SEBS

**Deck Type 3I:** Concrete Decks, Insulated

**Deck Description:** 2500 psi structural concrete or concrete plank

**System Type A(15):** One or more layers of insulation adhered with approved asphalt or adhesive.

**All General and System Limitations apply.**

**Deck Primer:** Deck is primed with ASTM D 41 primer.

**Vapor Barrier:** One ply of HPR Torch Base Sheet, heat welded to deck.

One or more layers of any of the following insulations.

<b><u>Base Insulation Layer:</u></b>	<b><u>Insulation Fasteners</u> <u>(Table 3)</u></b>	<b><u>Fastener</u> <u>Density/ft<sup>2</sup></u></b>
ACFoam-II, ISO 95+ GL, H-Shield, ENRGY 3, ENRGY 3 25 PSI, Ultra-Max, Multi-Max FA-3 Minimum 1.5" thick	N/A	N/A
<b><u>Top Insulation Layer:</u></b>	<b><u>Insulation Fasteners</u> <u>(Table 3)</u></b>	<b><u>Fastener</u> <u>Density/ft<sup>2</sup></u></b>
DensDeck Prime Minimum ½" thick	N/A	N/A

**Note:** Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of vapor barrier or insulation. All insulation shall be adhered to the vapor barrier in ¾" – 1" wide ribbons of Insul-Lock HR spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels used as a top layer shall be placed with the polyisocyanurate side facing down.

**Base/Ply Sheet:** One or more plies of HPR Glasbase, HPR Premium Glasbase, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt or HPR Polyscrim Plus adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq.  
Or  
One or more plies of HPR Glasbase, HPR Premium Glasbase or HPR Tri-Base Premium adhered with Weatherking or Weatherking Plus WC applied at 2½ gal./sq.  
Or  
One ply HPR Torch Base Sheet torch applied.

**Membrane:** One ply of StressPly E FR Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV FR Mineral or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq. or with Weatherking or Weatherking Plus WC applied at 2½ gal./sq.  
Or  
One ply of StressPly IV UV Mineral, StressPly IV Mineral, StressPly IV Plus, StressPly IV Plus UV Mineral or StressPly IV Plus Mineral torch applied.



**Surfacing:**

Optional for FR or mineral surfaced Membranes. Required for non-FR or smooth surfaced membranes. Apply one of the below or any approved coatings:

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq. or in Black-Knight at 70 lb./sq. or Black-Knight Cold at 5 gal./sq. (asphalt applied systems only, Not compatible with Weatherking and Weatherking Plus WC applied systems)
2. Minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
3. Energizer K Plus FR applied at 3.5 gal./sq. with minimum two coats of Garla-Brite applied at min 0.5 gal./sq./coat
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
5. WeatherScreen applied at min. 4 gal./sq. with #11 roofing granules at 60 lb./sq.
6. WeatherScreen applied at applied at min. 4 gal./sq. with roofing gravel applied at 400 lb./sq.
7. Green-Lock Plus Membrane Adhesive applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design  
Pressure:**

-150 psf. (See General Limitation #9)



<b>Membrane Type:</b>	SBS/SIS/SEBS
<b>Deck Type 3I:</b>	Concrete, Insulated
<b>Deck Description:</b>	Min. 2500 psi concrete or concrete plank
<b>System Type A(16):</b>	All layers of insulation adhered with approved adhesive, membrane fully adhered

**All General and System Limitations apply.**

One or more layers of the following insulations:

<b><u>Base Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
H-Shield Minimum 1.5" thick	N/A	N/A
<b><u>Top Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
SECUROCK Gypsum-Fiber Roof Board Minimum ¼" thick	N/A	N/A

**Note:** All layers of insulation adhered in Insul-Lock HR applied in ¾"-1" wide beads spaced 6" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

<b>System 1:</b>	<b>Base Sheet:</b>	One ply of HPR Torch Base Sheet torch applied onto insulation layer.
	<b>Cap Sheet:</b>	One ply of StressPly IV Mineral or StressPly IV Plus UV Mineral torch applied onto base sheet.
		<b><i>Maximum Desing Pressure: -220 psf. (See General Limitation #9)</i></b>
<b>System 2:</b>	<b>Base Sheet:</b>	One ply Millennium Base adhered in Green-Lock Plus Membrane Adhesive at a rate of 1.5 – 2.5 gal./sq. onto insulation layer.
	<b>Cap Sheet:</b>	One ply of Millennium Mineral or Millennium FR Mineral adhered in Green-Lock Plus Membrane Adhesive at a rate of 1.5 – 2.5 gal./sq. onto base sheet.
		<b><i>Maximum Desing Pressure: -262.5 psf. (See General Limitation #9)</i></b>
<b>System 3:</b>	<b>Base Sheet:</b>	One or more plies of StressBase 80 adhered with Green-Lock Plus Membrane Adhesive at a rate of 1.5 – 2.5 gal./sq. or adhered with a full mopping of approved asphalt onto insulation layer.
	<b>Cap Sheet:</b>	One ply of StressPly E FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV FR Mineral or VersiPly Mineral adhered with Green-Lock Plus Membrane Adhesive at a rate of 1.5 – 2.5 gal./sq. onto base sheet.
		<b><i>Maximum Desing Pressure: -290 psf. (See General Limitation #9)</i></b>



**Surfacing:**

Optional for FR or mineral surfaced Membranes. Required for non-FR or smooth surfaced membranes. Apply one of the below or any approved coatings:

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq. or in Black-Knight at 70 lb/sq. or Black-Knight Cold at 5 gal./sq.
2. Minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
3. Energizer K Plus FR applied at 3.5 gal./sq. with minimum two coats of Garla-Brite applied at min 0.5 gal./sq./coat
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
5. WeatherScreen applied at min. 4 gal./sq. with #11 roofing granules at 60 lb./sq.
6. WeatherScreen applied at applied at min. 4 gal./sq. with roofing gravel applied at 400 lb./sq.
7. Green-Lock Plus Membrane Adhesive applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design  
Pressure:**

**See Systems Above.**



**Membrane Type:** SBS/SIS/SEBS  
**Deck Type 3I:** Concrete, Insulated  
**Deck Description:** Min. 2500 psi concrete or concrete plank  
**System Type A(17):** All layers of insulation adhered with approved adhesive, membrane fully adhered

**All General and System Limitations apply.**

One or more layers of the following insulations:

<b><u>Base Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
H-Shield Minimum 1.5" thick	N/A	N/A
<b><u>Top Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
SECUROCK Gypsum-Fiber Roof Board Minimum ¼" thick	N/A	N/A

**Note:** Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry. All layers of insulation shall be adhered in full mopping of approved asphalt within the EVT range and at a rate of 25 lbs./sq. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

- System 1:**
- Base Sheet:** One ply of HPR Torch Base Sheet torch applied onto insulation layer.
- Cap Sheet:** One ply of StressPly IV Mineral or StressPly IV Plus UV Mineral torch applied onto base sheet.
- Maximum Desing Pressure: -220 psf. (See General Limitation #9)**
- System 2:**
- Base Sheet:** One ply Millennium Base adhered in Green-Lock Plus Membrane Adhesive at a rate of 1.5 – 2.5 gal./sq. onto insulation layer.
- Cap Sheet:** One ply of Millennium Mineral or Millennium FR Mineral adhered in Green-Lock Plus Membrane Adhesive at a rate of 1.5 – 2.5 gal./sq. onto base sheet.
- Maximum Desing Pressure: -262.5 psf. (See General Limitation #9)**
- System 3:**
- Base Sheet:** One or more plies of StressBase 80 adhered with Green-Lock Plus Membrane Adhesive at a rate of 1.5 – 2.5 gal./sq. or adhered with a full mopping of approved asphalt onto insulation layer.
- Cap Sheet:** One ply of StressPly E FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV FR Mineral or VersiPly Mineral adhered with Green-Lock Plus Membrane Adhesive at a rate of 1.5 – 2.5 gal./sq. onto base sheet.
- Maximum Desing Pressure: -375 psf. (See General Limitation #9)**





**Surfacing:**

Optional for FR or mineral surfaced Membranes. Required for non-FR or smooth surfaced membranes. Apply one of the below or any approved coatings:

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq. or in Black-Knight at 70 lb./sq. or Black-Knight Cold at 5 gal./sq.
2. Minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
3. Energizer K Plus FR applied at 3.5 gal./sq. with minimum two coats of Garla-Brite applied at min 0.5 gal./sq./coat
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
5. WeatherScreen applied at min. 4 gal./sq. with #11 roofing granules at 60 lb./sq.
6. WeatherScreen applied at applied at min. 4 gal./sq. with roofing gravel applied at 400 lb./sq.
7. Green-Lock Plus Membrane Adhesive applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design Pressure:**

See Systems Above.



**Membrane Type:** SBS/SIS/SEBS  
**Deck Type 3I:** Concrete, Insulated  
**Deck Description:** Min. 2500 psi concrete or concrete plank  
**System Type A(18):** All layers of insulation adhered with approved adhesive, membrane fully adhered

**All General and System Limitations apply.**

One or more layers of the following insulations:

<u>Insulation Layer:</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft<sup>2</sup></u>
SECUROCK Gypsum-Fiber Roof Board Minimum 1/4" thick	N/A	N/A

**Note:** All layers of insulation adhered in Insul-Lock HR applied in 3/4"-1" wide beads spaced 3" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

**System 1:**    **Base Sheet:**    One ply of HPR Torch Base Sheet torch applied onto insulation layer..  
                  **Cap Sheet:**        One ply of StressPly IV Mineral or StressPly IV Plus UV Mineral torch applied onto base sheet.

***Maximum Desing Pressure: -220 psf. (See General Limitation #9)***

**System 2:**    **Base Sheet:**    One ply Millennium Base adhered in Green-Lock Plus Membrane Adhesive at a rate of 1.5 – 2.5 gal./sq. onto insulation layer.  
                  **Cap Sheet:**        One ply of Millennium Mineral or Millennium FR Mineral adhered in Green-Lock Plus Membrane Adhesive at a rate of 1.5 – 2.5 gal./sq. onto base sheet.

***Maximum Desing Pressure: -262.5 psf. (See General Limitation #9)***

**System 3:**    **Base Sheet:**    One or more plies of StressBase 80 adhered with Green-Lock Plus Membrane Adhesive at a rate of 1.5 – 2.5 gal./sq. or adhered with a full mopping of approved asphalt onto insulation layer.  
                  **Cap Sheet:**        One ply of StressPly E FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV FR Mineral or VersiPly Mineral adhered with Green-Lock Plus Membrane Adhesive at a rate of 1.5 – 2.5 gal./sq. onto base sheet.

***Maximum Desing Pressure: -452.5 psf. (See General Limitation #9)***



**Surfacing:**

Optional for FR or mineral surfaced Membranes. Required for non-FR or smooth surfaced membranes. Apply one of the below or any approved coatings:

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq. or in Black-Knight o at 70 lb/sq. or Black-Knight Cold at 5 gal./sq.
2. Minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
3. Energizer K Plus FR applied at 3.5 gal./sq. with minimum two coats of Garla-Brite applied at min 0.5 gal./sq./coat
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
5. WeatherScreen applied at min. 4 gal./sq. with #11 roofing granules at 60 lb./sq.
6. WeatherScreen applied at applied at min. 4 gal./sq. with roofing gravel applied at 400 lb./sq.
7. Green-Lock Plus Membrane Adhesive applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design  
Pressure:**

**See Systems Above.**



**Membrane Type:** SBS/SIS/SEBS  
**Deck Type 3I:** Concrete, Insulated  
**Deck Description:** Min. 2500 psi concrete or concrete plank  
**System Type A(19):** All layers of insulation set in approved asphalt or adhesive.

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

<b><u>Base Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
ACFoam-II, ISO 95+ GL, H-Shield Minimum 1.5" thick	N/A	N/A
<b><u>Top Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
Structodek High Density Fiberboard Roof Insulation Minimum ½" thick	N/A	N/A

**Note:** Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of insulation except for insulation adhesive. All insulation shall be adhered to the deck in full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./100 ft<sup>2</sup>, or in ½" – ¾" wide beads of Insul-Lock HR spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

**Base/Ply Sheet:** One ply of StressBase 80, StressBase 120, FlexBase 80, FlexBase Plus 80, or FlexBase E 80 base sheet adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 25 lbs./sq. or Green-Lock Plus Membrane Adhesive applied at 1.5 gal./sq. or adhered with Weatherking or Weatherking Plus WC applied at 2½ gal./sq.

**Membrane:** One ply of BiFlex Mineral, OptiMax FR Mineral, StressPly E FR Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV FR Mineral or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 25 lbs./sq. or Green-Lock Plus Membrane Adhesive applied at 1.5 gal./sq. or adhered with Weatherking or Weatherking Plus WC applied at 2½ gal./sq.



**Surfacing:**

Optional for FR or mineral surfaced Membranes. Required for non-FR or smooth surfaced membranes. Apply one of the below or any approved coatings:

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq. or in Black-Knight at 70 lb/sq. or Black-Knight Cold at 5 gal./sq.
2. Minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
3. Energizer K Plus FR applied at 3.5 gal./sq. with minimum two coats of Garla-Brite applied at min 0.5 gal./sq./coat
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
5. WeatherScreen applied at applied at min. 4 gal./sq. with roofing gravel applied at 400 lb./sq.
6. Green-Lock Plus Membrane Adhesive applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design Pressure:**

- 322.5 psf. (See General Limitation #9)
- 127.5 psf; Insulation applied with Insul-Lock HR (See General Limitation #9)



**Membrane Type:** SBS/SIS/SEBS  
**Deck Type 3I:** Concrete, Insulated  
**Deck Description:** Min. 2500 psi concrete or concrete plank  
**System Type A(20):** All layers of insulation adhered with approved asphalt, membrane fully adhered

**All General and System Limitations apply.**

One or more layers of the following insulations:

<b><u>Base Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
<b>H-Shield Minimum 1.5" thick</b>	N/A	N/A
<b><u>Top Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
<b>SECUROCK Gypsum-Fiber Roof Board Minimum 1/4" thick</b>	N/A	N/A

**Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of insulation. All layers of insulation adhered in full mopping of approved asphalt within the EVT range and at a rate of 25 lbs./sq. Please refer to Roofing Application Standard RAS 117 for insulation attachment.**

**Base Sheet:** One ply Millennium Base adhered in full mopping of Black-Knight or approved Type I or Type III Coal Tar Pitch at a rate of 30 lbs./sq. onto insulation layer.

**Membrane:** One ply of Millennium Mineral adhered in full mopping of Black-Knight or approved Type I or Type III Coal Tar Pitch at a rate of 30 lbs./sq. onto ply or base sheet.

**Surfacing:** Optional for FR or mineral surfaced Membranes. Required for non-FR or smooth surfaced membranes. Apply one of the below or any approved coatings:

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq. or in Black-Knight at 70 lb./sq. or Black-Knight Cold at 5 gal./sq.
2. Minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
3. Energizer K Plus FR applied at 3.5 gal./sq. with minimum two coats of Garla-Brite applied at min 0.5 gal./sq./coat
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
5. WeatherScreen applied at min. 4 gal./sq. with #11 roofing granules at 60 lb./sq.
6. WeatherScreen applied at applied at min. 4 gal./sq. with roofing gravel applied at 400 lb./sq.
7. Green-Lock Plus Membrane Adhesive applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design Pressure:** -472 psf. (See General Limitation #9)



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**Membrane Type:** SBS/SIS/SEBS  
**Deck Type 3I:** Concrete Decks, Insulated  
**Deck Description:** 2500 psi structural concrete or concrete plank  
**System Type B(1):** Base layer of insulation mechanically fastened, top layer adhered with approved asphalt or adhesive.

**All General and System Limitations apply.**

One or more layers of the following insulations:

<b><u>Base Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
ACFoam-II, H-Shield Minimum 1.5" thick	4, 7 or 8	1:1.33 ft <sup>2</sup>

**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).

<b><u>Middle Insulation Layer (Optional):</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
ACFoam-II Minimum 1.5" thick	N/A	N/A

<b><u>Top Insulation Layer (Optional):</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
Structodek High Density Fiberboard Roof Insulation Minimum ½" thick	N/A	N/A
DensDeck, DensDeck Prime Minimum ¼" thick	N/A	N/A

**Note:** Apply optional middle and/or top layer of insulation shall be adhered with approved hot asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./100 ft<sup>2</sup> or in Insta Stick Quik Set Insulation Adhesive applied in continuous ¾ to 1 inch wide beads spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulations listed as the base layer shall only be used as the base layer 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 face down.

**Base/Ply Sheet:** One or more plies of HPR Glasbase, HPR Premium Glasbase, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt, HPR Polyscrim Plus adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq.

**Membrane:** One ply of StressPly E FR Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV FR Mineral or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq.



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**Surfacing:**

Optional for FR or mineral surfaced Membranes. Required for non-FR or smooth surfaced membranes. Apply one of the below or any approved coatings:

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq. or in Black-Knight at 70 lb/sq. or Black-Knight Cold at 5 gal./sq.
2. Minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
3. Energizer K Plus FR applied at 3.5 gal./sq. with minimum two coats of Garla-Brite applied at min 0.5 gal./sq./coat
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
5. WeatherScreen applied at min. 4 gal./sq. with #11 roofing granules at 60 lb./sq.
6. WeatherScreen applied at applied at min. 4 gal./sq. with roofing gravel applied at 400 lb./sq.
7. Green-Lock Plus Membrane Adhesive applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design Pressure:**

-82.5 psf. (See General Limitation #7.)





**Membrane Type:** SBS/SIS/SEBS  
**Deck Type 3I:** Concrete Decks, Insulated  
**Deck Description:** 2500 psi structural concrete or concrete plank  
**System Type B(2):** Base layer of insulation mechanically fastened, top layer adhered with approved asphalt or adhesive.

**All General and System Limitations apply.**

One or more layers of the following insulations:

<b><u>Base Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
ACFoam-II, H-Shield Minimum 1.5" thick	4, 7 or 8	1:1.33 ft <sup>2</sup>

**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).

<b><u>Middle Insulation Layer (Optional):</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
ACFoam-II Minimum 1.5" thick	N/A	N/A

<b><u>Top Insulation Layer (Optional):</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
Structodek High Density Fiberboard Roof Insulation Minimum ½" thick	N/A	N/A
DensDeck, DensDeck Prime Minimum ¼" thick	N/A	N/A

**Note:** Apply optional middle and/or top layer of insulation shall be adhered with approved hot asphalt within the EVT range and at a rate of 20-40 lbs./100 ft<sup>2</sup> or in Insta Stick Quik Set Insulation Adhesive applied in continuous ¾ to 1 inch wide beads spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulations listed as the base layer shall only be used as the base layer 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 face down.

**Base/Ply Sheet:** One or more plies of HPR Glasbase, HPR Premium Glasbase, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq.

**Membrane:** One ply of StressPly IV UV Mineral, StressPly IV Mineral, StressPly IV Plus, StressPly IV Plus UV Mineral or StressPly IV Plus Mineral torch applied.



**Surfacing:**

Optional for FR or mineral surfaced Membranes. Required for non-FR or smooth surfaced membranes. Apply one of the below or any approved coatings:

1. Minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
2. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq. or in Black-Knight at 70 lb/sq. or Black-Knight Cold at 5 gal./sq.
3. Green-Lock Plus Membrane Adhesive applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design****Pressure:**

-82.5 psf. (See General Limitation #7.)



<b>Membrane Type:</b>	SBS/SIS/SEBS
<b>Deck Type 3I:</b>	Concrete, Insulated
<b>Deck Description:</b>	Min. 2500 psi concrete or concrete plank
<b>System Type B(3):</b>	Base layer of insulation mechanically fastened, top layer adhered with approved asphalt or adhesive.

**All General and System Limitations apply.**

One or more layers of the following insulations:

<b><u>Base Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
ACFoam-II, ENRGY 3, H-Shield Minimum 2" thick	4, 5 & 3; 6, 9 & 12; 10 & 11	1:1 ft <sup>2</sup>

**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).

<b><u>Top Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
DensDeck Prime Minimum ½" thick	N/A	N/A

**Note:** Top layer of insulation shall be adhered in full mopping of approved hot asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 25 lbs./100 ft<sup>2</sup> or with Insul-Lock HR applied in ¾"-1" wide ribbons spaced 6" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulations listed as the base layer shall only be used as the base layer 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 face down.

<b>Base/Ply Sheet:</b>	One or more plies of HPR Glasbase, HPR Premium Glasbase, HPR Tri-Base Premium, HPR Glasfelt or HPR Premium Glasfelt adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 25 lbs./sq. Or One ply of HPR Torch Base Sheet torch applied to coverboard.
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<b>Membrane:</b>	One ply of StressPly E FR Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV FR Mineral or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 25 lbs./sq. Or One ply of StressPly IV UV Mineral, StressPly IV Mineral, StressPly IV Plus, StressPly IV Plus UV Mineral or StressPly IV Plus Mineral torch applied.
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**Surfacing:**

Optional for FR or mineral surfaced Membranes. Required for non-FR or smooth surfaced membranes. Apply one of the below or any approved coatings:

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq. or in Black-Knight at 70 lb./sq. or Black-Knight Cold at 5 gal./sq.
2. Minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
3. Energizer K Plus FR applied at 3.5 gal./sq. with minimum two coats of Garla-Brite applied at min 0.5 gal./sq./coat
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
5. WeatherScreen applied at min. 4 gal./sq. with #11 roofing granules at 60 lb./sq.
6. WeatherScreen applied at applied at min. 4 gal./sq. with roofing gravel applied at 400 lb./sq.
7. Green-Lock Plus Membrane Adhesive applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design  
Pressure:**

-112.5 psf. (See General Limitation #7)



<b>Membrane Type:</b>	SBS/SIS/SEBS
<b>Deck Type 3I:</b>	Concrete, Insulated
<b>Deck Description:</b>	Min. 2500 psi concrete or concrete plank
<b>System Type B(4):</b>	Base layer of insulation mechanically fastened, top layer adhered with approved asphalt.

**All General and System Limitations apply.**

One or more layers of the following insulations:

<b><u>Base Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
ACFoam-II, ENRGY 3, H-Shield Minimum 2” thick	4, 5 & 3; 6, 9 & 12; 10 & 11	1:1 ft <sup>2</sup>

**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).

<b><u>Top Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
DensDeck Prime Minimum ½” thick	N/A	N/A

**Note:** Top layer of insulation shall be adhered in full mopping of approved hot asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 25 lbs./100 ft<sup>2</sup>. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulations listed as the base layer shall only be used as the base layer 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 face down.

<b>Base/Ply Sheet:</b>	One or more plies of HPR Glasbase, HPR Premium Glasbase, HPR Tri-Base Premium, HPR Glasfelt or HPR Premium Glasfelt adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 25 lbs./sq.
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<b>Membrane:</b>	One ply of StressPly E FR Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV FR Mineral or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 25 lbs./sq.
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**Surfacing:**

Optional for FR or mineral surfaced Membranes. Required for non-FR or smooth surfaced membranes. Apply one of the below or any approved coatings:

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq. or in Black-Knight at 70 lb./sq. or Black-Knight Cold at 5 gal./sq.
2. Minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
3. Energizer K Plus FR applied at 3.5 gal./sq. with minimum two coats of Garla-Brite applied at min 0.5 gal./sq./coat
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
5. WeatherScreen applied at min. 4 gal./sq. with #11 roofing granules at 60 lb./sq.
6. WeatherScreen applied at applied at min. 4 gal./sq. with roofing gravel applied at 400 lb./sq.
7. Green-Lock Plus Membrane Adhesive applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design  
Pressure:**

-142.5 psf. (See General Limitation #7)



**Membrane Type:** SBS/SIS/SEBS  
**Deck Type 3I:** Concrete Decks, Insulated  
**Deck Description:** 2500 psi structural concrete or concrete plank  
**System Type C(1):** All layers of insulation simultaneously attached.

**All General and System Limitations apply.**

One or more layers of the following insulations:

<b><u>Base Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
ACFoam-II, ENRGY 3, ENRGY 3 25 PSI, ISO-95+ GL, H-Shield Minimum 1" thick	N/A	N/A

**Note:** All layers shall be simultaneously fastened; see top layer below for fasteners and density.

<b><u>Top Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
Structodek High Density Fiberboard Roof Insulation, Fesco Board, Retro-Fit Board Minimum ½" thick	1, 2, 4, 5, 10	1:3 ft <sup>2</sup>
DensDeck, DensDeck Prime Minimum ½" thick	1, 2, 4, 5, 10	1:3 ft <sup>2</sup>

**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/Ply Sheet:** One or more plies of HPR Glasbase, HPR Premium Glasbase, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt or HPR Polyscrim Plus adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq.

**Membrane:** One ply of StressPly E FR Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV FR Mineral or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq.



**Surfacing:**

Optional for FR or mineral surfaced Membranes. Required for non-FR or smooth surfaced membranes. Apply one of the below or any approved coatings:

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq. or in Black-Knight at 70 lb/sq. or Black-Knight Cold at 5 gal./sq.
2. Minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
3. Energizer K Plus FR applied at 3.5 gal./sq. with minimum two coats of Garla-Brite applied at min 0.5 gal./sq./coat
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
5. WeatherScreen applied at min. 4 gal./sq. with #11 roofing granules at 60 lb./sq.
6. WeatherScreen applied at applied at min. 4 gal./sq. with roofing gravel applied at 400 lb./sq.
7. Green-Lock Plus Membrane Adhesive applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design Pressure:**

-45 psf. (for all other applications) (See General Limitation #9.)

-60 psf. (for coverboard of 1" thick Structodek High Density Fiberboard mechanically attached at 1 per 3 ft<sup>2</sup>) (See General Limitation #9.)





**Membrane Type:** SBS/SIS/SEBS  
**Deck Type 3I:** Concrete, Insulated  
**Deck Description:** Min. 2500 psi concrete or concrete plank  
**System Type C(2):** All layers of insulation simultaneously attached.

**All General and System Limitations apply.**

One or more layers of the following insulations:

<b><u>Base Insulation Layer (Optional):</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
<b>ACFoam-II, ENRGY 3, H-Shield, Multi-Max FA-3 Minimum 1.5” thick</b>	N/A	N/A

**Note:** All layers shall be simultaneously fastened; see top layer below for fasteners and density.

<b><u>Top Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
<b>DensDeck Prime Minimum ½” thick</b>	4, 5 & 3; 6, 9 & 12; 10 & 11	1:1 ft <sup>2</sup>

**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/Ply Sheet:** One or more plies of HPR Glasbase, HPR Premium Glasbase, HPR Tri-Base Premium, HPR Glasfelt or HPR Premium Glasfelt adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 25 lbs./sq.  
 Or  
 One ply of HPR Torch Base Sheet torch applied to coverboard.

**Membrane:** One ply of StressPly E FR Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV FR Mineral or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 25 lbs./sq.  
 Or  
 One ply of StressPly IV UV Mineral, StressPly IV Mineral, StressPly IV Plus, StressPly IV Plus UV Mineral or StressPly IV Plus Mineral torch applied.



**Surfacing:**

Optional for FR or mineral surfaced Membranes. Required for non-FR or smooth surfaced membranes. Apply one of the below or any approved coatings:

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq. or in Black-Knight or Black- at 70 lb/sq. or Black-Knight Cold at 5 gal./sq.
2. Minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
3. Energizer K Plus FR applied at 3.5 gal./sq. with minimum two coats of Garla-Brite applied at min 0.5 gal./sq./coat
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
5. WeatherScreen applied at min. 4 gal./sq. with #11 roofing granules at 60 lb./sq.
6. WeatherScreen applied at applied at min. 4 gal./sq. with roofing gravel applied at 400 lb./sq.
7. Green-Lock Plus Membrane Adhesive applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design  
Pressure:**

-150 psf. (See General Limitation #7)



**Membrane Type:** SBS/SIS/SEBS  
**Deck Type 3I:** Concrete Decks, Insulated  
**Deck Description:** 2500 psi structural concrete or concrete plank  
**System Type D(1):** All layers of insulation and base sheet simultaneously attached.

**All General and System Limitations apply.**

One or more layers of the following insulations:

<b><u>Base Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
<b>ACFoam-II, ENRGY 3, ENRGY 3 25 PSI, ISO-95+ GL, H-Shield Minimum 1" thick</b>	N/A	N/A
<b><u>Top Insulation Layer (Optional):</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
<b>Structodek High Density Fiberboard Roof Insulation Minimum ½" thick</b>	N/A	N/A
<b>DensDeck, DensDeck Prime Minimum ¼" thick</b>	N/A	N/A

**Note:** All layers of insulation and base sheet shall be simultaneously attached. See base sheet below for fasteners and density. Refer to Roofing Application Standard RAS 117 for insulation attachment requirements. Insulation shall have preliminary attachment, prior to the installation of the roofing membrane. At an application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft.

**Base Sheet:** *(Option #1)* One ply of HPR Glasbase, HPR Premium Glasbase or HPR Tri-Base Premium fastened to the deck using OMG #14 Roofgrip Fasteners and 3" square Plates spaced 12" o.c. in a 4" lap and 12" o.c. in two staggered rows in the center of the sheet.

*(Option #2)* One ply of HPR Glasbase, HPR Premium Glasbase or HPR Tri-Base Premium fastened to the deck using SFS Dekfast 12 fasteners with plates, OMG Heavy Duty with OMG 3 in. Round Metal Plates, or OMG #14 Fasteners and 3" Square Plates spaced 9" o.c. in a 4" lap and 9" o.c. in two staggered rows in the center of the sheet.

**Intermediate Coverboard: (Optional)** Apply onto the mechanically fastened base sheet a ½" thick approved Structodek High Density Fiberboard Roof Insulation adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq.

**Ply Sheet:** One or more plies of HPR Glasbase Sheet, HPR Premium Glasbase, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt, HPR Polyscrim Plus adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq.



- Membrane:** One ply of StressPly E FR Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV FR Mineral or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq.
- Surfacing:** Optional for FR or mineral surfaced Membranes. Required for non-FR or smooth surfaced membranes. Apply one of the below or any approved coatings:
1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq. or in Black-Knight at 70 lb/sq. or Black-Knight Cold at 5 gal./sq.
  2. Minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
  3. Energizer K Plus FR applied at 3.5 gal./sq. with minimum two coats of Garla-Brite applied at min 0.5 gal./sq./coat
  4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
  5. WeatherScreen applied at min. 4 gal./sq. with #11 roofing granules at 60 lb./sq.
  6. WeatherScreen applied at applied at min. 4 gal./sq. with roofing gravel applied at 400 lb./sq.
  7. Green-Lock Plus Membrane Adhesive applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.
- Maximum Design Pressure:** -60 psf. (See General Limitation #7.)



**Membrane Type:** SBS/SIS/SEBS  
**Deck Type 3I:** Concrete Decks, Insulated  
**Deck Description:** 2500 psi structural concrete or concrete plank  
**System Type D(2):** All layers of insulation and base sheet simultaneously attached.

One or more layers of the following insulations:

**All General and System Limitations apply.**

<b><u>Base Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
<b>ACFoam-II, ENRGY 3, ENRGY 3 25 PSI, ISO-95+ GL, H-Shield Minimum 1" thick</b>	N/A	N/A
<b><u>Top Insulation Layer (Optional):</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
<b>Structodek High Density Fiberboard Roof Insulation Minimum ½" thick</b>	N/A	N/A
<b>DensDeck, DensDeck Prime Minimum ¼" thick</b>	N/A	N/A

**Note:** All layers of insulation and base sheet shall be simultaneously attached. See base sheet below for fasteners and density. Refer to Roofing Application Standard RAS 117 for insulation attachment requirements. Insulation shall have preliminary attachment, prior to the installation of the roofing membrane. At an application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft.

**Base Sheet:** *(Option #1)* One ply of HPR Glasbase, HPR Premium Glasbase or HPR Tri-Base Premium fastened to the deck using OMG #14 Roofgrip Fasteners and 3" Square Plates spaced 12" o.c. in a 4" lap and 12" o.c. in two staggered rows in the center of the sheet.

*(Option #2)* One ply of HPR Glasbase, HPR Premium Glasbase or HPR Tri-Base Premium fastened to the deck using SFS Dekfast 12 fasteners with plates, OMG Heavy Duty with OMG 3 in. Round Metal Plates or OMG Roofgrip Fasteners and 3" Square Plates spaced 9" o.c. in a 4" lap and 9" o.c. in two staggered rows in the center of the sheet.

**Intermediate Coverboard: (Optional)** Apply onto the mechanically fastened base sheet a ½" thick approved Structodek High Density Fiberboard Roof Insulation adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq.

**Ply Sheet:** One or more plies of HPR Glasbase Sheet, HPR Premium Glasbase, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq.



**Membrane:** One ply of StressPly IV UV Mineral, StressPly IV Mineral, StressPly IV Plus, StressPly IV Plus UV Mineral or StressPly IV Plus Mineral torch applied.

**Surfacing:** Optional for FR or mineral surfaced Membranes. Required for non-FR or smooth surfaced membranes. Apply one of the below or any approved coatings:

1. Minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
2. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq. or in Black-Knight at 70 lb./sq. or Black-Knight Cold at 5 gal./sq.
3. Green-Lock Plus Membrane Adhesive applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design Pressure:** -60 psf. (See General Limitation #7.)



**Membrane Type:** SBS/SIS/SEBS  
**Deck Type 3I:** Concrete, Insulated  
**Deck Description:** Min. 2500 psi concrete or concrete plank  
**System Type D(3):** All layers of insulation and base sheet simultaneously attached.

**All General and System Limitations apply.**

One or more layers of the following insulations:

<b><u>Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
<b>ACFoam-II, ENRGY 3, H-Shield, Multi-Max FA-3 Minimum 1.5" thick</b>	N/A	N/A
<b>DensDeck, DensDeck Prime Minimum ¼" thick</b>	N/A	N/A
<b>Structodek High Density Fiberboard Roof Insulation Minimum ½" thick</b>	N/A	N/A

**Note: All layers of insulation and base sheet shall be simultaneously attached. See base sheet below for fasteners and density. Refer to Roofing Application Standard RAS 117 for insulation attachment requirements. Insulation shall have preliminary attachment, prior to the installation of the roofing membrane. At an application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft.**

**Base Sheet:** One ply HPR Tri-Base Premium fastened to the deck as described below:

**Fastening:** OMG Flat Bottom Plates and #15 Roofgrip fasteners spaced 12" o.c. within 4" wide lap and 18" o.c. in two equally spaced staggered rows in the field.

**Ply Sheet:** One or more plies of HPR Glasbase, HPR Premium Glasbase, HPR Tri-Base Premium, HPR Glasfelt or HPR Premium Glasfelt adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 25 lbs./sq.  
Or  
One or more plies of HPR Torch Base Sheet torch applied.

**Membrane:** One ply of StressPly E FR Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV FR Mineral or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 25 lbs./sq.  
Or  
One ply of StressPly IV UV Mineral, StressPly IV Mineral, StressPly IV Plus, StressPly IV Plus UV Mineral or StressPly IV Plus Mineral torch applied.



**Surfacing:**

Optional for FR or mineral surfaced Membranes. Required for non-FR or smooth surfaced membranes. Apply one of the below or any approved coatings:

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq. or in Black-Knight at 70 lb./sq. or Black-Knight Cold at 5 gal./sq.
2. Minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
3. Energizer K Plus FR applied at 3.5 gal./sq. with minimum two coats of Garla-Brite applied at min 0.5 gal./sq./coat
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
5. WeatherScreen applied at min. 4 gal./sq. with #11 roofing granules at 60 lb./sq.
6. WeatherScreen applied at applied at min. 4 gal./sq. with roofing gravel applied at 400 lb./sq.
7. Green-Lock Plus Membrane Adhesive applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design  
Pressure:**

-112.5 psf. (See General Limitation #7)





**Membrane Type:** SBS/SIS/SEBS  
**Deck Type 3I:** Concrete, Insulated  
**Deck Description:** Min. 2500 psi concrete or concrete plank  
**System Type D(4):** All layers of insulation and base sheet simultaneously attached.

**All General and System Limitations apply.**

One or more layers of the following insulations:

<b><u>Insulation Layer:</u></b>	<b><u>Insulation Fasteners (Table 3)</u></b>	<b><u>Fastener Density/ft<sup>2</sup></u></b>
<b>ACFoam-II, ENRGY 3, H-Shield, Multi-Max FA-3 Minimum 1.5" thick</b>	N/A	N/A
<b>DensDeck, DensDeck Prime Minimum ¼" thick</b>	N/A	N/A
<b>Structodek High Density Fiberboard Roof Insulation Minimum ½" thick</b>	N/A	N/A

**Note: All layers of insulation and base sheet shall be simultaneously attached. See base sheet below for fasteners and density. Refer to Roofing Application Standard RAS 117 for insulation attachment requirements. Insulation shall have preliminary attachment, prior to the installation of the roofing membrane. At an application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft.**

**Base Sheet:** One ply of HPR Glasbase, HPR Premium Glasbase, HPR Tri-Base Premium fastened to the deck as described below:

**Fastening:** Trufast 3" Metal Insulation Plates with Trufast #14 HD Fasteners, OMG 3 in. Round Metal Plates with OMG Heavy Duty fasteners, OMG Flat Bottom Plates with #14 Roofgrip fasteners or SFS Intec Dekfast Galvalume Steel Hex plates with Dekfast 14 fasteners spaced 6" o.c. within 4" wide lap and 6" o.c. within three equally spaced staggered rows in the field.

**Ply Sheet:** One or more plies of HPR Glasbase, HPR Premium Glasbase, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 25 lbs./sq.

**Membrane:** One ply of StressPly E FR Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV FR Mineral or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 25 lbs./sq.



**Surfacing:**

Optional for FR or mineral surfaced Membranes. Required for non-FR or smooth surfaced membranes. Apply one of the below or any approved coatings:

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq. or in Black-Knight at 70 lb./sq. or Black-Knight Cold at 5 gal./sq.
2. Minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
3. Energizer K Plus FR applied at 3.5 gal./sq. with minimum two coats of Garla-Brite applied at min 0.5 gal./sq./coat
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
5. WeatherScreen applied at min. 4 gal./sq. with #11 roofing granules at 60 lb./sq.
6. WeatherScreen applied at applied at min. 4 gal./sq. with roofing gravel applied at 400 lb./sq.
7. Green-Lock Plus Membrane Adhesive applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design  
Pressure:**

-135 psf. (See General Limitation #7)



**Membrane Type:** SBS/SIS/SEBS  
**Deck Type 3:** Concrete Decks, Non-insulated  
**Deck Description:** 2500 psi structural concrete or concrete plank  
**System Type F(1)** Roof cover adhered to spot mopped anchor sheet with approved asphalt.

**All General and System Limitations apply.**

**Deck Primer:** Deck is primed with ASTM D 41 primer.

**Anchor Sheet:** An ASTM D4897, Type II approved sheet spot mopped to deck with hot asphalt using 12" diameter circles 24" o.c.

**Base/Ply Sheet:** One or more plies of HPR Glasbase, HPR Premium Glasbase, HPR Glasfelt, HPR Premium Glasfelt, HPR Polyscrim Plus adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq.

**Membrane:** One ply of StressPly E FR Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV FR Mineral or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq.

**Surfacing:** Optional for FR or mineral surfaced Membranes. Required for non-FR or smooth surfaced membranes. Apply one of the below or any approved coatings:

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq. or in Black-Knight at 70 lb/sq. or Black-Knight Cold at 5 gal./sq.
2. Minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
3. Energizer K Plus FR applied at 3.5 gal./sq. with minimum two coats of Garla-Brite applied at min 0.5 gal./sq./coat
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
5. WeatherScreen applied at min. 4 gal./sq. with #11 roofing granules at 60 lb./sq.
6. WeatherScreen applied at applied at min. 4 gal./sq. with roofing gravel applied at 400 lb./sq.
7. Green-Lock Plus Membrane Adhesive applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design Pressure:** -45 psf. (See General Limitation #9.)



**Membrane Type:** SBS/SIS/SEBS  
**Deck Type 3I:** Concrete Decks  
**Deck Description:** 2500 psi structural concrete or concrete plank.  
**System Type F(2):** Base sheet adhered with approved asphalt or adhesive.

**All General and System Limitations apply.**

**Deck Primer:** Deck is primed with ASTM D 41 primer.

**System 1:**    **Base/Ply Sheet:** Two to four plies HPR Polyscrim Plus adhered in full mopping of Black-Knight or approved Type I or Type III Coal Tar Pitch at a rate of 30 lbs./sq.  
                 **Cap Sheet:** One ply of Millennium Mineral or Millennium FR Mineral adhered in full mopping of Black-Knight or approved Type I or Type III Coal Tar Pitch at a rate of 30 lbs./sq.

**System 2:**    **Base Sheet:** One ply HPR Glasbase, HPR Premium Glasbase adhered in full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus at a rate of 25 lbs./sq.  
                 Or  
                 One ply Millennium Base adhered in full mopping of Black-Knight or approved Type I or Type III Coal Tar Pitch at a rate of 30 lbs./sq.  
                 **Ply Sheet:** Two to three plies HPR Polyscrim Plus adhered in full mopping of Black-Knight or approved Type I or Type III Coal Tar Pitch at a rate of 30 lbs./sq.  
                 **Cap Sheet:** One ply of Millennium Mineral or Millennium FR Mineral adhered in full mopping of Black-Knight or approved Type I or Type III Coal Tar Pitch at a rate of 30 lbs./sq.

**System 3:**    **Base Sheet:** One ply HPR Glasbase, HPR Premium Glasbase adhered in full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus at a rate of 25 lbs./sq.  
                 Or  
                 One ply Millennium Base adhered in full mopping of Black-Knight or approved Type I or Type III Coal Tar Pitch at a rate of 30 lbs./sq. or adhered in Black-Knight Cold applied at 1.5-2 gal./sq.  
                 **Ply Sheet:** One ply Millennium Base adhered in full mopping of Black-Knight or approved Type I or Type III Coal Tar Pitch at a rate of 30 lbs./sq.  
                 or  
                 One ply Millennium Base adhered in Black-Knight Cold applied at 1.5-2 gal./sq. (to base layer of Millennium Base only)  
                 **Cap Sheet:** One ply of Millennium Mineral or Millennium FR Mineral adhered in full mopping of Black-Knight or approved Type I or Type III Coal Tar Pitch at a rate of 30 lbs./sq.  
                 or  
                 One ply of Millennium Mineral or Millennium FR Mineral adhered in Black-Knight Cold applied at 1.5-2 gal./sq. (to Millennium Base only)

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

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq. or in Black-Knight at 70 lb/sq. or Black-Knight Cold at 5 gal./sq.
2. Minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
3. Green-Lock Plus Membrane Adhesive applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design Pressure:** -202.5 psf. (roof cover in Black-Knight Cold) (See General Limitation #9)  
-270 psf. (roof cover in coal tar or hot asphalt) (See General Limitation #9)



**Membrane Type:** SBS/SIS/SEBS  
**Deck Type 3:** Concrete Decks, Non-insulated  
**Deck Description:** 2500 psi structural concrete or concrete plank.  
**System Type F(3)** Roof cover adhered with approved asphalt.

**All General and System Limitations apply.**

**Base/Ply Sheet:** One or more plies of HPR Glasbase, HPR Premium Glasbase, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt, HPR Polyscrim Plus adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq.

**Membrane:** One ply of StressPly E FR Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV FR Mineral or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq.

**Surfacing:** Optional for FR or mineral surfaced Membranes. Required for non-FR or smooth surfaced membranes. Apply one of the below or any approved coatings:

1. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lb./sq. or in Black-Knight at 70 lb/sq. or Black-Knight Cold at 5 gal./sq.
2. Minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
3. Energizer K Plus FR applied at 3.5 gal./sq. with minimum two coats of Garla-Brite applied at min 0.5 gal./sq./coat
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat
5. WeatherScreen applied at min. 4 gal./sq. with #11 roofing granules at 60 lb./sq.
6. WeatherScreen applied at applied at min. 4 gal./sq. with roofing gravel applied at 400 lb./sq.
7. Green-Lock Membrane Adhesive or Green-Lock Plus Membrane Adhesive applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design Pressure:** -375 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 sidelap and one down the center of the sheet allowing a continuous area of ventilation. Encircling of the strips is not acceptable. A 6" break shall be placed every 12' in each ribbon to allow cross ventilation. Asphalt application of either system shall be at a minimum rate of 12 lbs./sq.  
**Note: Spot attached systems shall be limited to a maximum design pressure of -45 psf.**
5. Fastener spacing for insulation attachment is based on a Minimum Characteristic Force (F') value of 275 lbf., as tested in compliance with Testing Application Standard TAS 105. If the fastener value, as field-tested, are below 275 lbf. insulation attachment shall not be acceptable.
6. Fastener spacing for mechanical attachment of anchor/base sheet or membrane attachment is based on a minimum fastener resistance value in conjunction with the maximum design value listed within a specific system. Should the fastener resistance be less than that required, as determined by the Building Official, a revised fastener spacing, prepared, signed and sealed by a Florida registered Professional Engineer, Registered 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 with Roofing Application Standard RAS 111 and applicable wind load requirements.
9. The maximum designed pressure limitation listed shall be applicable to all roof pressure zones (i.e. field, perimeters, and corners). Neither rational analysis, nor extrapolation shall be permitted for enhanced fastening at enhanced pressure zones (i.e. perimeters, extended corners and corners). **(When this limitation is specifically referred within this NOA, General Limitation #7 will not be applicable.)**
10. All products listed herein shall have a quality assurance audit in accordance with the Florida Building Code and Rule 61G20-3 of the Florida Administrative Code.

## END OF THIS ACCEPTANCE

