



**BUILDING CODE COMPLIANCE OFFICE (BCCO)  
PRODUCT CONTROL DIVISION**

**MIAMI-DADE COUNTY, FLORIDA  
METRO-DADE FLAGLER BUILDING  
140 WEST FLAGLER STREET, SUITE 1603  
MIAMI, FLORIDA 33130-1563  
(305) 375-2901 FAX (305) 375-2908**

**NOTICE OF ACCEPTANCE (NOA)**

**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 by the BCCO and accepted by the Building Code and Product Review Committee 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 BCCO (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. BCCO reserves the right to revoke this acceptance, if it is determined by BCCO that this product or material fails to meet the requirements of the applicable building code.

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

**DESCRIPTION: Garland Modified Bitumen Roof System Over Concrete Deck**

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

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

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

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

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

This NOA revises NOA No. 08-1001.18 and consists of pages 1 through 73.  
The submitted documentation was reviewed by Jorge L. Acebo.



**NOA No.: 09-1228.08  
Expiration Date: 12/02/11  
Approval Date: 08/11/10  
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## ROOFING ASSEMBLY NOTICE OF ACCEPTANCE

**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 Plus,<br>HPR Tri-Base Premium | 36" x 72'         | proprietary               | Double asphalt coated, polyester/fiberglass/polyester scrim reinforced base sheet.                    |
| FlexBase 80                                | 39" x 34'8"       | ASTM D 6163<br>Type III   | SBS modified, fiberglass reinforced base sheet.   |
| FlexBase 120                               | 39" x 34'8"       | ASTM D 6163<br>Type III   | SBS modified, fiberglass reinforced base sheet.   |
| FlexBase Plus 80                           | 39" x 34'8"       | ASTM D 6162<br>Type III   | SBS modified, fiberglass/polyester reinforced base sheet  |
| FlexBase Plus 120                          | 39" x 34'8"       | ASTM D 6162<br>Type III   | SBS modified, fiberglass/polyester reinforced base sheet  |
| FlexBase E 80                              | 39" x 34'8"       | ASTM D 6162<br>Type III   | SBS/SIS modified, fiberglass/polyester reinforced base sheet.   |
| FlexBase E 120                             | 39" x 34'8"       | ASTM D 6162<br>Type III   | SBS/SIS modified, fiberglass/polyester reinforced base sheet.   |
| StressBase 80                              | 39" x 52'         | ASTM D 6163<br>Type I     | SBS modified, fiberglass reinforced base sheet.   |
| StressBase 120                             | 39" x 52'         | ASTM D 6163<br>Type I     | SBS modified, fiberglass reinforced base sheet.   |
| HPR Glasbase                               | 36" x 108'        | ASTM D 4601,<br>Type II   | Type II, asphalt coated fiberglass base sheet.  |
| HPR Premium Glasbase                       | 36" x 72'         | ASTM D 4601,<br>Type II   | Type II, asphalt coated fiberglass base sheet.  |
| HPR Torch Base Sheet                       | 39" x 34'8"       | ASTM D 5147               | SBS modified, fiberglass reinforced, torch applied base sheet.  |
| HPR Glasfelt                               | 36" x 180'        | ASTM D 2178,<br>Type IV   | Type IV asphalt impregnated glass felt for use in conventional and modified bitumen built-up system.  |
| HPR Premium Glasfelt                       | 36" x 180'        | ASTM D 2178,<br>Type VI   | Type VI asphalt impregnated glass felt for use in conventional and modified bitumen built-up systems. |
| HPR Polyscrim Plus                         | 40" x 324'        | ASTM D 5726               | Polyester felt for use in conventional and modified bitumen built-up roof systems.                    |
| BK Glasfelt                                | 36" x 180'        | ASTM D 4990,<br>Type I    | Coal Tar impregnated glass felt for use in conventional and modified bitumen built-up system.         |



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| <u>Product</u>            | <u>Dimensions</u>       | <u>Test Specification</u>     | <u>Product Description</u>   |
|---------------------------|-------------------------|-------------------------------|--|
| BK Premium Glasfelt       | 36" x 180'              | ASTM D 4990, Type I           | Coal Tar impregnated glass felt for use in conventional and modified bitumen built-up systems.     |
| GarMesh                   | 6" x 150'<br>12" x 150' | ASTM D 1668                   | SBR coated woven fiberglass reinforcing membrane.  |
| Grip Polyester Firm       | 10 sq.                  | ASTM D 1682                   | Polyester reinforcing fabric for use in cold applied systems.                                      |
| Grip Polyester Soft       | 10 sq.                  | ASTM D 1682                   | Polyester reinforcing fabric, for use in cold applied systems.                                     |
| HPR Organic Base Sheet    | 36" x 72'               | ASTM D 2626                   | Asphalt coated organic base sheet.   |
| StressPly                 | 39" x 34'8"             | ASTM D 6163 Grade S Type III  | Smooth surfaced, SBS modified, fiberglass scrim reinforced roofing membrane.                       |
| StressPly Mineral         | 39" x 26'2"             | ASTM D 6163 Grade G Type III  | Mineral surfaced, SBS modified, fiberglass scrim reinforced membrane.                              |
| StressPly FR Mineral      | 39" x 26'2"             | ASTM D 6163 Grade G Type III  | Mineral surfaced, SBS modified, fire retardant, fiberglass scrim membrane.                         |
| StressPly Plus            | 39" x 34'8"             | ASTM D 6162, Grade S Type III | Smooth surfaced, SBS modified, fiberglass/polyester scrim membrane.                                |
| StressPly Plus FR Mineral | 39" x 26'2"             | ASTM D 6162, Grade G Type III | Mineral surfaced, SBS modified, fire retardant, UV resistant, fiberglass/polyester scrim membrane. |
| StressPly E               | 39" x 34'8"             | ASTM D 6162, Grade S Type III | Smooth surfaced, SBS/SIS modified, fiberglass/polyester reinforced membrane.                       |
| StressPly E Mineral       | 39" x 26'2"             | ASTM D 6162, Grade G          | Mineral surfaced, SBS/SIS modified, fiberglass/polyester reinforced membrane.                      |
| StressPly E FR Mineral    | 39" x 26'2"             | ASTM D 6162, Grade G Type III | Mineral surfaced, SBS/SIS modified, fire retardant, fiberglass/polyester reinforced membrane.      |
| VersiPly 60               | 39" x 34'8"             | ASTM D 6163, Grade S Type III | Smooth surfaced, SBS modified, fiberglass scrim reinforced roofing membrane.                       |
| VersiPly 80               | 39" x 34'8"             | ASTM D 6163, Grade S Type III | Smooth surfaced, SBS modified, fiberglass scrim reinforced roofing membrane.                       |
| VersiPly Mineral          | 39" x 26'2"             | ASTM D 6163, Grade G Type III | Mineral surfaced, SBS modified, fiberglass scrim reinforced roofing membrane.                      |
| StressPly IV              | 39" x 26'2"             | ASTM D 6163, Grade S Type III | Smooth surfaced, SBS modified, fiberglass reinforced, torch applied cap sheet.                     |



| <u>Product</u>   | <u>Dimensions</u> | <u>Test Specification</u>     | <u>Product Description</u>   |
|--|-------------------|-------------------------------|--|
| StressPly IV Mineral   | 39" x 26'2"       | ASTM D 6163, Grade G Type III | Mineral surfaced, SBS modified, fiberglass reinforced, torch applied cap sheet.                                    |
| StressPly IV UV Mineral  | 39" x 26'2"       | ASTM D 6163, Grade G          | Mineral surfaced, SBS modified, fiberglass reinforced, torch applied cap sheet.                                    |
| StressPly IV Plus  | 39" x 26'2"       | ASTM D 6162, Grade S Type III | Smooth surfaced, SBS modified, fiberglass/polyester reinforced, torch applied cap sheet.                           |
| StressPly IV Plus Mineral  | 39" x 26'2"       | ASTM D 6162, Grade G Type III | Mineral surfaced, SBS modified, fiberglass/polyester reinforced, torch applied cap sheet.                          |
| StressPly IV Plus UV Mineral   | 39" x 26'2"       | ASTM D 6162, Grade G Type III | Mineral surfaced, SBS modified, fiberglass/polyester reinforced, torch applied cap sheet.                          |
| StressPly EUV Mineral  | 39" x 26'2"       | ASTM D 6162, Grade G Type III | Mineral surfaced, SBS/SIS modified, fiberglass/polyester reinforced membrane.                                      |
| StressPly EUV FR Mineral   | 39" x 26'2"       | ASTM D 6162, Grade G Type III | Mineral surfaced, SBS/SIS modified, fiberglass/polyester reinforced membrane.                                      |
| StressPly EUV  | 39" x 34'8"       | ASTM D 6162, Grade S Type III | Smooth surfaced, SBS/SIS modified, fiberglass/polyester reinforced membrane.                                       |
| Millennium Base  | 39" x 51'5"       | ASTM D 5147                   | Smooth surfaced, SBS modified coal tar, fiberglass/polyester reinforced base sheet.                                |
| Millennium   | 39" x 34'5"       | ASTM D 5147                   | Smooth surfaced, SBS modified coal tar, fiberglass/polyester reinforced membrane.                                  |
| Millennium Mineral   | 39" x 26'         | ASTM D 5147                   | Mineral surfaced, SBS modified coal tar, fiberglass/polyester reinforced membrane.                                 |
| Millennium FR Mineral  | 39" x 26'         | ASTM D 5147                   | Mineral surfaced, SBS modified coal tar, fiberglass/polyester reinforced membrane.                                 |
| BiFlex Smooth  | 39" x 34'8"       | ASTM D 6163, Grade S Type I   | Smooth surfaced, SBS modified, fiberglass reinforced, cap sheet.   |
| BiFlex Mineral   | 39" x 34'8"       | ASTM D 6163, Grade G Type I   | Mineral surfaced, SBS modified, fiberglass reinforced, cap sheet.  |
| Flashing Bond, Ultra-Shield Flashing Cement, Ultra-Shield Plastic Roof Cement, Silver-Flash, Weatherking Flashing Adhesive | 5 gallon          | ASTM D 4586                   | Trowel grade, asphalt based roofing mastic for use in repair and patching against leaks in built-up asphalt roofs. |
| 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          |                               | Trowel grade, tar based roofing mastic for use in repair and patching.   |



| <u>Product</u>                                   | <u>Dimensions</u> | <u>Test Specification</u> | <u>Product Description</u>  |
|--|-------------------|---------------------------|---|
| Garla-Flex, Ultra-Shield Rubberized Cement       | 2, 5 gallon pail  | ASTM D 4586               | Elastomeric, asphaltic compound formulated from a special weather and ozone-resistant thermoplastic rubber, plasticizing oils and bitumen. Asbestos free. |
| Garla-Shield, Ultra-Shield Fibered Emulsion      | 5, 55 gallon      | ASTM D 1227, Type IV      | Asphalt emulsion roof coating.  |
| Weatherking or Weatherking Plus WC               | 5, 55 gallon      | ASTM D 3019, Type III     | Cold process roof coating and adhesive.   |
| Green-Lock Membrane Adhesive                     | 5 gallon          | Proprietary               | Cold process roof coating and adhesive.   |
| Ultra-Shield Built-Up Mastic FR, WeatherScreen   | 5, 55 gallon      | ASTM D 4479, Type I       | Asbestos-free, heavy-bodied, fiber-reinforced, fire-rated asphalt roof coating.   |
| Garla-Brite                                      | 5 gallon          | ASTM D 2824, Type I       | Aluminum roof coating.  |
| Energizer K Plus FR or Energizer FR              | 5, 55 gallon      | ASTM D 4479, Type I       | Multipurpose, rubberized, liquid waterproofing membrane.  |
| Garla-Prime, Garla-Prime WB, Ultra-Shield Primer | 5, 55 gallon      | ASTM D 41                 | Non-fibered, quick drying asphalt roof primer   |
| Silver-Shield                                    | 5, 55 gallon      | ASTM D 2824, Type III     | High solids, aluminized roof coating.   |
| Garlastic KM or 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.   |
| Black-Knight or Black-Knight LV Flood Coat       | 70 lb. keg        | Proprietary               | Polymer modified coal tar pitch.  |
| Black-Knight CTP                                 | 200 lb. keg       |                           |   |
| Black-Knight Cold                                | 5, 55 gallon      |                           | Polymer modified coal tar pitch.  |
| Insu-lock II                                     | 3 gallon          | Proprietary               | Polyurethane low rise insulation adhesive   |
| Insul-Lock HR                                    | 1.5 liters        | Proprietary               | Polyurethane two component high rise insulation adhesive  |
| Pyramic  | 5, 55 gallon      |                           | White acrylic reflective roof coating   |
| Solex  | 5, 55 gallon      | Proprietary               | White kynar Reflective roof coating   |
| White-Knight                                     | 5, 55 gallon      |                           | White urethane reflective roof coating.   |



**APPROVED INSULATIONS:**

**TABLE 2**

| <b>Product Name</b>                                      | <b>Product Description</b>                  | <b>Manufacturer<br/>(With Current NOA)</b> |
|--|---|--|
| ACFoam II, ACFoam III                                    | Polyisocyanurate foam insulation            | Atlas Energy Products                      |
| ACFoam Composite   | Composite polyisocyanurate insulation board | Atlas Energy Products                      |
| Hytherm AP   | Polyisocyanurate foam insulation            | Dow  |
| Hytherm Composite  | Composite polyisocyanurate insulation       | Dow  |
| ISO 95+, ISO 95+ (25psi), ISO 95+GL                      | Polyisocyanurate foam insulation            | Firestone                                  |
| ISO 95+ Composite  | Composite polyisocyanurate insulation board | Firestone                                  |
| High Density Wood Fiberboard                             | Wood fiber insulation board                 | generic                                    |
| Perlite Insulation                                       | Perlite insulation board                    | generic                                    |
| DensDeck, DensDeck Prime,                                | Water resistant gypsum board                | G-P Gypsum Corp.                           |
| H-Shield   | Polyisocyanurate foam insulation            | Hunter Panels, Inc.                        |
| Fesco Foam   | Composite Insulation board                  | Johns Manville                             |
| ENRGY-3, PSI 25  | Polyisocyanurate foam insulation            | Johns Manville                             |
| ENRGY-3 Plus   | Composite Insulation board                  | Johns Manville                             |
| Retrofit Board   | Perlite insulation board                    | Johns Manville                             |
| Thermarroof Composite                                    | Composite Insulation board                  | RMax                                       |
| UltraMax   | Polyisocyanurate foam insulation            | RMax                                       |
| Multi-Max FA-3   | Polyisocyanurate foam insulation            | RMax                                       |
| Thermarroof Composite-3                                  | Composite insulation board                  | RMax                                       |
| SECUROCK®  | Gypsum board                                | US Gypsum                                  |
| GAFTEMP Fiberboard, GAFTEMP High Density Wood Fiberboard | Wood fiber insulation board                 | GAF Material Corp.                         |
| GAFTEMP Permalite, GAFTEMP Recover Board                 | Perlite insulation board                    | GAF Material Corp.                         |
| Structodek   | High Density wood fiber insulation board    | Blue Ridge Fiberboard                      |
| Fiber Base HD1, HD6                                      | Wood fiber board                            | Temple Inland                              |
| FlintBoard ISO   | Polyisocyanurate foam insulation            | CertainTeed                                |



**APPROVED FASTENERS:**

**TABLE 3**

| <b>Fastener Number</b> | <b>Product Name</b>          | <b>Product Description</b>                             | <b>Dimensions</b>     | <b>Manufacturer (With Current NOA)</b> |
|------------------------|------------------------------|--|-----------------------|--|
| 1.                     | Dekfast Fasteners #14 & #15  | Insulation fastener for wood, steel and concrete decks |                       | Construction Fasteners Inc.            |
| 2.                     | Omega                        | Insulation fastener for wood and steel                 |                       | Construction Fasteners Inc.            |
| 3.                     | Dekfast Hex Plate            | Galvalume hex stress plate.                            | 2 7/8" x 3 1/4"       | Construction Fasteners Inc.            |
| 4.                     | Dekfast Lock Plate           | Polypropylene locking plate.                           | 3" x 3 1/4"           | Construction Fasteners Inc.            |
| 5.                     | #14 & #15 Roofgrip Fasteners | Insulation fastener for wood, steel and concrete.      |                       | ITW Buildex Corp.                      |
| 6.                     | Metal Plate                  | Galvalume stress plate.                                | 3" round<br>3" square | ITW Buildex Corp.                      |
| 7.                     | Gearlok Plastic Plate        | Polypropylene round plate                              | 3.2"                  | ITW Buildex Corp.                      |
| 8.                     | Olympic Fastener #14         | Insulation fastener                                    |                       | OMG, Inc.                              |
| 9.                     | Olympic CD-10                | Insulation fastener for concrete deck.                 |                       | OMG, Inc.                              |
| 10.                    | Olympic Fluted Nail          | Insulation fastener for concrete deck.                 |                       | OMG, Inc.                              |
| 11.                    | Olympic Fastener ASAP        | Pre-assembled Insulation fastener and plate            |                       | OMG, Inc.                              |
| 12.                    | Olympic Polypropylene        | Polypropylene plastic plate                            | 3.25" round           | OMG, Inc.                              |
| 13.                    | Olympic G-2                  | 3.5" round galvalume AZ55 steel plate                  | 3.5" round            | OMG, Inc.                              |
| 14.                    | Olympic Standard             | 3" round galvalume AZ50 steel plate                    | 3" round              | OMG, Inc.                              |
| 15.                    | Insul-Fixx Fastener #14      | Insulation fastener for concrete, steel and wood decks |                       | SFS Stadler, Inc.                      |
| 16.                    | System ES-1 #14              | Pre-assembled Insulation fastener and plate            |                       | SFS Stadler, Inc.                      |
| 17.                    | Insul-Fixx S Plate           | 3" round galvalume AZ50 steel plate                    | 3" round              | SFS Stadler, Inc.                      |
| 18.                    | Insul-Fixx P Plate           | 3" round polyethylene stress plate                     | 3" round              | SFS Stadler, Inc.                      |
| 19.                    | Tru-Fast HD                  | Insulation fastener for concrete, steel and wood decks |                       | The Tru-Fast Corp.                     |
| 20.                    | Tru-Fast Plates              | 3" round galvalume AZ55 steel plate                    | 3" round              | The Tru-Fast Corp.                     |
| 21.                    | Tru-Fast Plates              | Polyethylene plastic plate                             | 3" round              | The Tru-Fast Corp.                     |
| 22.                    | Olympic Fastener HD          | Insulation fastener for wood, steel and concrete.      |                       | OMG, Inc.                              |



**EVIDENCE SUBMITTED:**

| <u>Test Agency</u>                        | <u>Test Identifier</u> | <u>Description</u>   | <u>Date</u> |
|---|------------------------|----------------------|-------------|
| Dynatech Engineering Corporation          | #4530.05.95-1          | TAS 114              | 5/31/95     |
| Factory Mutual Research Corporation       | J.I. IVOA7.AM          | FM 4470              | 02/21/95    |
|   | J.I. 1B4A7.AM          | FM 4470              | 12/15/97    |
|   | J.I. 4B4A9.AM          | FM 4470              | 12/31/97    |
|   | J.I. 0Y5A6.AM          | FM 4470              | 09/08/97    |
|   | J.I. 3D3A5.AM          | FM 4470              | 09/15/98    |
|   | J.I. 3004392           | FM 4470              | 09/21/99    |
|   | J.I. 0D9A0.AM          | FM 4470              | 05/02/00    |
|   | J.I. 3004907           | FM 4470              | 05/16/00    |
|   | J.I. 3009117           | FM 4470              | 12/21/00    |
|   | 3010113                | FM 4470              | 11/18/02    |
|   | 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             |             |
| Trinity Engineering, Inc.                 | #4532.12.95-1          | TAS 114(H)           | 12/31/95    |
| Momentum Technologies, Inc.               | EX22B7A                | ASTM D 6162          | 04/11/07    |
|   | TX21G5A                | ASTM D5147           | 04/25/06    |
|   | DX14C7A                | ASTM D 6163          | 03/16/07    |
|   | EX11L5A                | ASTM D 5147          | 03/19/07    |
|   | RX18C8A-R              | ASTM D 6162/6163     | 03/28/08    |
| PRI Asphalt Technologies, Inc.            | GRD-03-02-01           | Physical Properties  | 01/07/98    |
|   | GRD-05-02-01           | ASTM D 5147          | 12/18/97    |
|   | GRD-06-02-01           |                      | 01/09/98    |
| Exterior Research & Design, LLC.          | #4533.05.98-1          | TAS 114(J)           | 05/15/98    |
| Trinity   ERD                             | 4544.11.06             | TAS 114              | 11/02/06    |
|   | G15080.10.09           | TAS 114 (D)          | 10/14/09    |
|   | C8500SC.11.07-R1       | TAS 117 / ASTM D6862 | 08/07/09    |
| Atlantic & Caribbean Roof Consulting, LLC | ACRC 08-029            | TAS 114-95           | 04/24/08    |
|   | ACRC 08-026            | TAS 114-95           | 04/22/08    |



**APPROVED ASSEMBLIES:**

- 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 deck with approved asphalt or adhesive.

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

| <u>Base Insulation Layer (Optional)</u>  | <u>Insulation Fasteners<br/>(Table 3)</u> | <u>Fastener<br/>Density/ft<sup>2</sup></u> |
|--|---|--|
| ACFoam II, Isotherm R, ENRGY 3, PSI-25, UltraGard, ISO-95+GL, H-Shield (Hot Asphalt only)<br>Minimum 1" thick  | N/A                                       | N/A  |
| ACFoam II, ENRGY 3, PSI-25, ISO-95+GL, H-Shield (Insta-Stick or Hot Asphalt only)<br>Minimum 1.5" thick  | N/A                                       | N/A  |
| <u>Top Insulation Layer</u>  | <u>Insulation Fasteners<br/>(Table 3)</u> | <u>Fastener<br/>Density/ft<sup>2</sup></u> |
| GAFTEMP Fiberboard, GAFTEMP High Density, High Density Fiberboard, Fiber Base HD1, HD6, Structodek(Hot Asphalt only)<br>Minimum 1/2" thick   | N/A                                       | N/A  |
| Structodeck, GAFTEMP Recover Board, Retrofit Board (Insta-Stick or Hot Asphalt only)<br>Minimum 1/2" thick   | N/A                                       | N/A  |
| GAFTEMP Permalite, Fesco Board<br>Minimum 3/4" thick   | N/A                                       | N/A  |
| Standard or Wide Flute Fiberglass Roof Insulation, Standard or Wide Flute Fiber Glass Roof Insulation, Fiber Glass Roof Insulation (Standard or Wide Flute) (Hot Asphalt only)<br>Minimum 15/16" thick | N/A                                       | N/A  |
| DensDeck, DensDeck Prime (Insta-Stick or Hot Asphalt only)<br>Minimum 1/4" 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, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs/100 ft<sup>2</sup> or Insta-Stik Roofing Adhesive applied in continuous 3/4" 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 Plus, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt, HPR Polyscrim Plus adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq. (Note: Minimum two plies of ASTM D 2178, type VI or three plies of type IV is required for VersiPly 60 applications.)

**Membrane:** One ply of StressPly E, StressPly E Mineral, StressPly E FR Mineral, StressPly, StressPly Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV, StressPly EUV Mineral, StressPly EUV FR Mineral, VersiPly 60, VersiPly 80, or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, 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 Flood Coat or Black-Knight LV Flood Coat 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
3. Energizer FR applied at 3 gal./sq. or 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal/sq/coat, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq. .
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 applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design**

**Pressure:**

- 237.5 psf (for minimum 1.5" thick ENRGY 3 followed by minimum ¼" DensDeck, ¼" DensDeck Prime or minimum ½" HD Fiberboard applied in hot asphalt with asphalt applied membranes.)  
(See General Limitation #9)
- 145 psf (for minimum 1.5" thick ENRGY 3 followed by minimum ¾" GAFTEMP Permalite applied in hot asphalt with asphalt applied membranes) (See General Limitation #9).
- 90 psf (for all Insta-Stick applications with asphalt applied membranes)  
(See General Limitation #9)
- 45 psf (for all other applications) (See General Limitation #9)



- 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 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:** GAFGLAS Stratavent or JM Ventsulation 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.

| <u>Base Insulation Layer (Optional)</u>  | <u>Insulation Fasteners (Table 3)</u> | <u>Fastener Density/ft<sup>2</sup></u> |
|--|---------------------------------------|--|
| ACFoam II, Isortherm R, ENRGY 3, PSI-25, UltraGard, ISO-95+GL, H-Shield<br>Minimum 1" thick                            | N/A                                   | N/A                                    |
| <u>Top Insulation Layer</u>  | <u>Insulation Fasteners (Table 3)</u> | <u>Fastener Density/ft<sup>2</sup></u> |
| GAFTEMP Fiberboard, GAFTEMP High Density, High Density Fiberboard, Fiber Base HD1, HD6, Structodek<br>Minimum ½" thick | N/A                                   | N/A                                    |
| DensDeck, DensDeck Prime<br>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, Garlastic KM, 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 Plus, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt, HPR Polyscrim Plus adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq. (Note: Minimum two plies of ASTM D 2178, type VI or three plies of type IV is required for VersiPly 60 applications.)

**Membrane:** One ply of StressPly E, StressPly E Mineral, StressPly E FR Mineral, StressPly, StressPly Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV, StressPly EUV Mineral, StressPly EUV FR Mineral, VersiPly 60, VersiPly 80, or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, 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 Flood Coat or Black-Knight LV Flood Coat 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
3. Energizer FR applied at 3 gal./sq. or 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal/sq/coat, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
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 applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design**

**Pressure:** -60 psf (See General Limitation #9)



- Deck Type 3I:** Concrete Decks, Insulated
- Deck Description:** 2500 psi structural concrete or concrete plank
- System Type A(3):** 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.

| <u>Base Insulation Layer</u>  | <u>Insulation Fasteners</u><br><u>(Table 3)</u> | <u>Fastener</u><br><u>Density/ft<sup>2</sup></u> |
|---|---|--|
| ACFoam II, Isortherm R, ENRGY 3, PSI-25, UltraGard, ISO-95+GL, H-Shield (Hot Asphalt only)<br>Minimum 1.5" thick              | N/A   | N/A  |
| ACFoam II, ENRGY 3, PSI-25, ISO-95+GL, H-Shield (Insta-Stick or Hot Asphalt only)<br>Minimum 1.5" thick                       | N/A   | N/A  |
| <u>Top Insulation Layer</u>   | <u>Insulation Fasteners</u><br><u>(Table 3)</u> | <u>Fastener</u><br><u>Density/ft<sup>2</sup></u> |
| GAFTEMP Fiberboard, GAFTEMP High Density, High Density Fiberboard, Fiber Base HD1, HD6 (Hot Asphalt only)<br>Minimum ½" thick | N/A   | N/A  |
| Structodeck FS (Insta-Stick or Hot Asphalt only)<br>Minimum ½" thick  | N/A   | N/A  |
| DensDeck, DensDeck Prime (Insta-Stick or Hot Asphalt only)<br>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, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs/100 ft<sup>2</sup> or Insta-Stik Roofing 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 Plus, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, 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, 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 StressPly IV Mineral, StressPly IV UV Mineral, StressPly IV Plus Mineral or StressPly IV Plus UV Mineral. Required for StressPly IV or StressPly IV Plus. Apply one of the below or any approved coating.

1. Minimum two coats of Garla-Brite applied at min. 0.5 gal/sq/coat, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
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 Flood Coat or Black-Knight LV Flood Coat at 70 lb/sq. or Black-Knight Cold at 5 gal/sq.
3. Green-Lock Membrane Adhesive applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design Pressure:**

- 237.5 psf (for minimum 1.5" thick ENRGY 3 followed by minimum 1/4" DensDeck, 1/4" DensDeck Prime or minimum 1/2" HD Fiberboard applied in hot asphalt with asphalt applied membranes.)  
(See General Limitation #9)
- 145 psf (for minimum 1.5" thick ENRGY 3 followed by minimum 3/4" GAFTEMP Permalite applied in hot asphalt with asphalt applied membranes) (See General Limitation #9)
- 90 psf (for all Insta-Stick applications with asphalt applied membranes)  
(See General Limitation #9)
- 45 psf (for all other applications) (See General Limitation #9)



**Deck Type 3I:** Concrete Decks, Insulated  
**Deck Description:** 2500 psi structural concrete or concrete plank  
**System Type A(4):** 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.

| <u>Base Insulation Layer (Optional)</u>  | <u>Insulation Fasteners</u><br><u>(Table 3)</u> | <u>Fastener</u><br><u>Density/ft<sup>2</sup></u> |
|--|---|--|
| ACFoam II, ENRGY 3, PSI-25, UltraGard, ISO-95+GL, H-Shield<br>Minimum 2" thick   | N/A   | N/A  |
| <u>Top Insulation Layer(Optional)</u>  | <u>Insulation Fasteners</u><br><u>(Table 3)</u> | <u>Fastener</u><br><u>Density/ft<sup>2</sup></u> |
| GAFTEMP Fiberboard, GAFTEMP High Density, High Density Fiberboard, Fiber Base HD1, HD6, Structodek<br>Minimum 1/2" 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 with Insta-Stik Roofing Adhesive applied in continuous 3/4 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 Plus or HPR Tri-Base Premium adhered with Weatherking or Weatherking Plus WC applied at 2 1/2 gal./sq.

**Membrane:** One ply of StressPly E, StressPly E Mineral, StressPly E FR Mineral, StressPly, StressPly Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV, StressPly EUV Mineral, StressPly EUV FR Mineral, VersiPly 60, VersiPly 80, or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, 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 2 1/2 gal./sq. (Note: VersiPly 60 not compatible with Weatherking or Weatherking Plus WC)



**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 Flood Coat or Black-Knight LV Flood Coat 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, minimum two coats of Pyramic applied at min. 1.0 gal./sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal./sq and a minimum one coat of Solex applied at a min. 0.50 gal./sq.
3. Energizer FR applied at 3 gal./sq. or 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, minimum two coats of Pyramic applied at min. 1.0 gal./sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal./sq and a minimum one coat of Solex applied at a min. 0.50 gal./sq.
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal./sq/coat, minimum two coats of Pyramic applied at min. 1.0 gal./sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal./sq and a minimum one coat of Solex applied at a min. 0.50 gal./sq.
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 applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

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

-142.5 psf (for systems including wood fiberboard) (See General Limitation #9)

-217.5 psf (with polyisocyanurate with no wood fiberboard)  
(See General Limitation #9)



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

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

**System Type A(5):** 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></b><br><b><u>(Table 2)</u></b> | <b><u>Fastener</u></b><br><b><u>Density/ft<sup>2</sup></u></b> |
|---|---|--|
| <b>Any approved, non-foil faced polyisocyanurate insulation</b><br>Minimum 1.5" thick | N/A   | N/A  |
| <b><u>Top Insulation Layer</u></b>  | <b><u>Insulation Fasteners</u></b><br><b><u>(Table 2)</u></b> | <b><u>Fastener</u></b><br><b><u>Density/ft<sup>2</sup></u></b> |
| <b>DensDeck Prime</b><br>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 II 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 Plus, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt, HPR Polyscrim Plus adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq. (Note: Minimum two plies of ASTM D 2178, type VI or three plies of type IV is required for VersiPly 60 applications.)

Or

One or more plies of HPR Glasbase, HPR Premium Glasbase, HPR Tri-Base Plus, 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, StressPly E Mineral, StressPly E FR Mineral, StressPly, StressPly Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV, StressPly EUV Mineral, StressPly EUV FR Mineral, VersiPly 60, VersiPly 80, or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq. or with Weatherking or Weather Plus WC applied at 2½ gal./sq. (Note: VersiPly 60 not compatible with Weatherking or Weatherking Plus WC)

Or

One ply of StressPly IV, 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 Flood Coat or Black-Knight LV Flood Coat 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
3. Energizer FR applied at 3 gal./sq. or 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal/sq/coat, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
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 applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design Pressure:**

-150.0 psf (See General Limitation #9)



**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.

**Base Insulation Layer**

**Insulation Fasteners**  
**(Table 2)**

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

**Any approved, non-foil faced polyisocyanurate insulation**  
Minimum 1.0" thick

N/A

N/A

**Top Insulation Layer**

**Insulation Fasteners**  
**(Table 2)**

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

**High Density Wood Fiber**  
Minimum ½" thick

N/A

N/A

**Perlite**  
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, Garlastic KM, 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 Plus, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt, HPR Polyscric Plus adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq. (Note: Minimum two plies of ASTM D 2178, type VI or three plies of type IV is required for VersiPly 60 applications.)

Or

One or more plies of HPR Glasbase, HPR Premium Glasbase, HPR Tri-Base Plus, 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



**Membrane:**

One ply of StressPly E, StressPly E Mineral, StressPly E FR Mineral, StressPly, StressPly Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV, StressPly EUV Mineral, StressPly EUV FR Mineral, VersiPly 60, VersiPly 80, or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, 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. (Note: VersiPly 60 not compatible with Weatherking or Weatherking Plus WC)

Or

One ply of StressPly IV, 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 Flood Coat or Black-Knight LV Flood Coat 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)
2. Minimum two coats of Garla-Brite applied at min. 0.5 gal/sq/coat, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
3. Energizer FR applied at 3 gal./sq. or 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal/sq/coat, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
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 applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design Pressure:**

-157.5 psf {hot asphalt or torch applied roof cover}(See General Limitation #9)  
-142.5 psf {Weatherking or Weatherking Plus WC applied roof cover}  
(See General Limitation #9)



**Deck Type 3I:** Concrete Decks, Insulated  
**Deck Description:** Min. 2500 psi structural concrete or concrete plank  
**System Type A(7):** 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:

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

**Note: All insulation shall be adhered to the deck in 1/2" to 3/4" wide beads 12" o.c. of Weather-Tite Pourable Foam Insulation Adhesive or Insul-Lock II. 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 Plus, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt, HPR Polyscric Plus adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq. (Note: Minimum two plies of ASTM D 2178, type VI or three plies of type IV is required for VersiPly 60 applications.)

Or

One or more plies of HPR Glasbase, HPR Premium Glasbase, HPR Tri-Base Plus, HPR Tri-Base Premium adhered with Weatherking or Weatherking Plus WC applied at 2 1/2 gal./sq.

Or

One ply of HPR Torch Base Sheet, torch applied to coverboard

**Membrane:** One ply of StressPly E, StressPly E Mineral, StressPly E FR Mineral, StressPly, StressPly Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV, StressPly EUV Mineral, StressPly EUV FR Mineral, VersiPly 60, VersiPly 80, or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq. or with Weatherking or Weather Plus WC applied at 2 1/2 gal./sq. (Note: VersiPly 60 not compatible with Weatherking or Weatherking Plus WC)

Or

One ply of StressPly IV, StressPly IV UV Mineral, StressPly IV Mineral, StressPly IV Plus, StressPly IV Plus UV Mineral, 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 Flood Coat or Black-Knight LV Flood Coat 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
3. Energizer FR applied at 3 gal./sq. or 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of GarlaBrite applied at min. 0.5 gal/sq/coat, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
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 applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design  
Pressure:**

-75.0 psf (See General Limitation #9)



**Deck Type 3I:** Concrete Decks, Insulated  
**Deck Description:** Min. 2500 psi structural concrete or concrete plank  
**System Type A(8):** 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:

| <u>Base Insulation Layer</u>                       | <u>Insulation Fasteners</u><br><u>(Table 3)</u> | <u>Fastener</u><br><u>Density/ft<sup>2</sup></u> |
|--|---|--|
| ACFoam II, ENRGY 3, H-Shield<br>Minimum 1.5" thick | N/A   | N/A  |
| <u>Top Insulation Layer</u>                        | <u>Insulation Fasteners</u><br><u>(Table 3)</u> | <u>Fastener</u><br><u>Density/ft<sup>2</sup></u> |
| High Density Wood Fiber<br>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 Weather-Tite Pourable Foam Insulation Adhesive or Insul-Lock II. 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 Plus, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt, HPR Polyscrim Plus adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq. (Note: Minimum two plies of ASTM D 2178, type VI or three plies of type IV is required for VersiPly 60 applications.)  
 Or  
 One or more plies of HPR Glasbase, HPR Premium Glasbase, HPR Tri-Base Plus, 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, StressPly E Mineral, StressPly E FR Mineral, StressPly, StressPly Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV, StressPly EUV Mineral, StressPly EUV FR Mineral, VersiPly 60, VersiPly 80, or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq. or with Weatherking or Weather Plus WC applied at 2½ gal./sq. (Note: VersiPly 60 is not compatible with Weatherking or Weatherking Plus WC)  
 Or  
 One ply of StressPly IV, 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 Flood Coat or Black-Knight LV Flood Coat 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
3. Energizer FR applied at 3 gal./sq. or 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal/sq/coat, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
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 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)



**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:

| <u>Base Insulation Layer</u>                           | <u>Insulation Fasteners<br/>(Table 3)</u> | <u>Fastener<br/>Density/ft<sup>2</sup></u> |
|--|---|--|
| <b>Approved EPS (Type IX)</b><br>Minimum 1.5" thick    | N/A                                       | N/A  |
| <u>Top Insulation Layer</u>                            | <u>Insulation Fasteners<br/>(Table 3)</u> | <u>Fastener<br/>Density/ft<sup>2</sup></u> |
| <b>High Density Wood Fiber</b><br>Minimum 0.5" thick   | N/A                                       | N/A  |
| <b>DensDeck, DensDeck Prime</b><br>Minimum 0.25" thick | N/A                                       | N/A  |

**Note: All insulation shall be adhered to the deck in 1/2" to 3/4" wide beads 12" o.c. of Weather-Tite Pourable Foam Insulation Adhesive or Insul-Lock II. 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 Plus, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt, HPR Polyscrim Plus adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq. (Note: Minimum two plies of ASTM D 2178, type VI or three plies of type IV is required for VersiPly 60 applications.)

Or

One or more plies of HPR Glasbase, HPR Premium Glasbase, HPR Tri-Base Plus, HPR Tri-Base Premium adhered with Weatherking or Weatherking Plus WC applied at 2 1/2 gal./sq.

Or

One ply of HPR Torch Base Sheet, torch applied to coverboard



**Membrane:**

One ply of StressPly E, StressPly E Mineral, StressPly E FR Mineral, StressPly, StressPly Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV, StressPly EUV Mineral, StressPly EUV FR Mineral, VersiPly 60, VersiPly 80, or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq. or with Weatherking or Weather Plus WC applied at 2½ gal./sq. (Note: VersiPly 60 not compatible with Weatherking or Weatherking Plus WC)

Or

One ply of StressPly IV, 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 Flood Coat or Black-Knight LV Flood Coat 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
3. Energizer FR applied at 3 gal./sq. or 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal/sq/coat, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
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 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)
- 150.0 psf (with HDWF) (See General Limitation #9)
- 157.5 psf (with DensDeck or DensDeck Prime) (See General Limitation #9)



**Deck Type 3I:** Concrete Decks, Insulated  
**Deck Description:** Min. 2500 psi structural concrete or concrete plank  
**System Type A(10):** 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:

| <u>Base Insulation Layer</u>                                    | <u>Insulation Fasteners<br/>(Table 3)</u> | <u>Fastener<br/>Density/ft<sup>2</sup></u> |
|---|---|--|
| <b>Foamular 250, Dow Styrofoam or XPS</b><br>Minimum 1.0" thick | N/A                                       | N/A  |
| <br>  |   |  |
| <u>Top Insulation Layer</u>                                     | <u>Insulation Fasteners<br/>(Table 3)</u> | <u>Fastener<br/>Density/ft<sup>2</sup></u> |
| <b>High Density Wood Fiber</b><br>Minimum 0.5" thick            | N/A                                       | N/A  |
| <br>  |   |  |
| <b>DensDeck, DensDeck Prime</b><br>Minimum 0.25" thick          | N/A                                       | N/A  |

**Note: All insulation shall be adhered to the deck in 1/2" to 3/4" wide beads 12" o.c. of Weather-Tite Pourable Foam Insulation Adhesive or Insul-Lock II. 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 Plus, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt, HPR Polyscrim Plus adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq. (Note: Minimum two plies of ASTM D 2178, type VI or three plies of type IV is required for VersiPly 60 applications.)

Or

One or more plies of HPR Glasbase, HPR Premium Glasbase, HPR Tri-Base Plus, HPR Tri-Base Premium adhered with Weatherking or Weatherking Plus WC applied at 2 1/2 gal./sq.

Or

One ply of HPR Torch Base Sheet, torch applied to coverboard



**Membrane:**

One ply of StressPly E, StressPly E Mineral, StressPly E FR Mineral, StressPly, StressPly Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV, StressPly EUV Mineral, StressPly EUV FR Mineral, VersiPly 60, VersiPly 80, or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq. or with Weatherking or Weather Plus WC applied at 2½ gal./sq. (Note: VersiPly 60 not compatible with Weatherking or Weatherking Plus WC)

Or

One ply of StressPly IV, 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 Flood Coat or Black-Knight LV Flood Coat 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
3. Energizer FR applied at 3 gal./sq. or 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of GarlaBrite applied at min. 0.5 gal/sq/coat, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
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 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)



**Deck Type 3I:** Concrete Decks, Insulated  
**Deck Description:** Min. 2500 psi structural concrete or concrete plank  
**System Type A(11):** 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:

| <u>Insulation Bottom Layer</u>                                  | <u>Insulation Fasteners<br/>(Table 3)</u> | <u>Fastener<br/>Density/ft<sup>2</sup></u> |
|---|---|--|
| ACFoam II, Multi-Max-3, ENRGY 3, H-Shield<br>Minimum 1.5" thick | N/A                                       | N/A  |
| <u>Insulation Top Layer</u>                                     | <u>Insulation Fasteners<br/>(Table 3)</u> | <u>Fastener<br/>Density/ft<sup>2</sup></u> |
| DensDeck, DensDeck Prime<br>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 Weather-Tite Pourable Foam Insulation Adhesive or Insu-Lock II. 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:** (Optional) Any UL or FM approved asphaltic vapor retarder may be installed over the deck or the base layer of insulation

**Base/Ply:** One or more plies of HPR Glasbase, HPR Premium Glasbase, Tri-Base Plus, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt, HPR Polyscrim Plus adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq. (Note: Minimum two plies of ASTM D 2178, type VI or three plies of type IV is required for VersiPly 60 applications.)

Or

One or more plies of HPR Glasbase, HPR Premium Glasbase, HPR Tri-Base Plus, 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, StressPly E Mineral, StressPly E FR Mineral, StressPly, StressPly Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV, StressPly EUV Mineral, StressPly EUV FR Mineral, VersiPly 60, VersiPly 80 or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq. or with Weatherking or Weather Plus WC applied at 2½ gal./sq. (Note: VersiPly 60 not compatible with Weatherking or Weatherking Plus WC)

Or

One ply of StressPly IV, 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 Flood Coat or Black-Knight LV Flood Coat 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
3. Energizer FR applied at 3 gal./sq. or 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal/sq/coat, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
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 applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design Pressure:**

-135.0 psf (See General Limitation #9)



**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 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.

**Base Insulation Layer**

**(Optional) ACFoam II**

Minimum 1.5" thick

**Insulation Fasteners**  
**(Table 2)**

N/A

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

N/A

**Top Insulation Layer**

**Structodek**

Minimum 0.5" thick

**Insulation Fasteners**  
**(Table 2)**

N/A

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

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 vapor barrier or deck in full mopping of approved asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs/100 ft<sup>2</sup>, or in 1/2" - 3/4" wide beads of Insul-Lock II 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 BK Glasfelt, BK Premium Glasfelt or 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, 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 Organic Base, HPR Glasbase, HPR Premium Glasbase adhered in full mopping of approved asphalt, HPR All Temp, Garlastic KM, 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 BK Glasfelt, BK Premium Glasfelt or 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, 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 Organic Base, HPR Glasbase, HPR Premium Glasbase adhered in full mopping of approved asphalt, HPR All Temp, Garlastic KM, 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, 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, Millennium Mineral or Millennium FR Mineral adhered in Black-Knight Cold applied at 1.5-2 gal/sq. (to Millennium Base only)
- System 4: 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. or adhered in Black-Knight Cold applied at 1.5-2 gal/sq.
- Ply Sheet:** One ply Millennium, 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.
- Cap Sheet:** One ply of Millennium, 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 adhered in Black-Knight Cold applied at 1.5-2 gal/sq.
- System 5: Base/Ply Sheet:** Three to five plies BK Glasfelt, BK Premium Glasfelt or 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.
- System 6: Base/Ply Sheet:** One ply HPR Organic Base, HPR Glasbase, HPR Premium Glasbase adhered in full mopping of approved asphalt, HPR All Temp, Garlastic KM, 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.
- Cap Sheet:** Two to four plies BK Glasfelt, BK Premium Glasfelt or 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.



**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 Flood Coat or Black-Knight LV Flood Coat at 70 lb./sq. or Black-Knight Cold 5 gal/sq.
2. Minimum two coats of GarlaBrite applied at min. 0.5 gal/sq/coat , minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
3. Green-Lock Membrane Adhesive applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design  
Pressure:**

- 82.5 psf (no base insulation, coverboard in Insul-Lock II) (See General Limitation #9)
- 127.5 psf (base insulation in Insul-Lock II, coverboard in asphalt)  
(See General Limitation #9)
- 202.5 psf (roof cover in Black-Knight Cold) (See General Limitation #9)
- 252.0 psf (roof cover in coal tar or hot asphalt) (See General Limitation #9)



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

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

**System Type A(13):** 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.

| <u>Base Insulation Layer</u>                                 | <u>Insulation Fasteners<br/>(Table 2)</u> | <u>Fastener<br/>Density/ft<sup>2</sup></u> |
|--|---|--|
| <b>ENERGY 3, Multi-Max-3, HyTherm AP</b><br>Minimum 2" thick | N/A                                       | N/A  |
| <u>Top Insulation Layer</u>                                  | <u>Insulation Fasteners<br/>(Table 2)</u> | <u>Fastener<br/>Density/ft<sup>2</sup></u> |
| <b>Structodek</b><br>Minimum 0.5" thick                      | N/A                                       | N/A  |
| <b>DensDeck Prime</b><br>Minimum 0.5" thick                  | N/A                                       | N/A  |
| <b>SECUROCK</b><br>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 Weather-Tite 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 Membrane adhesive at a rate of 1.5 gal./sq.

**Membrane:** One ply of Millennium, Millennium Mineral or Millennium FR Mineral adhered with Green-Lock 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 Flood Coat or Black-Knight LV Flood Coat 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
3. Green-Lock 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 High Density Fiberboard)  
(See General Limitation #9)

-262.5 psf (Top Insulation Layer with DensDeck Prime or SECUROCK)  
(See General Limitation #9)



**Deck Type 3I:** Concrete, Insulated  
**Deck Description:** Min. 2,500 psi concrete or concrete plank  
**System Type A(14):** All layers of insulation set in approved adhesive.

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

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

**Note: All layers of insulation adhered to the deck in Insta-Stik Roofing Adhesive applied in continuous 3/4 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.**

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

**Membrane:** One ply of BiFlex Smooth, BiFlex Mineral, StressPly E, StressPly E Mineral, StressPly E FR Mineral, StressPly, StressPly Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV, StressPly EUV Mineral, StressPly EUV FR Mineral, VersiPly 60, VersiPly 80, or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 25 lbs./sq. or Green-Lock 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 Flood Coat or Black-Knight LV Flood Coat 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
3. 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 Flood Coat or Black-Knight LV Flood Coat at 70 lb/sq. or Black-Knight Cold at 5 gal/sq.
4. 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 Flood Coat or Black-Knight LV Flood Coat at 70 lb/sq. or Black-Knight Cold at 5 gal/sq.
5. Minimum two coats of Garla-Brite applied at min. 0.5 gal/sq/coat, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
6. Energizer FR applied at 3 gal./sq. or 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
7. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of GarlaBrite applied at min. 0.5 gal/sq/coat, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
8. WeatherScreen applied at applied at min. 4 gal./sq. with roofing gravel applied at 400 lb./sq.
9. Green-Lock 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 #7)



**Deck Type 3I:** Concrete, Insulated  
**Deck Description:** Min. 2,500 psi concrete or concrete plank  
**System Type A(15):** All layers of insulation set in approved adhesive.

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

| <u>Base Insulation Layer</u>   | <u>Insulation Fasteners</u><br><u>(Table 3)</u> | <u>Fastener</u><br><u>Density/ft<sup>2</sup></u> |
|--|---|--|
| ACFoam II, Hy-Therm AP, Hy-Therm APComposite, ISO 95+GL, H-Shield<br>Minimum 1.5" thick  | N/A   | N/A  |
| <u>Top Insulation Layer</u>  | <u>Insulation Fasteners</u><br><u>(Table 2)</u> | <u>Fastener</u><br><u>Density/ft<sup>2</sup></u> |
| GAFTEMP High Density, High Density Fiberboard, Fiber Base HD1, HD6, Structodek,<br>GAFTEMP Recover Board, GAFTEMP Fiberboard<br>Minimum 1/2" 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, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs/100 ft<sup>2</sup>, or in 1/2" - 3/4" wide beads of Insul-Lock II 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.

**Ply Sheet:** One ply of StressBase 80, StressBase 120, FlexBase 80, FlexBase 120, FlexBase Plus 80, FlexBase Plus 120, FlexBase E 80, FlexBase E 120 base sheet adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 25 lbs./sq. or Green-Lock Membrane Adhesive applied at 1.5 gal./sq. or adhered with Weatherking or Weatherking Plus WC applied at 2 1/2 gal./sq.

**Membrane:** One ply of BiFlex Smooth, BiFlex Mineral, StressPly E, StressPly E Mineral, StressPly E FR Mineral, StressPly, StressPly Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV, StressPly EUV Mineral, StressPly EUV FR Mineral, VersiPly 60, VersiPly 80, or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 25 lbs./sq. or Green-Lock Membrane Adhesive applied at 1.5 gal./sq. or adhered with Weatherking or Weatherking Plus WC applied at 2 1/2 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 Flood Coat or Black-Knight LV Flood Coat 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
3. 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 Flood Coat or Black-Knight LV Flood Coat at 70 lb./sq. or Black-Knight Cold at 5 gal/sq.
4. Minimum two coats of Garla-Brite applied at min. 0.5 gal/sq/coat, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
5. Energizer FR applied at 3 gal./sq. or 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
6. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of GarlaBrite applied at min. 0.5 gal/sq/coat, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
7. WeatherScreen applied at applied at min. 4 gal./sq. with roofing gravel applied at 400 lb./sq.
8. Green-Lock 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)



**Deck Type 3I:** Concrete, Insulated  
**Deck Description:** Min. 2,500 psi concrete or concrete plank  
**System Type A(16):** All layers of insulation adhered with approved adhesive, membrane fully adhered

**All General and System Limitations apply.**

**Vapor Barrier:** (Optional) One ply of HPR Torch Base Sheet, torch applied over the primed concrete deck. (See Maximum Design Pressure)

One or more layers of the following insulations:

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

**Note:** All layers of insulation adhered in Insul-Lock HR or Weathertite One Step Foamable Insulation Adhesive applied in min 1/4"- 1/2" wide ribbons spaced 12" o.c. to the vapor barrier. 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.

**Primer:** Prime SecuRock insulation board with ASTM D-41 asphalt primer at 1 gallon per square

**Ply Sheet:** One or more plies of HPR Torch Base Sheet, torch applied onto insulation layer.

**Membrane:** One ply of StressPly IV, 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 Flood Coat or Black-Knight LV Flood Coat 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
3. Energizer FR applied at 3 gal./sq. or 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal/sq/coat, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq..
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 applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design Pressure:**

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



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

**Deck Description:** Min. 2,500 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:

| <u>Base Insulation Layer</u>          | <u>Insulation Fasteners<br/>(Table 3)</u> | <u>Fastener<br/>Density/ft<sup>2</sup></u> |
|---------------------------------------|---|--|
| <b>H-Shield</b><br>Minimum 1.5" thick | N/A                                       | N/A  |
| <u>Top Insulation Layer</u>           | <u>Insulation Fasteners<br/>(Table 3)</u> | <u>Fastener<br/>Density/ft<sup>2</sup></u> |
| <b>SECUROCK</b><br>Minimum 1/4" 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 or more plies of StressBase 80 adhered with Green-Lock 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 Mineral, adhered with Green-Lock Membrane adhesive at a rate of 1.5 – 2.5 gal./sq. onto base sheet.

**Maximum Desing Pressure: -375 psf (See General Limitation #9)**

**System 2: Base Sheet:** One ply of HPR Torch Base Sheet, torch applied onto insulation layer.

**Cap Sheet:** One ply of StressPly IV Mineral torch applied onto base sheet.

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

**System 3: Base Sheet:** One ply Millennium Base, adhered in Green-Lock Membrane adhesive at a rate of 1.5 – 2.5 gal./sq. onto insulation layer.

**Cap Sheet:** One ply of Millennium, Millennium Mineral or Millennium FR Mineral, adhered in Green-Lock 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)**



**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 Flood Coat or Black-Knight LV Flood Coat 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
3. Energizer FR applied at 3 gal./sq. or 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal/sq/coat, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq..
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 applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design Pressure:**

See Systems Above.



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

**Deck Description:** Min. 2,500 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>Base Insulation Layer</u>          | <u>Insulation Fasteners</u><br><u>(Table 3)</u> | <u>Fastener</u><br><u>Density/ft<sup>2</sup></u> |
|---------------------------------------|---|--|
| <b>H-Shield</b><br>Minimum 1.5" thick | N/A   | N/A  |
| <u>Top Insulation Layer</u>           | <u>Insulation Fasteners</u><br><u>(Table 3)</u> | <u>Fastener</u><br><u>Density/ft<sup>2</sup></u> |
| <b>SECUROCK</b><br>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 6" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.**

**System 1: Base Sheet:** One or more plies of StressBase 80 adhered with Green-Lock 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 Mineral adhered with Green-Lock Membrane adhesive at a rate of 1.5 – 2.5 gal./sq. onto base sheet.

**Maximum Desing Pressure: -290 psf (See General Limitation #9)**

**System 2: Base Sheet:** One ply of HPR Torch Base Sheet, torch applied onto insulation layer.

**Cap Sheet:** One ply of StressPly IV Mineral torch applied onto base sheet.

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

**System 3: Base Sheet:** One ply Millennium Base, adhered in Green-Lock Membrane adhesive at a rate of 1.5 – 2.5 gal./sq. onto insulation layer.

**Cap Sheet:** One ply of Millennium, Millennium Mineral or Millennium FR Mineral, adhered in Green-Lock 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)**



**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 Flood Coat or Black-Knight LV Flood Coat 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
3. Energizer FR applied at 3 gal./sq. or 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal/sq/coat, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq..
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 applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design Pressure:**

See Systems Above.



**Deck Type 3I:** Concrete, Insulated  
**Deck Description:** Min. 2,500 psi concrete or concrete plank  
**System Type A(19):** 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>Base Insulation Layer</u>          | <u>Insulation Fasteners</u><br><u>(Table 3)</u> | <u>Fastener</u><br><u>Density/ft<sup>2</sup></u> |
|---------------------------------------|---|--|
| <b>H-Shield</b><br>Minimum 1.5" thick | N/A   | N/A  |
| <u>Top Insulation Layer</u>           | <u>Insulation Fasteners</u><br><u>(Table 3)</u> | <u>Fastener</u><br><u>Density/ft<sup>2</sup></u> |
| <b>SECUROCK</b><br>Minimum 1/4" 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 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.

**Ply Sheet:** (Optional) One or more plies of BK Glasfelt or BK Premium Glasfelt 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 base sheet.

**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 Flood Coat or Black-Knight LV Flood Coat 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
3. Energizer FR applied at 3 gal./sq. or 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal/sq/coat, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq..
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 applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design Pressure:**

-472 psf (See General Limitation #9)



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

**Deck Description:** Min. 2,500 psi concrete or concrete plank

**System Type A(20):** 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</u><br><u>(Table 3)</u> | <u>Fastener</u><br><u>Density/ft<sup>2</sup></u> |
|-------------------------------------|---|--|
| <b>SECUROCK</b><br>Minimum ¼” thick | N/A   | N/A  |

**Note: All layers of insulation adhered in Insul-Lock HR applied in ¾"-1" wide beads spaced 3" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.**

**System 1: Base Sheet:** One or more plies of StressBase 80 adhered with Green-Lock 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 adhered with Green-Lock 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)**

**System 2: Base Sheet:** One ply of HPR Torch Base Sheet, torch applied onto insulation layer..

**Cap Sheet:** One ply of StressPly IV Mineral torch applied onto base sheet.

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

**System 3: Base Sheet:** One ply Millennium Base, adhered in Green-Lock Membrane adhesive at a rate of 1.5 – 2.5 gal./sq. onto insulation layer.

**Cap Sheet:** One ply of Millennium, Millennium Mineral or Millennium FR Mineral, adhered in Green-Lock 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)**



**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 Flood Coat or Black-Knight LV Flood Coat 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
3. Energizer FR applied at 3 gal./sq. or 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal/sq/coat, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq..
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 applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design Pressure:**

See Systems Above.



**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:

| <u>Base Insulation Layer</u>              | <u>Insulation Fasteners</u><br><u>(Table 3)</u> | <u>Fastener</u><br><u>Density/ft<sup>2</sup></u> |
|---|---|--|
| ACFoam II, H-Shield<br>Minimum 1.5" thick | 8, 9 & 10                                       | 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).**

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

| <u>Top Insulation Layer (Optional)</u>                    | <u>Insulation Fasteners</u><br><u>(Table 3)</u> | <u>Fastener</u><br><u>Density/ft<sup>2</sup></u> |
|---|---|--|
| High Density Fiberboard, Structodek<br>Minimum 1/2" thick | N/A   | N/A  |

|  |     |     |
|--|-----|-----|
| DensDeck, DensDeck Prime<br>Minimum 1/4" 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, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs/100 ft<sup>2</sup> or in Insta-Stik Roofing Adhesive applied in continuous 3/4 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, Tri-Base Plus, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt, HPR Polyscrim Plus adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq. (Note: Minimum two plies of ASTM D 2178, type VI or three plies of type IV is required for VersiPly 60 applications.)



**Membrane:** One ply of StressPly E, StressPly E Mineral, StressPly E FR Mineral, StressPly, StressPly Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV, StressPly EUV Mineral, StressPly EUV FR Mineral, VersiPly 60, VersiPly 80, or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, 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 Flood Coat or Black-Knight LV Flood Coat 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
3. Energizer FR applied at 3 gal./sq. or 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal/sq/coat, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
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 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.)

**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:

| <u>Base Insulation Layer</u>              | <u>Insulation Fasteners</u><br><u>(Table 3)</u> | <u>Fastener</u><br><u>Density/ft<sup>2</sup></u> |
|---|---|--|
| ACFoam II, H-Shield<br>Minimum 1.5" thick | 8, 9 & 10                                       | 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).

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

| <u>Top Insulation Layer (Optional)</u>                    | <u>Insulation Fasteners</u><br><u>(Table 3)</u> | <u>Fastener</u><br><u>Density/ft<sup>2</sup></u> |
|---|---|--|
| High Density Fiberboard, Structodek<br>Minimum 1/2" thick | N/A   | N/A  |
| DensDeck, DensDeck Prime<br>Minimum 1/4" 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-Stik Roofing Adhesive applied in continuous 3/4 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, Tri-Base Plus, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq.

**Membrane:** One ply of StressPly IV, 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 Stress Ply IV Mineral, StressPly IV UV Mineral StressPly IV Plus Mineral, StressPly IV Plus UV Mineral. Required for StressPly IV or StressPly IV Plus. Apply one of the below or any approved coating.

1. Minimum two coats of Garla-Brite applied at min. 0.5 gal/sq/coat, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
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 Flood Coat or Black-Knight LV Flood Coat at 70 lb/sq. or Black-Knight Cold at 5 gal/sq.
3. Green-Lock 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.)



**Deck Type 3I:** Concrete, Insulated  
**Deck Description:** Min. 2,500 psi concrete or concrete plank  
**System Type B(3):** 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:

| <u>Base Insulation Layer</u>                       | <u>Insulation Fasteners</u><br><u>(Table 3)</u> | <u>Fastener</u><br><u>Density/ft<sup>2</sup></u> |
|--|---|--|
| ACFoam II, ENRGY 3, H-Shield<br>Minimum 2.0" thick | 5 & 3 or 6, 22 & 14, 19 & 20                    | 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).**

| <u>Top Insulation Layer</u>          | <u>Insulation Fasteners</u><br><u>(Table 3)</u> | <u>Fastener</u><br><u>Density/ft<sup>2</sup></u> |
|--------------------------------------|---|--|
| DensDeck Prime<br>Minimum 1/2" thick | N/A   | N/A  |

**Note: Top layer of insulation shall be adhered in full mopping of approved hot asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 25 lbs/100 ft<sup>2</sup> or with Insul-Lock II or Weathertite Pourable Foam Insulation Adhesive applied in 3/4"- 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.**

**Base/Ply Sheet:** One or more plies of HPR Glasbase, HPR Premium Glasbase, HPR Tri-Base Plus, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 25 lbs./sq. (Note: Minimum two plies of ASTM D 2178, type VI or three plies of type IV is required for VersiPly 60 applications.)

Or

One ply of HPR Torch Base Sheet, torch applied to coverboard

**Membrane:** One ply of StressPly E, StressPly E Mineral, StressPly E FR Mineral, StressPly, StressPly Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV, StressPly EUV Mineral, StressPly EUV FR Mineral, VersiPly 60, VersiPly 80 or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 25 lbs./sq.

Or

One ply of StressPly IV, 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 Flood Coat or Black-Knight LV Flood Coat 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
3. Energizer FR applied at 3 gal./sq. or 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of GarlaBrite applied at min. 0.5 gal/sq/coat, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
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 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)



**Deck Type 3I:** Concrete, Insulated  
**Deck Description:** Min. 2,500 psi concrete or concrete plank  
**System Type B(4):** 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:

| <u>Base Insulation Layer</u>                       | <u>Insulation Fasteners</u><br><u>(Table 3)</u> | <u>Fastener</u><br><u>Density/ft<sup>2</sup></u> |
|--|---|--|
| ACFoam II, ENRGY 3, H-Shield<br>Minimum 2.0" thick | 5 & 3 or 6, 22 & 14, 19 & 20                    | 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).**

| <u>Top Insulation Layer</u>          | <u>Insulation Fasteners</u><br><u>(Table 3)</u> | <u>Fastener</u><br><u>Density/ft<sup>2</sup></u> |
|--------------------------------------|---|--|
| DensDeck Prime<br>Minimum 1/2" thick | N/A   | N/A  |

**Note: Top layer of insulation shall be adhered in full mopping of approved hot asphalt, HPR All Temp, Garlastic KM, 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.**

**Base/Ply Sheet:** One or more plies of HPR Glasbase, HPR Premium Glasbase, HPR Tri-Base Plus, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 25 lbs./sq. (Note: Minimum two plies of ASTM D 2178, type VI or three plies of type IV is required for VersiPly 60 applications.)

**Membrane:** One ply of StressPly E, StressPly E Mineral, StressPly E FR Mineral, StressPly, StressPly Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV, StressPly EUV Mineral, StressPly EUV FR Mineral, VersiPly 60, VersiPly 80 or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, 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 Flood Coat or Black-Knight LV Flood Coat 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
3. Energizer FR applied at 3 gal./sq. or 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal/sq/coat, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
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 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)



**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:

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

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

| <u>Top Insulation Layer</u>   | <u>Insulation Fasteners</u><br><u>(Table 3)</u> | <u>Fastener</u><br><u>Density/ft<sup>2</sup></u> |
|---|---|--|
| GAFTEMP Fiberboard, GAFTEMP High Density, High Density Fiberboard, Fiber Base HD1, HD6, Structodek, GAFTEMP Permalite, Fesco Board, GAFTEMP Recover Board, Retrofit Board<br>Minimum 1/2" thick | 1, 5, 8, 15, & 19                               | 1:3 ft <sup>2</sup>                              |

|  |                  |                     |
|--|------------------|---------------------|
| DensDeck, DensDeck Prime<br>Minimum 1/2" thick | 1, 5, 8, 15 & 19 | 1:3 ft <sup>2</sup> |
|--|------------------|---------------------|

|   |                   |                     |
|---|-------------------|---------------------|
| Standard or Wide Flute Fiberglass Roof Insulation, Standard or Wide Flute Fiber Glass Roof Insulation, Fiber Glass Roof Insulation (Standard or Wide Flute)<br>Minimum 15/16" thick | 1, 5, 8, 15, & 19 | 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 Plus, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt, HPR Polyscrim Plus adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq. (Note: Minimum two plies of ASTM D 2178, type VI or three plies of type IV is required for VersiPly 60 applications.)

**Membrane:** One ply of StressPly E, StressPly E Mineral, StressPly E FR Mineral, StressPly, StressPly Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV, StressPly EUV Mineral, StressPly EUV FR Mineral, VersiPly 60, VersiPly 80, or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, 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 Flood Coat or Black-Knight LV Flood Coat 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
3. Energizer FR applied at 3 gal./sq. or 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of GarlaBrite applied at min. 0.5 gal/sq/coat, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
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 applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design**

**Pressure:**

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



**Deck Type 3I:** Concrete, Insulated  
**Deck Description:** Min. 2,500 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:

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

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

| <u>Top Insulation Layer</u>          | <u>Insulation Fasteners</u><br><u>(Table 3)</u> | <u>Fastener</u><br><u>Density/ft<sup>2</sup></u> |
|--------------------------------------|---|--|
| DensDeck Prime<br>Minimum 1/2" thick | 5 & 3 or 6, 22 & 14, 19 & 20                    | 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 Plus, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 25 lbs./sq. (Note: Minimum two plies of ASTM D 2178, type VI or three plies of type IV is required for VersiPly 60 applications.)

Or

One ply of HPR Torch Base Sheet, torch applied to coverboard

**Membrane:** One ply of StressPly E, StressPly E Mineral, StressPly E FR Mineral, StressPly, StressPly Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV, StressPly EUV Mineral, StressPly EUV FR Mineral, VersiPly 60, VersiPly 80 or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 25 lbs./sq.

Or

One ply of StressPly IV, 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 Flood Coat or Black-Knight LV Flood Coat 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, minimum two coats of Pyramic applied at min. 1.0 gal./sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal./sq and a minimum one coat of Solex applied at a min. 0.50 gal./sq.
3. Energizer FR applied at 3 gal./sq. or 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, minimum two coats of Pyramic applied at min. 1.0 gal./sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal./sq and a minimum one coat of Solex applied at a min. 0.50 gal./sq.
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal./sq/coat, minimum two coats of Pyramic applied at min. 1.0 gal./sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal./sq and a minimum one coat of Solex applied at a min. 0.50 gal./sq.
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 applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design  
Pressure:**

-150.0 psf (See General Limitation #7)



**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:

| <u>Base Insulation Layer</u>   | <u>Insulation Fasteners</u><br><u>(Table 3)</u> | <u>Fastener</u><br><u>Density/ft<sup>2</sup></u> |
|--|---|--|
| ACFoam II, Isotherm R, ENRGY 3, PSI-25, UltraGard, ISO-95+GL, H-Shield<br>Minimum 1" thick           | N/A   | N/A  |
| <u>Top Insulation Layer (Optional)</u>   | <u>Insulation Fasteners</u><br><u>(Table 3)</u> | <u>Fastener</u><br><u>Density/ft<sup>2</sup></u> |
| GAFTEMP High Density, High Density Fiberboard, Fiber Base HD1, HD6, Structodek<br>Minimum 1/2" thick | N/A   | N/A  |
| DensDeck, DensDeck Prime<br>Minimum 1/4" thick   | 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, HPR Tri-Base Plus, HPR Tri-Base Premium, Celotex Vaporbar GB, GAFGLAS Stratavent, JM PermaPly R, JM Dynabase, JM Ventsulation, Tamko Vapor-Chan, Intec Permavent or Intec FlexBase 60 fastened to the deck using Buildex #14-10 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, HPR Tri-Base Plus, HPR Tri-Base Premium fastened to the deck using SFS #12 or HD Insulfixx S, Olympic #12 or HD with Olympic Standard Plates, or Buildex #14-10 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) 1/2" thick High Density Wood Fiberboard adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, 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 Plus, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt, HPR Polyscrim Plus adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq. (Note: Minimum two plies of ASTM D 2178, type VI or three plies of type IV is required for VersiPly 60 applications.)



**Membrane:** One ply of StressPly E, StressPly E Mineral, StressPly E FR Mineral, StressPly, StressPly Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV, StressPly EUV Mineral, StressPly EUV FR Mineral, VersiPly 60, VersiPly 80, or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, 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 Flood Coat or Black-Knight LV Flood Coat 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
3. Energizer FR applied at 3 gal./sq. or 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal/sq/coat, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
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 applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design Pressure:**

-60 psf (See General Limitation #7.)



**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.**

| <u>Base Insulation Layer</u>   | <u>Insulation Fasteners</u><br><u>(Table 3)</u> | <u>Fastener</u><br><u>Density/ft<sup>2</sup></u> |
|--|---|--|
| ACFoam II, Isotherm R, ENRGY 3, PSI-25, UltraGard, ISO-95+GL, H-Shield<br>Minimum 1" thick           | N/A   | N/A  |
| <u>Top Insulation Layer (Optional)</u>   | <u>Insulation Fasteners</u><br><u>(Table 3)</u> | <u>Fastener</u><br><u>Density/ft<sup>2</sup></u> |
| GAFTEMP High Density, High Density Fiberboard, Fiber Base HD1, HD6, Structodek<br>Minimum 1/2" thick | N/A   | N/A  |
| DensDeck, DensDeck Prime<br>Minimum 1/4" thick   | 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, HPR Tri-Base Plus, HPR Tri-Base Premium, Celotex Vaporbar GB, GAFGLAS Stratavent, JM PermaPly R, JM Dynabase, JM Ventsulation, Tamko Vapor-Chan, Intec Permavent or Intec FlexBase 60 fastened to the deck using Buildex #14-10 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, HPR Tri-Base Plus, HPR Tri-Base Premium, GAFGLAS Stratavent, GS Flex-I-Glas Base, Malarkey #501, Tamko Glass-Base, Vapor-Chan or Base-N-Ply fastened to the deck using SFS #12 or HD Insulfixx S, Olympic #12 or HD with Olympic Standard Plates, or Buildex 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) 1/2" thick High Density Wood Fiberboard adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, 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 Plus, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq.



**Membrane:** One ply of StressPly IV, 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 StressPly IV Mineral, StressPly IV UV Mineral, StressPly IV Plus Mineral or StressPly IV Plus Mineral. Required for StressPly IV or StressPly IV Plus. Apply one of the below or any approved coating.

1. Minimum two coats of Garla-Brite applied at min. 0.5 gal/sq/coat, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
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 Flood Coat or Black-Knight LV Flood Coat at 70 lb/sq. or Black-Knight Cold at 5 gal/sq.
3. Green-Lock 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.)



- Deck Type 3I:** Concrete, Insulated
- Deck Description:** Min. 2,500 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:

| <u>Insulation Layer</u>   | <u>Insulation Fasteners<br/>(Table 3)</u> | <u>Fastener<br/>Density/ft<sup>2</sup></u> |
|---|---|--|
| <b>ACFoam II, ENRGY 3, H-Shield, Multi-Max FA-3</b><br>Minimum 1.5" thick | N/A                                       | N/A  |
| <b>DensDeck, DensDeck Prime</b><br>Minimum ¼" thick                       | N/A                                       | N/A  |
| <b>High Density Wood Fiberboard</b><br>Minimum ½" thick                   | 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 Plus or HPR Tri-Base Premium fastened to the deck as described below:

**Fastening:** Tru-Fast MP3 plates with Tru-Fast HD fasteners, OMG Standard Metal Plates with OMG Heavy Duty fasteners, ITW Buildex Flat Bottom Plates with #14 Rofgrip fasteners or SFS Intec Dekfast 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 Plus, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 25 lbs./sq. (Note: Minimum two plies of ASTM D 2178, type VI or three plies of type IV is required for VersiPly 60 applications.)

**Membrane:** One ply of StressPly E, StressPly E Mineral, StressPly E FR Mineral, StressPly, StressPly Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV, StressPly EUV Mineral, StressPly EUV FR Mineral, VersiPly 60, VersiPly 80, or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, 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 Flood Coat or Black-Knight LV Flood Coat 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
3. Energizer FR applied at 3 gal./sq. or 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of GarlaBrite applied at min. 0.5 gal/sq/coat, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
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 applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design Pressure:**

-135.0 psf (See General Limitation #7)



**Deck Type 3I:** Concrete, Insulated  
**Deck Description:** Min. 2,500 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:

| <u>Insulation Layer</u>   | <u>Insulation Fasteners</u><br><u>(Table 3)</u> | <u>Fastener</u><br><u>Density/ft<sup>2</sup></u> |
|---|---|--|
| <b>ACFoam II, ENRGY 3, H-Shield, Multi-Max FA-3</b><br>Minimum 1.5" thick | N/A   | N/A  |
| <b>DensDeck, DensDeck Prime</b><br>Minimum ¼" thick                       | N/A   | N/A  |
| <b>High Density Wood Fiberboard</b><br>Minimum ½" thick                   | 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 Plus or HPR Tri-Base Premium, fastened per below:  
**Fastening:** ITW Buildex 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 Plus, HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 25 lbs./sq. (Note: Minimum two plies of ASTM D 2178, type VI or three plies of type IV is required for VersiPly 60 applications.)  
 Or  
 One or more plies of HPR Torch Base Sheet, torch applied  
**Membrane:** One ply of StressPly E, StressPly E Mineral, StressPly E FR Mineral, StressPly, StressPly Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV, StressPly EUV Mineral, StressPly EUV FR Mineral, VersiPly 60, VersiPly 80, or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 25 lbs./sq.  
 Or  
 One ply of StressPly IV, 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 Flood Coat or Black-Knight LV Flood Coat 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
3. Energizer FR applied at 3 gal./sq. or 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal/sq/coat, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq..
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 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)



**Deck Type 3:** Concrete Decks, Non-insulated  
**Deck Description:** 2500 psi structural concrete or concrete plank  
**System Type F(1)** 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 Plus or HPR Tri-Base Premium, HPR Glasfelt, HPR Premium Glasfelt, HPR Polyscrim Plus adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq. (Note: Minimum two plies of ASTM D 2178, type VI or three plies of type IV is required for VersiPly 60 applications.)

**Membrane:** One ply of StressPly E, StressPly E Mineral, StressPly E FR Mineral, StressPly, StressPly Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV, StressPly EUV Mineral, StressPly EUV FR Mineral, VersiPly 60, VersiPly 80, or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, 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 Flood Coat or Black-Knight LV Flood Coat 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
3. Energizer FR applied at 3 gal./sq. or 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal/sq/coat, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
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 applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design Pressure:** -375 psf (See General Limitation #9.)



**Deck Type 3:** Concrete Decks, Non-insulated  
**Deck Description:** 2500 psi structural concrete or concrete plank  
**System Type F(2)** 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:** GAFGLAS Stratavent or JM Ventsulation is 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, HPR Polyscrim Plus adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq. (Note: Minimum two plies of ASTM D 2178, type VI or three plies of type IV is required for VersiPly 60 applications.)

**Membrane:** One ply of StressPly E, StressPly E Mineral, StressPly E FR Mineral, StressPly, StressPly Mineral, StressPly FR Mineral, StressPly Plus, StressPly Plus FR Mineral, StressPly EUV, StressPly EUV Mineral, StressPly EUV FR Mineral, VersiPly 60, VersiPly 80, or VersiPly Mineral adhered with a full mopping of approved asphalt, HPR All Temp, Garlastic KM, 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 Flood Coat or Black-Knight LV Flood Coat 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 ,minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
3. Energizer FR applied at 3 gal./sq. or 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, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
4. WeatherScreen applied at min. 4 gal./sq. with minimum two coats of Garla-Brite applied at min. 0.5 gal/sq/coat, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
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 applied at min 3-5 gal./sq. with roofing gravel applied at 400 lb./sq.

**Maximum Design Pressure:** -60 psf (See General Limitation #9.)



**Deck Type 3I:** Concrete Decks

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

**System Type F(3):** 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 BK Glasfelt, BK Premium Glasfelt or 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, 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 Organic Base, HPR Glasbase, HPR Premium Glasbase adhered in full mopping of approved asphalt, HPR All Temp, Garlastic KM, 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 BK Glasfelt, BK Premium Glasfelt or 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, 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 Organic Base, HPR Glasbase, HPR Premium Glasbase adhered in full mopping of approved asphalt, HPR All Temp, Garlastic KM, 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, 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, Millennium Mineral or Millennium FR Mineral adhered in Black-Knight Cold applied at 1.5-2 gal/sq. (to Millennium Base only)



- System 4:** **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. or adhered in Black-Knight Cold applied at 1.5-2 gal/sq.
- Ply Sheet:** One ply Millennium, 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.
- Cap Sheet:** One ply of Millennium, 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 adhered in Black-Knight Cold applied at 1.5-2 gal/sq.
- System 5:** **Base/Ply Sheet:** Three to five plies BK Glasfelt, BK Premium Glasfelt or 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.
- System 6:** **Base/Ply Sheet:** One ply HPR Organic Base, HPR Glasbase, HPR Premium Glasbase adhered in full mopping of approved asphalt, HPR All Temp, Garlastic KM, 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.
- Cap Sheet:** Two to four plies BK Glasfelt, BK Premium Glasfelt or 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.
- 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 Flood Coat or Black-Knight LV Flood Coat at 70 lb/sq. or Black-Knight Cold at 5 gal/sq.
  2. Minimum two coats of GarlaBrite applied at min. 0.5 gal/sq/coat, minimum two coats of Pyramic applied at min. 1.0 gal/sq/coat or minimum one coat of Pyramic applied at a min. 1.0 gal/sq and a minimum one coat of Solex applied at a min. 0.50 gal/sq.
  3. Green-Lock 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)  
-252.0 psf (roof cover in coal tar or hot asphalt) (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.)**

**END OF THIS ACCEPTANCE**



NOA No.: 09-1228.08  
Expiration Date: 12/02/11  
Approval Date: 08/11/10  
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