MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION
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DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER)
BOARD AND CODE ADMINISTRATION DIVISION

NOTICE OF ACCEPTANCE (NOA)

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

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County RER - Product Control Section to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Section (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. RER reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

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

DESCRIPTION: Garland Built-Up Roofing Systems Over Concrete Decks.

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

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

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

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

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

This NOA renews NOA No. 22-0811.12 and consists of pages 1 through 11.
The submitted documentation was reviewed by Alex Tigera.

ROOFING SYSTEM APPROVAL

Category: Roofing
Sub-Category: Built-Up Roofing
Material: Fiberglass/Asphalt
Deck Type: Concrete
Maximum Design Pressure: -375 psf.

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

Product	Dimensions	Test Specification	Product Description
HPR Glasbase	36” x 108’ 75 lbs.	ASTM D4601 Type II	Type II, asphalt coated fiberglass base sheet.
HPR Premium Glasbase	36” x 72’ 75 lbs.	ASTM D4601 Type II	Type II, asphalt coated fiberglass base sheet.
HPR Glasfelt	36" x 180'; roll weight: 95 lbs.	ASTM D2178	Type IV asphalt impregnated glass felt for use in conventional and modified built-up roof systems.
HPR Premium Glasfelt	36" x 180’; roll weight: 95 lbs.	ASTM D2178	Type VI asphalt impregnated glass felt for use in conventional and modified bitumen built-up roofing.
HPR Polyscrim Plus	40” x 324’	ASTM D5726	Polyester felt.
Millennium Base	39” x 51’5”	ASTM D6162	Smooth surfaced, SBS modified coal tar, fiberglass/polyester reinforced base sheet.
Garland Flashing Bond	5 gallon	ASTM D4586	Trowel grade, asphalt based roofing mastic for use in repair and patching against leaks in built-up asphalt roofs.
Garla-Flex	2, 5 gallon pail	ASTM D4586	Elastomeric, asphaltic compound formulated from a special weather and ozone-resistant thermoplastic rubber, plasticizing oils and bitumen. Asbestos free.
Garla-Brite	5 gallon	ASTM D2824 Type I	Aluminum roof coating.
Garla-Prime VOC	5, 55 gallon	ASTM D41	Non-fibered, quick drying asphalt roof primer.
Silver-Shield	5, 55 gallon	ASTM D2824 Type III	High solids, aluminized roof coating.

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

Product	Dimensions	Test Specification	Product Description
Black Knight	70 lb. keg	Proprietary	Polymer modified coal tar pitch.
Insul-Lock HR	1.5 liters	Proprietary	Polyurethane two component high rise insulation adhesive.
Garlastic KM Plus	60 lb. keg	TAS 121	SEBS modified, hot applied asphalt.
HPR All Temp Asphalt	100 lb. keg	TAS 121	Hot asphalt adhesive for modified bitumen and BUR roof systems.
Black-Knight Cold	5, 55 gallon	Proprietary	Polymer modified coal tar pitch.
Pyramic	5, 55 gallon	Proprietary	White acrylic reflective roof coating.
Green-Lock Membrane Adhesive	5 gallon	Proprietary	Cold process roof coating and adhesive.
Solex	5, 55 gallon	Proprietary	White kynar reflective roof coating.

APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
ACFoam-II	Polyisocyanurate foam insulation	Atlas Roofing Corporation
ENRGY 3, ENRGY 3 Plus	Polyisocyanurate foam insulation	Johns Manville Corp.
Fesco Board	Expanded perlite, insulation	Johns Manville Corp.
Retro-Fit Board	Perlite insulation board	Johns Manville Corp.
Ultra-Max	Polyisocyanurate foam insulation	RMax Operating, LLC
DensDeck	Water resistant gypsum board	Georgia Pacific Gypsum LLC
Structodek High Density Fiberboard Roof Insulation	High Density wood fiber insulation board	Blue Ridge Fiberboard, Inc.

APPROVED FASTENERS/ADHESIVES:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
1.	None	N/A	N/A	N/A

EVIDENCE SUBMITTED

Test Agency	Test Identifier	Description	Date
Dynatech Engineering Corporation	4530.05.95-1	TAS 114	05/31/95
Factory Mutual Research Corporation	IVOA7.AM	FM 4470	02/21/95
	0Y5A6.AM	FM 4470	09/08/97
	1B4A7.AM	FM 4470	12/15/97
	4B4A9.AM	FM 4470	12/31/97
	3D3A5.AM	FM 4470	09/15/98
	3004392	FM 4470	09/21/99
	0D9A0.AM	FM 4470	05/02/00
	3004907	FM 4470	05/16/00
	3009117	FM 4470	12/21/00
PRI Construction Mateerials Technologies	GRD-052-02-01	ASTM D 2178	10/31/11
	GRD-051-02-01	ASTM D 2178	10/31/11
	GRD-054-02-01	ASTM D 2626	11/17/11
Trinity | ERD	G32700.09.11-1	ASTM D4601	09/16/11
	G37200.10.11-2	ASTM D 5726	10/18/11
	G39620.07.12	ASTM D4990	07/02/12
	G37200.08.12-13-R2	ASTM D6162/D4798	09/26/13

APPROVED ASSEMBLIES:

Membrane Type: BUR

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(1): All layers of insulation adhered with approved asphalt or adhesive.

All General and System Limitations apply.

One or more layers of any of the following insulations.

Base Insulation Layer	Insulation Fasteners	Fastener Density/ft^2
ACFoam-II, ENRGY 3 **Minimum 1.5" thick**	**N/A**	**N/A**

Top Insulation Layer	Insulation Fasteners	Fastener Density/ft^2
Structodek High Density Fiberboard Roof Insulation, Retro-Fit Board **Minimum ½" thick**	**N/A**	**N/A**
Fesco Board **Minimum ¾" thick**	**N/A**	**N/A**
DensDeck **Minimum ¼" thick**	**N/A**	**N/A**

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of insulation. All insulation shall be adhered to the deck in full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./100 ft^2. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels used as a top layer shall be placed with the polyisocyanurate side facing down.

Base Sheet: HPR Glasfelt, HPR Glasbase or HPR Premium Glasbase adhered directly over the top layer of insulation with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq.

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

Surfacing: (Required) Install one of the following:

1. 400 lbs./sq. gravel or 300 lbs./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lbs./sq. or in Black Knight at 70 lb/sq.
2. Garla-Brite applied at 1 gal. per 150 ft^2.

Maximum Design Pressure:

-145 psf. (for minimum 1.5" thick ENRGY 3 followed by Fesco Board or Retro-Fit Board insulation, minimum ¾" thick, applied in hot asphalt with asphalt applied membranes) (See General Limitation #9)

-237.5 psf. (for minimum 1.5" thick ENRGY 3 followed by minimum ¼" DensDeck or minimum ½" HD Fiberboard applied in hot asphalt with asphalt applied membranes.) (See General Limitation #9)

Membrane Type: BUR

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 fully adhered to deck or spot mopped to optional anchor sheet with approved asphalt or adhesive.

All General and System Limitations apply.

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

Anchor Sheet: (Optional) Install one ply of approved ASTM D 4897, Type II base sheet in a spot mopping of ASTM D 312, type III or type IV asphalt; 12" dia. circles, 24" o.c. at an application rate of 12 lbs./sq.

One or more layers of any of the following insulations.

Insulation Layer	Insulation Fasteners	Fastener Density/ft^2
ACFoam II, ENRGY 3, ENRGY 3 Plus, Ultra-Max Minimum 1" thick	**N/A**	**N/A**
Structodek High Density Fiberboard Roof Insulation, Retro-Fit Board Minimum ½" thick	**N/A**	**N/A**
Fesco Board Minimum ¾" thick	**N/A**	**N/A**
DensDeck Minimum ¼" thick	**N/A**	**N/A**

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of vapor barrier or insulation. All insulation shall be adhered to the vapor barrier or deck in full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./100 ft^2. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels used as a top layer shall be placed with the polyisocyanurate side facing down.

Base Sheet: (Optional) HPR Glasbase or HPR Premium Glasbase adhered directly over the top layer of insulation with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: Two or more plies of HPR Glasbase, HPR Premium Glasbase, HPR Glasfelt, HPR Premium Glasfelt or approved ASTM D 2178 type IV or VI ply sheet adhered with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq.

Surfacing: (Required) Install one of the following:

1. 400 lbs./sq. gravel or 300 lbs./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lbs./sq. or in Black Knight at 70 lb/sq.
2. Garla-Brite applied at 1 gal. per 150 ft^2.

Maximum Design Pressure: -60 psf. (if insulation is fully adhered to deck) (See General Limitation #9.)

Membrane Type: BUR

Deck Type 3: Concrete Decks, Non-Insulated

Deck Description: 2500 psi concrete plank

System Type F(1): Roof cover adhered with approved asphalt or adhesive.

All General and System Limitations apply.

Base Sheet: HPR Glasfelf, HPR Glasbase or HPR Premium Glasbase adhered directly over the primed concrete deck with a full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq.

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

Surfacing: (Required) Install one of the following:

1. 400 lbs./sq. gravel or 300 lbs./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lbs./sq. or in Black Knight at 70 lb/sq.
2. Garla-Brite applied at 1 gal. per 150 ft^2.

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

Membrane Type: BUR

Deck Type 3I: Concrete Decks, Non-Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type F(2): Base sheet adhered with approved asphalt or adhesive.

All General and System Limitations apply.

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

System 1:

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

System 2:

Base/Ply Sheet: One ply HPR Glasbase, HPR Premium Glasbase adhered in full mopping of approved asphalt, HPR All Temp Asphalt or Garlastic KM Plus at a rate of 25 lbs./sq.

Or

One ply Millennium Base adhered in full mopping of Black-Knight or approved Type I or Type III Coal Tar Pitch at a rate of 30 lbs./sq. or adhered in Black-Knight Cold applied at 1.5-2 gal./sq.

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

Surfacing: (Required) Install one of the following:

1. 400 lbs./sq. gravel or 300 lbs./sq. slag in a flood coat of approved mopping asphalt at an application rate of 60 lbs./sq. or in Black-Knight at 70 lb/sq. or Black-Knight Cold at 5 gal./sq.
2. Minimum two coats of Garla-Brite applied at min. 0.5 gal./sq./coat, 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 lbs./sq.

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

CONCRETE DECK SYSTEM LIMITATIONS:

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

GENERAL LIMITATIONS:

1. Fire classification is not part of this acceptance, refer to a current Approved Roofing Materials Directory for fire ratings of this product.
2. Insulation may be installed in multiple layers. The first layer shall be attached in compliance with Product Control Approval guidelines. All other layers shall be adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq., or mechanically attached using the fastening pattern of the top layer
3. All standard panel sizes are acceptable for mechanical attachment. When applied in approved asphalt, panel size shall be 4' x 4' maximum.
4. An overlay and/or recovery board insulation panel is required on all applications over closed cell foam insulations when the base sheet is fully mopped. If no recovery board is used the base sheet shall be applied using spot mopping with approved asphalt, 12" diameter circles, 24" o.c.; or strip mopped 8" ribbons in three rows, one at each sidelap and one down the center of the sheet allowing a continuous area of ventilation. Encircling of the strips is not acceptable. A 6" break shall be placed every 12' in each ribbon to allow cross ventilation. Asphalt application of either system shall be at a minimum rate of 12 lbs./sq. **Note: Spot attached systems shall be limited to a maximum design pressure of -45 psf.**
5. Fastener spacing for insulation attachment is based on a Minimum Characteristic Force (F') value of 275 lbf., as tested in compliance with Testing Application Standard TAS 105. If the fastener value, as field-tested, are below 275 lbf. insulation attachment shall not be acceptable.
6. Fastener spacing for mechanical attachment of anchor/base sheet or membrane attachment is based on a minimum fastener resistance value in conjunction with the maximum design value listed within a specific system. Should the fastener resistance be less than that required, as determined by the Building Official, a revised fastener spacing, prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant may be submitted. Said revised fastener spacing shall utilize the withdrawal resistance value taken from Testing Application Standards TAS 105 and calculations in compliance with Roofing Application Standard RAS 117.
7. Perimeter and corner areas shall comply with the enhanced uplift pressure requirements of these areas. Fastener densities shall be increased for both insulation and base sheet as calculated in compliance with Roofing Application Standard RAS 117. Calculations prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant **(When this limitation is specifically referred within this NOA, General Limitation #9 will not be applicable.)**
8. All attachment and sizing of perimeter nailers, metal profile, and/or flashing termination designs shall conform with Roofing Application Standard RAS 111 and applicable wind load requirements.
9. The maximum designed pressure limitation listed shall be applicable to all roof pressure zones (i.e. field, perimeters, and corners). Neither rational analysis, nor extrapolation shall be permitted for enhanced fastening at enhanced pressure zones (i.e. perimeters, extended corners and corners). **(When this limitation is specifically referred within this NOA, General Limitation #7 will not be applicable.)**
10. All products listed herein shall have a quality assurance audit in accordance with the Florida Building Code and Rule 61G20-3 of the Florida Administrative Code.

END OF THIS ACCEPTANCE