MIAMI-DADE

BUILDING CODE COMPLIANCE OFFICE (BCCO)
PRODUCT CONTROL DIVISION

MIAMI-DADE COUNTY, FLORIDA
METRO-DADE FLAGLER BUILDING
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MIAMI, FLORIDA 33130-1563
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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 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, including the High Velocity Hurricane Zone.

DESCRIPTION: Garland Built-Up Roofing Systems Over Cementitious Wood Fiber Decks

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. 01-0816.10 and consists of pages 1 through 9.
The submitted documentation was reviewed by Jorge L. Acebo.

PRODUCT CONTROL ACCEPTED

ROOFING ASSEMBLY NOTICE OF ACCEPTANCE

Category:	Roofing
Sub-Category:	Built-Up Roofing
Material:	Fiberglass/Organic
Deck Type:	Cementitious Wood Fiber
Maximum Design Pressure	-45 psf
Fire Classification:	See General Limitation #1

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

Product	Dimensions	Test Specification	Product Description
HPR Mineral Surface Capsheet	Roll weight: 85 lbs.	proprietary	Mineral capsheet with polyester mat for use in conventional built-up roofing.
HPR Smooth Surface Capsheet	Roll weight: 85 lbs.	proprietary	Smooth capsheet with polyester mat for use in conventional built-up roofing.
HPR TriBase	36" x 72' 72 lbs.	proprietary	Double asphalt coated, polyester/fiberglass/polyester scrim reinforced base sheet
HPR Glasbase	36" x 108' 75 lbs.	ASTM D 4601, Type II	Type II, asphalt coated fiberglass base sheet.
HPR Premium Glasbase	36" x 72' 75 lbs.	ASTM D 4601, Type II	Type II, asphalt coated fiberglass base sheet.
HPR Glasfelt	36" x 180'; roll weight: 95 lbs.	ASTM D 2178	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 D 2178	Type VI asphalt impregnated glass felt for use in conventional and modified bitumen built-up roofing.
VersiPly 40	39" x 68' 7"; 40 mil	ASTM D 6163, Grade S	Smooth surfaced, SBS modified, fiberglass scrim reinforced roofing membrane.
Gravitop Coating	5, 55 gallon	ASTM D 2824	Roof coating.

Product	Dimensions	Test Specification	Product Description
Garla-Bond Asphalt, Garland Flashing Bond, Ultra-Shield Flashing Cement, Ultra-Shield Plastic Roof Cement	5 gallon	ASTM D 4586	Trowel grade, asphalt based roofing mastic for use in repair and patching against leaks in built-up asphalt roofs.□
Garla-Flex V.O.C., 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 Weatherking Plus	5, 55 gallon	ASTM D 3019, type III	Cold process roof coating and adhesive.
Ultra-Shield Metal Rust Proofing	5, 55 gallon	ASTM D 3019, type III	Asbestos-free, petroleum compound modified with polymers and corrosion inhibitors.
Weatherking FR Top Coat, Ultra-Shield Built-Up Mastic FR	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	5, 55 gallon	ASTM D 4479, type I	Multipurpose, rubberized, liquid waterproofing membrane.
GarlaPrime VOC, 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.
Pyramic	5, 55 gallon		White reflective roof coating.
Black Knight or Black Knight LV Flood Coat	70 lb. keg	Proprietary	Polymer modified coal tar pitch.

APPROVED FASTENERS:

TABLE 2

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
1.	NTB Magnum w/2" head	Glass reinforced Nylon insulation fastener for gypsum & CWF decks.		Olympic Manufacturing Group, Inc.
2.	Olympic Lite-Deck	Carbon Steel CR-10 coanting insulation fastener for gypsum & CWF decks.		Olympic Manufacturing Group, Inc.
3.	NTB Plastic plate	Polypropylene plastic plate	3" round	Olympic Manufacturing Group, Inc.
4.	Lite-Deck Plate	3" round galvalume AZ55 steel plate	3" round	Olympic Manufacturing Group, Inc.

EVIDENCE SUBMITTED

Test Agency	Test Identifier	Description	Date
Dynatech Engineering Corporation□	#4530.05.95-1	Wind Uplift Classification	5/31/95
Factory Mutual Research Corporation	J.I. IVOA7.AM	Class I Fire: I-60 and I-90	02/21/95
	J.I. 1B4A7.AM	Windstorm Classification□	12/15/97
	J.I. 4B4A9.AM		12/31/97
	J.I. 0Y5A6.AM		09/08/97
	J.I. 3D3A5.AM		09/15/98
	J.I. 3004392		09/21/99
	J.I. 0D9A0.AM		05/02/00
	J.I. 3004907		05/16/00
	J.I. 3009117		12/21/00
Trinity Engineering, Inc.	#4532.12.95-1	Wind Uplift Classification (6" x 6" Adhesion Testing)□	21/31/95
PRI Asphalt Technologies, Inc.	GRD-03-02-01	Physical Properties ASTM D 5147	01/07/98
	GRD-05-02-01		12/18/97
	GRD-06-02-01		01/09/98
Exterior Research & Design, LLC.	#4533.05.98-1	PA 114(J)	05/15/98

APPROVED ASSEMBLIES:

Deck Type 5I: Cementitious Wood Fiber, Insulated

Deck Description: Cementitious wood fiber

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

All General and System Limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 2)	Fastener Density/ft^2
Pyrox **Minimum 1.3" thick**	**1 & 2**	**1:2 ft^2**
ACFoam II **Minimum 1.5" thick**	**1 & 2**	**1:2 ft^2**
E'NRG'Y-2 **Minimum 1.4" thick**	**1 & 2**	**1:2 ft^2**
Perlite **Minimum ¾" thick**	**1 & 2**	**1:2 ft^2**
High Density Wood Fiberboard **Minimum 1" thick**	**1 & 2**	**1:2 ft^2**
Fiberglass **Minimum $^{15}/_{16}$" thick**	**1 & 2**	**1:2 ft^2**

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

Top Insulation Layer	Insulation Fasteners (Table 2)	Fastener Density/ft^2
Perlite **Minimum ¾" thick**	**N/A**	**N/A**
High Density Wood Fiberboard **Minimum 1" thick**	**N/A**	**N/A**
Fiberglass **Minimum $^{15}/_{16}$" thick**	**N/A**	**N/A**

Note: Apply optional 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^2. 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 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, Garlastic KM, 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 Tribase, 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, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq.

Cap Sheet: (Optional) HPR Mineral Surface Capsheet or VersiPly 40 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. HPR Smooth Surface Capsheet may be substituted when gravel surface is used as outlined below.

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.
2. GarlaBrite applied at 1 gal. per 150 ft^2 or Pyramic applied at 2 gal. per square.
3. Energizer FR applied at 3 gal./sq. with GarlaBrite applied at 1 gal. per 150 ft^2 or Pyramic applied at 2 gal. per square.
4. Weatherking FR Top Coat applied at 2½ gal./sq. with GarlaBrite applied at 1 gal. per 150 ft^2 or Pyramic applied at 2 gal. per square.
6. Weatherking FR Top Coat applied at 2½ gal./sq. with #11 roofing granules at 60 lb./sq.
6. Weatherking FR Top Coat applied at applied at 3 gal./sq. with roofing gravel applied at 400 lb./sq.

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

Deck Type 5I: Cementitious Wood Fiber, Insulated

Deck Description: Cementitious wood fiber

System Type C: All layers of insulation simultaneously attached.

All General and System Limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 2)	Fastener Density/ft^2
ACFoam II **Minimum 1.5" thick**	**N/A**	**N/A**
E'NRG'Y-2 **Minimum 1.4" thick**	**N/A**	**N/A**
Pyrox **Minimum 1.3" thick**	**N/A**	**N/A**
Perlite **Minimum ¾" thick**	**N/A**	**N/A**
High Density Wood Fiberboard **Minimum 1" thick**	**N/A**	**N/A**
Fiberglass **Minimum $^{15}/_{16}$" thick**	**N/A**	**N/A**

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Top Insulation Layer	Insulation Fasteners (Table 2)	Fastener Density/ft^2
Perlite **Minimum ¾" thick**	**1 & 2**	**1:2 ft^2**
High Density Wood Fiberboard **Minimum 1" thick**	**1 & 2**	**1:2 ft^2**
Fiberglass **Minimum $^{15}/_{16}$" thick**	**1 & 2**	**1:2 ft^2**

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

Base Sheet: (Optional) HPR Glasbase or HPR Premium Glasbase adhered directly over the top layer of insulation 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:	Two or more plies of HPR Glasbase, HPR Premium Glasbase, HPR Tribase, 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, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs./sq.
Cap Sheet:	(Optional) HPR Mineral Surface Capsheet or VersiPly 40 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. HPR Smooth Surface Capsheet may be substituted when gravel surface is used as outlined below.
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. 2. GarlaBrite applied at 1 gal. per 150 ft^2 or Pyramic applied at 2 gal. per square. 3. Energizer FR applied at 3 gal./sq. with GarlaBrite applied at 1 gal. per 150 ft^2 or Pyramic applied at 2 gal. per square. 4. Weatherking FR Top Coat applied at 2½ gal./sq. with GarlaBrite applied at 1 gal. per 150 ft^2 or Pyramic applied at 2 gal. per square. 5. Weatherking FR Top Coat applied at 2½ gal./sq. with #11 roofing granules at 60 lb./sq. 6. Weatherking FR Top Coat applied at applied at 3 gal./sq. with roofing gravel applied at 400 lb./sq.
Maximum Design Pressure:	-45 psf. (See General Limitation #9.)

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