MIAMI-DADE

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 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 Modified Bitumen Roof System Over Steel Deck

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. 01-0816.01 and consists of pages 1 through 20.
The submitted documentation was reviewed by Jorge L. Acebo.

PRODUCT CONTROL ACCEPTED

ROOFING ASSEMBLY NOTICE OF ACCEPTANCE

Category:	Roofing
Sub-Category:	Modified Bitumen
Material:	SBS/SIS/SEBS
Deck Type:	Steel
Maximum Design Pressure	-82.5 psf
Fire Classification:	See General Limitation #1

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

Product	Dimensions	Test Specification	Product Description
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 TorchBase	39" x 34'8" 76 lbs.	ASTM D 5147	SBS modified, fiberglass reinforced, torch applied base sheet.
HPR Glasfelt	36" x 180' Roll weight: 85 lbs.	ASTM D 2178, Type IV	Type IV asphalt impregnated glass felt for use in conventional and modified bitumen built-up system.
HPR Premium Glasfelt	36" x 180' ; Roll weight: 95 lbs.	ASTM D 2178, Type IV	Type VI asphalt impregnated glass felt for use in conventional and modified bitumen built-up systems.
HPR Polyscrim or HPR Polyscrim Plus	40" x 324' 40 lbs.	ASTM D 5726	Polyester felt for use in conventional and modified bitumen built-up roof systems.
StressPly	39" x 34'8" 80 mil	ASTM D 6163 Grade S	Smooth surfaced , SBS modified, fiberglass scrim reinforced roofing membrane.
StressPly FR	39" x 34'8" 80 mil	ASTM D 6163 Grade S	Smooth surfaced, SBS modified, fire retardant, fiberglass scrim membrane.
StressPly Mineral	39" x 26'2" 135 mil	ASTM D 6163 Grade G	Mineral surfaced, SBS modified, fiberglass scrim reinforced membrane.

Product	Dimensions	Test Specification	Product Description
StressPly FR Mineral	39" x 26'2" 135 mil	ASTM D 6163 Grade G	Mineral surfaced, SBS modified, fire retardant, fiberglass scrim membrane.
StressPly Plus	39" x 34'8" 80 mil	ASTM D 6163, Grade S	Smooth surfaced, SEBS/SBS modified, Quad-Axial fiberglass scrim membrane.
StressPly Plus FR	39" x 34'8" 80 mil	ASTM D 6163, Grade S	Smooth surfaced, SEBS/SBS modified, fire retardant, UV resistant, Quad-Axial fiberglass scrim membrane.
StressPly Plus Mineral	39" x 26'2" 135 mil	ASTM D 6163, Grade G	Mineral surfaced, SEBS/SBS modified, UV resistant, Quad-Axial fiberglass scrim membrane.
StressPly Plus Mineral FR	39" x 26'2" 135 mil	ASTM D 6163, Grade G	Mineral surfaced, SEBS/SBS modified, fire retardant, UV resistant, Quad-Axial fiberglass scrim membrane.
StressPly E	39" x 34'8" 80 mil	ASTM D 6162, Grade S	Smooth surfaced, SBS/SIS modified, fiberglass/polyester reinforced membrane.
StressPly E FR	39" x 34'8" 80 mil	ASTM D 6162, Grade S	Smooth surfaced, SBS/SIS modified, fire retardant, fiberglass/polyester reinforced membrane.
StressPly E Mineral	39" x 26'2" 135 mil	ASTM D 6162, Grade G	Mineral surfaced, SBS/SIS modified, fiberglass/polyester reinforced membrane.
StressPly E FR Mineral	39" x 26'2" 135 mil	ASTM D 6162, Grade G	Mineral surfaced, SBS/SIS modified, fire retardant, fiberglass/polyester reinforced membrane.
VersiPly 60	39" x 34'8" 60 mil	ASTM D 6163, Grade S	Smooth surfaced, SBS modified, fiberglass scrim reinforced roofing membrane.
VersiPly 80	39" x 34'8" 80 mil	ASTM D 6163, Grade S	Smooth surfaced, SBS modified, fiberglass scrim reinforced roofing membrane.
VersiPly 80 Mineral	39" x 26'2" 135 mil	ASTM D 6163, Grade G	Mineral surfaced, SBS modified, fiberglass scrim reinforced roofing membrane.
StressPly IV	39" x 26'2"	ASTM D 6163, Grade S	Smooth surfaced, SBS modified, fiberglass reinforced, torch applied cap sheet.
StressPly IV Mineral	39" x 26'2"	ASTM D 6163, Grade G	Mineral surfaced, SBS modified, fiberglass reinforced, torech applied cap sheet.

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 or 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.
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.

APPROVED FASTENERS:

TABLE 2

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
1.	Dekfast Fasteners #12, #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.	#12 Roofgrip Fasteners	Insulation fastener for wood and steel.		ITW Buildex Corp.
6.	Metal Plate	Galvalume stress plate.	3" round 3" square	ITW Buildex Corp.
7.	Gearlok Plastic Plate	Polypropylene round plate	3.2"	ITW Buildex Corp.
8.	Olympic Fastener #12 & #14	Insulation fastener		Olympic Manufacturing Group, Inc.
9.	Olympic Fastener ASAP	Pre-assembled Insulation fastener and plate		Olympic Manufacturing Group, Inc.
10.	Olympic Polypropylene	Polypropylene plastic plate	3.25" round	Olympic Manufacturing Group, Inc.
11.	Olympic G-2	3.5" round galvalume AZ55 steel plate	3.5" round	Olympic Manufacturing Group, Inc.
12.	Olympic Standard	3" round galvalume AZ50 steel plate	3" round	Olympic Manufacturing Group, Inc.
13.	Insul-Fixx Fastener	Insulation fastener for steel and wood decks		SFS Stadler, Inc.
14.	System ES-1	Pre-assembled Insulation fastener and plate		SFS Stadler, Inc.
15.	Insul-Fixx S Plate	3" round galvalume AZ50 steel plate	3" round	SFS Stadler, Inc.
16.	Insul-Fixx P Plate	3" round polyethylene stress plate	3" round	SFS Stadler, Inc.

APPROVED FASTENERS:

TABLE 2

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
17.	Tru-Fast	Insulation fastener for steel and wood decks		The Tru-Fast Corp.
18.	Tru-Fast Plates	3" round galvalume AZ55 steel plate	3" round	The Tru-Fast Corp.
19.	Tru-Fast Plates	Polyethylene plastic plate	3" round	The Tru-Fast Corp.

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	TAS 114(J)	05/15/98

APPROVED ASSEMBLIES:

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

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

All General and System Limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 2)	Fastener Density/ft^2
Pyrox, WhiteLine, Millox, ACFoam II, Isotherm R, E'NRG'Y-2, PSI-25, UltraGard, ISO-95+GL		
Minimum 1.5" thick	**1, 5, 8, 13, 14 & 17**	**1:2 ft^2**
ConPerl, GAFTEMP Permalite, Fesco Board		
Minimum 1.5" thick	**1, 5, 8, 13, 14 & 17**	**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).

Middle Insulation Layer (Optional)	Insulation Fasteners (Table 2)	Fastener Density/ft^2
UltraGard, Pyrox, E'NRG'Y-2, PSI-25, WhiteLine, Millox, ACFoam II, Isotherm R, UltraGard, ISO-95+GL		
Minimum 1.5" thick	**N/A**	**N/A**

Top Insulation Layer (Optional)	Insulation Fasteners (Table 2)	Fastener Density/ft^2
BP High Strength, FM-90 Traffic Top/High Density, GAFTEMP High Density, Roof Insulation Board, High Density Fiberboard, Fiber Base HD1, HD6, Structodek		
Minimum ½" thick	**N/A**	**N/A**
Dens Deck		
Minimum ¼" thick	**N/A**	**N/A**

Note: Apply optional middle and/or top layer of insulation shall be adhered with approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft^2 or in Insta-Stik Roofing Adhesive applied in continuous ¾ to 1 inch wide beads spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulations listed as the base layer shall only be used as the base layer with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels may be used as a top layer placed with the polyisocyanurate side face down.

Base/Ply Sheet:	One or more plies of HPR Glasbase, HPR Premium Glasbase, HPR Glasfelt, HPR Premium Glasfelt, HPR Polyscrim, HPR Polyscrim Plus, GAFGLAS #75, GAFGLAS Ply 4, Vaporbar GB, PermaPly R, GlasPly IV, PermaPly 28, or other 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.
Membrane:	One ply of StressPly E, StressPly E FR, StressPly E Mineral, StressPly E FR Mineral, StressPly, StressPly Mineral, StressPly FR, StressPly FR Mineral, StressPly Plus, StressPly Plus Mineral, StressPly Plus FR, StressPly Plus Mineral FR, 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. 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.)

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type B(2): Base layer of insulation mechanically fastened, top layer adhered with approved asphalt.

Deck: 18-22 ga Grade C steel deck attached 6' o.c. (every flute) using ¾"puddle welds to steel supports spaced maximum 5 ft. o.c.

All General and System Limitations apply.

Base Insulation Layer	**Insulation Fasteners (Table 2)**	**Fastener Density/ft^2**
ACFoam II Minimum 1.5" thick	**8**	**1:1.33 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).

Middle Insulation Layer (Optional)	**Insulation Fasteners (Table 2)**	**Fastener Density/ft^2**
ACFoam II Minimum 1.5" thick	**N/A**	**N/A**

Top Insulation Layer (Optional)	**Insulation Fasteners (Table 2)**	**Fastener Density/ft^2**
High Density Fiberboard, Structodek Minimum ½" thick	**N/A**	**N/A**
Dens Deck Minimum ¼" thick	**N/A**	**N/A**

Note: Apply optional middle and/or top layer of insulation shall be adhered with approved hot asphalt, HPR All Temp, Garlastic KM, 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. 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 Glasfelt, HPR Premium Glasfelt, HPR Polyscrim, HPR Polyscrim Plus, GAFGLAS #75, GAFGLAS Ply 4, Vaporbar GB, PermaPly R, GlasPly IV, PermaPly 28, or other 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. (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 FR, StressPly E Mineral, StressPly E FR Mineral, StressPly, StressPly Mineral, StressPly FR, StressPly FR Mineral, StressPly Plus, StressPly Plus Mineral, StressPly Plus FR, StressPly Plus Mineral FR, 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. 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:	-82.5 psf. (See General Limitation #7.)

Deck Type 2I:	Steel, Insulated
Deck Description:	18-22 ga. steel
System Type B(3):	Base layer of insulation mechanically fastened, top layer adhered with approved asphalt.
Deck:	18-22 ga Grade C steel deck attached 6' o.c. (every flute) using ¾"puddle welds to steel supports spaced maximum 5 ft. o.c.

All General and System Limitations apply.

Base Insulation Layer	**Insulation Fasteners (Table 2)**	**Fastener Density/ft^2**
ACFoam II Minimum 1.5" thick	**8**	**1:1.33 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).

Middle Insulation Layer (Optional)	**Insulation Fasteners (Table 2)**	**Fastener Density/ft^2**
ACFoam II Minimum 1.5" thick	**N/A**	**N/A**

Top Insulation Layer (Optional)	**Insulation Fasteners (Table 2)**	**Fastener Density/ft^2**
High Density Fiberboard, Structodek Minimum ½" thick	**N/A**	**N/A**
Dens Deck Minimum ¼" thick	**N/A**	**N/A**

Note: Apply optional middle and/or top layer of insulation shall be adhered with approved hot asphalt, HPR All Temp, Garlastic KM, or Garlastic KM Plus within the EVT range and at a rate of 20-40 lbs/100 ft^2 or in Insta-Stik Roofing Adhesive applied in continuous ¾ to 1 inch wide beads spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulations listed as the base layer shall only be used as the base layer with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels may be used as a top layer placed with the polyisocyanurate side face down.

Base/Ply Sheet:	One more plies of HPR GlasBase, HPR Premium GlasBase, HPR Glasfelt, HPR Premium Glasfelt or other 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. Or One ply of HPR TorchBase, torch applied to Structodek.
Membrane:	One ply of StressPly IV or StressPly IV Mineral, torch applied.

Surfacing:	Optional for Stress Ply IV Mineral. Required for StressPly IV. 1. GarlaBrite applied at 1 gal. per 150 ft^2 or Pyramic applied at 2 gal. per square. 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.
Maximum Design Pressure:	-82.5 psf. (See General Limitation #7.)

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

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

Deck: 18-22 ga Grade C steel deck attached 6' o.c. (every flute) using ¾"puddle welds to steel supports spaced 5 ft. o.c.

All General and System Limitations apply.

Base Insulation Layer	**Insulation Fasteners (Table 2)**	**Fastener Density/ft^2**
Pyrox, WhiteLine, Millox, ACFoam II, Isotherm R, E'NRG'Y-2, PSI-25, UltraGard, ISO-95+GL		
Minimum 1" thick	**N/A**	**N/A**

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

Top Insulation Layer	**Insulation Fasteners (Table 2)**	**Fastener Density/ft^2**
BP High Strength, FM-90 Traffic Top/High Density, GAFTEMP Fiberboard, GAFTEMP High Density, Roof Insulation Board, High Density Fiberboard, Fiber Base HD1, HD6, Structodek, Armor Board Regular, Esgard, Celotex Fiberboard, Huebert Fiberboard, Kop-R Wood Fiber, ConPerl, GAFTEMP Permalite, Fesco Board, GAFTEMP Recover Board, Retrofit Board		
Minimum ½" thick	**1, 5, 8, 13, 14 & 17**	**1:3 ft^2**
Standard or Wide Flute Fiberglass Roof Insulation, Standard or Wide Flute Fiber Glass Roof Insulation, Fiber Glass Roof Insulation (Standard or Wide Flute)		
Minimum $^{15}/_{16}$" thick	**1, 5, 8, 13, 14 & 17**	**1:3 ft^2**

Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. 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 Glasfelt, HPR Premium Glasfelt, HPR Polyscrim, HPR Polyscrim Plus, GAFGLAS #75, GAFGLAS Ply 4, Vaporbar GB, PermaPly R, GlasPly IV, PermaPly 28, or other 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. or with Weatherking Mastic or Weatherking Plus Mastic applied at 2½ gal./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 FR, StressPly E Mineral, StressPly E FR Mineral, StressPly, StressPly Mineral, StressPly FR, StressPly FR Mineral, StressPly Plus, StressPly Plus Mineral, StressPly Plus FR, StressPly Plus Mineral FR, 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 Mastic or Weatherking Plus Mastic applied at 2½ gal./sq.

Surfacing: Optional for FR or mineral surfaced Membranes. Required for non-FR or smooth surfaced membranes.

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:

-60 psf (for coverboard of 1" thick High Density Wood Fiberboard mechanically attached at 1 per 2 ft^2 over polyisocyanurate base layer with asphalt applied membranes.) (See General Limitation #7.)

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

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

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

All General and System Limitations apply.

Base Insulation Layer	**Insulation Fasteners (Table 2)**	**Fastener Density/ft^2**
Pyrox, WhiteLine, Millox, ACFoam II, Isotherm R, E'NRG'Y-2, PSI-25, UltraGard, ISO-95+GL		
Minimum 1.5" thick	**N/A**	**N/A**
JM Fiber Glass Roof Insulation (Standard or Wide Flute), Owens Corning Standard or Wide Flute Fiberglas Roof Insulation		
Minimum $^{15}/_{16}$" thick	**N/A**	**N/A**

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

Top Insulation Layer	**Insulation Fasteners (Table 2)**	**Fastener Density/ft^2**
BP High Strength, FM-90 Traffic Top/High Density, GAFTEMP High Density, Roof Insulaiton Board, High Density Fiberboard, Sturdi-Top, Fiber Base HD1, HD6, Structodek FS		
Minimum ½" thick	**1, 2, 5, 8, 13, 14 & 17**	**1:2.67 ft^2**
JM Fiber Glass Roof Insulation (Standard or Wide Flute), Owens Corning Standard or Wide Flute Fiberglas Roof Insulation		
Minimum $^{15}/_{16}$" thick	**1**	**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/Ply Sheet: One or more plies of HPR Glasbase, HPR Premium Glasbase, HPR Glasfelt, HPR Premium Glasfelt or other 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.
Or
One ply of HPR TorchBase, torch applied to Structodek FS

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

Surfacing: Optional for Stress Ply IV Mineral. Required for StressPly IV.

1. GarlaBrite applied at 1 gal. per 150 ft2 or Pyramic applied at 2 gal. per square.
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.

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

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type D(1): All layers of insulation and base sheet simultaneously attached.

Deck: 18-22 ga Grade C steel deck attached 6' o.c. (every flute) using ¾"puddle welds to steel supports spaced 5 ft. o.c.

All General and System Limitations apply.

Base Insulation Layer	**Insulation Fasteners (Table 2)**	**Fastener Density/ft^2**
Pyrox, WhiteLine, Millox, ACFoam II, Isotherm R, E'NRG'Y-2, PSI-25, UltraGard, ISO-95+GL		
Minimum 1" thick	**N/A**	**N/A**

Top Insulation Layer (Optional)	**Insulation Fasteners (Table 2)**	**Fastener Density/ft^2**
BP High Strength, FM-90 Traffic Top/High Density, GAFTEMP High Density, Roof Insulation Board, High Density Fiberboard, Fiber Base HD1, HD6, Structodek		
Minimum ½" thick	**N/A**	**N/A**
Dens-Deck		
Minimum ¼" 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 TriBase, GAFGLAS Stratavent, JM PermaPly R, JM Dynabase, JM Ventsulation, Tamko Vapor-Chan, Intec Permavent or Intec FlexBase 60 fastened to the deck using Buildex Accutrac Fasteners and 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 TriBase, 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 Accutrac Fasteners and 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) ½" 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, HPR Premium Glasbase, HPR Glasfelt, HPR Premium Glasfelt, HPR Polyscrim, HPR Polyscrim Plus, GAFGLAS #75, GAFGLAS Ply 4, Vaporbar GB, PermaPly R, GlasPly IV, PermaPly 28, or other 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. (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 FR, StressPly E Mineral, StressPly E FR Mineral, StressPly, StressPly Mineral, StressPly FR, StressPly FR Mineral, StressPly Plus, StressPly Plus Mineral, StressPly Plus FR, StressPly Plus Mineral FR, 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. 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:	-60 psf (See General Limitation #7.)

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. steel

System Type D(2): All layers of insulation and base sheet simultaneously attached.

Deck: 18-22 ga Grade C steel deck attached 6' o.c. (every flute) using ¾"puddle welds to steel supports spaced 5 ft. o.c.

All General and System Limitations apply.

Base Insulation Layer	**Insulation Fasteners (Table 2)**	**Fastener Density/ft^2**
Pyrox, WhiteLine, Millox, ACFoam II, Isotherm R, E'NRG'Y-2, PSI-25, UltraGard, ISO-95+GL		
Minimum 1" thick	**N/A**	**N/A**

Top Insulation Layer (Optional)	**Insulation Fasteners (Table 2)**	**Fastener Density/ft^2**
BP High Strength, FM-90 Traffic Top/High Density, GAFTEMP High Density, Roof Insulation Board, High Density Fiberboard, Fiber Base HD1, HD6, Structodek		
Minimum ½" thick	**N/A**	**N/A**
Dens-Deck		
Minimum ¼" 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 TriBase, 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 Accutrac Fasteners and 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 TriBase, 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 Accutrac Fasteners and 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) ½" 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, HPR Premium Glasbase, HPR Glasfelt, HPR Premium Glasfelt or other 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. Or One ply of HPR TorchBase, torch applied to base sheet (no intermediate coverboard)
Membrane:	One ply of StressPly IV or StressPly IV Mineral, torch applied.
Surfacing:	Optional for Stress Ply IV Mineral. Required for StressPly IV. 1. GarlaBrite applied at 1 gal. per 150 ft2 or Pyramic applied at 2 gal. per square. 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.
Maximum Design Pressure:	-60 psf (See General Limitation #7.)

STEEL DECK SYSTEM LIMITATIONS:

1. If mechanical attachment to the structural deck through the lightweight insulating concrete is proposed, a field withdrawal resistance testing shall be performed to determine equivalent or enhanced fastener patterns and density. All testing and fastening design shall be in compliance with Testing Application Standard TAS 105 and Roofing Application Standard RAS 137, calculations shall be signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant.
2. For steel deck application where specific deck construction is not referenced: The deck shall be a minimum 22 gage attached with 5/8" puddle welds with weld washers at every flute with maximum deck spans of 5 ft. o.c.

GENERAL LIMITATIONS:

1. Fire classification is not part of this acceptance, refer to a current Approved Roofing Materials Directory for fire ratings of this product.
2. Insulation may be installed in multiple layers. The first layer shall be attached in compliance with Product Control Approval guidelines. All other layers shall be adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq., or mechanically attached using the fastening pattern of the top layer
3. All standard panel sizes are acceptable for mechanical attachment. When applied in approved asphalt, panel size shall be 4' x 4' maximum.
4. An overlay and/or recovery board insulation panel is required on all applications over closed cell foam insulations when the base sheet is fully mopped. If no recovery board is used the base sheet shall be applied using spot mopping with approved asphalt, 12" diameter circles, 24" o.c.; or strip mopped 8" ribbons in three rows, one at each 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