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)

Bitec, Inc.
#2 Industrial Park Drive
Morrilton, AR 72110

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 Miami-Dade County Product Control Division and accepted by the Board of Rules and Appeals (BORA) 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 Division (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. BORA reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Division 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 High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: Bitec Modified Bitumen Roof Systems over Lightweight Insulating Concrete

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 consists of pages 1 through 11.
The submitted documentation was reviewed by Frank Zuloaga, RRC

ROOFING ASSEMBLY APPROVAL

Category:	Roofing
Sub-Category:	Modified Bitumen
Materials	SBS/APP
Deck Type:	Lightweight Insulating Concrete
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
Beta Base	3 sq. roll	ASTM D 4601	Fiberglass base sheet
APM-4.5T	25.58 x 3.28'; roll weight: 92lbs.	ASTM D 5147	APP mineral surfaced modified bitumen membrane reinforced with polyester for use as a roof membrane sheet.
APM-4T	32.8 x 3.28'; roll weight: 107 lbs.	ASTM D 5147	APP mineral surfaced modified bitumen membrane reinforced with polyester for use as a roof membrane sheet.
MDA	32.8 x 3.28'; roll weight: 107 lbs.	ASTM D 5147	APP colored pattern mineral surfaced modified bitumen membrane reinforced with polyester for use as a roof membrane sheet.
APS-4T	33.5 x 32.8'; roll weight: 90 lbs.	ASTM D 5147	APP modified bitumen membrane reinforced with polyester for use as an interply or roof membrane sheet.
FA-2T	49.2 x 3.28'; roll weight: 70 lbs.	ASTM D 5147	APP modified bitumen membrane reinforced with fiberglass for use as a base sheet or interply membrane.
MAC 300		PA 121	Aluminum roof coating
MAC 200		PA 121	Aluminum roof coating.
SPM-3.5H	33.9 x 3.28'; roll weight: 100 lbs.	ASTM D 5147	SBS mineral surfaced modified bitumen membrane reinforced with polyester for use as a roof membrane sheet.
SPM-4H	32.8 x 3.28'; roll weight: 105 lbs.	ASTM D 5147	SBS mineral surfaced modified bitumen membrane reinforced with polyester for use as a roof membrane sheet.
MDS	32.8 x 3.28'; roll weight: 107 lbs.	ASTM D 5147	SBS colored pattern mineral surfaced modified bitumen membrane reinforced with polyester for use as a roof membrane sheet.
SPM-4.5T	25.58 x 3.28'; roll weight: 92 lbs.	ASTM D 5147	SBS mineral surfaced modified bitumen membrane reinforced with polyester for use as a roof membrane sheet.

Product	Dimensions	Test Specification	Product Description
SPS-3H	33.5 x 32.8'; roll weight: 73 lbs	ASTM D 5147	SBS modified bitumen membrane reinforced with polyester for use as an interply or roof membrane sheet.
SFM-3.5H	33.9 x 3.28'; roll weight: 100 lbs.	ASTM D 5147	SBS modified bitumen, mineral surface membrane reinforced with fiberglass for use as a roof membrane.
SFM-3.5H-FR	33.9 x 3.28'; roll weight: 103 lbs.	ASTM D 5147	SBS modified bitumen, mineral surface membrane reinforced with fiberglass for use as a roof membrane sheet.
FS-2H	49.2 x 3.28'; roll weight: 70 lbs.	ASTM D 5147	SBS modified bitumen membrane reinforced with fiberglass for use as a base sheet or interply membrane.

EVIDENCE SUBMITTED

Test Agency	Test Identifier	Description	Date
Factory Mutual Research Corporation	J.I. # 0B3A7.AM		12/30/96
Dynatech Engineering, Inc.	06.94.07	Wind Uplift Testing	06/07/94
Underwriters Laboratories, Inc.	R12321 (N)	Fire Classification Compliance	02/25/93
Exterior Research & Design, LLC.	#10650.10.97-1	Wind Uplift PA 114(D) & (J)	10/15/97

APPROVED ASSEMBLIES

Membrane Type: APP

Deck Type 4I: Lightweight Insulating Concrete, Insulated, New Construction or Reroof

Deck Description: Elastizell Cellular Lightweight 300 psi Concrete over steel or concrete structure

System Type A: Anchor sheet mechanically fastened; one or more layers of insulation adhered with approved asphalt.

All General and System Limitations apply.

Deck Minimum 22 ga. Type B Grade E slotted steel decking attached to ¼" thick structural steel supports spaced 5 ft. o.c. fastened with 5/8" puddle welds spaced 6" o.c. to steel supports. Steel deck side laps shall be fastened 18" o.c. between supports with Traxx/ l fasteners.

Insulation Base Layer	Fastener Type	Fastening Detail No.	Fasteners Per Board	Fastener Density
One or more layers of any of the following insulations:				
Approved Type(s): **ACFoam II**				
Minimum: 4' x 4' x 1.5"	N/A	N/A	N/A	N/A

Insulation Base or Top Layer	Fastener Type	Fastening Detail No.	Fasteners Per Board	Fastener Density
One or more layers of any of the following insulations:				
Approved Type(s): **Standard or Wide Flute Fiberglass Roof Insulation, Standard or Wide Flute Fiber Glass Roof Insulation**				
Minimum: 4' x 4' x 15/16"	N/A	N/A	N/A	N/A
Approved Type(s): **Celotherm, ConPerl, GAFTEMP Permalite, Fesco Board**				
Minimum: 2' x 4' x ¾"	N/A	N/A	N/A	N/A
Approved Type(s): **Armor Board Regular, Esgard, Celotex Fiberboard, GAFTEMP Fiberboard, Huebert Fiberboard, Kop-R Wood Fiber**				
Minimum: 4' x 4' x 1"	N/A	N/A	N/A	N/A
Approved Type(s): **Celotex High Density Wood Fiberboard**				
Minimum: 4' x 4' x ½"	N/A	N/A	N/A	N/A

Note: All insulation shall be adhered to the anchor sheet in full moppings of approved hot asphalt within the EVT range and at a rate of 20-40 lbs. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulations 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 may be used as a top layer placed with the polyisocyanurate side facing down.

Anchor Sheet:	One ply of GAFGLAS #75 fastened to the deck as described below:
Fastening #1:	Fasten base sheet with ES Products FM-90 Fasteners spaced 7" o.c. in a 4" side lap and 7" o.c. in two staggered rows in the center of the sheet.
Base Sheet:	One or more plies of PermaPly No. 28, Glas Base, VaporBar, GAFGLAS #75 adhered to the insulated substrate with a full mopping of approved asphalt at an application rate of 25 lb./sq. ± 15%.
Ply Sheet:	(Optional or as specified) One ply of FA-2T or APS-4T torch applied one or more plies of GlasPly IV or GlasPly Premier adhered with a full mopping of asphalt at an application rate of 25 lb./sq. ± 15%.
Membrane:	One ply of MDA, APS-4T, APM-4T, or APM-4.5T torch applied.
Surfacing:	(Optional) Install one of the following as required for fire rating: 1. APOC 212, Henry 520, Karnak 97 or 97AF, MAC 200, Monsey ProGrade Aluminum or Grundy al MB applied at a rate of 1 ½ gal./sq. 2. Install 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved asphalt at an application rate of 60 lb./sq..
Maximum Design Pressure:	-45 psf (See General Limitations #7.)
Maximum Fire Classification:	See General Limitation #1.
Maximum Slope:	See General Limitation #1.

Membrane Type: SBS

Deck Type 4I: Lightweight Insulating Concrete, Insulated, New Construction or Reroof

Deck Description: Elastizell Cellular Lightweight 300 psi Concrete over steel or concrete structure.

System Type A: Anchor sheet mechanically fastened; one or more layers of insulation adhered with approved asphalt.

All General and System Limitations apply.

Deck Minimum 22 ga. Type B Grade E slotted steel decking attached to ¼" thick structural steel supports spaced 5 ft. o.c. fastened with 5/8" puddle welds spaced 6" o.c. to steel supports. Steel deck side laps shall be fastened 18" o.c. between supports with Traxx/ 1 fasteners.

Insulation Base Layer	**Fastener Type**	**Fastening Detail No.**	**Fasteners Per Board**	**Fastener Density**
One or more layers of any of the following insulations:				
Approved Type(s): **ACFoam II**				
Minimum: 4' x 4' x 1.5"	N/A	N/A	N/A	N/A

Insulation Base or Top Layer	**Fastener Type**	**Fastening Detail No.**	**Fasteners Per Board**	**Fastener Density**
One or more layers of any of the following insulations:				
Approved Type(s): **Standard or Wide Flute Fiberglass Roof Insulation, Standard or Wide Flute Fiber Glass Roof Insulation**				
Minimum: 4' x 4' x 15/16"	N/A	N/A	N/A	N/A
Approved Type(s): **Celotherm, ConPerl, GAFTEMP Permalite, Fesco Board**				
Minimum: 2' x 4' x ¾"	N/A	N/A	N/A	N/A
Approved Type(s): **Armor Board Regular, Esgard, Celotex Fiberboard, GAFTEMP Fiberboard, Huebert Fiberboard, Kop-R Wood Fiber**				
Minimum: 4' x 4' x 1"	N/A	N/A	N/A	N/A
Approved Type(s): **Celotex High Density Wood Fiberboard**				
Minimum: 4' x 4' x ½"	N/A	N/A	N/A	N/A

Note: All insulation shall be adhered to the anchor sheet in full moppings of approved hot asphalt within the EVT range and at a rate of 20-40 lbs. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulations 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 may be used as a top layer placed with the polyisocyanurate side facing down.

Anchor Sheet:	One ply of GAFGLAS #75 fastened to the deck as described below:
Fastening #1:	Fasten base sheet with ES Products FM-90 Fasteners spaced 7" o.c. in a 4" side lap and 7" o.c. in two staggered rows in the center of the sheet.
Base Sheet:	One or more plies of PermaPly No. 28, Glas Base, VaporBar, GAFGLAS #75 adhered to the insulated substrate with a full mopping of approved asphalt at an application rate of 25 lb./sq. ± 15%.
Ply Sheet:	(Optional or as specified) One ply of FS-2H or SPS-3H or one or more plies of GlasPly IV or GlasPly Premier adhered with a full mopping of approved asphalt at an application rate of 25 lbs./sq. ± 15%.
Membrane:	One ply of SPM-4.5T torch welded, or one ply of MDS, SPM-3.5H, SFM-3.5H, SFM-3.5H-FR or SPS-3H adhered with a full mopping of approved asphalt at an application rate of 25 lb./sq. ± 15%.
Surfacing:	(Optional) Install one of the following as required for fire rating: 1. Karnak 97 or 97AF, MAC 200, MAC 300, Monsey ProGrade Aluminum or Grundy al MB applied at a rate of 1 ½ gal./sq. 2. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved asphalt at an application rate of 60 lb./sq..
Maximum Design Pressure:	-45 psf (See General Limitations #7.)
Maximum Fire Classification:	See General Limitation #1.
Maximum Slope:	See General Limitation #1.

Membrane Type: APP

Deck Type 4: Lightweight Insulating Concrete, New Construction or Reroof

Deck Description: Elastizell Lightweight 300 psi Concrete over steel or concrete structure

System Type E: Base sheet mechanically fastened.

All General and System Limitations apply.

Deck Minimum 22 ga. Type B Grade E slotted steel decking attached to ¼" thick structural steel supports spaced 5 ft. o.c. fastened with 5/8" puddle welds spaced 6" o.c. to steel supports. Steel deck side laps shall be fastened 18" o.c. between supports with Traxx/ 1 fasteners.

Base Sheet: One or more plies of GAFGLAS #75 fastened to the deck as described below:

Fastening #1: Fasten base sheet with ES Products FM-90 Fasteners spaced 7" o.c. in a 4" side lap and 7" o.c. in two staggered rows in the center of the sheet.

Ply Sheet: (Optional or as specified) One ply of FA-2T or APS-4T torch applied one or more plies of GlasPly IV or GlasPly Premier adhered with a full mopping of asphalt at an application rate of 25 lb./sq. ± 15%.

Membrane: One ply of MDA, APS-4T, APM-4T, or APM-4.5T torch applied.

Surfacing: (Optional) Install one of the following as required for fire rating:

1. APOC 212, Henry 520, Karnak 97 or 97AF, MAC 200, Monsey ProGrade Aluminum or Grundy al MB applied at a rate of 1 ½ gal./sq.
2. Install 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved asphalt at an application rate of 60 lb./sq..

Maximum Design Pressure: -45 psf (See General Limitations #7.)

Maximum Fire Classification: See General Limitation #1.

Maximum Slope: See General Limitation #1.

Membrane Type: SBS

Deck Type 4: Lightweight Insulating Concrete, New Construction or Reroof

Deck Description: Elastizell Lightweight 300 psi Concrete over steel or concrete structure

System Type E: Base sheet mechanically fastened.

All General and System Limitations apply.

Deck Minimum 22 ga. Type B Grade E slotted steel decking attached to ¼" thick structural steel supports spaced 5 ft. o.c. fastened with 5/8" puddle welds spaced 6" o.c. to steel supports. Steel deck side laps shall be fastened 18" o.c. between supports with Traxx/ l fasteners.

Base Sheet: One or more plies of GAFGLAS #75 fastened to the deck as described below:

Fastening #1: Fasten base sheet with ES Products FM-90 Fasteners spaced 7" o.c. in a 4" side lap and 7" o.c. in two staggered rows in the center of the sheet.

Ply Sheet: (Optional or as specified) One ply of FS-2H or SPS-3H or one or more plies of GlasPly IV or GlasPly Premier adhered with a full mopping of approved asphalt at an application rate of 25 lbs./sq. ± 15%.

Membrane: One ply of SPM-4.5T torch welded, or one ply of MDS, SPM-3.5H, SFM-3.5H, SFM-3.5H-FR or SPS-3H adhered with a full mopping of approved asphalt at an application rate of 25 lb./sq. ± 15%.

Surfacing: (Optional) Install one of the following as required for fire rating:

1. Karnak 97 or 97AF, MAC 200, MAC 300, Monsey ProGrade Aluminum or Grundy al MB applied at a rate of 1 ½ gal./sq.
2. 400 lb./sq. gravel or 300 lb./sq. slag in a flood coat of approved asphalt at an application rate of 60 lb./sq..

Maximum Design Pressure: -45 psf (See General Limitations #7.)

Maximum Fire Classification: See General Limitation #1.

Maximum Slope: See General Limitation #1.

LIGHTWEIGHT INSULATING CONCRETE 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 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 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.
3. For systems where specific lightweight insulating concrete is not referenced, the minimum design mix shall be a minimum of 250 psi.

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 ACCEPTANCE