



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)

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**Ecology Roof Systems**  
505 N. Tustin Avenue Suite 188  
Santa Ana, CA 92705

### 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 High Velocity Hurricane Zone of the Florida Building Code.

### DESCRIPTION: Ecology Modified Bitumen 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 consists of pages 1 through 10.  
The submitted documentation was reviewed by Frank Zuloaga, RRC



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# ROOFING ASSEMBLY APPROVAL

Category: Roofing  
Sub-Category: SBS Modified Bitumen  
Deck Type: Concrete  
Maximum Design Pressure -45 psf  
Fire Classification: See General Limitation #1

## TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
ERS-500	3 squares; roll weight: 85 lbs.	ASTM D 5147	Lightweight SBS modified base sheet for use as a base or interply in modified bitumen roof systems.
ERS-500-4	2 squares; roll weight: 90 lbs.	ASTM D 5147	Heavyweight SBS modified base sheet for use as a base or interply in modified bitumen roof systems.
ERS-500-6	1.5 squares; roll weight: 106 lbs.	ASTM D 5147	SBS modified interply sheet for use in the metalflex and hot asphalt/cold adhesive modified bitumen built-up roof systems.
ERS-603	1 square; roll weight: 120 lbs.	ASTM D 5147	Dual reinforced, SBS modified granulated torch applied membrane.
ERS-602	1 square; roll weight: 110 lbs.	ASTM D 5147	Dual reinforced, SBS modified smooth torch applied membrane. Use permitted only with additional surfacing.
ERS-502	1 square; roll weight: 100 lbs.	ASTM D 5147	Polyester reinforced SBS modified granulated membrane. Applied in hot asphalt.
ERS-501	1 square; roll weight: 90 lbs.	ASTM D 5147	Polyester reinforced SBS smooth surface membrane. May be used as an interply, or as a membrane with additional surfacing. Applied in hot asphalt or cold adhesive.
ERS-505	1 square; roll weight: 90 lbs.	ASTM D 5147	Lightweight glass reinforced cap membrane. Applied in hot asphalt or cold adhesive.
ERS-504C	1 square; roll weight: 110 lbs.	ASTM D 5147	Polyester and glass reinforced SBS membrane for use in modified bitumen roof systems. Applied in hot asphalt or cold adhesive.



<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
ERS-504G	1 square; roll weight: 110 lbs.	ASTM D 5147	Fiberglass reinforced SBS membrane with granule surface for use in modified bitumen roof systems. Applied in hot asphalt or cold adhesive.
ERS-504CG	1 square; roll weight: 120 lbs.	ASTM D 5147	Polyester and glass reinforced SBS membrane for use in modified bitumen roof systems. Torch applied.
ERS-703	1 square; roll weight: 101 lbs.	ASTM D 5147	Aluminum or copper embossed SBS modified cap membrane for use on modified bitumen roof systems. May be applied in hot asphalt or by torch.
ERS-500-6P	9½ square; roll weight: 106 lbs.	ASTM D 5147	Polyester reinforced SBS modified interply sheet used in hot or cold modified bitumen built-up roof systems.
ERS-604	1 square; roll weight: 120 lbs.	ASTM D 5147	Dual reinforced, fire rated SBS modified granulated torch membrane. Torch applied.

### APPROVED INSULATIONS:

TABLE 2

<b>Product Name</b>	<b>Product Description</b>	<b>Manufacturer (With Current NOA)</b>
EnergyGuard Composite	Polyisocyanurate foam insulation with perlite insulation.	GAF Materials Corp.
EnergyGuard	Polyisocyanurate foam insulation	BMCA
ACFoam II	Polyisocyanurate foam insulation	Atlas Energy Products
ACFoam Composite	Polyisocyanurate composite foam insulation	Atlas Energy Products
ISO 95+	Polyisocyanurate foam insulation	Firestone Building Products, Inc.
ISO 95+ Composite	Polyisocyanurate/perlite rigid insulation	Firestone Building Products, Inc.
Wood Fiber	Wood fiber insulation board	Generic
High Density Wood Fiberboard	Wood fiber insulation board	Generic
Perlite Insulation	Perlite insulation board	generic
Dens Deck	Water resistant gypsum board	G-P Gypsum Corp.
Armor-R Plus	Polyisocyanurate foam roof insulation.	Honeywell Int'l., Inc.



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**APPROVED INSULATIONS:**

**TABLE 2**

<b>Product Name</b>	<b>Product Description</b>	<b>Manufacturer (With Current NOA)</b>
ENRGY 2, ENERGY 3, PSI-25	Isocyanurate Insulation.	Johns Manville
Fesco Foam	Isocyanurate Insulation with perlite facer	Johns Manville
Kop-R (WC)	Polyisocyanurate/perlite ridgid insulation	Koppers Industries, Inc.
Multi-Max & FA	Polyisocyanurate roof insulation	RMax, Inc.

**APPROVED FASTENERS:**

**TABLE 3**

<b>Fastener Number</b>	<b>Product Name</b>	<b>Product Description</b>	<b>Dimensions</b>	<b>Manufacturer (With Current NOA)</b>
1.	Dekfast Fasteners #14 & #15	Insulation fastener for wood, steel and concrete decks		Construction Fasteners Inc.
2.	Dekfast Hex Plate	Galvalume hex stress plate.	2 7/8" x 3-1/4"	Construction Fasteners Inc.
3.	Dekfast Autoset Plate	Galvalume stress plate.	2-7/8" x 3-1/4"	Construction Fasteners Inc.

**EVIDENCE SUBMITTED:**

<b><u>Test Agency/Identifier</u></b>	<b><u>Name</u></b>	<b><u>Report</u></b>	<b><u>Date</u></b>
Factory Mutual Research Corp.	Wind Uplift Classification and Fire Rating	J.I. 2X4A8.AM	09/07/94
Underwriters Laboratories, Inc..	Fire Classification	See current Underwriters Laboratories Guide	01/01/94
Factory Mutual Research Corp.	Current insulation fastening requirements	See current FMRC Approval Guide	01/01/94



**APPROVED ASSEMBLIES:**

- Membrane Type:** SBS
- Deck Type 3I:** Concrete Decks, Insulated
- Deck Description:** 2500 psi structural concrete or concrete plank
- System Type A:** One or more layers of insulation adhered with approved asphalt; base sheet adhered.

**All General and System Limitations shall apply.**  
 One or more layers of any of the following insulations.

Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft <sup>2</sup>
<b>WHITE LINE, AP Minimum 1.3" thick</b>	N/A	N/A
<b>ENRGY 2, ENRGY 3, PSI-25, Iso 95 + GW, GL Minimum 1.4" thick</b>	N/A	N/A
<b>Multi-Max, Multi-Max FA, Permalite ISO-Lite R Minimum 1.5" thick</b>	N/A	N/A
<b>ACFoam Composite, Fesco Foam, EnergyGuard Composite, Kop-R Minimum 2" thick</b>	N/A	N/A
<b>Wood Fiber Minimum 1" thick</b>	N/A	N/A
<b>Perlite Minimum ¾" thick</b>	N/A	N/A

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

**Base Sheet:** (Optional) One ply of ERS-500, ERS-500-4 or ERS-500-6 adhered to the insulated substrate with a spot mopping of approved mopping asphalt in 16" dia. spots 18" o.c. or a full mopping to an approved perlite at an application rate of 20-40 lbs./sq.

**Ply Sheet:** None.

**Membrane:** One ply of ERS-602 or ERS-603 torch applied to base sheet, or one ply of ERS-501, ERS-502 ERS-504C or ERS-504G adhered with approved mopping asphalt or adhesive at an application rate of 20-40 lbs./sq.

**Surfacing:** (Optional) one of the following as required:  
 1. APOC Sunbrite 400 at 2 gal.sq.

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



**Membrane Type:** SBS  
**Deck Type 3I:** Concrete Decks, Insulated  
**Deck Description:** 2500 psi structural concrete or concrete plank  
**System Type B:** Base insulation layer mechanically attached; top layer adhered; base sheet adhered.

**All General and System Limitations shall apply.**

One or more layers of any of the following insulations.

<b>Base Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>WHITE LINE Minimum 1.3" thick</b>	<b>1</b>	<b>1:2 ft<sup>2</sup></b>
<b>ENRGY 2, ENRGY 3, PSI-25 Minimum 1.4" thick</b>	<b>1</b>	<b>1:2 ft<sup>2</sup></b>
<b>Multi-Max, Multi-Max FA, Permalite ISO-Lite R Minimum 1.5" thick</b>	<b>1</b>	<b>1:2 ft<sup>2</sup></b>
<b>ACFoam Composite, Fesco Foam, EnergyGuard Composite, Kop-R (WC) Minimum 2" thick</b>	<b>1</b>	<b>1:2 ft<sup>2</sup></b>
<b>Wood Fiber Minimum 1" thick</b>	<b>1</b>	<b>1:4 ft<sup>2</sup></b>
<b>Perlite Minimum ¾" thick</b>	<b>1</b>	<b>1:1.33 ft<sup>2</sup></b>

**Note:** Base layer shall be mechanically attached with fasteners and density described above. 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).

<b>Top Insulation Layer (Optional)</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>AC-Foam Composite, Kop-R (WC), Fesco Foam, EnergyGuard Composite, Minimum 2" thick</b>	<b>N/A</b>	<b>N/A</b>
<b>Wood Fiber Minimum 1" thick</b>	<b>N/A</b>	<b>N/A</b>
<b>Perlite Minimum ¾" thick</b>	<b>N/A</b>	<b>N/A</b>

**Note:** 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<sup>2</sup>. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.



Base Sheet: (Optional) One ply of ERS-500, ERS-500-4, ERS-500-6 or ERS 501 adhered to the insulated substrate in a full mopping of approved asphalt at an application rate of 20-40 lbs./sq.

Ply Sheet: (Optional) One ply of ERS-500 adhered to ERS-500 base ply in a full mopping of approved asphalt at an application rate of 20-40 lbs./sq.

Membrane: One ply of ERS-504C, ERS-505 or ERS-703 adhered with approved mopping asphalt or adhesive at an application rate of 20-40 lbs./sq. or ERS-604T torch applied.

Surfacing: (Optional) one of the following as required:  
1. APOC Sunbrite 400 at 2 gal./sq.

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



**Membrane Type:** SBS

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

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

**System Type C:** All layers of insulation simultaneously attached; base sheet adhered.

**All General and System Limitations shall apply.**

One or more layers of any of the following insulations.

<b>Base Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>WHITE LINE Minimum 1.3" thick</b>	N/A	N/A
<b>ENRGY 2, ENRGY 3, PSI-25, Iso 95 + GW, GL Minimum 1.4" thick</b>	N/A	N/A
<b>Multi-Max, Multi-Max FA, Permalite ISO-Lite R, ACFoam-II, Armor R Plus, Kop-R (WII), UltraGard Gold SP, EnergyGuard, Trocal ISO II Minimum 1.5" thick</b>	N/A	N/A
<b>Perlite Minimum ¾" thick</b>	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.**

<b>Top Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>WHITE LINE, AP Minimum 1.3" thick</b>	1	1:2 ft <sup>2</sup>
<b>ENRGY 2, ENRGY 3, PSI-25 Minimum 1.4" thick</b>	1	1:2 ft <sup>2</sup>
<b>Multi-Max, Multi-Max FA, Permalite ISO-Lite R Minimum 1.5" thick</b>	1	1:2 ft <sup>2</sup>
<b>ACFoam Composite, Fesco Foam, EnergyGuard Composite, Kop-R (WC) Minimum 2" thick</b>	1	1:2 ft <sup>2</sup>
<b>Wood Fiber Minimum 1" thick</b>	1	1:4 ft <sup>2</sup>
<b>Perlite Minimum ¾" thick</b>	1	1:1.33 ft <sup>2</sup>

**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.**



Base Sheet: (Optional) One ply of ERS-500, ERS-500-4, ERS-500-6 or ERS-501 adhered to the insulated substrate with a spot mopping of approved mopping asphalt in 16" dia. spots 18" o.c. or a full mopping to an approved perlite at an application rate of 20-40 lbs./sq.

Ply Sheet: (Optional) One ply of ERS-500 adhered to ERS-500 base ply in a full mopping of approved asphalt at an application rate of 20-40 lbs./sq.

Membrane: One ply of ERS-501, ERS-502, ERS-504C, ERS-505, ERS-602, ERS-603 or ERS-703 adhered with approved mopping asphalt or adhesive at an application rate of 20-40 lbs./sq. or ERS-602, ERS-603 or ERS-604T torch applied.

Surfacing: (Optional) one of the following as required:  
1. APOC Sunbrite 400 at 2 gal./sq.

Maximum Design Pressure: -45 psf (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 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 Engineer, 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. **(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 9B-72 of the Florida Administrative Code.

END OF THIS ACCEPTANCE



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