



**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)

**Ecology Roof Systems
1400 N. Harbor Blvd.
Fullerton, CA. 92835**

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 South Florida Building Code, 1994 Edition for Miami-Dade County or Florida Building Code.

DESCRIPTION: Coal Tar Elastomeric Membrane – Concrete 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 consists of pages 1 through 10
The submitted documentation was reviewed by Jorge Acebo, RC.



**NOA No.: 05-0330.04
Expiration Date: 09/29/10
Approval Date: 09/29/05
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ROOFING SYSTEM APPROVAL

Category: Roofing
Sub-Category: Modified Bitumen
Sub-Type: SBS
Deck Type: Concrete
Maximum Design Pressure: -452.5 psf

TABLE 1
TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT

<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
ERS-900	3' x 50'	ASTM D 5147	Asphalt applied, smooth surfaced membrane. Surface may be finished with flood coat and aggregate. Membrane is black in color.
ERS-920 WS	3.33' x 50'	ASTM D 5147	Self-adhered, smooth surfaced membrane with hot air welded seams. Membrane is black in color.
ERS-920	3' x 50'	ASTM D 5147	Self-adhered, smooth surfaced membrane with self-adhered seams. Membrane is black in color.
ERS-5000	3' x 50'	ASTM D 5147	Asphalt applied, smooth surfaced membrane with hot air welded seams. Membrane is white in color.
ERS-920 BS	3' x 50'	ASTM D 5147	Self-adhered base or ply sheet.
ERS-920 VB	3' x 50'	ASTM D 5147	Self-adhered vapor retarder.



TABLE 2
TRADE NAMES OF PRODUCTS MANUFACTURED BY OTHERS

<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>	<u>Manufacturer</u>
JM-PermaPly 28	36' x 108'; 72 lb. roll	ASTM D 4601	Type II asphalt impregnated and coated glass fiber base sheet	Johns Manville Corp. (with current NOA)
JM-Glas Base	36" x 108'; roll weight: 84 lbs.	ASTM D 4601	Type II asphalt impregnated and coated glass fiber base sheet	Johns Manville Corp. (with current NOA)
JM-Ventsulation	36" x 36'	ASTM D 4897 Type II	Heavy duty fiber glass base sheet impregnated and coated on both sides.	Johns Manville Corp. (with current NOA)
GAFGLAS # 75	36" or 39-3/8" x 108'	ASTM D 4601	G2 Fiberglass base sheet	GAF Materials Corp. (with current NOA)
GAFGLAS Stratavent	36" or 39-3/8" x 108'	ASTM D 4897	Ventilated base sheet.	GAF Materials Corp. (with current NOA)
Hydro Stop			Kraft/Foil Base Sheet	Celotex Corp. (with current NOA)
Channel Vent GB				Celotex Corp. (with current NOA)
#14 or #15 DekFast Fasteners and Plates	Various	PA 114 PA 117	Insulation fasteners and stress plates	Construction Fasteners (with current NOA)
#14 or #15 Roofgrip	Various	PA 114 PA 117	Insulation fasteners and stress plates	ITW Buildex (with current NOA)
Olympic HD Fasteners and Plates	Various	PA 114 PA 117	Insulation fasteners and stress plates	Olympic (with current NOA)
Tru-Fast Fasteners and Plates	Various	PA 114 PA 117	Insulation fasteners and stress plates	Tru-Fast Corp. (with current NOA)
ACFoam II	Various	PA 110	Polyisocyanurate foam insulation	Atlas Energy Products (with current NOA)
E'NRG'Y-2	Various	PA 110	Polyisocyanurate foam insulation	Johns Manville Corp. (with current NOA)
Multi-Max FA	Various	PA 110	Polyisocyanurte foam insulation	R-Max (with current NOA)
Dens-Deck	Min. 1/4" thick	PA 110	Gypsum insulation board	Georgia-Pacific (with current NOA)
Asphalt		ASTM D 312	Type III or IV Hot asphalt bitumen adhesive	Generic (with current NOA)
Asphalt Primer		ASTM D 41	Asphalt Primer	Generic (with current NOA)



**TABLE 3
FASTENERS:**

<u>Product Name</u>	<u>Product Description</u>	<u>Dimensions</u>	<u>Manufacturer</u>
Olympic HD / S	Carbon Steel , CR-10 or Answer Coating	Various	Olympic Fasteners (with current NOA)
Dekfast 14 with Hex plate	Carbon Steel, Senti (black)	#14dia. By 14in. (356mm)	Construction Fasteners, Inc. (with current NOA)
14 Roofgrip with Flat Bottom.	Carbon Steel, SPEX (black) or Climaseal (blue)	#14 dia. by 8 in. (203mm) max. length.	ITW Buildex (with current NOA)
#15 Roofgrip with Flat Bottom	Carbon Steel, SPEX (black or blue) or Climaseal (blue or red)	#15 dia. by 14 in. (356mm) max. length.	ITW Buildex (with current NOA)
14 Roofgrip with Recessed	Carbon Steel, SPEX (black) or Climaseal (blue)	#14 dia. by 8 in. (203mm) max. length.	ITW Buildex (with current NOA)
#15 Roofgrip with Recessed	Carbon Steel, SPEX (black or blue) or Climaseal (blue or red)	#15 dia. by 14 in. (356mm) max. length.	ITW Buildex (with current NOA)
Tru-Fast HD with MP-3	Carbon Steel Tru-Kote Coating or Trimrite Stainless	#14 , 1 ½ to 12 in. (3.8 to 30.5 cm)	The Tru-Fast Corporation (with current NOA)

TEST REPORTS

<u>Test Agency/Identifier</u>	<u>Name</u>	<u>Report</u>	<u>Date</u>
Factory Mutual Research Corporation	J.I. 0X8A3.AM FM Approval Guide	Wind Uplift Classification Uplift Classifications	11/94 Published Annually
Underwriters Laboratories, Inc.	UL Roofing Materials and Systems Directory	File No. R10473 Fire Classification	Published Annually
Exterior Research & Design, LLC.	9117.08.97-1	Wind Uplift	08.15.97
Celotex Testing Center	Physical properties	ASTM D 5147 Physical Property Testing	11/97



SYSTEMS:

Deck Type 3I:	Concrete Decks, Insulated, New Construction, Reroof
Deck Description:	2500 psi structural concrete or concrete plank
System Type A:	One or more layers of insulation adhered to primed deck or to vapor retader with approved asphalt.

All General and System Limitations apply.

<u>Insulation Base Layer</u>	<u>Fastener Density ft²</u>	<u>Fastener Type</u>
One or more layers of the following: AC Foam II, E'NRG'Y-2, Multi-Max FA Minimum: 1.5" thick	N/A	N/A

<u>Insulation Top Layer</u>	<u>Fastener Density ft²</u>	<u>Fastener Type</u>
One or more layers of the following: ConPerl, Fesco Board, GAFTEMP Permalite Minimum: 3/4"	N/A	N/A

Armor Board High Density, BP High Strength, FM-90 Traffic Top/High Density, ERS Redi-Deck, Fiber Top C, E, S, GAFTEMP High Density, Roof Insulation Board, Celotex High Density Wood Fiberboard, Sturdi-Top, Fiber Base HD1 or HD6 Minimum: 1/2" thick	N/A	N/A
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Dens Deck Minimum: 1/4" thick	N/A	N/A
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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 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as 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.

Vapor Barrier: (Optional) One ply of #15 felt applied in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply of ERS-920 VB self-adhered to the primed deck.

Base Sheet: One ply of Approved ASTM D 4601, type II fiberglass base sheet or ASTM D 2178, type IV ply sheet applied in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply of ERS-920 VB self-adhered to the properly primed substrate.

Ply Sheet: (Optional) One ply of Approved ASTM D 4601, type II fiberglass base sheet or ASTM D 2178, type IV ply sheet applied in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply of ERS-920 VB self-adhered to the properly primed substrate.

Membrane: One ply of ERS-900 or ERS-5000 applied in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply of ERS-920 or ERS-920 WS self-adhered to the properly primed substrate.



Surfacing: (Optional) Gravel at 400 lbs./sq. applied in flood coat of hot asphalt applied at 50 to 60 lbs./sq.

Note: All surfaces to receive self-adhered membrane shall be properly primed with ASTM D 41 primer.

Maximum Design Pressure:

- 127.5 psf (for Polyisocyanurte with GAFTEMP Permalite top layer)
(See General Limitation # 9)
- 285.0 psf (for Polyisocyanurte with Celotex HD Wood Fiberboard top layer)
(See General Limitation # 9)
- 152.5 psf (for Polyisocyanurte with Dens Deck top layer)
(See General Limitation # 9)
- 45.0 psf (for all other insulation combinations)
(See General Limitation # 9)



Deck Type 3I: Concrete Decks, Insulated, New Construction, Reroof
Deck Description: 2500 psi structural concrete or concrete plank
System Type B: Base layer of insulation mechanically attached, optional top layer adhered with approved asphalt.

All General and System Limitations apply.

<u>Insulation Base Layer</u>	<u>Fasteners Density ft²</u>	<u>Fastener Type</u>
One or more layers of the following:		
AC Foam II, E'NRG'Y-2, Multi-Max FA		
Minimum: 1.5" thick	1:2	Any approved fasteners in table 3

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 PA 117 for fastener details).

<u>Insulation Top Layer</u>	<u>Fasteners Density</u>	<u>Fastener Type</u>
High Density Wood Fiberboard		
Minimum: ½" thick	N/A	N/A
Dens Deck		
Minimum: ¼" thick	N/A	N/A

Note: Apply top layer of insulation in a full mopping of any approved mopping hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as Base Layer only shall be used only as base layer with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels shall be used as a top layer placed with the polyisocyanurate side facing down.

Base Sheet: One ply of Approved ASTM D 4601, type II fiberglass base sheet or ASTM D 2178, type IV ply sheet applied in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply of ERS-920 BS self-adhered to the properly primed substrate.

Ply Sheet: (Optional) One ply of Approved ASTM D 4601, type II fiberglass base sheet or ASTM D 2178, type IV ply sheet applied in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply of ERS-920 BS self-adhered to the properly primed substrate.

Membrane: One ply of ERS-900 or ERS-5000 applied in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply of ERS-920 or ERS-920 WS self-adhered to the properly primed substrate.

Surfacing: (Optional) Gravel at 400 lbs./sq. applied in flood coat of hot asphalt applied at 50 to 60 lbs./sq.

Note: All surfaces to receive self-adhered membrane shall be properly primed with ASTM D 41 primer.

Maximum Design Pressure: -45.0 psf (See General Limitation #7.)



Deck Type 3I: Concrete Decks, Insulated, New Construction, Reroof
Deck Description: 2500 psi structural concrete or concrete plank
System Type C: All layers of insulation simultaneously attached.

All General and System Limitations apply.

<u>Base Layer (Optional)</u>	<u>Fasteners Density</u>	<u>Fastener Type</u>
One or more layers of the following: AC Foam II, HyTherm AP, Hy-Tec, Pyrox, E'NRG'Y-2, Shelterglass FM, Mutli-Max FA Minimum: 1.2" thick	N/A	N/A

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

<u>Insulation Base or Top Layer</u>	<u>Fasteners Density ft²</u>	<u>Fastener Type</u>
One or more layers of the following: ConPerl, GAFTEMP Permalite, Fesco Board Minimum: 1" thick	1:2	Any Approved Fastener in Table 3

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 wind load requirements. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

- Base Sheet:** One ply of Approved ASTM D 4601, type II fiberglass base sheet or ASTM D 2178, type IV ply sheet applied in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply of ERS-920 BS self-adhered to the properly primed substrate.
- Ply Sheet:** (Optional) One ply of Approved ASTM D 4601, type II fiberglass base sheet or ASTM D 2178, type IV ply sheet applied in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply of ERS-920 BS self-adhered to the properly primed substrate.
- Membrane:** One ply of ERS-900 or ERS-5000 applied in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply of ERS-920 or ERS-920 WS self-adhered to the properly primed substrate.
- Surfacing:** (Optional) Gravel at 400 lbs./sq. applied in flood coat of hot asphalt applied at 50 to 60 lbs./sq.

Note: All surfaces to receive self-adhered membrane shall be properly primed with ASTM D 41 primer.

Maximum Design Pressure: -45.0 psf (See General Limitation #9.)



Deck Type 3: Concrete Decks, New Construction, Reroof
Deck Description: 2500 psi structural concrete or concrete plank
System Type F: Base sheet adhered to primed concrete deck.

All General and System Limitations apply.

Base Sheet: One ply of Approved ASTM D 4601, type II fiberglass base sheet or ASTM D 2178, type IV ply sheet applied in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply of ERS-920 BS self-adhered to the properly primed substrate.

Ply Sheet: (Optional) One ply of Approved ASTM D 4601, type II fiberglass base sheet or ASTM D 2178, type IV ply sheet applied in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply of ERS-920 BS self-adhered to the properly primed substrate.

Membrane: One ply of ERS-900 or ERS-5000 applied in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one ply of ERS-920 or ERS-920 BS self-adhered to the properly primed substrate.

Surfacing: (Optional) Gravel at 400 lbs./sq. applied in flood coat of hot asphalt applied at 50 to 60 lbs./sq.

Note: All surfaces to receive self-adhered membrane shall be properly primed with ASTM D 41 primer.

Maximum Design Pressure: -452.5 psf (for asphalt adhered base sheets)
(See General Limitation #9.)
-115.0 psf (for self-adhered base sheets)
(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 Professional Engineer, Registered Architect, or Registered Roof Consultant.



GENERAL LIMITATIONS:

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

END OF THIS ACCEPTANCE



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