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)

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 – 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 consists of pages 1 through 12.
The submitted documentation was reviewed by Jorge Acebo, RC.

ROOFING SYSTEM APPROVAL

Category: Roofing
Sub-Category: Modified Bitumen
Sub-Type: Coal Tar / SBS
Deck Type: Steel
Maximum Design Pressure **-52.5 psf**

TABLE 1
TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT

Product	Dimensions	Test Specification	Product Description
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-900 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

Product	Dimensions	Test Specification	Product Description	Manufacturer
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)
DekFast Fasteners and Plates	Various	PA 114 PA 117	Insulation fasteners and stress plates	Construction Fasteners (with current NOA)
Accutrac	Various	PA 114 PA 117	Insulation fasteners and stress plates	ITW Buildex (with current NOA)
Hextra	Various	PA 114 PA 117	Insulation fasteners and stress plates	ITW Buildex (with current NOA)
Roofgrip	Various	PA 114 PA 117	Insulation fasteners and stress plates	ITW Buildex (with current NOA)
Olympic 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	Polyisocyanurate foam insulation	R-Max (with current NOA)
Dens-Deck	Min. ¼" 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

Product	Descriptions	Dimensions	Manufacturer
Olympic HD (with Steel plate)	Carbon Steel, CR-10 or Answer coating (black)	Various	Olympic Fasteners (with current NOA)
Olympic (with Standard plate)	Carbon Steel, CR-10 or Answer coating (black)	Various	Olympic Fasteners (with current NOA)
Dekfast 12 or 14 (with Hex plate)	Carbon Steel, Sentri (black)	Various	Construction Fasteners, Inc. (with current NOA)
Dekfast SS (with 3" round plate)	Stainless Steel	#12, $1^5/_8$" to 12 in. (40.1 to 30.5 cm)	Construction Fasteners, Inc. (with current NOA)
Dekfast Omega (with 3" round plate)	Stainless Steel, Carbon Steel tip, Sentri (gray)	#14 dia. by 8 in. (203mm) max length	Construction Fasteners, Inc. (with current NOA)
Accu Trac (with Recessed plate)	Carbon Steel, SPEX (black) or Climaseal (blue)	#12 dia. By 8 in. (203mm) max length	ITW Buildex Corp. (with current NOA)
Accutrac (with Accu Trac plate)	Carbon Steel, SPEX (black) or Climaseal (blue)	#12 dia. By 8 in. (203mm) max length	ITW Buildex Corp. (with current NOA)
12, 14 Roofgrip (with Flat Bottom Metal plate)	Carbon Steel, SPEX (blue, gray) or Climaseal (blue)	Various	ITW Buildex Corp. (with current NOA)
12, 14 Roofgrip (with Recessed plate)	Carbon Steel, SPEX (blue, gray) or Climaseal (blue)	Various	ITW Buildex Corp. (with current NOA)
#15 Roofgrip (with Flat Bottom Metal plate)	Carbon Steel, SPEX (blue, gray) or Climaseal (blue, red)	#15 dia. by 14 in. (356mm) max.length.	ITW Buildex Corp. (with current NOA)
#15 Roofgrip (with Recessed plate)	Carbon Steel, SPEX (blue, gray) or Climaseal (blue, red)	#15 dia. by 14 in. (356mm) max.length.	ITW Buildex Corp. (with current NOA)
Tru-Fast (with MP-3 plate)	Carbon Steel Tru-Kote Coating	Various	The Tru-Fast Corp. (with current NOA)

TEST REPORTS

Test Agency/Identifier	Name	Report	Date
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 1I:	Steel, Insulated, New Construction, Reroof
Deck Description:	18-22 ga. steel
System Type B(1):	Base layer of insulation mechanically attached, optional top layer adhered with approved asphalt.

All General and System Limitations apply.

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

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 fastener details).

Insulation Top Layer	Fastener Density ft²	Fastener Type
High Density Wood Fiberboard Minimum: ½" thick	N/A	N/A
Dens Deck Minimum: ¼" thick	N/A	N/A

Note: Apply optional top layer of insulation in a full mopping of approved hot asphalt applied within the EVT range and at a rate of 20-40 lbs./100 ft². 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 facing down.

Base Sheet: One or more plies 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 or more plies 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 or more plies 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-900 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 1I:	Steel, Insulated, New Construction, Reroof
Deck Description:	18-22 ga. steel
System Type B (2):	Base layer of insulation (fire barrier) mechanically attached followed by vapor barrier and top insulation layers adhered with approved asphalt.

All General and System Limitations apply.

Insulation Base Layer (fire barrier)	Fastener Density ft²	Fastener Type
One or more layers of the following:		
Dens Deck		
Minimum: ½" thick	1:2	See any approved fastener in table 3

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 fastener details).

Vapor Barrier: One or more plies of Approved ASTM D 4601, type II fiberglass base 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.

Insulation Base Layer	Fastener Density ft²	Fastener Type
One or more layers of the following:		
AC Foam II, E'NRG'Y-2, Multi-Max FA		
Minimum: ½" thick	N/A	N/A

Insulation Base or Top Layer	Fastener Density ft²	Fastener Type
One or more layers of the following:		
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 approved hot asphalt applied within the EVT range and at a rate of 20-40 lbs./100 ft². 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 facing down.

Base Sheet: One or more plies 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 or more plies 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 or more plies 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 Hyload SAM or ERS-900 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: **-52.5 psf**; (See General Limitation #7.)

Deck Type 1I:	Steel, Insulated, New Construction, Reroof
Deck Description:	18-22 ga. steel
System Type C:	All layers of insulation simultaneously attached.

All General and System Limitations apply.

Insulation (Optional) Base Layer	Fastener Density ft²	Fastener Type
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.

Insulation Base or Top Layer	Fastener Density ft²	Fastener Type
One or more layers of the following: **ConPerl, GAFTEMP Permalite, Fesco Board** Minimum: 1" thick	1:2	See 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. Refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One or more plies 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 or more plies 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 or more plies 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-900 WS self-adhered to the properly primed substrate.

Surfacing: (Optional) Gravel at 400 lbs./sq. applied in flood coat of hot asphalt applied at 40-50 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.)

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 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.

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