



**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)

**Koppers Industries
436 Seventh Avenue,
Room 1650
Pittsburgh, PA 15237**

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: Koppers Built-Up Roofing 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 NOA renews NOA # 00-1108.07 and consists of pages 1 through 9.
The submitted documentation was reviewed by Frank Zuloaga, RRC



**NOA No 03-1015.06
Expiration Date: 12/28/08
Approval Date: 11/13/03
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ROOFING SYSTEM APPROVAL

Category: Roofing
Sub-Category: Built-Up Roofing

Material: Fiberglass, Polyester/Organic
Deck Type: Lightweight Concrete
Maximum Design Pressure -82.5 psf
Fire Classification: See General Limitation #1

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
Coal Tar Pitch	Available in 20 or 55 gallon drums or in bulk.	ASTM D 450 type I	Coal tar pitch used as a waterproof and adhesive material in conjunction with organic or inorganic felts.
Glass Fiber Base Sheet	Roll size: 36" x 108'	ASTM D-4601	Non-perforated, type II asphalt impregnated and coated glass fiber base sheet for use in conventional and modified bitumen built-up roofing.
Kop-R (WC)	various	PA 110	Polyisocyanurate and perlite composite insulation board.
Kop-R (WI)	various	PA 110	Polyisocyanurate foam insulation.
Kop-R (WII)	various	PA 110	Polyisocyanurate foam insulation board.
Kop-R High Density Wood Fiber	various	PA 110	Wood fiber insulation board.
No. 15 Tarred Felt Ply Sheet	Roll size: 36" x 144'	ASTM D 227	Organic fiber based felt saturated with refined coal tar.
Organic Base Sheet	Roll size: 36" x 75'	ASTM D 2626	Non-perforated, organic fiber based felt saturated and coated with asphalt surfaced with a parting agent.
Tar-Glas Ply Sheet	Roll Size: 36"x 108'	ASTM D 4990	A coal tar impregnated and coated glass fiber ply sheet for use in conventional built-up roofing.
Tar-Glas Premium Ply Sheet	Roll size: 36" x 108'	ASTM D 4990	A coal tar impregnated and coated glass fiber ply sheet for use in conventional bitumen built-up roofing.
Koppers Aluminum Roof Coatings 435		ASTM D2824 Type I	Premium grade asphalt reflective coating, fiber reinforced.
Koppers Aluminum Roof Coatings 445		ASTM D2824 Type III	Commercial grade asphalt reflective coating, non-fibrated.
Koppers Asphalt Roof Cement		ASTM D4586 Type I	Medium consistency asphalt flashing cement.



<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
Koppers Cold Polyester Fabric	3' x 300'		Color coded blue. Stabilized tricot, warp knit base flashing backer sheet.
Koppers Flash-On 441 Asphalt Cement		ASTM D4586 Type I	Heavy consistency asphalt flashing cement.
Koppers High-Pen Primer 452		ASTM D41	Thin asphalt based primer
Koppers Hot Polyester	3.3' x 324'		Color coded gray, spun-bonded non-woven polyester fabric.
Koppers Polyester Base Flashing	3.3' x 50'		Asphalt coated polyester reinforced SBS Modified Bitumen base flashing.
Koppers 2041-M Modified Bitumen	3.3' x 33'		Polyester reinforced SBS Modified Bitumen base flashing.
Koppers 2045-M Modified Bitumen	3.3' x 33'		Premium grade polyester reinforced SBS Modified Bitumen base flashing.
ONYX Coal Tar Emulsion		Proprietary	Emulsified coal tar pitch.
ONYX Modified Flashing Cement		Proprietary	Asphalt based SBS modified asphalt flashing cement.
ONYX Modified Bitumen Adhesive		Proprietary	Asphalt based SBS modified bitumen adhesive.



TRADE NAMES OF PRODUCTS MANUFACTURED BY OTHERS:

<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>	<u>Manufacturer</u>
ACFoam II	various	PA 110	Polyisocyanurate foam insulation	Atlas (with current NOA)
E'NRG'Y-2, PSI-25	various	PA 110	Polyisocyanurate foam insulation	Johns Manville (with current NOA)
HyTherm AP	various	PA 110	Polyisocyanurate foam insulation	Celotex (with current NOA)
Pyrox	various	PA 110	Polyisocyanurate foam insulation	Apache (with current NOA)
E'NRG'Y-2 Plus	various	PA 110	Polyisocyanurate composite insulation	Johns Manville (with current NOA)
ACFoam Composite	Various	PA 110	Polyisocyanurate composite insulation	Atlas (with current NOA)
Fiberglass	various	PA 110	Fiberglass roof insulation	See Approved Systems Listings
Perlite Insulation	various	PA 110	Perlite insulation board	See Approved Systems Listings
High Density Wood Fiberboard	various	PA 110	Wood fiber insulation board	See Approved Systems Listings
DekFast Fastener		PA 114	Insulation fastening assembly with steel and plastic stress plate.	Construction Fasteners, Inc. (with current NOA)
Roofgrip Fastener		PA114	Insulation fastening assembly with steel and plastic stress plate.	ITW Buildex (with current NOA)
Olympic HD		PA 114	Insulation fastener	Olympic (with current NOA)
Olympic CD-10		PA 114	Insulation fastener	Olympic (with current NOA)
Olympic Fluted Nail		PA 114	Insulation fastener	Olympic (with current NOA)
HD Insulfixx Fastener		PA 114	Insulation fastening assembly with steel and plastic stress plate.	SFS Stadler (with current NOA)
Tru-Fast Fastener		PA 114	Insulation fastening assembly with steel and plastic stress plate.	Tru-Fast (with current NOA)
FM-90 Fasteners	various	PA 114	Galvanized steel base ply fastener for lightweight concrete decks	ES Products, Inc. (with current NOA)
Asphalt Primer		ASTM D 41	Asphalt Primer	generic
Coal Tar Priming Oil		ASTM D 43	Coal tar based primer	generic



EVIDENCE SUBMITTED:

<u>Test Agency</u>	<u>Name</u>	<u>Report</u>	<u>Date</u>
Factory Mutual Research Corporation	FM Approval Guide	Insulation attachment requirements	Published Annually
Underwriters Laboratories, Inc. IRT of S. Florida, Inc.	UL Roofing Materials and Systems Directory 00010 00011	Fire Classifications PA 114	Published Annually 08/02/2000



APPROVED ASSEMBLIES:

Deck Type 4I: Lightweight Concrete, Insulated, New Construction

Deck Description: Elastizell Insulating Lightweight Concrete

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

All General and System Limitations shall apply.

Deck: 18-22 ga Marlin Type "BV" vented steel deck shall be secured to 1/4" thick structural supports spaced a maximum of 5 ft on centers with 5/8" puddle welds and washers at the bottom of each rib (6" o/c.) Side laps shall be fasten 24" o.c between spans with #10 TEK fasteners.

<u>Insulation</u> <u>Base Layer</u>	<u>Fastener</u> <u>Type</u>	<u>Fastening</u> <u>Detail No.</u>	<u>Fasteners</u> <u>Per Board</u>	<u>Fastener</u> <u>Density</u>
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One or more layers of the following:

Approved Type(s): Kop-R(WII), AC-Foam II, Pyrox, HyTherm AP				
Minimum: 1.0" x 4' x 4'	N/A	N/A	N/A	N/A

Approved Type(s): E'NRG'Y 2, PSI-25				
Minimum: 1.0" x 3' x 4'	N/A	N/A	N/A	N/A

Approved Type(s): E'NRG'Y 2 Plus, Kop-R Composite, Kop-R(WC), ACfoam Composite				
Minimum: 1.5" x 3' x 4'	N/A	N/A	N/A	N/A

Approved Type(s): Standard or Wide Flute Armor-R Glass, Fiberglas Roof Insulation or Fiber Glass Roof Insulation				
Minimum: 15/16" x 4' x 4'	N/A	N/A	N/A	N/A

Approved Type(s): Kop-R Wood Fiber, Armor Board Regular or High Density Fiberboard, Esgard Fiberboard, Celotex Regular or High Density Fiberboard, Traffic Top, High Density Roof Fiberboard, GAFTEMP Regular or High Density Fiberboard, Huebert Fiberboard				
Minimum: 1/2" x 2' x 4'	N/A	N/A	N/A	N/A

<u>Insulation</u> <u>Top Layer</u>	<u>Fastener</u> <u>Type</u>	<u>Fastening</u> <u>Detail No.</u>	<u>Fasteners</u> <u>Per Board</u>	<u>Fastener</u> <u>Density</u>
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One or more layers of the following:

Approved Type(s): E'NRG'Y 2 Plus, Kop-R Composite, Kop-R(WC), ACfoam Composite				
Minimum: 1.5" x 3' x 4'	N/A	N/A	N/A	N/A

Approved Type(s): Standard or Wide Flute Armor-R Glass, Fiberglas Roof Insulation or Fiber Glass Roof Insulation				
Minimum: 15/16" x 4' x 4'	N/A	N/A	N/A	N/A



Approved Type(s): **Kop-R Wood Fiber, Armor Board Regular or High Density Fiberboard, Esgard Fiberboard, Celotex Regular or High Density Fiberboard, Traffic Top, High Density Roof Fiberboard, GAFTEMP Regular or High Density Fiberboard, Huebert Fiberboard**

Minimum: ½" x 2' x 4' N/A N/A N/A N/A

Approved Type(s): **Celotherm, ConPerl, GAFTEMP Permalite, Fesco Board**

Minimum: ¾" x 2' x 4' N/A N/A N/A N/A

All insulation shall be adhered to the anchor sheet in full mopping of approved hot asphalt or coal tar pitch 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 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.

Base Sheet: Koppers glass fiber or organic base sheet fastened to the deck with ES Products FM-90 fasteners spaced 7" o.c. at a 4" side lap and 7" o.c. in two staggered rows in the center of the sheet.

Ply Sheet: Three or more plies of Koppers Tarred Felt, Glass Felt, Tar-Glas, Premium Tar-Glas or Polyester Roofing felt adhered in a full mopping of approved coal tar at an application rate of 25 lbs./sq. ± 15%.

Cap Sheet: None.

Surfacing: Flood coat of coal tar with an application rate of 70 lbs./sq.; plus gravel or slag at application rates of 400 and 300 lbs./sq., respectively.

Maximum Design Pressure: -67.5 psf; (See General Limitation #7.)

Maximum Fire Classification: See General Limitation #1.

Maximum Slope: See General Limitation #1.



Deck Type 4I: Lightweight Concrete, Insulated, New Construction

Deck Description: Elastizell Insulating Lightweight Concrete

System Type E: Anchor sheet mechanically attached to roof deck.

All General and System Limitations shall apply.

Deck: 18-22 ga Marlin Type "BV" vented steel deck shall be secured to 1/4" thick structural supports spaced a maximum of 5 ft on centers with 5/8" puddle welds and washers at the bottom of each rib (6" o/c.) Side laps shall be fasten 24" o.c between spans with #10 TEK fasteners.

Base Sheet: Koppers glass fiber or organic base sheet fastened to the deck with ES Products FM-90 fasteners spaced 7" o.c. at a 4" side lap and 7" o.c. in two staggered rows in the center of the sheet.

Ply Sheet: Three or more plies of Koppers Tarred Felt, Glass Felt, Tar-Glas, Premium Tar-Glas or Polyester Roofing felt adhered in a full mopping of approved coal tar at an application rate of 25 lbs./sq. ± 15%.

Cap Sheet: None.

Surfacing: Flood coat of coal tar with an application rate of 70 lbs./sq.; plus gravel or slag at application rates of 400 and 300 lbs./sq., respectively.

Maximum Design Pressure: -82.5 psf; (See General Limitation #7.)

Maximum Fire Classification: See General Limitation #1.

Maximum Slope: See General Limitation #1.

LIGHTWEIGHT INSULATING CONCRETE SYSTEM LIMITATIONS:

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.

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.

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.)**
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



NOA No 03-1015.06
Expiration Date: 12/28/08
Approval Date: 11/13/03
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