



**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, Inc.
436 7th Avenue
Pittsburgh, PA 15219**

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 Roof System over Cementitious Wood Fiber 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 11.

The submitted documentation was reviewed by Frank Zuloaga, RRC.



**NOA No 02-1018.06
Expiration Date: 01/22/06
Approval Date: 01/02/03
Page 1 of 12**

ROOFING SYSTEM APPROVAL

Category: Roofing
Sub-Category: Built-Up Roofing, Coal Tar
Material: Fiberglass, Polyester/Organic
Deck Type: Cementitious Wood Fiber
Maximum Design Pressure -82.5 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>
Coal Tar Bitumen	Available in 20 or 55 gallon drums or in bulk.	ASTM D 450 type III	Coal tar pitch used as a waterproof and adhesive material in conjunction with organic or inorganic felts.
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.
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.

APPROVED INSULATIONS:

TABLE 2

<u>Product Name</u>	<u>Product Description</u>	<u>Manufacturer (With Current NOA)</u>
Kop-R (WI)	Polyisocyanurate foam insulation	Koppers Industries, Inc.
Kop-R (WC)	Polyisocyanurate and perlite composite insulation board.	Koppers Industries, Inc.



NOA No 02-1018.06
Expiration Date: 01/22/06
Approval Date: 01/02/03
Page 2 of 12

APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
Kop-R (WII)	Polyisocyanurate foam insulation board.	Koppers Industries, Inc.
Kop-R High Density Wood Fiber	Wood fiber insulation board.	Koppers Industries, Inc.
Pyrox	Polyisocyanurate foam insulation	Apache Products Co.
ACFoam II	Polyisocyanurate foam insulation	Atlas Energy Products
ACFoam Composite	Polyisocyanurate composite insulation	Atlas Energy Products
ConPerl	Perlite insulation board	Conglas
GAFTEMP® Permalite	Perlite insulation board.	GAF Materials Corp.
Fiberglass	Fiberglass roof insulation	Generic
Perlite Insulation	Perlite insulation board	Generic
Regular Wood Fiberboard	Wood fiber insulation board	Generic
High Density Wood Fiberboard	Wood fiber insulation board	Generic
Armor-R Glas	Fiberglass roof insulation.	Honeywell Int'l, Inc.
Armor Board High Density Fiberboard	High-density wood fiber insulation board.	Honeywell Int'l, Inc.
ENRGY-2, ENRGY-2 Plus, PSI-25	Polyisocyanurate foam insulation	Johns Manville
Fiberglas	Fiber Glass roof insulation.	Johns Manville
Perlite Insulation	Expanded Mineral Fiber board	Johns Manville

APPROVED FASTENERS:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
1.	Twin Loc-Nail	Galvanized steel base ply fastener with steel wire locking staple for CWF decks		ES Products, Inc.
2.	Polymer Gyptec	Glass reinforced Nylon insulation fastener for gypsum & CWF decks.		ITW Buildex Corp.
3.	Polymer Gyptec Metal Plate	Galvalume stress plate	3" round	ITW Buildex Corp.



NOA No 02-1018.06
Expiration Date: 01/22/06
Approval Date: 01/02/03
Page 3 of 12

APPROVED FASTENERS:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
4.	NTB Magnum	Glass reinforced Nylon insulation fastener for gypsum & CWF decks with barbs.		Olympic Mfg. Group, Inc.
5.	NTB Plate	Galvalume stress plate	3" round	Olympic Mfg. Group, Inc.
6.	Lite-Deck	Insulation fastener for CWF and Gypsum decks.		Olympic Mfg. Group, Inc.
7.	Lite-Deck Plate	Galvalume stress plate	3" round	Olympic Mfg. Group, Inc.
8.	Powerlite	Insulation fastener for CWF and Gypsum decks.		Powers Fasteners, Inc.
9.	Powerlite Plates	3" round galvalume AZ55 steel plate	3" round	Powers Fasteners, Inc.
10.	Powerlite Lap Plates	2" round galvalume AZ55 steel plate	2" round	Powers Fasteners, Inc.
11.	Tru-Fast TL	Glass reinforced Nylon insulation fastener for gypsum & CWF decks.		Tru-Fast Corp.
12.	Tru-Fast TL 3 in. Plate	Galvalume AZ55 steel plate	3" round	Tru-Fast Corp.

EVIDENCE SUBMITTED:

<u>Test Agency</u>	<u>Name</u>	<u>Report</u>	<u>Date</u>
Factory Mutual Research Corporation	J.I. 1W5A1.AM	I-90 Wind Classification	08/12/93
Factory Mutual Research Corporation	FM Approval Guide	Insulation attachment requirements	Published Annually
Underwriters Laboratories, Inc.	UL Roofing Materials and Systems Directory	Fire Classifications	Published Annually
Dynatech Engineering	1.94.17	Wind Uplift, Small Scale	01/17/94
Dynatech Engineering	4301-12.94-1	Wind Uplift	12/05/94
Dynatech Engineering	4301-12.94-2	Wind Uplift	12/05/94
Dynatech Engineering	4302-1.95-2	Wind Uplift	01/03/95
Dynatech Engineering	4302-1.95-4	Wind Uplift	01/04/95



NOA No 02-1018.06
Expiration Date: 01/22/06
Approval Date: 01/02/03
Page 4 of 12

<u>Test Agency</u>	<u>Name</u>	<u>Report</u>	<u>Date</u>
Exterior Research & Design, LLC.	4302.02.97-1	PA 114(D)	02/15/97
IRT-Arcon, Inc.	02-026	TAS 114	07/26/02



APPROVED ASSEMBLIES:

- Deck Type 5I:** Cementitious Wood Fiber, Insulated, New Construction
- Deck Description:** Cementitious Wood Fiber,
- System Type A:** Anchor sheet mechanically attached, all layers of insulation adhered with approved asphalt or coal tar pitch.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Insulation for Base Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Kop-R(WII), AC-Foam II, Pyrox, ENRGY 2, PSI-25 Minimum 1" thick	N/A	N/A
ENRGY 2 Plus, Kop-R Composite, Kop-R(WC), ACFoam Composite Minimum 1.5" thick	N/A	N/A
Standard or Wide Flute Armor-R Glass, Fiberglas Roof Insulation or Fiber Glass Roof Insulation Minimum 15/16" thick	N/A	N/A
Kop-R Wood Fiber, Armor Board Regular or High Density Fiberboard, Esgard Fiberboard, Regular or High Density Fiberboard, Traffic Top, High Density Roof Fiberboard, GAFTEMP Regular or High Density Fiberboard, Huebert Fiberboard Minimum 1/2" thick	N/A	N/A
Insulation for Top Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 2 Plus, Kop-R Composite, Kop-R(WC), ACFoam Composite Minimum 1.5" thick	N/A	N/A
Standard or Wide Flute Armor-R Glass, Fiberglas Roof Insulation or Fiber Glass Roof Insulation Minimum 15/16" thick	N/A	N/A
Kop-R Wood Fiber, Armor Board Regular or High Density Fiberboard, Esgard Fiberboard, Regular or High Density Fiberboard, Traffic Top, High Density Roof Fiberboard, GAFTEMP Regular or High Density Fiberboard, Huebert Fiberboard Minimum 1/2" thick	N/A	N/A
ConPerl, GAFTEMP Permalite, Fesco Board Minimum 3/4" thick	N/A	N/A

Note: All insulation shall be adhered to the anchor sheet in full mopping of approved 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 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: Koppers Glass Fiber or Organic base sheet attached as described below.

Fastening : Attach anchor with ES Products 1.8" Twin Loc-Nail fasteners spaced 9" o.c. at the 3" side lap and two rows staggered 12" o.c. in the field.

Base Sheet: (Optional) Koppers organic or glass fiber base sheet adhered to the insulation substrate with approved asphalt at an application rate of 25 lbs./sq. \pm 15%.

Ply Sheet: Two or more plies of Koppers Tarred Felt, Glass Felt, Tar-Glas or Premium Tar-Glas Roofing Felt. Roof cover may be Glass Fiber Felt, Tar-Glas or Premium Tar-Glas Felt adhered in a full mopping of approved coal tar at an application rate of 25 lbs./sq. \pm 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.)



Deck Type 5I: Cementitious Wood Fiber, Insulated, New Construction

Deck Description: Cementitious wood fiber

System Type B: Base layer of insulation mechanically fastened, top layer adhered with approved bitumen.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Insulation for Base Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
AC-Foam II Minimum 1.5" thick	11	1:4 ft ²
E'NRG'Y 2, PSI Minimum 1.5" thick	2, 4, 6, 8 or 11	1:3 ft ²
Minimum 2" thick	2, 4, 6, 8 or 11	1:4 ft ²
ENRGY 2 Plus, Kop-R Composite, Kop-R(WC), ACFoam Composite Minimum 1.5" thick	2, 4, 6, 8 or 11	1:4 ft ²
Standard or Wide Flute Armor-R Glass, Fiberglas Roof Insulation or Fiber Glass Roof Insulation Minimum 1⁵/₁₆" thick	2, 4, 6, 8 or 11	1:2.67 ft ²
Kop-R Wood Fiber, Armor Board Regular or High Density Fiberboard, Esgard Fiberboard, Regular or High Density Fiberboard, Traffic Top, High Density Roof Fiberboard, GAFTEMP Regular or High Density Fiberboard, Hubert Fiberboard Minimum 1" thick	2, 4, 6, 8 or 11	1:2 ft ²
ConPerl, GAFTEMP Permalite, Fesco Board Minimum 3/4" thick	2, 4, 6, 8 or 11	1:2 ft ²

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 fastening details).

Insulation for Top Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 2 Plus, Kop-R Composite, Kop-R(WC), ACFoam Composite Minimum 1.5" thick	N/A	N/A
Standard or Wide Flute Armor-R Glass, Fiberglas Roof Insulation or Fiber Glass Roof Insulation Minimum 1⁵/₁₆" thick	N/A	N/A
Kop-R Wood Fiber, Armor Board Regular or High Density Fiberboard, Esgard Fiberboard, Regular or High Density Fiberboard, Traffic Top, High Density Roof Fiberboard, GAFTEMP Regular or High Density Fiberboard, Huebert Fiberboard Minimum 1/2" thick	N/A	N/A
ConPerl, GAFTEMP Permalite, Fesco Board Minimum 3/4" thick	N/A	N/A



NOA No 02-1018.06
Expiration Date: 01/22/06
Approval Date: 01/02/03
Page 8 of 12

Note: Apply optional top layer of insulation in a full mopping of approved hot asphalt or coal tar pitch applied within the EVT range and at a rate of 20-40 lbs./100ft². Please 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: (Optional) Koppers organic or glass fiber base sheet adhered to the insulation substrate with approved asphalt at an application rate of 25 lbs./sq. ± 15%.
- Ply Sheet: Two or more plies of Koppers Tarred Felt, Glass Felt, Tar-Glas or Premium Tar-Glas Roofing Felt. Roof cover may be Glass Fiber Felt, Tar-Glas or Premium Tar-Glas 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: -45 psf (See General Limitation #9.)



Deck Type 5I: Cementitious Wood Fiber, Insulated, New Construction

Deck Description: Cementitious wood fiber

System Type C: All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Insulation for Base Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Kop-R(WII), AC-Foam II, Pyrox, ENRGY 2, PSI-25 Minimum 1" thick	N/A	N/A
ENRGY 2 Plus, Kop-R Composite, Kop-R(WC), ACFoam Composite Minimum 1.5" thick	N/A	N/A
Standard or Wide Flute Armor-R Glass, Fiberglas Roof Insulation or Fiber Glass Roof Insulation Minimum 1⁵/₁₆" thick	N/A	N/A
Kop-R Wood Fiber, Armor Board Regular or High Density Fiberboard, Esgard Fiberboard, Regular or High Density Fiberboard, Traffic Top, High Density Roof Fiberboard, GAFTEMP Regular or High Density Fiberboard, Hubert Fiberboard Minimum 1/2" thick	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.

Insulation for Top Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ENRGY 2 Plus, Kop-R Composite, Kop-R(WC), ACFoam Composite Minimum 1.5" thick	2, 4, 6, 8 or 11	1:4 ft ²
Standard or Wide Flute Armor-R Glass, Fiberglas Roof Insulation or Fiber Glass Roof Insulation Minimum 1⁵/₁₆" thick	2, 4, 6, 8 or 11	1:2.67 ft ²
Kop-R Wood Fiber, Armor Board Regular or High Density Fiberboard, Esgard Fiberboard, Regular or High Density Fiberboard, Traffic Top, High Density Roof Fiberboard, GAFTEMP Regular or High Density Fiberboard, Hubert Fiberboard Minimum 1" thick	2, 4, 6, 8 or 11	1:2 ft ²
ConPerl, GAFTEMP Permalite, Fesco Board Minimum 3/4" thick	2, 4, 6, 8 or 11	1:2 ft ²

Base Sheet: (Optional) Koppers organic or glass fiber base sheet adhered to the insulation substrate with approved asphalt at an application rate of 25 lbs./sq. ± 15%.



Ply Sheet: Two or more plies of Koppers Tarred Felt, Glass Felt, Tar-Glas or Premium Tar-Glas Roofing Felt. Roof cover may be Glass Fiber Felt, Tar-Glas or Premium Tar-Glas Felt adhered in a full mopping of approved coal tar at an application rate of 25 lbs./sq. \pm 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: -45 psf (See General Limitation #9.)



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.)**

END OF THIS ACCEPTANCE



NOA No 02-1018.06
Expiration Date: 01/22/06
Approval Date: 01/02/03
Page 12 of 12