



**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 Wood 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 revises NOA No. 05-1208.03 and consists of pages 1 through 15.
The submitted documentation was reviewed by Jorge L. Acebo.



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ROOFING SYSTEM APPROVAL

Category: Roofing
Sub-Category: Built-Up Roofing
Material: Fiberglass
Deck Type: Wood
Maximum Design Pressure -60 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 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.
Kop-R (WC)	various	TAS 110	Polyisocyanurate and perlite composite insulation board.
Kop-R (WI)	various	TAS 110	Polyisocyanurate foam insulation.
Kop-R (WII)	various	TAS 110	Polyisocyanurate foam insulation board.
Kop-R High Density Wood Fiber	various	TAS 110	Wood fiber insulation board.
Koppers Polyester Roofing Felt	8 sq./roll	Proprietary	Spunbond polyester plysheet for use in conventional 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.



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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	TAS 110	Polyisocyanurate foam insulation	Atlas (with current NOA)
E'NRG'Y-2, PSI-25	various	TAS 110	Polyisocyanurate foam insulation	Johns Manville (with current NOA)
HyTherm AP	various	TAS 110	Polyisocyanurate foam insulation	Celotex (with current NOA)
Pyrox	various	TAS 110	Polyisocyanurate foam insulation	Apache (with current NOA)
E'NRG'Y-2 Plus	various	TAS 110	Polyisocyanurate composite insulation	Johns Manville (with current NOA)
ACFoam Composite	Various	TAS 110	Polyisocyanurate composite insulation	Atlas (with current NOA)
Fiberglass	various	TAS 110	Fiberglass roof insulation	See Approved Systems Listings
Perlite Insulation	various	TAS 110	Perlite insulation board	See Approved Systems Listings
High Density Wood Fiberboard	various	TAS 110	Wood fiber insulation board	See Approved Systems Listings
DekFast Fastener		TAS 114	Insulation fastening assembly with steel and plastic stress plate.	Construction Fasteners, Inc. (with current NOA)
Accutrac Fastener		TAS 114	Insulation fastener assembly	ITW Buildex (with current NOA)
Hextra Fastener		TAS 114	Insulation fastening assembly with steel and plastic stress plate.	ITW Buildex (with current NOA)
Roofgrip Fastener		TAS 114	Insulation fastening assembly with steel and plastic stress plate.	ITW Buildex (with current NOA)
Olympic Fasteners		PA 114	Insulation fasteners	Olympic (with current NOA)
ESI Fastening Systems		TAS 114	Insulation fastening assembly with interlocking plastic plate.	SFS Stadler (with current NOA)
Insulfixx Fastener		TAS 114	Insulation fastening assembly with steel and plastic stress plate.	SFS Stadler (with current NOA)
HD Insulfixx Fastener		TAS 114	Insulation fastening assembly with steel and plastic stress plate.	SFS Stadler (with current NOA)



<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>	<u>Manufacturer</u>
Tru-Fast Fastener		TAS 114	Insulation fastening assembly with steel and plastic stress plate.	Tru-Fast (with current NOA)
Roofing Nails		TAS 114	Corrosion resistant annular ring shank nails, FF-N-105-B Type 2.	generic
Tin Caps	Min. 32ga. 1 ⁵ / ₈ " Diameter		Corrosion resistant circular discs.	generic
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	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. □ Dynatech Engineering	UL Roofing Materials and Systems Directory 1.94.17	Fire Classifications Wind Uplift, Small Scale	Published Annually 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
Exterior Research & Design, LLC.	4302.02.97-1	TAS 114	02/15/97
Atlantic & Caribbean Roof Consulting, LLC	ACRC 05-010 ACRC 05-011	TAS 114	10/04/05 10/04/05



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APPROVED ASSEMBLIES:

Deck Type II: Wood, Insulated

Deck Description: 1⁹/₃₂" or greater plywood or wood plank

System Type A(1): All layers of insulation adhered to anchor sheet with approved asphalt or coal tar pitch

All General and System Limitations shall apply.

<u>Insulation Base Layer</u>	<u>Fastener Type</u>	<u>Fastening Detail No.</u>	<u>Fasteners Per Board</u>	<u>Fastener 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
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Approved Type(s): **E'NRG'Y 2, PSI-25**

Minimum: 1.0" x 3' x 4'	N/A	N/A	N/A	N/A
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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
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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
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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, Hubert Fiberboard**

Minimum: 1/2" x 2' x 4'	N/A	N/A	N/A	N/A
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<u>Insulation Top Layer</u>	<u>Fastener Type</u>	<u>Fastening Detail No.</u>	<u>Fasteners Per Board</u>	<u>Fastener 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
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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
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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, Hubert 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

Note: 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.

Anchor Sheet: Koppers Glass Fiber or Organic base sheet applied to the deck with corrosion resistant annular ring shank nails and tin caps at a fastener spacing of 9" o.c. at the lap, 9" o.c. in two rows staggered along the center line of the of the sheet in the field.

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

Ply Sheet: Two or more plies of Koppers Tarred Felt, Glass Felt, Tar-Glas, Premium Tar-Glas or Polyester Roofing Felt. Roof cover may be Glass Fiber Felt, Tar-Glas or Premium Tar-Glas Felt 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: -60 psf; (See General Limitation #9)



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Deck Type II: Wood, Insulated

Deck Description: ¹⁹/₃₂" or greater plywood or wood plank

System Type A(2): All layers of insulation adhered to anchor sheet with approved asphalt or coal tar pitch

All General and System Limitations shall apply.

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

Approved Type(s): **Kop-R**

Minimum: 1.5" x 4' x 4'	N/A	N/A	N/A	N/A
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<u>Insulation Top Layer</u>	<u>Fastener Type</u>	<u>Fastening Detail No.</u>	<u>Fasteners Per Board</u>	<u>Fastener Density</u>
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One or more layers of the following:

Approved Type(s): **Celotex High Density Wood Fiberboard**

Minimum: ½" x 2' x 4'	N/A	N/A	N/A	N/A
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Note: 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.

Anchor Sheet: Koppers Glass Fiber or Organic base sheet applied to the deck with corrosion resistant annular ring shank nails and tin caps at a fastener spacing of 7" o.c. at the lap, 7" o.c. in two rows staggered along the center line of the of the sheet in the field.

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

Ply Sheet: Two or more plies of Koppers Tarred Felt, Tar-Glas or Premium Tar-Glas. Roof cover may be Koppers 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: -52.5 psf; (See General Limitation #7)



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Deck Type 1I: Wood, Insulated

Deck Description: 19/32" or greater plywood or wood plank

System Type B: Base layer of insulation mechanically fastened, optional top layer adhered with approved asphalt or coal tar pitch.

All General and System Limitations shall apply.

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

Approved Type(s): **Kop-R(WII), AC-Foam II, Pyrox**

Minimum: 1.3" x 4' x 4'	CF DekFast S/P	[3]	4	1:4 ft ²
	CF Omega	[3]	4	1:4 ft ²
Minimum: 1.3" x 4' x 4'	ITW Accutrac S/P	[3]	4	1:4 ft ²
	ITW Hextra S/P	[3]	4	1:4 ft ²
	ITW Roofgrip S/P	[3]	4	1:4 ft ²
Minimum: 1.3" x 4' x 4'	Olympic Std. S/P	[3]	4	1:4 ft ²
	Olympic HD S/P	[3]	4	1:4 ft ²
Minimum: 1.3" x 4' x 4'	SFS Insulfixx S/P	[3]	4	1:4 ft ²
	SFS Isofast IF/IG/IW	[3]	4	1:4 ft ²
Minimum: 1.3" x 4' x 4'	TruFast S/P	[3]	4	1:4 ft ²

Approved Type(s): **E'NRG'Y 2, PSI-25**

Minimum: 1.4" x 3' x 4'	CF DekFast S/P	[2]	4	1:3 ft ²
	CF Omega	[2]	4	1:3 ft ²
Minimum: 1.4" x 3' x 4'	ITW Accutrac S/P	[2]	4	1:3 ft ²
	ITW Hextra S/P	[2]	4	1:3 ft ²
	ITW Roofgrip S/P	[2]	4	1:3 ft ²
Minimum: 1.4" x 3' x 4'	Olympic Std. S/P	[2]	4	1:3 ft ²
	Olympic HD S/P	[2]	4	1:3 ft ²
Minimum: 1.4" x 3' x 4'	SFS Insulfixx S/P	[2]	4	1:3 ft ²
	SFS Isofast IF/IG/IW	[2]	4	1:3 ft ²
Minimum: 1.4" x 3' x 4'	TruFast S/P	[2]	4	1:3 ft ²
Minimum: 2.0" x 3' x 4'	CF DekFast S/P	[2]	3	1:4 ft ²
	CF Omega	[2]	3	1:4 ft ²
	ITW Accutrac S/P	[2]	3	1:4 ft ²
	ITW Hextra S/P	[2]	3	1:4 ft ²
Minimum: 2.0" x 3' x 4'	ITW Roofgrip S/P	[2]	3	1:4 ft ²
	Olympic Std. S/P	[2]	3	1:4 ft ²
	Olympic HD S/P	[2]	3	1:4 ft ²
Minimum: 2.0" x 3' x 4'	SFS Insulfixx S/P	[2]	3	1:4 ft ²
	SFS Isofast IF/IG/IW	[2]	3	1:4 ft ²
Minimum: 2.0" x 3' x 4'	TruFast S/P	[2]	3	1:4 ft ²

Approved Type(s): **HyTherm AP**

Minimum: 1.5" x 4' x 4'	CF DekFast S/P	[3]	4	1:4 ft ²
	CF Omega	[3]	4	1:4 ft ²



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Minimum: 1.5" x 4' x 4'	ITW Accutrac S/P	[3]	4	1:4 ft ²
	ITW Hextra S/P	[3]	4	1:4 ft ²
	ITW Roofgrip S/P	[3]	4	1:4 ft ²
Minimum: 1.5" x 4' x 4'	Olympic Std. S/P	[3]	4	1:4 ft ²
	Olympic HD S/P	[3]	4	1:4 ft ²
Minimum: 1.5" x 4' x 4'	SFS Insulfixx S/P	[3]	4	1:4 ft ²
	SFS Isofast IF/IG/IW	[3]	4	1:4 ft ²
Minimum: 1.5" x 4' x 4'	TruFast S/P	[3]	4	1:4 ft ²

Approved Type(s): **E'NRG'Y 2 Plus, Kop-R Composite, Kop-R(WC), ACFoam Composite**

Minimum: 1.5" x 3' x 4'	CF DekFast S/P	[2]	3	1:4 ft ²
	CF Omega	[2]	3	1:4 ft ²
Minimum: 1.5" x 3' x 4'	ITW Accutrac S/P	[2]	4	1:3 ft ²
	ITW Hextra S/P	[2]	4	1:3 ft ²
	ITW Roofgrip S/P	[2]	4	1:3 ft ²
Minimum: 1.5" x 3' x 4'	Olympic Std. S/P	[2]	4	1:3 ft ²
	Olympic HD S/P	[2]	4	1:3 ft ²
Minimum: 1.5" x 3' x 4'	SFS Insulfixx S/P	[2]	4	1:3 ft ²
	SFS Isofast IF/IG/IW	[2]	4	1:3 ft ²
Minimum: 1.5" x 3' x 4'	TruFast S/P	[2]	4	1:3 ft ²

Approved Type(s): **Standard or Wide Flute Armor-R Glass, Fiberglass Roof Insulation or Fiber Glass Roof Insulation**

Minimum: 2.0" x 4' x 4'	CF DekFast S/P	[3]	8	1:2 ft ²
	CF Omega	[3]	8	1:2 ft ²
Minimum: 2.0" x 4' x 4'	ITW Accutrac S/P	[3]	8	1:2 ft ²
	ITW Hextra S/P	[3]	8	1:2 ft ²
	ITW Roofgrip S/P	[3]	8	1:2 ft ²
Minimum: 2.0" x 4' x 4'	Olympic Std. S/P	[3]	6	1:2.67 ft ²
	Olympic HD S/P	[3]	6	1:2.67 ft ²
Minimum: 2.0" x 4' x 4'	SFS Insulfixx S/P	[3]	8	1:2 ft ²
	SFS Isofast IF/IG/IW	[3]	8	1:2 ft ²
Minimum: 2.0" x 4' x 4'	TruFast S/P	[3]	6	1:2.67 ft ²

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, Hubert Fiberboard**

Minimum: 1.0" x 2' x 4'	CF DekFast S/P	[1]	2	1:4 ft ²
	CF Omega	[1]	2	1:4 ft ²
Minimum: 1.0" x 2' x 4'	ITW Accutrac S/P	[1]	4	1:2 ft ²
	ITW Hextra S/P	[1]	4	1:2 ft ²
	ITW Roofgrip S/P	[1]	4	1:2 ft ²
Minimum: 1.0" x 2' x 4'	Olympic Std. S/P	[1]	2	1:4 ft ²
	Olympic HD S/P	[1]	2	1:4 ft ²
Minimum: 1.0" x 2' x 4'	SFS Insulfixx S/P	[1]	4	1:2 ft ²
	SFS Isofast IF/IG/IW	[1]	4	1:2 ft ²
Minimum: 1.0" x 2' x 4'	TruFast S/P	[1]	4	1:2 ft ²



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).

<u>Insulation Top Layer</u>	<u>Fastener Type</u>	<u>Fastening Detail No.</u>	<u>Fasteners Per Board</u>	<u>Fastener 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, Hubert Fiberboard				
Minimum: 1/2" x 2' x 4'	N/A	N/A	N/A	N/A

Approved Type(s): Celotherm, ConPerl, GAFTEMP Permalite, Fesco Board				
Minimum: 3/4" x 2' x 4'	N/A	N/A	N/A	N/A

Note: Apply top layer of insulation in a full mopping of any approved mopping 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.

Anchor Sheet: (Required where first layer of insulation is regular or high density wood fiber) Koppers organic or glass fiber base sheet adhered to the insulation substrate with approved bitumen at an application rate of 25 lbs./sq. ± 15%.

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

Ply Sheet: Two or more plies of Koppers Tarred Felt, Glass Felt, Tar-Glas, Premium Tar-Glas or Polyester 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.)



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Deck Type II: Wood, Insulated
Deck Description: 1 9/32" or greater plywood or wood plank
System Type C: One or more layers of insulation simultaneously fastened.

All General and System Limitations shall apply.

<u>Insulation Base Layer</u>	<u>Fastener Type</u>	<u>Fastening Detail No.</u>	<u>Fasteners Per Board</u>	<u>Fastener Density</u>
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, Hubert Fiberboard Minimum: 1/2" x 2' x 4'	N/A	N/A	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..

<u>Insulation Top Layer</u>	<u>Fastener Type</u>	<u>Fastening Detail No.</u>	<u>Fasteners Per Board</u>	<u>Fastener Density</u>
Approved Type(s): E'NRG'Y 2 Plus, Kop-R Composite, Kop-R(WC), ACFoam Composite Minimum: 1.5" x 3' x 4'	CF DekFast S/P	[2]	3	1:4 ft ²
	CF Omega	[2]	3	1:4 ft ²
Minimum: 1.5" x 3' x 4'	ITW Accutrac S/P	[2]	4	1:3 ft ²
	ITW Hextra S/P	[2]	4	1:3 ft ²
	ITW Roofgrip S/P	[2]	4	1:3 ft ²
Minimum: 1.5" x 3' x 4'	Olympic Std. S/P	[2]	4	1:3 ft ²
	Olympic HD S/P	[2]	4	1:3 ft ²
Minimum: 1.5" x 3' x 4'	SFS Insulfixx S/P	[2]	4	1:3 ft ²
	SFS Isofast IF/IG/IW	[2]	4	1:3 ft ²
Minimum: 1.5" x 3' x 4'	TruFast S/P	[2]	4	1:3 ft ²

Approved Type(s): **Standard or Wide Flute Armor-R Glass, Fiberglas Roof Insulation or Fiber Glass Roof Insulation**

Minimum: 2.0" x 4' x 4'	CF DekFast S/P	[3]	8	1:2 ft ²
	CF Omega	[3]	8	1:2 ft ²
Minimum: 2.0" x 4' x 4'	ITW Accutrac S/P	[3]	8	1:2 ft ²



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	ITW Hextra S/P	[3]	8	1:2 ft ²
	ITW Roofgrip S/P	[3]	8	1:2 ft ²
Minimum: 2.0" x 4' x 4'	Olympic Std. S/P	[3]	6	1:2.67 ft ²
	Olympic HD S/P	[3]	6	1:2.67 ft ²
Minimum: 2.0" x 4' x 4'	SFS Insulfixx S/P	[3]	8	1:2 ft ²
	SFS Isofast IF/IG/IW	[3]	8	1:2 ft ²
Minimum: 2.0" x 4' x 4'	TruFast S/P	[3]	6	1:2.67 ft ²

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, Hubert Fiberboard**

Minimum: 1.0" x 2' x 4'	CF DekFast S/P	[1]	2	1:4 ft ²
	CF Omega	[1]	2	1:4 ft ²
Minimum: 1.0" x 2' x 4'	ITW Accutrac S/P	[1]	4	1:2 ft ²
	ITW Hextra S/P	[1]	4	1:2 ft ²
	ITW Roofgrip S/P	[1]	4	1:2 ft ²
Minimum: 1.0" x 2' x 4'	Olympic Std. S/P	[1]	2	1:4 ft ²
	Olympic HD S/P	[1]	2	1:4 ft ²
Minimum: 1.0" x 2' x 4'	SFS Insulfixx S/P	[1]	4	1:2 ft ²
	SFS Isofast IF/IG/IW	[1]	4	1:2 ft ²
Minimum: 1.0" x 2' x 4'	TruFast S/P	[1]	4	1:2 ft ²

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

Minimum: ¾" x 2' x 4'	CF DekFast S/P	[1]	4	1:2 ft ²
	CF Omega	[1]	4	1:2 ft ²
Minimum: ¾" x 2' x 4'	ITW Accutrac S/P	[1]	4	1:2 ft ²
	ITW Hextra S/P	[1]	4	1:2 ft ²
	ITW Roofgrip S/P	[1]	4	1:2 ft ²
Minimum: ¾" x 2' x 4'	Olympic Std. S/P	[1]	4	1:2 ft ²
	Olympic HD S/P	[1]	4	1:2 ft ²
Minimum: ¾" x 2' x 4'	SFS Insulfixx S/P	[1]	4	1:2 ft ²
	SFS Isofast IF/IG/IW	[1]	4	1:2 ft ²
Minimum: ¾" x 2' x 4'	TruFast S/P	[1]	4	1:2 ft ²

Anchor Sheet: (Required where first layer of insulation is regular or high density wood fiber) Koppers organic or glass fiber base sheet adhered to the insulation substrate with approved bitumen at an application rate of 25 lbs./sq. ± 15%.

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

Ply Sheet: Two or more plies of Koppers Tarred Felt, Glass Felt, Tar-Glas, Premium Tar-Glas or Polyester 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 1: Wood, Non-insulated
Deck Description: ¹⁹/₃₂" or greater plywood or wood plank decks
System E(1): Base sheet mechanically attached

All General and System Limitations shall apply.

Base Sheet: Koppers glass fiber or organic base sheet applied to the deck with approved annular ring shank nails and tin caps at a fastener spacing of 9" o.c. at the lap, 9" o.c. in two rows staggered along the center line of the of the sheet in the field.

Ply Sheet: Two or more plies of Koppers Tarred Felt, Glass Felt, Tar-Glas, Premium Tar-Glas or Polyester 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: -60 psf (See General Limitation #9.)



Deck Type 1: Wood, Non-insulated
Deck Description: ¹⁹/₃₂" or greater plywood or wood plank decks
System E(2): Base sheet mechanically attached

All General and System Limitations shall apply.

Base Sheet: Koppers glass fiber or organic base sheet applied to the deck with approved annular ring shank nails and tin caps at a fastener spacing of 7" o.c. at the lap, 7" o.c. in two rows staggered along the center line of the of the sheet in the field.

Ply Sheet: Two or more plies of Koppers Tarred Felt, Tar-Glas or Premium Tar-Glas. Roof cover may be Koppers 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: -52.5 psf (See General Limitation #7.)



WOOD DECK SYSTEM LIMITATIONS:

- 1 A slip sheet is required with Ply 4 and Ply 6 when used as a mechanically fastened base or anchor sheet.

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. 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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