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)

Firestone Building Products Company
310 East 96th Street
Indianapolis, IN 46240-3702

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 Florida Building Code, including the High Velocity Hurricane Zone.

DESCRIPTION: Modified Bitumen Roofing Systems for Cemetitious 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. 05-0830.07 and consists of pages 1 through 29.
The submitted documentation was reviewed by Jorge L. Acebo.

ROOFING SYSTEM APPROVAL

Category:	Roofing
Sub-Category:	Modified Bitumen
Material:	APP/SBS
Deck Type:	Cementitious Wood Fiber
Maximum Design Pressure	-72.5 psf
Fire Classification:	See General Limitation #1

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

Product	Dimensions	Test Specification	Product Description
APP 180	39.4" x 32'10"	ASTM D 5147	Polyester reinforced modified bitumen, granule surfaced membrane. Torch applied.
APP 180 FR	39.4" x 32'10"	ASTM D 5147	Polyester reinforced, fire regardant modified bitumen, granule surfaced membrane. Torch applied.
APP 170	39.4" x 33'6"	ASTM D 5147	Polyester reinforced modified bitumen membrane. Torch applied.
APP 160	39.4" x 32'10"	ASTM D 5147	Polyester reinforced modified bitumen membrane. Torch applied.
MB Base Sheet	36" x 108'	ASTM D 5147	Fiberglass reinforced base sheet, asphalt coated on both sides. Applied in hot asphalt or mechanically attached.
SBS	39.4" x 33'10"	ASTM D 5147	Granule surfaced, modified bitumen membrane reinforced with non-woven polyester mat.
SBS FR	39.4" x 33'10"	ASTM D 5147	Ceramic granule surface, modified bitumen membrane reinforced with non-woven polyester mat.
SBS Premium FR	39.4" x 33'10"	ASTM D 5147	Ceramic granule surface, fire rated, modified bitumen membrane reinforced with non-woven polyester mat.
SBS Base Sheet	39.4" x 50'	ASTM D 5147	Fiberglass reinforced SBS base sheet. Applied in hot asphalt or mechanically attached.
SBS Smooth	39.4" x 33'10"	ASTM D 5147	Smooth surfaced, modified bitumen membrane reinforced with non-woven polyester mat. Applied in hot asphalt.
SBS Premium	39.4" x 33'10"	ASTM D 5147	Granule surfaced, modified bitumen membrane reinforced with polyester mat. Applied in hot asphalt.

Product	Dimensions	Test Specification	Product Description
SBS Glass	39.4" x 33'10"	ASTM D 5147	Fiberglass reinforced, granule surfaced, modified bitumen membrane. Applied in hot asphalt.
SBS Glass FR	39.4" x 33'10"	ASTM D 5147	Granular surfaced, fiberglass reinforced, fire regardant, modified bitumen membrane. Applied in hot asphalt.
Type IV	33" x 180"	ASTM D5147	Fiberglass reinforced, asphalt impregnated, roofing ply. Applied in hot asphalt.
Type VI	33" x 180"	ASTM D5147	Fiberglass reinforced, asphalt impregnated, roofing ply. Applied in hot asphalt.
ISO 95+	various	TAS 110	Polyisocyanurate foam insulation.
ISO 95+ GL	various	TAS 110	Polyisocyanurate foam insulation.
ISO 95+ GW	various	TAS 110	Polyisocyanurate foam insulation.
FiberTop Wood Fiber	various	TAS 110	High density wood fiber insulation.
ISO 95+ Composite	various	TAS 110	Polyisocyanurate foam / perlite insulation.
Polymer Fastener		TAS 114	11/16" diameter, glass reinforced nylon fastener for gypsum or cementitious wood fiber decks.
Polymer Plate		TAS 114	3" square, galvalume plate for use with the Polymer Fastener.
Firestone AP Fasteners		TAS 114	#15-13 fluorocarbon polymer treated, heavy duty fastener.
Firestone HD Fasteners		TAS 114	#15-13 fluorocarbon polymer treated, heavy duty fastener.
Firestone Concrete Drives		TAS 114	1/4" diameter concrete deck fastener.
Firestone Insulation Plate	$2\ ^{7}/_{8}$" hex plate	TAS 114	Galvalume hex plate for insulation attachment.

TRADE NAMES OF PRODUCTS MANUFACTURED BY OTHERS:

Product	Dimensions	Test Specification	Product Description	Manufacturer
Pyrox	various	TAS 114	Polyisocyanurate foam insulation	Apache
APOC 212		TAS 121	Aluminum roof coating.	
ACFoam I	various	TAS 110	Polyisocyanurate foam insulation	Atlas Energy Products
ACFoam II	various	TAS 110	Polyisocyanurate foam insulation	Atlas Energy Products

Product	Dimensions	Test Specification	Product Description	Manufacturer
Hy-Tec	various	TAS 110	Polyisocyanurate foam insulation	Celotex Corp.
Hy-Tec 2	various	TAS 110	Polyisocyanurate foam insulation	Celotex Corp.
Hy-Therm AP	various	TAS 110	Polyisocyanurate foam insulation	Celotex Corp.
Hy-Therm White Line	various	TAS 110	Polyisocyanurate foam insulation	Celotex Corp.
VaporBar GB	36" x 108'	ASTM D 4601	G2 fiberglas base sheet	Celotex Corp.
Channel-Vent GB		ASTM D 4601	Glass mat with mineral granules	Celotex Corp.
Dekfast Fasteners #14		TAS 114	Insulation fastener	Construction Fasteners Inc.
Dekfast Fasteners #15 HD		TAS 114	Insulation fastener	Construction Fasteners Inc.
Dekfast Hex Plate		TAS 114	Galvalume stress plate for use with Dekfast Fasteners	Construction Fasteners Inc.
TPR Fastener		TAS 114	Lightweight insulating concrete deck fastener	Creative Construction Components
FM-45, FM-60, FM-90 Fasteners and FM-30 Disc		TAS 114	Base ply fastening systems for lightweight concrete decks	ES Products, Inc.
ISO 95+ Composite	various	TAS 110	Polyisocyanurate foam / perlite insulation	Firestone
ISO 95+ GL	various	TAS 110	Polyisocyanurate foam insulation	Firestone
ISO 95+ GW	various	TAS 110	Polyisocyanurate foam insulation	Firestone
Rhoflex Composite	various	TAS 110	Polyisocyanurate foam / perlite insulation	Firestone
Rhoflex GL	various	TAS 110	Polyisocyanurate foam insulation	Firestone
Rhoflex GW	various	TAS 110	Polyisocyanurate foam insulation	Firestone
GAFGLAS # 75	3' x 108'; Roll weight: 75 lbs.	ASTM D 4601	G2 Fiberglass base sheet	GAF Materials Corporation

Product	Dimensions	Test Specification	Product Description	Manufacturer
GAF Stratavent		ASTM D 4601	Asphalt coated, granule surfaced, glass mat	GAF Materials Corporation
GAFglas		ASTM D 4601	Glass mat base sheet	GAF Materials Corporation
#6192-900		TAS 121	Roof coating	Gibson-Homans
Durakote #151		TAS 121	Roof coating	Gilsonite
Asphalt Primer		ASTM D 41	Asphalt Primer	generic
Asphalt		ASTM D 312	Type III or IV Hot asphalt bitumen adhesive	generic
High Density Wood Fiberboard	various	TAS 110	Wood fiber insulation board	generic
Perlite Insulation	various	TAS 110	Perlite insulation board	generic
Red Rosin	various		Rosin paper for barrier layer on wood decks	generic
Roofing Nails	Minimum #12	TAS 114	Corrosion resistant annular ring shank nails	generic
Tin Caps	Min. 32 ga. x $1^5/_8$"		Corrosion resistant circular discs.	generic
Base Sheet		ASTM D 4601 Type II	G2 Base sheet	generic
Type X Gypsum	various		Fire resistant rated gypsum	generic
Iso-Lite E	various	TAS 110	Polyisocyanurate foam insulation	International Permalite
Roofgrip Fastener #14		TAS 114	Insulation fastener	ITW Buildex
Flat Metal Plate	3" square	TAS 114	Galvalume plate for use with Buildex Roofgrip	ITW Buildex
Lite Weight Concrete Fastener	1.75" long 3" head dia.	TAS 114	Corrosion resistant fastener for base sheet attachment to lightweight concrete decks	ITW Buildex
Karnak No. 169		ASTM D 2824	Aluminum roof coating	Karnak Corp.
Karnak 97 AF		TAS 121	Roof coating	Karnak Corp.
Karnak 97		TAS 121	Roof coating	Karnak Corp.
Barrier Board Plus	various	TAS 110	Polyisocyanurate foam / wood fiber insulation	NRG Barriers, Inc.
E'NERG'Y PSI-25	various	TAS 110	Polyisocyanurate foam insulation	NRG Barriers, Inc.

Product	Dimensions	Test Specification	Product Description	Manufacturer
E'NRG'Y-2	various	TAS 110	Polyisocyanurate foam insulation	NRG Barriers, Inc.
Olympic Fastener #14		TAS 114	Insulation fastener	Olympic Manufacturing
Olympic Metal Plate		TAS 114	Metal plate for use with Olympic fasteners	Olympic Manufacturing Group, Inc.
Olympic CR Fastener		TAS 114	Insulation fastener assembly for lightweight concrete	Olympic Manufacturing Group, Inc.
CR Base Sheet Disc		TAS 114	Galvalume disc for use with Olympic CR Fastener	Olympic Manufacturing Group, Inc
Olympic Strap Toggle		TAS 114	Insulation fastener	Olympic Manufacturing Group, Inc.
Fiberglas	various	TAS 110	Fiber glass roof insulation	Johns Manville
Multi-Max FA	various	TAS 110	Polyisocyanurate foam insulation	RMAX
GlasBase	36" x 108'	ASTM D 4601	Type II asphalt impregnated and coated glass fiber base sheet	Johns Manville
GlasKap	36" x 36"	ASTM D 3909	Asphalt impregnated and coated felt surfaced with mineral granules for use as top ply	Johns Manville
PermaPly 28	36" x 324 sq. ft.	ASTM D 4601	Glass fiber, asphalt impregnated base sheet	Johns Manville
UltraGard Gold II	various	TAS 110	Polyisocyanurate foam insulation	Johns Manville
UltraGard II	various	TAS 110	Polyisocyanurate foam insulation	Johns Manville
Ventsulation	36" x 36'	ASTM D 3909	Asphalt coated, granule surfaced, glass mat with 1" grid embossed waffle pattern for venting	Johns Manville
Insul-Fixx Fastener		TAS 114	Insulation fastener	SFS/Stadler
Insul-Fixx S	3" square	TAS 114	Galvalume stress plate for use with Insul-Fixx Fasteners	SFS/Stadler
Vapor Chan		ASTM D 4601	Glass mat coated with mineral granules	Tamko

Product	Dimensions	Test Specification	Product Description	Manufacturer
Rawl Spike		TAS 114	Insulation fastener and steel and plastic stress plate for concrete deck	The Rawlplug Company Inc.
Rawl Fasteners #14		TAS 114	Insulation fasteners	The Rawlplug Company Inc.
Rawl Fasteners #12		TAS 114	Insulation fasteners	The Rawlplug Company Inc.
Rawl Metal Plate	3" round	TAS 114	Galvalume stress plate for Rawl #12 and #14 Fasteners	The Rawlplug Company Inc.
Rawl Speed-Lock Toggle Bolt		TAS 114	Insulation fastener assembly	The Rawlplug Company Inc.
Rawl Drive		TAS 114	Insulation fastener and steel and plastic stress plate for concrete deck	The Rawlplug Company Inc.
Rawlite		TAS 114	Insulation fastener for cementitious and gypsum decks	The Rawlplug Company Inc.
Rawlite Plate	3" round	TAS 114	Plate for use with Rawlite fastener	The Rawlplug Company Inc.
Tru-Fast CF Fasteners		TAS 114	Insulation fastener with steel or plastic plate for concrete	Tru-Fast
Tru-Fast Fastener HD		TAS 114	Insulation fastener with plastic or steel plate	Tru-Fast

EVIDENCE SUBMITTED:

Test Agency	Test Identifier	Description	Date
Factory Mutual Research Corporation	J.I. 0Z5A3.AM	Wind Uplift Classification	03/08/95
	J.I. 2Y3A3.AM	Wind Uplift Classification	11/28/94
	J.I. 1D5A8.AM	Wind Uplift Classification	09/09/98
	J.I. 3003597	Wind Uplift Classification	07/14/99
	J.I. 3004786	Wind Uplift Classification	05/16/00
	J.I. 3005030	Wind Uplift Classification	08/08/00
Underwriters Laboratories	R9516/95NK2269	Fire Classification Compliance	02/03/95
Trinity Engineering, Inc.	4810.01.96-1	Uplift Resistance TAS 114(C) and TAS 114(D)	01/31/96
Exterior Research & Design, LLC.	4810.10.96-1 4674.11.01-1	TAS 114	10/31/96 03/21/06
IRT-ARCON, Inc.	02-026 02-011	TAS 114	07/26/02 02/07/02

APPROVED ASSEMBLIES

Membrane Type: APP

Deck Type 5I: Cementitious Wood Fiber, Insulated

Deck Description: Cementitious wood fiber

System Type A(1): Anchor sheet mechanically fastened; all layers of insulation adhered with approved asphalt.

All General and System Limitations apply.

Insulation Base Layer	Fastener Type	Fastening Detail No.	Fasteners Per Board	Fastener Density
Approved Type(s): **ACFoam-II, ACFoam-I**				
Minimum: 4' x 4' x 1.3"	N/A	N/A	N/A	N/A
Approved Type(s): **E"NRG"Y-2, PSI-25**				
Minimum: 4' x 4' x 1.4"	N/A	N/A	N/A	N/A
Approved Type(s): **Fiberglas**				
Minimum: 4' x 4' x 15/16"	N/A	N/A	N/A	N/A
Approved Type(s): **Hy-Tec, Hy-Tec II**				
Minimum: 4' x 4' x 1.2	N/A	N/A	N/A	N/A
Approved Type(s): **Iso 95+ GL, GW, Composite**				
Minimum: 4' x 4' x 1.4"	N/A	N/A	N/A	N/A
Approved Type(s): **ISO-Lite E**				
Minimum: 4' x 4' x 1.3"	N/A	N/A	N/A	N/A
Approved Type(s): **Multi-Max**				
Minimum: 4' x 4' x 1.5"	N/A	N/A	N/A	N/A
Approved Type(s): **UltraGard Gold II**				
Minimum: 4' x 4' x 1.3"	N/A	N/A	N/A	N/A
Approved Type(s): **Perlite**				
Minimum: 2' x 4' x 3/4"	N/A	N/A	N/A	N/A

Insulation Top Layer	Fastener Type	Fastening Detail No.	Fasteners Per Board	Fastener Density
Approved Type(s): **Perlite**				
Minimum: 2' x 4' x ¾"	N/A	N/A	N/A	N/A
Approved Type(s): **Fiber Top, High Density Wood Fiber**				
Minimum: 4' x 4' x ½"	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 within the EVT range and at a rate of 20-40 lbs/100 ft^2. 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:	One ply of Firestone MB Base Sheet, Celotex Vaporbar GB, Manville GlasBase or Perma Ply 28 with a 4" side lap mechanically fastened to the lightweight deck as described below:
Fastening:	Fasten base sheet with any approved cementitious wood fiber deck fasteners listed in this NOA, fastened 12" o.c. at the 4" side lap, and with two staggered rows in the center of the sheet fastened 18" o.c.; see System Limitation # 2.
Base Sheet:	One ply of Firestone MB Base Sheet, Celotex Vaporbar GB, Manville GlasBase or Perma Ply 28 adhered to the insulation with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq.. If base sheet is applied directly to polyisocyanurate insulation, only a spot or strip mopped application as detailed in this approval is approved; see General Limitation #4.
Ply Sheet:	(Optional) One or more plies of Firestone MB Base Sheet, Type IV or VI ply sheet or other listed base sheet applied in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq..
Membrane:	One ply of Firestone APP 160, APP 170, APP 180 or APP 180 FR applied by torch parallel to the base ply, with the overlaps staggered 12".
Surfacing:	Install one of the following: 1. Gravel or slag at 400 lb. and 300 lb., respectively, in a flood coat of approved asphalt at an application rate of 60 lb./sq.. 2. Karnak No. 97, No. 97 AF or No. 169, Henry 520 aluminum, MB aluminum coating or APOC #212 at an application rate of 1½ gal./sq.. APP 180 FR does not require 1 or 2 above to achieve a UL Class A fire rating.
Maximum Design Pressure:	-45 psf (See General Limitation #9.)

Membrane Type: SBS

Deck Type 5I: Cementitious Wood Fiber, Insulated

Deck Description: Cementitious wood fiber

System Type A(2): Anchor sheet mechanically fastened; all layers of insulation adhered with approved asphalt.

All General and System Limitations apply.

Insulation Base Layer	Fastener Type	Fastening Detail No.	Fasteners Per Board	Fastener Density
Approved Type(s): **ACFoam-II, ACFoam-I**				
Minimum: 4' x 4' x 1.3"	N/A	N/A	N/A	N/A
Approved Type(s): **E"NRG"Y-2, PSI-25**				
Minimum: 4' x 4' x 1.4"	N/A	N/A	N/A	N/A
Approved Type(s): **Fiberglas**				
Minimum: 4' x 4' x 15/16"	N/A	N/A	N/A	N/A
Approved Type(s): **Hy-Tec, Hy-Tec II**				
Minimum: 4' x 4' x 1.2	N/A	N/A	N/A	N/A
Approved Type(s): **Iso 95+ GL, GW, Composite, Rhoflex Composite**				
Minimum: 4' x 4' x 1.4"	N/A	N/A	N/A	N/A
Approved Type(s): **ISO-Lite E**				
Minimum: 4' x 4' x 1.3"	N/A	N/A	N/A	N/A
Approved Type(s): **Multi-Max**				
Minimum: 4' x 4' x 1.5"	N/A	N/A	N/A	N/A
Approved Type(s): **UltraGard Gold II**				
Minimum: 4' x 4' x 1.3"	N/A	N/A	N/A	N/A
Approved Type(s): **Perlite**				
Minimum: 2' x 4' x 3/4"	N/A	N/A	N/A	N/A

Insulation Top Layer	Fastener Type	Fastening Detail No.	Fasteners Per Board	Fastener Density
Approved Type(s): **Perlite**				
Minimum: 2' x 4' x ¾"	N/A	N/A	N/A	N/A
Approved Type(s): **Fiber Top, High Density Wood Fiber**				
Minimum: 4' x 4' x ½"	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 within the EVT range and at a rate of 20-40 lbs/100 ft^2. 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:	One ply of Firestone SBS Base Sheet or other approved ASTM D 4601 type II base sheet nailed to the deck 9" o.c. at the lap and 18" o.c. in two staggered rows centered on the sheet.
Fastening:	Fasten base sheet with any approved cementitious wood fiber deck fasteners listed in this NOA, fastened 12" o.c. at the 4" side lap, and with two staggered rows in the center of the sheet fastened 18" o.c.; see System Limitation # 2.
Base Sheet:	One ply of Firestone MB, Firestone SBS Base Sheet, Celotex Vaporbar GB, Manville GlasBase, GAF GAFglas, Perma Ply 28 or Firestone Type IV or VI ply sheet adhered to the insulation in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Ply Sheet:	(Optional) One of SBS Smooth or SBS base sheet or Firestone Type IV or VI ply sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq..
Membrane:	One ply of Firestone SBS, SBS FR, SBS Smooth, SBS Premium, Premium FR, SBS Glass or SBS Glass FR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq..
Surfacing:	(Optional) Install one of the following: 1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq.. 2. Karnak No. 97, No. 97 AF at an application rate of 1½ gal./sq..
Maximum Design Pressure:	-45 psf (See General Limitation #9.)

Membrane Type: APP

Deck Type 5I: Cementitious Wood Fiber, Insulated

Deck Description: Cementitious wood fiber

System Type B(1): Base layer of insulation mechanically fastened, top layer adhered with approved asphalt.

All General and System Limitations apply.

Insulation Base Layer	Fastener Type	Fastening Detail No.	Fasteners Per Board	Fastener Density
Approved Type(s): **AC-Foam I**				
Minimum: 1.3" x 4' x 4'	Rawlite	[2]	4	1:3 ft²
Minimum: 1.3" x 4' x 4'	Polymer Gyptec	[2]	4	1:3 ft²
Approved Type(s): **AC-Foam II**				
Minimum: 1.3" x 4' x 4'	Rawlite	[3]	4	1:2.67 ft²
Minimum: 1.3" x 4' x 4'	Polymer Gyptec	[3]	4	1:2.67 ft²
Approved Type(s): **Perlite**				
Minimum: ¾" x 2' x 4'	Rawlite	[1]	4	1:2 ft²
Minimum: ¾" x 2' x 4'	Polymer Gyptec	[1]	4	1:2 ft²
Approved Type(s): **Fiberglas**				
Minimum: $^{15}/_{16}$" x 4' x 4'	Rawlite	[3]	6	1:2.67 ft²
Minimum: $^{15}/_{16}$" x 4' x 4'	Polymer Gyptec	[3]	6	1:2.67 ft²

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).

Insulation Top Layer	Fastener Type	Fastening Detail No.	Fasteners Per Board	Fastener Density
Approved Type(s): **Perlite**				
Minimum: ¾" x 2' x 4'	N/A	N/A	N/A	N/A
Approved Type(s): **Fiberglas**				
Minimum: $^{15}/_{16}$" x 4' 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 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:	One ply of Firestone MB Base Sheet, Celotex Vaporbar GB, Manville GlasBase or Perma Ply 28 adhered to the insulation with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq.. If base sheet is applied directly to polyisocyanurate insulation, only a spot or strip mopped application as detailed in this approval is approved; see General Limitation #4.
Ply Sheet:	(Optional) One or more plies of Firestone MB Base Sheet, Type IV or VI ply sheet or other listed base sheet applied in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq..
Membrane:	One ply of Firestone APP 160, APP 170, APP 180 or APP 180 FR applied by torch parallel to the base ply, with the overlaps staggered 12".
Surfacing:	Install one of the following: 1. Gravel or slag at 400 lb. and 300 lb., respectively, in a flood coat of approved asphalt at an application rate of 60 lb./sq.. 2. Karnak No. 97, No. 97 AF or No. 169, Henry 520 aluminum, MB aluminum coating or APOC #212 at an application rate of 1½ gal./sq.. APP 180 FR does not require 1 or 2 above to achieve a UL Class A fire rating.
Maximum Design Pressure:	-45 psf (See General Limitation #9.)

Membrane Type: SBS

Deck Type 5I: Cementitious Wood Fiber, Insulated

Deck Description: Cementitious wood fiber

System Type B(2): Base layer of insulation mechanically fastened, top layer adhered with approved asphalt.

All General and System Limitations apply.

Insulation Base Layer	Fastener Type	Fastening Detail No.	Fasteners Per Board	Fastener Density
Approved Type(s): **AC-Foam I**				
Minimum: 1.3" x 4' x 4'	Rawlite	[2]	4	1:3 ft²
Minimum: 1.3" x 4' x 4'	Polymer Gyptec	[2]	4	1:3 ft²
Approved Type(s): **AC-Foam II**				
Minimum: 1.3" x 4' x 4'	Rawlite	[3]	4	1:2.67 ft²
Minimum: 1.3" x 4' x 4'	Polymer Gyptec	[3]	4	1:2.67 ft²
Approved Type(s): **Perlite**				
Minimum: ¾" x 2' x 4'	Rawlite	[1]	4	1:2 ft²
Minimum: ¾" x 2' x 4'	Polymer Gyptec	[1]	4	1:2 ft²
Approved Type(s): **Fiberglas**				
Minimum: $^{15}/_{16}$" x 4' x 4'	Rawlite	[3]	6	1:2.67 ft²
Minimum: $^{15}/_{16}$" x 4' x 4'	Polymer Gyptec	[3]	6	1:2.67 ft²

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).

Insulation Top Layer	Fastener Type	Fastening Detail No.	Fasteners Per Board	Fastener Density
Approved Type(s): **Perlite**				
Minimum: ¾" x 2' x 4'	N/A	N/A	N/A	N/A
Approved Type(s): **Fiberglas**				
Minimum: $^{15}/_{16}$" x 4' 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 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:	One ply of Firestone MB, Firestone SBS Base Sheet, Celotex Vaporbar GB, Manville GlasBase, GAF GAFglas, Perma Ply 28 or Firestone Type IV or VI ply sheet adhered to the insulation in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Ply Sheet:	(Optional) One or more plies of SBS Smooth or SBS base sheet or Firestone Type IV or VI ply sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq..
Membrane:	One ply of Firestone SBS, SBS FR, SBS Smooth, SBS Premium, Premium FR, SBS Glass or SBS Glass FR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq..
Surfacing:	(Optional) Install one of the following: 1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq.. 2. Karnak No. 97, No. 97 AF at an application rate of 1½ gal./sq..
Maximum Design Pressure:	-45 psf (See General Limitation #9.)

Membrane Type: APP

Deck Type 5I: Cementitious Wood Fiber, Insulated

Deck Description: Cementitious wood fiber

System Type C(1): All layers of insulation simultaneously fastened.

All General and System Limitations apply.

Insulation Base Layer	Fastener Type	Fastening Detail No.	Fasteners Per Board	Fastener Density
Approved Type(s): **Iso 95+ GL, GW, Composite, Rhoflex Composite**				
Minimum: 4' x 4' x 1.4"	N/A	N/A	N/A	N/A
Approved Type(s): **Multi Max FA**				
Minimum: 4' x 4' x 1.5"	N/A	N/A	N/A	N/A
Approved Type(s): **ACFoam I, II**				
Minimum: 4' x 4' x 1.3"	N/A	N/A	N/A	N/A
Approved Type(s): **Hy-Therm AP, Whiteline**				
Minimum: 4' x 4' x 1.3"	N/A	N/A	N/A	N/A
Approved Type(s): **Pyrox**				
Minimum: 4' x 4' x 1.3"	N/A	N/A	N/A	N/A
Approved Type(s): **UltraGard II**				
Minimum: 4' x 4' x 1.5"	N/A	N/A	N/A	N/A
Approved Type(s): **Perlite**				
Minimum: 4' x 4' x ¾"	N/A	N/A	N/A	N/A
Approved Type(s): **Fiber Top, High Density Wood Fiber**				
Minimum: 2' x 4' x ½"	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.

Insulation Top Layer	Fastener Type	Fastening Detail No.	Fasteners Per Board	Fastener Density
Approved Type(s): **Perlite**				
Minimum: 4' x 4' x ¾"	Rawlite	[2]	4	1:3 ft²
Minimum: 4' x 4' x ¾"	Polymer Gyptec	[2]	4	1:3 ft²
Minimum: 4' x 4' x ¾"	Polymer	[2]	4	1:3 ft²
Approved Type(s): **Fiberglas**				
Minimum: $^{15}/_{16}$" x 4' x 4'	Rawlite	[3]	6	1:2.67 ft²

Note: 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.

Base Sheet:	One ply of Firestone MB Base Sheet, Celotex Vaporbar GB, Manville GlasBase or Perma Ply 28 adhered to the insulation with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq.. If base sheet is applied directly to polyisocyanurate insulation, only a spot or strip mopped application as detailed in this approval is approved; see General Limitation #4.
Ply Sheet:	(Optional) One or more plies of Firestone MB Base Sheet, Firestone Type IV or VI ply sheet or other listed base sheet applied in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq..
Membrane:	One ply of Firestone APP 160, APP 170, APP 180 or APP 180 FR applied by torch parallel to the base ply, with the overlaps staggered 12".
Surfacing:	Install one of the following: 1. Gravel or slag at 400 lb. and 300 lb., respectively, in a flood coat of approved asphalt at an application rate of 60 lb./sq.. 2. Karnak No. 97, No. 97 AF or No. 169, Henry 520 aluminum, MB aluminum coating or APOC #212 at an application rate of 1½ gal./sq.. APP 180 FR does not require 1 or 2 above to achieve a UL Class A fire rating.
Maximum Design Pressure:	-45 psf (See General Limitation #9.)

Membrane Type: SBS

Deck Type 5I: Cementitious Wood Fiber, Insulated

Deck Description: Cementitious wood fiber

System Type C(2): All layers of insulation simultaneously fastened.

All General and System Limitations apply.

Insulation Base Layer	Fastener Type	Fastening Detail No.	Fasteners Per Board	Fastener Density
Approved Type(s): **Iso 95+ GL, GW, Composite**				
Minimum: 4' x 4' x 1.4"	N/A	N/A	N/A	N/A
Approved Type(s): **Multi Max FA**				
Minimum: 4' x 4' x 1.5"	N/A	N/A	N/A	N/A
Approved Type(s): **ACFoam I, II**				
Minimum: 4' x 4' x 1.3"	N/A	N/A	N/A	N/A
Approved Type(s): **Hy-Therm AP, Whiteline**				
Minimum: 4' x 4' x 1.3"	N/A	N/A	N/A	N/A
Approved Type(s): **Pyrox**				
Minimum: 4' x 4' x 1.3"	N/A	N/A	N/A	N/A
Approved Type(s): **UltraGard II**				
Minimum: 4' x 4' x 1.5"	N/A	N/A	N/A	N/A
Approved Type(s): **Perlite**				
Minimum: 2' x 4' x ¾"	N/A	N/A	N/A	N/A
Approved Type(s): **Fiber Top, High Density Wood Fiber**				
Minimum: 4' x 4' x ½"	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.

Insulation Top Layer	Fastener Type	Fastening Detail No.	Fasteners Per Board	Fastener Density
Approved Type(s): **Perlite**				
Minimum: 2' x 4' x ¾"	Rawlite	[2]	4	1:3 ft²
Minimum: 2' x 4' x ¾"	Polymer Gyptec	[2]	4	1:3 ft²
Minimum: 2' x 4' x ¾"	Polymer	[2]	4	1:3 ft²
Approved Type(s): **Fiberglas**				
Minimum: 4' x 4' x $^{15}/_{16}$"	Rawlite	[3]	6	1:2.67 ft²

Note: 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.

Base Sheet:	One ply of Firestone MB, Firestone SBS Base Sheet, Celotex Vaporbar GB, Manville GlasBase, GAF GAFglas, Perma Ply 28 or Firestone Type IV or VI ply sheet adhered to the insulation in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Ply Sheet:	(Optional) One of SBS Smooth or SBS base sheet or Firestone Type IV or VI ply sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Membrane:	One ply of Firestone SBS, SBS FR, SBS Smooth, SBS Premium, Premium FR, SBS Glass or SBS Glass FR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Surfacing:	(Optional) Install one of the following: 1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq.. 2. Karnak No. 97, No. 97 AF at an application rate of 1½ gal./sq..
Maximum Design Pressure:	-45 psf (See General Limitation #9.)

Membrane Type: APP

Deck Type 5I: Cementitious Wood Fiber, Insulated

Deck Description: Cementitious wood fiber

System Type D(1): All layers of insulation and base sheet simultaneously fastened.

All General and System Limitations apply.

Insulation Base or Top Layer	Fastener Type	Fastening Detail No.	Fasteners Per Board	Fastener Density
Approved Type(s): **ACFoam-II, ACFoam-I**				
Minimum: 4' x 4' x 1.3"	N/A	N/A	N/A	N/A
Approved Type(s): **E"NRG"Y-2, PSI-25**				
Minimum: 4' x 4' x 1.4"	N/A	N/A	N/A	N/A
Approved Type(s): **Fiberglas**				
Minimum: 4' x 4' x $^{15}/_{16}$"	N/A	N/A	N/A	N/A
Approved Type(s): **Hy-Tec, Hy-Tec II**				
Minimum: 4' x 4' x 1.2	N/A	N/A	N/A	N/A
Approved Type(s): **Iso 95+ GL, GW, Composite**				
Minimum: 4' x 4' x 1.4"	N/A	N/A	N/A	N/A
Approved Type(s): **ISO-Lite E**				
Minimum: 4' x 4' x 1.3"	N/A	N/A	N/A	N/A
Approved Type(s): **Multi-Max**				
Minimum: 4' x 4' x 1.5"	N/A	N/A	N/A	N/A
Approved Type(s): **UltraGard Gold II**				
Minimum: 4' x 4' x 1.3"	N/A	N/A	N/A	N/A
Approved Type(s): **Perlite**				
Minimum: 2' x 4' x 3/4"	N/A	N/A	N/A	N/A

Note: Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: One ply of Firestone MB Base Sheet, Celotex Vaporbar GB, Manville GlasBase or Perma Ply 28 with a 4" side lap mechanically fastened to the deck through the insulation as described below:

Fastening:	Fasten base sheet with any approved cementitious wood fiber deck fasteners listed in this NOA, fastened 12" o.c. at the 4" side lap, and with two staggered rows in the center of the sheet fastened 18" o.c.; see System Limitation # 2. Fasten base sheet over an additional ply of Perma Ply 28 with Rawlite Fasteners and Stress Plates in the lap 18" o.c. and one row centered on the sheet 18" o.c.
Ply Sheet:	(Optional) One or more plies of Firestone MB Base Sheet, Type IV or VI ply sheet or other listed base sheet applied in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq..
Membrane:	One ply of Firestone APP 160, APP 170, APP 180 or APP 180 FR applied by torch parallel to the base ply, with the overlaps staggered 12".
Surfacing:	Install one of the following: 1. Gravel or slag at 400 lb. and 300 lb., respectively, in a flood coat of approved asphalt at an application rate of 60 lb./sq.. 2. Karnak No. 97, No. 97 AF or No. 169, Henry 520 aluminum, MB aluminum coating or APOC #212 at an application rate of 1½ gal./sq.. APP 180 FR does not require 1 or 2 above to achieve a UL Class A fire rating.
Maximum Design Pressure:	-45 psf (See General Limitation #9.)

Membrane Type: SBS

Deck Type 5I: Cementitious Wood Fiber, Insulated

Deck Description: Cementitious wood fiber

System Type D(2): All layers of insulation and base sheet simultaneously fastened.

All General and System Limitations apply.

Insulation Base Layer	Fastener Type	Fastening Detail No.	Fasteners Per Board	Fastener Density
Approved Type(s): **Iso 95+ GL, GW, Composite**				
Minimum: 4' x 4' x 1.4"	N/A	N/A	N/A	N/A
Approved Type(s): **Multi Max FA**				
Minimum: 4' x 4' x 1.5"	N/A	N/A	N/A	N/A
Approved Type(s): **ACFoam I, II**				
Minimum: 4' x 4' x 1.3"	N/A	N/A	N/A	N/A
Approved Type(s): **Hy-Therm AP, Whiteline**				
Minimum: 4' x 4' x 1.3"	N/A	N/A	N/A	N/A
Approved Type(s): **Pyrox**				
Minimum: 4' x 4' x 1.3"	N/A	N/A	N/A	N/A
Approved Type(s): **UltraGard II**				
Minimum: 4' x 4' x 1.5"	N/A	N/A	N/A	N/A
Approved Type(s): **Perlite**				
Minimum: 2' x 4' x ¾"	N/A	N/A	N/A	N/A

Insulation Top Layer	Fastener Type	Fastening Detail No.	Fasteners Per Board	Fastener Density
Approved Type(s): **Perlite**				
Minimum: 2' x 4' x ¾"	N/A	N/A	N/A	N/A
Approved Type(s): **Fiber Top, High Density Wood Fiber**				
Minimum: 4' x 4' x ½"	N/A	N/A	N/A	N/A

Note: Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet:	One ply of Firestone MB, Firestone SBS Base Sheet, Celotex Vaporbar GB, Manville GlasBase, GAF GAFglas or Perma Ply 28 with a 4" side lap mechanically fastened to the deck through the insulation as described below:
Fastening:	Fasten base sheet with any approved cementitious wood fiber deck fasteners listed in this NOA, fastened 12" o.c. at the 4" side lap, and with two staggered rows in the center of the sheet fastened 18" o.c.; see System Limitation # 2.
Ply Sheet:	(Optional) One of SBS Smooth or SBS base sheet or Firestone Type IV or VI ply sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq..
Membrane:	One ply of Firestone SBS, SBS FR, SBS Smooth, SBS Premium, Premium FR, SBS Glass or SBS Glass FR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq..
Surfacing:	(Optional) Install one of the following: 1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq.. 2. Karnak No. 97, No. 97 AF at an application rate of 1½ gal./sq..
Maximum Design Pressure:	-45 psf (See General Limitation #9.)

Membrane Type: APP

Deck Type 5I: Cementitious Wood Fiber, Insulated

Deck Description: Cementitious Wood Fiber.

System Type E(1): Base sheet mechanically fastened.

All General and System Limitations apply.

Base Sheet: One ply of Firestone MB Base Sheet, Celotex Vaporbar GB, Manville GlasBase or Perma Ply 28 with a 4" side lap mechanically fastened to the lightweight deck as described below:

Fastening: Fasten base sheet with any approved cementitious wood fiber deck fasteners listed in this NOA, fastened 12" o.c. at the 4" side lap, and with two staggered rows in the center of the sheet fastened 18" o.c.; see System Limitation # 2.

Ply Sheet: None.

Membrane: One ply of Firestone APP 160, APP 170, APP 180 or APP 180 FR torch applied to the base ply.

Surfacing: Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq..

2. Karnak No. 97, No. 97 AF or No. 169 at an application rate of 1½-3 gal./sq..

APP 180 FR does not require 1 or 2 above to achieve a UL Class A fire rating.

Maximum Design Pressure: -45 psf (See General Limitation #9.)

Membrane Type: SBS

Deck Type 5I: Cementitious Wood Fiber, Insulated

Deck Description: Cementitious Wood Fiber.

System Type E(2): Base sheet mechanically fastened.

All General and System Limitations apply.

Base Sheet: One ply of Firestone SBS Base Sheet or other approved ASTM D 4601 type II base sheet nailed to the deck 9" o.c. at the lap and 18" o.c. in two staggered rows centered on the sheet.

Fastening: Fasten base sheet with any approved cementitious wood fiber deck fasteners listed in this NOA, fastened 12" o.c. at the 4" side lap, and with two staggered rows in the center of the sheet fastened 18" o.c.; see System Limitation # 2.

Ply Sheet: (Optional) One of SBS Smooth or SBS base sheet ot Firestone Type IV or VI ply sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq..

Membrane: One ply of Firestone SBS, SBS FR, SBS Smooth, SBS Premium, Premium FR, SBS Glass or SBS Glass FR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq..

Surfacing: (Optional) Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq..

2. Karnak No. 97, No. 97 AF at an application rate of 1½ gal./sq..

Maximum Design Pressure: -45 psf (See General Limitation #9.)

Membrane Type:	APP
Deck Type 5:	Cementitious Wood Fiber, Non-Insulated
Deck Description:	Cementitious Wood Fiber
System Type E(3):	Base Sheet Mechanically Fastened

All General and System Limitations Apply.

Base Sheet:	One ply of Firestone MB Base Sheet mechanically fastened with 1.8" Twin Loc-Nail Fasteners fastened at 9" o.c. at the 3" side lap and 12" o.c. in two staggered rows in the field of the sheet.
Ply Sheet:	(Optional) One or more plies of APP 160 or APP 170 heat welded. Or One or more plies of Firestone MB Base Sheet, Type IV Ply Sheet or Type VI Ply Sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Membrane:	Firestone APP 160, APP 170, APP 180 or APP 180 FR heat welded.
Surfacing:	(Optional) Install one of the following: 1. Gravel or slag at 400 lbs. and 300 lbs. respectively, set in a flood coat of Type III or IV asphalt at 60 lbs./sq. 2. Karnak No. 97, No. 97 AF or No. 169 at an application rate of 1-1/2 to 3 gal./sq.
Maximum Design Pressure:	-72.5 psf (See General Limitation #7.)

Membrane Type:	SBS
Deck Type 5:	Cementitious Wood Fiber, Non-Insulated
Deck Description:	Cementitious Wood Fiber
System Type E(4):	Base Sheet Mechanically Fastened

All General and System Limitations Apply.

Base Sheet:	One ply of Firestone MB Base Sheet mechanically fastened with 1.8" Twin Loc-Nail Fasteners fastened at 9" o.c. at the 3" side lap and 12" o.c. in two staggered rows in the field of the sheet.
Ply Sheet:	(Optional) One or more plies of SBS Base Sheet, SBS Smooth, MB Base Sheet, Type IV Ply Sheet or Type VI Ply Sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Membrane:	Firestone SBS, SBS FR, SBS Premium, SBS Premium FR or SBS Smooth adhered in a full mopping of approved asphalt applied within the EVT range and a rate of 20-40 lbs./sq.
Surfacing:	(Optional) Install one of the following: 1. Gravel or slag at 400 lbs. and 300 lbs. respectively, set in a flood coat of Type III or IV asphalt at 60 lbs./sq. 2. Karnak No. 97, No. 97 AF or No. 169 at an application rate of 1-1/2 to 3 gal./sq.
Maximum Design Pressure:	-72.5 psf (See General Limitation #7.)

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.)**
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