MIAMI-DADE

MIAMI-DADE COUNTY, FL
METRO-DADE FLAGLER BUILD

BUILDING CODE COMPLIANCE OFFICE
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CONTRACTOR ENFORCEMENT DIVISION
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PRODUCT CONTROL DIVISION
(305) 375-2902 FAX (305) 372-6339

PRODUCT CONTROL NOTICE OF ACCEPTANCE

Firestone Building Products Co.
525 Congressional Boulevard
Carmel ,IN 46032-5607

Your application for Notice of Acceptance (NOA) of:
Modified Bitumen Roofing Systems for Concrete Deck
under Chapter 8 of the Code of Miami-Dade County governing the use of Alternate Materials and Types of Construction, and completely described herein, has been recommended for acceptance by the Miami-Dade County Building Code Compliance Office (BCCO) under the conditions specified herein.

This NOA shall not be valid after the expiration date stated below. BCCO reserves the right to secure this product or material at any time from a jobsite or manufacturer's plant for quality control testing. If this product or material fails to perform in the approved manner, BCCO may revoke, modify, or suspend the use of such product or material immediately. BCCO reserves the right to revoke this approval, if it is determined by BCCO that this product or material fails to meet the requirements of the South Florida Building Code.

The expense of such testing will be incurred by the manufacturer.

ACCEPTANCE NO.: 01-0130.03
EXPIRES: 03/08/2006

Raul Rodriguez
Chief Product Control Division

THIS IS THE COVERSHEET, SEE ADDITIONAL PAGES FOR SPECIFIC AND GENERAL CONDITIONS
BUILDING CODE & PRODUCT REVIEW COMMITTEE

This application for Product Approval has been reviewed by the BCCO and approved by the Building Code and Product Review Committee to be used in Miami-Dade County, Florida under the conditions set forth above.

Francisco J. Quintana, R.A.
Director
Miami-Dade County
Building Code Compliance Office

APPROVED: 03/08/2001

ROOFING SYSTEM APPROVAL

Category:	Roofing	**Approval Date: March 8, 2001**
Sub-Category:	Modified Bitumen	**Expiration Date: March 8, 2006**
Material:	APP/SBS	
Deck Type:	Concrete	
Maximum Design Pressure	-547 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.

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Product	Dimensions	Test Specification	Product Description
SBS Premium	39.4" x 33'10"	ASTM D 5147	Granule surfaced, modified bitumen membrane reinforced with polyester mat. Applied in hot asphalt.
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	PA 110	Polyisocyanurate foam insulation.
ISO 95+ GL	various	PA 110	Polyisocyanurate foam insulation.
ISO 95+ GW	various	PA 110	Polyisocyanurate foam insulation.
FiberTop Wood Fiber	various	PA 110	High density wood fiber insulation.
ISO 95+ Composite	various	PA 110	Polyisocyanurate foam / perlite insulation.
Polymer Fastener		PA 114	11/16" diameter, glass reinforced nylon fastener for gypsum or cementitious wood fiber decks.
Polymer Plate		PA 114	3" square, galvalume plate for use with the Polymer Fastener.
Firestone AP Fasteners		PA 114	#15-13 fluorocarbon polymer treated, heavy duty fastener.
Firestone HD Fasteners		PA 114	#15-13 fluorocarbon polymer treated, heavy duty fastener.
Firestone Concrete Drives		PA 114	1/4" diameter concrete deck fastener.
Firestone Insulation Plate	2 7/8" hex plate	PA 114	Galvalume hex plate for insulation attachment.

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TRADE NAMES OF PRODUCTS MANUFACTURED BY OTHERS:

Product	Dimensions	Test Specification	Product Description	Manufacturer
Pyrox	various	PA 114	Polyisocyanurate foam insulation	Apache (with current PCA)
APOC 212		PA 121	Aluminum roof coating.	APOC, Subsidiary of Gardner (with current PCA)
ACFoam I	various	PA 110	Polyisocyanurate foam insulation	Atlas Energy Products (with current PCA)
ACFoam II	various	PA 110	Polyisocyanurate foam insulation	Atlas Energy Products (with current PCA)
Hy-Tec	various	PA 110	Polyisocyanurate foam insulation	Celotex Corp. (with current PCA)
Hy-Tec 2	various	PA 110	Polyisocyanurate foam insulation	Celotex Corp. (with current PCA)
Hy-Therm AP	various	PA 110	Polyisocyanurate foam insulation	Celotex Corp. (with current PCA)
Hy-Therm White Line	various	PA 110	Polyisocyanurate foam insulation	Celotex Corp. (with current PCA)
VaporBar GB	36" x 108'	ASTM D 4601	G2 fiberglas base sheet	Celotex Corp. (with current PCA)
Channel-Vent GB		ASTM D 4601	Glass mat with mineral granules	Celotex Corp. (with current PCA)
Dekfast Fasteners #14		PA 114	Insulation fastener	Construction Fasteners Inc. (with current PCA)
Dekfast Fasteners #15 HD		PA 114	Insulation fastener	Construction Fasteners Inc. (with current PCA)

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Product	Dimensions	Test Specification	Product Description	Manufacturer
Dekfast Hex Plate		PA 114	Galvalume stress plate for use with Dekfast Fasteners	Construction Fasteners Inc. (with current PCA)
TPR Fastener		PA 114	Lightweight insulating concrete deck fastener	Creative Construction Components (with current PCA)
FM-45, FM-60, FM-90 Fasteners and FM-30 Disc		PA 114	Base ply fastening systems for lightweight concrete decks	ES Products, Inc. (with current PCA)
GAFGLAS # 75	3' x 108'; Roll weight: 75 lbs.	ASTM D 4601	G2 Fiberglass base sheet	GAF Materials Corporation (with current PCA)
GAF Stratavent		ASTM D 4601	Asphalt coated, granule surfaced, glass mat	GAF Materials Corporation (with current PCA)
GAFglas		ASTM D 4601	Glass mat base sheet	GAF Materials Corporation (with current PCA)
#6192-900		PA 121	Roof coating	Gibson-Homans (with current PCA)
Durakote #151		PA 121	Roof coating	Gilsonite (with current PCA)
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	PA 110	Wood fiber insulation board	generic
Perlite Insulation	various	PA 110	Perlite insulation board	generic
Red Rosin	various		Rosin paper for barrier layer on wood decks.	generic
Roofing Nails	Minimum # 12	PA 114	Corrosion resistant annular ring shank nails	generic

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Product	Dimensions	Test Specification	Product Description	Manufacturer
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	PA 110	Polyisocyanurate foam insulation	International Permalite (with current PCA)
Roofgrip Fastener #14		PA 114	Insulation fastener	ITW Buildex (with current PCA)
Flat Metal Plate	3" square	PA 114	Galvalume plate for use with Buildex Roofgrip	ITW Buildex (with current PCA)
Lite Weight Concrete Fastener	1.75" long 3" head dia.	PA 114	Corrosion resistant fastener for base sheet attachment to lightweight concrete decks	ITW Buildex (with current PCA)
Karnak No. 169		ASTM D 2824	Aluminum roof coating	Karnak Corp. (with current PCA)
Karnak 97 AF		PA 121	Roof coating	Karnak (with current PCA)
Karnak 97		PA 121	Roof coating	Karnak (with current PCA)
Barrier Board Plus	various	PA 110	Polyisocyanurate foam / wood fiber insulation	NRG Barriers, Inc. (with current PCA)
E'NERG'Y PSI-25	various	PA 110	Polyisocyanurate foam insulation	NRG Barriers, Inc. (with current PCA)
E'NRG'Y-2	various	PA 110	Polyisocyanurate foam insulation	NRG Barriers, Inc. (with current PCA)
Olympic Fastener #14		PA 114	Insulation fastener	Olympic Manufacturing (with current PCA)

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Product	Dimensions	Test Specification	Product Description	Manufacturer
Olympic Metal Plate		PA 114	Metal plate for use with Olympic fasteners	Olympic Manufacturing (with current PCA)
Olympic CR Fastener		PA 114	Insulation fastener assembly for lightweight concrete	Olympic Manufacturing (with current PCA)
CR Base Sheet Disc		PA 114	Galvalume disc for use with Olympic CR Fastener	Olympic Manufacturing (with current PCA)
Olympic Strap Toggle		PA 114	Insulation fastener	Olympic Manufacturing (with current PCA)
Fiberglas	various	PA 110	Fiber glass roof insulation	Johns Manville (with current PCA)
Multi-Max FA	various	PA 110	Polyisocyanurate foam insulation	RMAX (with current PCA)
GlasBase	36" x 108'	ASTM D 4601	Type II asphalt impregnated and coated glass fiber base sheet	Johns Manville (with current PCA)
GlasKap	36" x 36"	ASTM D 3909	Asphalt impregnated and coated felt surfaced with mineral granules for use as top ply	Johns Manville (with current PCA)
PermaPly 28	36" x 324 sq. ft.	ASTM D 4601	Glass fiber, asphalt impregnated base sheet	Johns Manville (with current PCA)
UltraGard Gold II	various	PA 110	Polyisocyanurate foam insulation	Johns Manville (with current PCA)
UltraGard II	various	PA 110	Polyisocyanurate foam insulation	Johns Manville (with current PCA)
Ventsulation	36" x 36'	ASTM D 3909	Asphalt coated, granule surfaced, glass mat with 1" grid embossed waffle pattern for venting	Johns Manville (with current PCA)

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Product	Dimensions	Test Specification	Product Description	Manufacturer
Insul-Fixx Fastener		PA 114	Insulation fastener	SFS/Stadler (with current PCA)
Insul-Fixx S	3" square	PA 114	Galvalume stress plate for use with Insul-Fixx Fasteners	SFS/Stadler (with current PCA)
Vapor Chan		ASTM D 4601	Glass mat coated with mineral granules	Tamko (with current PCA)
Rawl Spike		PA 114	Insulation fastener and steel and plastic stress plate for concrete deck.	The Rawlplug Company Inc. (with current PCA)
Rawl Fasteners #14		PA 114	Insulation fasteners	The Rawlplug Company Inc. (with current PCA)
Rawl Fasteners #12		PA 114	Insulation fasteners	The Rawlplug Company Inc. (with current PCA)
Rawl Metal Plate	3" round	PA 114	Galvalume stress plate for Rawl #12 and #14 Fasteners	The Rawlplug Company Inc. (with current PCA)
Rawl Speed-Lock Toggle Bolt		PA 114	Insulation fastener assembly	The Rawlplug Company Inc. (with current PCA)
Rawl Drive		PA 114	Insulation fastener and steel and plastic stress plate for concrete deck	The Rawlplug Company Inc. (with current PCA)
Rawlite		PA 114	Insulation fastener for cementitious and gypsum decks	The Rawlplug Company Inc. (with current PCA)
Rawlite Plate	3" round	PA 114	Plate for use with Rawlite fastener	The Rawlplug Company Inc. (with current PCA)
Tru-Fast CF Fasteners		PA 114	Insulation fastener with steel or plastic plate for concrete	Tru-Fast (with current PCA)
Tru-Fast Fastener HD		PA 114	Insulation fastener with plastic or steel plate	Tru-Fast (with current PCA)

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EVIDENCE SUBMITTED:

Test Agency	Test Identifier	Description	Date
Factory Mutual Research Corporation	J.I. 0Z5A3.AM	Wind Uplift Classification	03/08/95
Factory Mutual Research Corporation	J.I. 2Y3A3.AM	Wind Uplift Classification	11/28/94
Factory Mutual Research Corporation	J.I. 1D5A8.AM	Wind Uplift Classification	09/09/98
Factory Mutual Research Corporation	J.I. 3003597	Wind Uplift Classification	07/14/99
Factory Mutual Research Corporation	J.I. 3004786	Wind Uplift Classification	05/16/00
Factory Mutual Research Corporation	J.I. 3005030	Wind Uplift Classification	08/08/00
Underwriters Laboratories	R9516/94NK11625	Fire Classification Compliance	08/08/94
Underwriters Laboratories	R9516/95NK2269	Fire Classification Compliance	02/03/95
Trinity Engineering, Inc.	4810.01.96-1	Uplift Resistance PA 114(C) and PA 114(D)	01/31/96
Exterior Research & Design, LLC.	4810.10.96-1	Uplift Resistance PA 114(J)	10/31/96

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APPROVED ASSEMBLIES

Membrane Type: APP

Deck Type 3I: Concrete Decks, Insulated, New Construction

Deck Description: 2500 psi structural concrete or concrete plank

System Type A: One or more 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): **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, Celotex Hy-Therm AP**				
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 C, High Density Wood Fiber**				
Minimum: 4' x 4' x ½"	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 C, High Density Wood Fiber**				
Minimum: 4' x 4' x ½"	N/A	N/A	N/A	N/A

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of base sheet. All insulation shall be adhered to the deck in full mopping of approved 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 used as a top layer shall be placed with the polyisocyanurate side facing down.

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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 Type 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 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.; or one ply Firestone APP 160, torch applied.
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:	-120 psf (See General Limitation #9.)
Maximum Fire Classification:	See general limitation #1.

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Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated, New Construction

Deck Description: 2500 psi structural concrete or concrete plank

System Type A: One or more 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): **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, Celotex Hy-Therm AP**				
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 C, High Density Wood Fiber**				
Minimum: 4' x 4' x ½"	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 C, High Density Wood Fiber**				
Minimum: 4' x 4' x ½"	N/A	N/A	N/A	N/A

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of base sheet. All insulation shall be adhered to the deck in full mopping of approved 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 used as a top layer shall be placed with the polyisocyanurate side facing down.

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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 Type 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 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:	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:	-120 psf (See General Limitation #9.)
Maximum Fire Classification:	See General Limitation #1.

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Membrane Type: APP

Deck Type 3I: Concrete Decks, Insulated, New Construction

Deck Description: 2500 psi structural concrete or concrete plank

System Type B: Base layer of insulation mechanically fastened, top layer 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"	Firestone AP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Firestone Drive	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Firestone HD	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Dekfast 14, 15	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Olympic #14	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Tru-Fast CF3	[2]	5	1:2.4 ft²
Approved Type(s): **E"NRG"Y-2, PSI-25**				
Minimum: 4' x 4' x 1.4"	Firestone AP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Firestone Drive	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Firestone HD	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Dekfast 14, 15	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Olympic #14	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Tru-Fast CF3	[2]	5	1:2.4 ft²
Approved Type(s): **Hy-Tec, Hy-Tec II**				
Minimum: 4' x 4' x 1.2"	Firestone AP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Firestone Drive	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Firestone HD	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Dekfast 14, 15	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Olympic #14	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Tru-Fast CF3	[2]	5	1:2.4 ft²
Approved Type(s): **Iso 95+ GL, GW, Composite**				
Minimum: 4' x 4' x 1.4"	Firestone AP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Firestone Drive	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Firestone HD	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Dekfast 14, 15	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Olympic #14	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Tru-Fast CF3	[2]	5	1:2.4 ft²
Approved Type(s): **ISO-Lite E**				
Minimum: 4' x 4' x 1.3"	Firestone AP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Firestone Drive	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Firestone HD	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Dekfast 14, 15	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Olympic #14	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Tru-Fast CF3	[2]	5	1:2.4 ft²

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Approved Type(s): **Multi-Max**

Minimum: 4' x 4' x 1.5"	Firestone AP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Firestone Drive	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Firestone HD	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Dekfast 14, 15	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Olympic #14	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Tru-Fast CF3	[2]	5	1:2.4 ft²

Approved Type(s): **UltraGard Gold II**

Minimum: 4' x 4' x 1.3"	Firestone AP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Firestone Drive	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Firestone HD	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Dekfast 14, 15	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Olympic #14	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Tru-Fast CF3	[2]	5	1:2.4 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): **Any of the insulations listed for Base Layer, above.**

Note: Optional top layer of insulation shall be adhered with 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. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face 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 Type 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..

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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) .

Maximum Fire Classification: See General Limitation #1.

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Roofing Product Control Examiner

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated, New Construction

Deck Description: 2500 psi structural concrete or concrete plank

System Type B: Base layer of insulation mechanically fastened, top layer 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"	Firestone AP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Firestone Drive	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Firestone HD	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Dekfast 14, 15	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Olympic #14	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Tru-Fast CF3	[2]	5	1:2.4 ft²
Approved Type(s): **E"NRG"Y-2, PSI-25**				
Minimum: 4' x 4' x 1.4"	Firestone AP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Firestone Drive	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Firestone HD	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Dekfast 14, 15	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Olympic #14	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Tru-Fast CF3	[2]	5	1:2.4 ft²
Approved Type(s): **Hy-Tec, Hy-Tec II**				
Minimum: 4' x 4' x 1.2"	Firestone AP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Firestone Drive	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Firestone HD	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Dekfast 14, 15	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Olympic #14	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Tru-Fast CF3	[2]	5	1:2.4 ft²
Approved Type(s): **Iso 95+ GL, GW, Composite**				
Minimum: 4' x 4' x 1.4"	Firestone AP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Firestone Drive	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Firestone HD	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Dekfast 14, 15	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Olympic #14	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Tru-Fast CF3	[2]	5	1:2.4 ft²
Approved Type(s): **ISO-Lite E**				
Minimum: 4' x 4' x 1.3"	Firestone AP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Firestone Drive	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Firestone HD	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Dekfast 14, 15	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Olympic #14	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Tru-Fast CF3	[2]	5	1:2.4 ft²

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Approved Type(s): **Multi-Max**

Minimum: 4' x 4' x 1.5"	Firestone AP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Firestone Drive	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Firestone HD	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Dekfast 14, 15	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Olympic #14	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Tru-Fast CF3	[2]	5	1:2.4 ft²

Approved Type(s): **UltraGard Gold II**

Minimum: 4' x 4' x 1.3"	Firestone AP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Firestone Drive	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Firestone HD	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Dekfast 14, 15	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Olympic #14	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Tru-Fast CF3	[2]	5	1:2.4 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): **Any of the insulations listed for Base Layer, above.**

Note: Optional top layer of insulation shall be adhered with 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. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face 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 Type 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.)

Maximum Fire Classification: See General Limitation #1.

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Membrane Type: APP

Deck Type 3I: Concrete Decks, Insulated, New Construction

Deck Description: 2500 psi structural concrete or concrete plank

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

The following assembly is approved to a maximum design pressure of -52.5 psf. No substitutions shall be made. All General and System Limitations apply.

Insulation: Base: Minimum 1.5" Firestone ISO 95+ GL or any other Approved polyisocyanurate insulation mechanically attached using Firestone AP or HD fasteners or Firestone Concrete Drives or other Approved concrete deck fasteners at a density of 1 per 2 ft^2.

Top: Minimum ½" Firestone FiberTop wood fiberboard, minimum ½" Celotex High Density Wood Fiberboard or minimum ¾" thick GAFTEMP Permalite, bonded in a full mopping of ASTM D 312, type III or type IV asphalt applied within the EVT range and at a rate of 20-40 lbs/sq.

Ply Sheet: One or more plies in any combination of the following: Firestone MB Base Sheet, Celotex Vaporbar GB, Manville GlasBase, Perma-Ply 28 or Firestone Type IV or Type VI ply sheet bonded to the insulation in a full mopping of ASTM D 312, type III or IV asphalt applied within the EVT range and at a rate of 20-40 lbs/sq.

Membrane: One ply of APP 160, APP 170, APP 180 or APP 180 FR torch applied parallel to the base ply, with overlaps staggered 12".

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 gal./sq..
3. Fields F900 emulsion, Gilsonite Durakote # 151, Gibson Homans #6192-900 applied at 6 gal./sq. with 60 lbs. of roofing granules set in the wet coating.
4. Owens Corning Fiberglass Cap sheet GAF Mineral Surface Capsheet or Manville Glaskap in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq..

   APP 180 FR does not require 1, 2, 3 or 4 above to achieve a UL Class A fire rating.

Maximum Design Pressure: -52.5 psf (See General Limitation #7)

Maximum Fire Classification: See General Limitation #1.

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Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated, New Construction

Deck Description: 2500 psi structural concrete or concrete plank

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

The following assembly is approved to a maximum design pressure of -52.5 psf. No substitutions shall be made. All General and System Limitations apply.

Insulation: Base: Minimum 1.5" Firestone ISO 95+ GL or any other Approved polyisocyanurate insulation mechanically attached using Firestone AP or HD fasteners or Firestone Concrete Drives or other Approved concrete deck fasteners at a density of 1 per 2 ft^2.

Top: Minimum ½" Firestone FiberTop wood fiberboard, minimum ½" Celotex High Density Wood Fiberboard or minimum ¾" thick GAFTEMP Permalite, bonded in a full mopping of ASTM D 312, type III or type IV asphalt applied within the EVT range and at a rate of 20-40 lbs/sq.

Ply Sheet: One or more plies in any combination of the following: Firestone MB Base Sheet, Celotex Vaporbar GB, Manville GlasBase, Perma-Ply 28 or Firestone Type IV or Type VI ply sheet bonded to the insulation in a full mopping of ASTM D 312, type III or IV 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: -52.5 psf (See General Limitation #7)

Maximum Fire Classification: See General Limitation #1.

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Membrane Type: APP

Deck Type 3I: Concrete Decks, Insulated, New Construction

Deck Description: 2500 psi structural concrete or concrete plank

System Type C: All layers of insulation simultaneously attached.

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
Minimum: 4' x 4' x 1.4"	N/A	N/A	N/A	N/A
Approved Type(s): **UltraGard Gold II**				
Minimum: 2' x 4' x 1.3"	N/A	N/A	N/A	N/A
Approved Type(s): **Perlite**				
Minimum: 4' x 4' x 3/4"	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.

Insulation 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"	Firestone SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Dekfast SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Gripdeck S	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Roofgrip S	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Insulfixx SP	[2]	5	1:2.4 ft²

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Minimum: 4' x 4' x 1.3"	Olympic SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Tru-Fast SP	[2]	5	1:2.4 ft²

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

Minimum: 4' x 4' x 1.4"	Firestone SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Dekfast SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Gripdeck S	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Roofgrip S	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Insulfixx SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Olympic SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Tru-Fast SP	[2]	5	1:2.4 ft²

Approved Type(s): **Hy-Tec, Hy-Tec II**

Minimum: 4' x 4' x 1.2	Firestone SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Dekfast SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Gripdeck S	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Roofgrip S	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Insulfixx SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Olympic SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Tru-Fast SP	[2]	5	1:2.4 ft²

Approved Type(s): **Iso 95+ GL, GW, Composite**

Minimum: 4' x 4' x 1.4"	Firestone SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Dekfast SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Gripdeck S	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Roofgrip S	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Insulfixx SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Olympic SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Tru-Fast SP	[2]	5	1:2.4 ft²

Approved Type(s): **ISO-Lite E**

Minimum: 4' x 4' x 1.3"	Firestone SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Dekfast SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Gripdeck S	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Roofgrip S	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Insulfixx SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Olympic SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Tru-Fast SP	[2]	5	1:2.4 ft²

Approved Type(s): **Multi-Max**

Minimum: 4' x 4' x 1.5"	Firestone SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Dekfast SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Gripdeck S	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Roofgrip S	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Insulfixx SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Olympic SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Tru-Fast SP	[2]	5	1:2.4 ft²

Approved Type(s): **UltraGard Gold II**

Minimum: 4' x 4' x 1.3"	Firestone SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Dekfast SP	[2]	5	1:2.4 ft²

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Minimum: 4' x 4' x 1.3"	Gripdeck S	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Roofgrip S	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Insulfixx SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Olympic SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Tru-Fast SP	[2]	5	1:2.4 ft²
Approved Type(s): **Perlite**				
Minimum: 2' x 4' x ¾"	DekFast S/P	[2]	4	1:3 ft²
Minimum: 2' x 4' x ¾"	Insulfixx S/P	[2]	4	1:3 ft²
Minimum: 2' x 4' x ¾"	Olympic S/P	[2]	4	1:3 ft²
Minimum: 2' x 4' x ¾"	Tru-Fast S/P	[2]	4	1:3 ft²
Approved Type(s): **Fiber Top, High Density Wood Fiber**				
Minimum: 4' x 4' x ½"	DekFast S/P	[2]	4	1:3 ft²
Minimum: 4' x 4' x ½"	Insulfixx S/P	[2]	4	1:3 ft²
Minimum: 4' x 4' x ½"	Olympic S/P	[2]	4	1:3 ft²
Minimum: 4' x 4' x ½"	Tru-Fast S/P	[2]	4	1:3 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, Type IV or Type 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)

Maximum Fire Classification: See General Limitation #1.

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Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated, New Construction

Deck Description: 2500 psi structural concrete or concrete plank

System Type C: All layers of insulation simultaneously attached.

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

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): **ACFoam-II, ACFoam-I**				
Minimum: 4' x 4' x 1.3"	Firestone SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Dekfast SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Gripdeck S	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Roofgrip S	[2]	5	1:2.4 ft²

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Minimum: 4' x 4' x 1.3"	Insulfixx SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Olympic SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Tru-Fast SP	[2]	5	1:2.4 ft²

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

Minimum: 4' x 4' x 1.4"	Firestone SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Dekfast SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Gripdeck S	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Roofgrip S	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Insulfixx SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Olympic SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Tru-Fast SP	[2]	5	1:2.4 ft²

Approved Type(s): **Hy-Tec, Hy-Tec II**

Minimum: 4' x 4' x 1.2	Firestone SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Dekfast SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Gripdeck S	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Roofgrip S	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Insulfixx SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Olympic SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Tru-Fast SP	[2]	5	1:2.4 ft²

Approved Type(s): **Iso 95+ GL, GW, Composite**

Minimum: 4' x 4' x 1.4"	Firestone SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Dekfast SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Gripdeck S	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Roofgrip S	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Insulfixx SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Olympic SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Tru-Fast SP	[2]	5	1:2.4 ft²

Approved Type(s): **ISO-Lite E**

Minimum: 4' x 4' x 1.3"	Firestone SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Dekfast SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Gripdeck S	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Roofgrip S	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Insulfixx SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Olympic SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Tru-Fast SP	[2]	5	1:2.4 ft²

Approved Type(s): **Multi-Max**

Minimum: 4' x 4' x 1.5"	Firestone SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Dekfast SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Gripdeck S	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Roofgrip S	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Insulfixx SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Olympic SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Tru-Fast SP	[2]	5	1:2.4 ft²

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Approved Type(s): **UltraGard Gold II**

Minimum: 4' x 4' x 1.3"	Firestone SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Dekfast SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Gripdeck S	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Roofgrip S	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Insulfixx SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Olympic SP	[2]	5	1:2.4 ft²
Minimum: 4' x 4' x 1.3"	Tru-Fast SP	[2]	5	1:2.4 ft²

Approved Type(s): **Perlite**

Minimum: 2' x 4' x ¾"	DekFast S/P	[2]	4	1:3 ft²
Minimum: 2' x 4' x ¾"	Insulfixx S/P	[2]	4	1:3 ft²
Minimum: 2' x 4' x ¾"	Olympic S/P	[2]	4	1:3 ft²
Minimum: 2' x 4' x ¾"	Tru-Fast S/P	[2]	4	1:3 ft²

Approved Type(s): **Fiber Top, High Density Wood Fiber**

Minimum: 4' x 4' x ½"	DekFast S/P	[2]	4	1:2 ft²
Minimum: 4' x 4' x ½"	Insulfixx S/P	[2]	4	1:2 ft²
Minimum: 4' x 4' x ½"	Olympic S/P	[2]	4	1:2 ft²
Minimum: 4' x 4' x ½"	Tru-Fast S/P	[2]	4	1:2 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 Type 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 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: 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.)

Maximum Fire Classification: See General Limitation #1.

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Membrane Type: APP

Deck Type 3I: Concrete Decks, Insulated, New Construction

Deck Description: 2500 psi structural concrete or concrete plank

System Type D: All layers of insulation and base sheet simultaneously attached.

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

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 through the insulation to the deck as described below:

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Fastening:	Approved Dekfast, Firestone, Olympic, Tru-Fast, Roofgrip, or Insulfixx screws with metal plates or Firestone Drives at the side lap 18" o.c. and two rows staggered in the center of the sheet 36" o.c.. Fasten base sheet over an additional ply of Perma Ply 28 with Rawl Spikes, Drives or Speed-Lock Toggles, with Rawl 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 Type 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.)
Maximum Fire Classification:	See General Limitation #1.

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Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated, New Construction

Deck Description: 2500 psi structural concrete or concrete plank

System Type D: All layers of insulation and base sheet simultaneously attached.

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

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

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:

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Fastening:	Approved Dekfast, Firestone, Olympic, Tru-Fast, Roofgrip, or Insulfixx screws with metal plates or Firestone Drives at the side lap 18" o.c. and two rows staggered in the center of the sheet 36" o.c..
Ply Sheet:	(Optional) One of SBS Smooth or SBS base sheet or Firestone Type IV 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:	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.)
Maximum Fire Classification:	See General Limitation #1.

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Membrane Type: APP

Deck Type 3I: Concrete Decks, Insulated, New Construction

Deck Description: 2500 psi structural concrete or concrete plank

System Type D-1: All layers of insulation and base sheet simultaneously attached.

The following assembly is approved to a maximum design pressure of -82.5 psf. No substitutions shall be made. All General and System Limitations apply.

Insulation: Base: Minimum 1.5" Firestone ISO 95+ GL or any other Approved polyisocyanurate insulation mechanically attached using Firestone AP or HD fasteners or Firestone Concrete Drives or other Approved concrete deck fasteners using preliminary attachment techniques (2 fasteners per 4' x 4' board or 4 fasteners per 4' x 8' board).

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 with a 4" side lap mechanically fastened through the insulation to the deck with Firestone AP or HD fasteners or Firestone Concrete Drives or other Approved concrete deck fasteners at a spacing of 12" o.c. in the 4" side lap and two rows staggered in the center of the sheet, 12" o.c.

Ply Sheet: (Optional) One or more plies of Firestone MB base sheet, Type IV or VI ply sheet or other listed base or ply sheet hot mopped in Type III or IV asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Membrane: One ply of APP 160, APP 170, APP 180 or APP 180 FR torch applied parallel to the base ply, with overlaps staggered 12".

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 gal./sq..
3. Fields F900 emulsion, Gilsonite Durakote # 151, Gibson Homans #6192-900 applied at 6 gal./sq. with 60 lbs. of roofing granules set in the wet coating.
4. Owens Corning Fiberglass Cap sheet GAF Mineral Surface Capsheet or Manville Glaskap in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq..

APP 180 FR does not require 1, 2, 3 or 4 above to achieve a UL Class A fire rating.

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

Maximum Fire Classification: See General Limitation #1.

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Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated, New Construction

Deck Description: 2500 psi structural concrete or concrete plank

System Type D-1: All layers of insulation and base sheet simultaneously attached.

The following assembly is approved to a maximum design pressure of -82.5 psf. No substitutions shall be made. All General and System Limitations apply.

Insulation: Base: Minimum 1.5" Firestone ISO 95+ GL or any other Approved polyisocyanurate insulation mechanically attached using Firestone AP or HD fasteners or Firestone Concrete Drives or other Approved concrete deck fasteners using preliminary attachment techniques (2 fasteners per 4' x 4' board or 4 fasteners per 4' x 8' board).

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 with a 4" side lap mechanically fastened through the insulation to the deck with Firestone AP or HD fasteners or Firestone Concrete Drives or other Approved concrete deck fasteners at a spacing of 12" o.c. in the 4" side lap and two rows staggered in the center of the sheet, 12" o.c.

Ply Sheet: (Optional) One or more plies of Firestone MB base sheet, Type IV or VI ply sheet or other listed base or ply sheet hot mopped in Type III or IV 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: -82.5 psf (See General Limitation #7)

Maximum Fire Classification: See General Limitation #1.

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Membrane Type: APP

Deck Type 3: Concrete Decks, Non-insulated, New Construction

Deck Description: 2500 psi structural concrete or concrete plank

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

All General and System Limitations apply.

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 as described below:

Fastening: Fasten base sheet with Dekfast #14, 15, Olympic #14 or Tru-Fast CF screws and metal or plastic plates at a 4" side lap 18" o.c. and two rows staggered in the center of the sheet 36" 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.)

Maximum Fire Classification: See General Limitation #1.

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Membrane Type: SBS

Deck Type 3: Concrete Decks, Non-insulated, New Construction

Deck Description: 2500 psi structural concrete or concrete plank

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

All General and System Limitations apply.

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 as described below:

Fastening: Fasten base sheet with Dekfast #14, 15, Olympic #14 or Tru-Fast CF screws and metal or plastic plates at a 4" side lap 18" o.c. and two rows staggered in the center of the sheet 36" o.c..

Ply Sheet: (Optional) One or more plies of SBS Smooth or SBS base sheet or Firestone Type IV 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: 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.)

Maximum Fire Classification: See General Limitation #1.

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Membrane Type: APP

Deck Type 3: Concrete Decks, Non-Insulated, New Construction

Deck Description: 2500 psi structural concrete or concrete plank

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

The following assembly is approved to a maximum design pressure of -82.5 psf. No substitutions shall be made. All General and System Limitations apply.

Base Sheet: One ply of Firestone MB Base Sheet with a 4" side lap mechanically fastened through the insulation to the deck with Firestone AP or HD fasteners or Firestone Concrete Drives or other Approved concrete deck fasteners at a spacing of 12" o.c. in the 4" side lap and two rows staggered in the center of the sheet, 12" o.c.

Ply Sheet: (Optional) One or more plies of Firestone MB base sheet, Type IV or Type VI ply sheet or other listed base or ply sheet hot mopped in Type III or IV 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: -82.5 psf (See General Limitation #7)

Maximum Fire Classification: See General Limitation #1.

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Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated, New Construction

Deck Description: 2500 psi structural concrete or concrete plank

System Type E(2): All layers of insulation and base sheet simultaneously attached.

The following assembly is approved to a maximum design pressure of -82.5 psf. No substitutions shall be made. All General and System Limitations apply.

Base Sheet: One ply of Firestone MB Base Sheet with a 4" side lap mechanically fastened through the insulation to the deck with Firestone AP or HD fasteners or Firestone Concrete Drives or other Approved concrete deck fasteners at a spacing of 12" o.c. in the 4" side lap and two rows staggered in the center of the sheet, 12" o.c.

Ply Sheet: (Optional) One or more plies of Firestone MB base sheet, Type IV or Type VI ply sheet or other listed base or ply sheet hot mopped in Type III or IV 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: -82.5 psf (See General Limitation #9.)

Maximum Fire Classification: See General Limitation #1.

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Membrane Type: APP

Deck Type 3: Concrete Decks, Insulated, New Construction

Deck Description: 2500 psi structural concrete or concrete plank

System Type F(1): (Optional) Base sheet adhered with approved asphalt.

All General and System Limitations apply.

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of base sheet.

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, Celotex Hy-Therm AP**				
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 C, High Density Wood Fiber**				
Minimum: 4' x 4' x ½"	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 C, High Density Wood Fiber**				
Minimum: 2' 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.

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Base Sheet:	One ply of Firestone MB Base Sheet, Celotex Vaporbar GB, Manville GlasBase, Perma Ply 28 or Firestone Type IV or Type VI ply sheet adhered to the properly primed deck 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 Firestone MB Base Sheet, Type IV or Type VI ply sheet or other listed base or ply sheet hot mopped in Type III or IV asphalt applied within the EVT range at a rate of 20-40 lbs/sq.
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:	-120 psf (See General Limitation #9.)
Maximum Fire Classification:	See General Limitation #1.

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Membrane Type: SBS

Deck Type 3: Concrete Decks, Insulated, New Construction

Deck Description: 2500 psi structural concrete or concrete plank

System Type F(1): (Optional) Base sheet adhered with approved asphalt.

All General and System Limitations apply.

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of base sheet.

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, Celotex Hy-Therm AP**				
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 C, High Density Wood Fiber**				
Minimum: 4' x 4' x ½"	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 C, High Density Wood Fiber**				
Minimum: 2' 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.

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Base Sheet:	(Optional) One ply of Firestone MB, Firestone SBS Base Sheet, Celotex Vaporbar GB, Manville GlasBase, GAF GAFglas, Perma Ply 28 or Firestone Type IV or Type VI ply sheet adhered to the properly primed concrete deck with 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 Firestone MB Base Sheet, Type IV or Type VI ply sheet, SBS Smooth, SBS Base Sheet or other Approved base or 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:	-120 psf (See General Limitation #9.
Maximum Fire Classification:	See General Limitation #1.

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Membrane Type: APP

Deck Type 3: Concrete Decks, Non-insulated, New Construction

Deck Description: 2500 psi structural concrete or concrete plank

System Type F(2): (Optional) Base sheet adhered with approved asphalt.

All General and System Limitations apply.

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of base sheet.

Base Sheet: One ply of Firestone MB Base Sheet, Celotex Vaporbar GB, Manville GlasBase, Perma Ply 28 or Firestone Type IV or VI ply sheet adhered to the properly primed deck 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 Firestone MB Base Sheet, Type IV or VI ply sheet or other listed base or ply sheet hot mopped in Type III or IV asphalt applied within the EVT range at a rate of 20-40 lbs/sq.

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: -522.5 psf (See General Limitation #9.)

Maximum Fire Classification: See General Limitation #1.

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Membrane Type: SBS

Deck Type 3: Concrete Decks, Non-insulated, New Construction

Deck Description: 2500 psi structural concrete or concrete plank

System Type F(2): Base sheet adhered with approved asphalt.

All General and System Limitations apply.

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of base sheet.

Base Sheet: (Optional) 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 properly primed concrete deck with 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 Firestone MB Base Sheet, Type IV or VI ply sheet, SBS Smooth, SBS Base Sheet or other Approved base or 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: -547.5 psf (See General Limitation #9.)

Maximum Fire Classification: See General Limitation #1.

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Concrete Deck System Limitations.

1. The following assembly is approved to a maximum design pressure of **-422.5 psf.*** No substitutions shall be made:

   a. Deck: Structural concrete primed with ASTM D 41 primer.

   b. Insulation: Base: Minimum ½" Firestone ISO 95+ GL or other Approved polyisocyanurate insulation except Apache Pyrox bonded in a full mopping of ASTM D 312, type III or IV asphalt applied within the EVT range and at a rate of 20-40 lbs/sq.

   Top: Minimum ½" thick Firestone FiberTop high density wood fiberboard, bonded in a full mopping of ASTM D 312, type III or IV asphalt applied within the EVT range and at a rate of 20-40 lbs/sq.

   c. Base Sheet: One ply of Firestone MB Base Sheet, Celotex Vaporbar GB, Manville GlasBase, Perma-Ply 28 or Firestone Type IV or VI ply sheet bonded to the insulation in a full mopping of ASTM D 312, type III or type IV asphalt applied within the EVT range and at a rate of 20-40 lbs/sq.

   d. Ply Sheet: (Optional) One or more plies of Firestone MB base sheet, Type IV or VI ply sheet or other listed base or ply sheet hot mopped in Type III or IV asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

   e. Membrane: One ply of APP 160, APP 170, APP 180 or APP 180 FR torch applied parallel to the base ply, with overlaps staggered 12".

   f. Surfacing: (Optional) Refer to system description for surfacing installation options.

2. The following assembly is approved to a maximum design pressure of **-520 psf.*** No substitutions shall be made:

   a. Deck: Structural concrete primed with ASTM D 41 primer.

   b. Insulation: Base: Minimum ½" Firestone ISO 95+ GL or other Approved polyisocyanurate insulation except Apache Pyrox bonded in a full mopping of ASTM D 312, type III or IV asphalt applied within the EVT range and at a rate of 20-40 lbs/sq.

   Top: Minimum ½" thick Celotex High Density Wood Fiberboard (Trafic Top), bonded in a full mopping of ASTM D 312, type III or IV asphalt applied within the EVT range and at a rate of 20-40 lbs/sq.

   c. Base Sheet: One ply of Firestone MB Base Sheet, Celotex Vaporbar GB, Manville GlasBase, Perma-Ply 28 or Firestone Type IV or VI ply sheet bonded to the insulation in a full mopping of ASTM D 312, type III or type IV asphalt applied within the EVT range and at a rate of 20-40 lbs/sq.

   d. Ply Sheet: (Optional) One or more plies of Firestone MB base sheet, Type IV or VI ply sheet or other listed base or ply sheet hot mopped in Type III or IV asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

   e. Membrane: One ply of APP 160, APP 170, APP 180 or APP 180 FR torch applied parallel to the base ply, with overlaps staggered 12".

   f. Surfacing: (Optional) Refer to system description for surfacing installation options.

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3. The following assembly is approved to a maximum design pressure of **-422.5 psf.*** No substitutions shall be made:

   a. Deck: Structural concrete primed with ASTM D 41 primer.

   b. Insulation: Base: Minimum ½" Firestone ISO 95+ GL or other Approved polyisocyanurate insulation except Apache Pyrox bonded in a full mopping of ASTM D 312, type III or IV asphalt applied within the EVT range and at a rate of 20-40 lbs/sq.

   Top: Minimum ½" thick Firestone FiberTop high density wood fiberboard, bonded in a full mopping of ASTM D 312, type III or IV asphalt applied within the EVT range and at a rate of 20-40 lbs/sq.

   c. Base Sheet: One ply of Firestone MB Base Sheet, SBS Base Sheet, Celotex Vaporbar GB, Manville GlasBase, Perma-Ply 28 or Firestone Type IV or VI ply sheet bonded to the insulation in a full mopping of ASTM D 312, type III or type IV asphalt applied within the EVT range and at a rate of 20-40 lbs/sq.

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

   e. 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.

   f. Surfacing: (Optional) Refer to system description for surfacing installation options.

4. The following assembly is approved to a maximum design pressure of **-520 psf.*** No substitutions shall be made:

   a. Deck: Structural concrete primed with ASTM D 41 primer.

   b. Insulation: Base: Minimum ½" Firestone ISO 95+ GL or other Approved polyisocyanurate insulation except Apache Pyrox bonded in a full mopping of ASTM D 312, type III or IV asphalt applied within the EVT range and at a rate of 20-40 lbs/sq.

   Top: Minimum ½" thick Celotex High Density Wood Fiberboard (Traffic Top), bonded in a full mopping of ASTM D 312, type III or IV asphalt applied within the EVT range and at a rate of 20-40 lbs/sq.

   c. Base Sheet: One ply of Firestone MB Base Sheet, SBS Base Sheet, Celotex Vaporbar GB, Manville GlasBase, Perma-Ply 28 or Firestone Type IV or VI ply sheet bonded to the insulation in a full mopping of ASTM D 312, type III or type IV asphalt applied within the EVT range and at a rate of 20-40 lbs/sq.

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

   e. 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.

   f. Surfacing: (Optional) Refer to system description for surfacing installation options.

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5. The following assembly is approved to a maximum design pressure of **-255 psf.*** No substitutions shall be made:

   a. Deck: Structural concrete primed with ASTM D 41 primer.

   b. Insulation: Base: Minimum ½" Firestone ISO 95+ GL or other Approved polyisocyanurate insulation except Apache Pyrox bonded in a full mopping of ASTM D 312, type III or IV asphalt applied within the EVT range and at a rate of 20-40 lbs/sq.

   Top: Minimum ¾" thick perlite, bonded in a full mopping of ASTM D 312, type III or IV asphalt applied within the EVT range and at a rate of 20-40 lbs/sq.

   c. Base Sheet: One ply of Firestone MB Base Sheet, Celotex Vaporbar GB, Manville GlasBase, Perma-Ply 28 or Firestone Type IV or VI ply sheet bonded to the insulation in a full mopping of ASTM D 312, type III or type IV asphalt applied within the EVT range and at a rate of 20-40 lbs/sq.

   d. Ply Sheet: (Optional) One or more plies of Firestone MB base sheet, Type IV or VI ply sheet or other listed base or ply sheet hot mopped in Type III or IV asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

   e. Membrane: One ply of APP 160, APP 170, APP 180 or APP 180 FR torch applied parallel to the base ply, with overlaps staggered 12".

   f. Surfacing: (Optional) Refer to system description for surfacing installation options.

6. The following assembly is approved to a maximum design pressure of **-255 psf.*** No substitutions shall be made:

   a. Deck: Structural concrete primed with ASTM D 41 primer.

   b. Insulation: Base: Minimum ½" Firestone ISO 95+ GL or other Approved polyisocyanurate insulation except Apache Pyrox bonded in a full mopping of ASTM D 312, type III or IV asphalt applied within the EVT range and at a rate of 20-40 lbs/sq.

   Top: Minimum ¾" thick perlite, bonded in a full mopping of ASTM D 312, type III or IV asphalt applied within the EVT range and at a rate of 20-40 lbs/sq.

   c. Base Sheet: One ply of Firestone MB Base Sheet, SBS Base Sheet, Celotex Vaporbar GB, Manville GlasBase, Perma-Ply 28, Firestone Type IV or VI ply sheet bonded to the insulation in a full mopping of ASTM D 312, type III or type IV asphalt applied within the EVT range and at a rate of 20-40 lbs/sq.

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

   e. 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.

   f. Surfacing: (Optional) Refer to system description for surfacing installation options.

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7. The following assembly is approved to a maximum design pressure of **-280 psf.*** No substitutions shall be made:

   a. Deck: Structural concrete primed with ASTM D 41 primer.

   b. Insulation: Minimum 1.5" thick Firestone Composite bonded polyisocyanurate side down in a full mopping of ASTM D 312, type III or IV asphalt applied within the EVT range and at a rate of 20-40 lbs/sq.

   c. Base Sheet: One ply of Firestone MB Base Sheet, Celotex Vaporbar GB, Manville GlasBase, Perma-Ply 28 or Firestone Type IV or VI ply sheet bonded to the insulation in a full mopping of ASTM D 312, type III or type IV asphalt applied within the EVT range and at a rate of 20-40 lbs/sq.

   d. Ply Sheet: (Optional) One or more plies of Firestone MB base sheet, Type IV or VI ply sheet or other listed base or ply sheet hot mopped in Type III or IV asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

   e. Membrane: One ply of APP 160, APP 170, APP 180 or APP 180 FR torch applied parallel to the base ply, with overlaps staggered 12".

   f. Surfacing: (Optional) Refer to system description for surfacing installation options.

8. The following assembly is approved to a maximum design pressure of **-280 psf.*** No substitutions shall be made:

   a. Deck: Structural concrete primed with ASTM D 41 primer.

   b. Insulation: Minimum 1.5" thick Firestone Composite bonded polyisocyanurate side down in a full mopping of ASTM D 312, type III or IV asphalt applied within the EVT range and at a rate of 20-40 lbs/sq.

   c. Base Sheet: One ply of Firestone MB Base Sheet, SBS Base Sheet, Celotex Vaporbar GB, Manville GlasBase, Perma-Ply 28 or Firestone Type IV or VI ply sheet bonded to the insulation in a full mopping of ASTM D 312, type III or type IV asphalt applied within the EVT range and at a rate of 20-40 lbs/sq.

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

   e. 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.

   f. Surfacing: (Optional) Refer to system description for surfacing installation options.

*** See General Limitation #9**

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GENERAL LIMITATIONS:

1. Fire classification is not part of this acceptance, refer to a current Approved Roofing Materials Directory for fire ratings of this product.
2. Insulation may be installed in multiple layers. The first layer shall be attached in compliance with Product Control Approval guidelines. All other layers shall be adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq., or mechanically attached using the fastening pattern of the top layer
3. All standard panel sizes are acceptable for mechanical attachment. When applied in approved asphalt, panel size shall be 4' x 4' maximum.
4. An overlay and/or recovery board insulation panel is required on all applications over closed cell foam insulations when the base sheet is fully mopped. If no recovery board is used the base sheet shall be applied using spot mopping with approved asphalt, 12" diameter circles, 24" o.c.; or strip mopped 8" ribbons in three rows, one at each sidelap and one down the center of the sheet allowing a continuous area of ventilation. Encircling of the strips is not acceptable. A 6" break shall be placed every 12' in each ribbon to allow cross ventilation. Asphalt application of either system shall be at a minimum rate of 12 lbs./sq. **Note: Spot attached systems shall be limited to a maximum design pressure of -45 psf.**
5. Fastener spacing for insulation attachment is based on a Minimum Characteristic Force (F') value of 275 lbf., as tested in compliance with Testing Application Standard TAS 105. If the fastener value, as field-tested, are below 275 lbf. insulation attachment shall not be acceptable.
6. Fastener spacing for mechanical attachment of anchor/base sheet or membrane attachment is based on a minimum fastener resistance value in conjunction with the maximum design value listed within a specific system. Should the fastener resistance be less than that required, as determined by the Building Official, a revised fastener spacing, prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant may be submitted. Said revised fastener spacing shall utilize the withdrawal resistance value taken from Testing Application Standards TAS 105 and calculations in compliance with Roofing Application Standard RAS 117.
7. Perimeter and corner areas shall comply with the enhanced uplift pressure requirements of these areas. Fastener densities shall be increased for both insulation and base sheet as calculated in compliance with Roofing Application Standard RAS 117. Calculations prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant **(When this limitation is specifically referred within this NOA, General Limitation #9 will not be applicable.)**
8. All attachment and sizing of perimeter nailers, metal profile, and/or flashing termination designs shall conform with Roofing Application Standard RAS 111 and applicable wind load requirements.
9. The maximum designed pressure limitation listed shall be applicable to all roof pressure zones (i.e. field, perimeters, and corners). Neither rational analysis, nor extrapolation shall be permitted for enhanced fastening at enhanced pressure zones (i.e. perimeters, extended corners and corners). **(When this limitation is specifically referred within this NOA, General Limitation #7 will not be applicable.)**

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NOTICE OF ACCEPTANCE STANDARD CONDITIONS

1 Renewal of this Acceptance (approval) shall be considered after a renewal application has been filed and the original submitted documentation, including test supporting data, engineering documents, are no older than eight (8) years.

2 Any and all approved products shall be permanently labeled with the manufacturer's name, city, state, and the following statement: "Miami-Dade County Product Control Approved", or as specifically stated in the specific conditions of this Acceptance.

3 Renewals of Acceptance will not be considered if:

a) There has been a change in the South Florida Building Code affecting the evaluation of this product and the product is not in compliance with the code changes;

b) The product is no longer the same product (identical) as the one originally approved;

c) If the Acceptance holder has not complied with all the requirements of this acceptance, including the correct installation of the product;

d) The engineer who originally prepared, signed and sealed the required documentation initially submitted, is no longer practicing the engineering profession.

4 Any revision or change in the materials, use, and/or manufacture of the product or process shall automatically be cause for termination of this Acceptance, unless prior written approval has been requested (through the filing of a revision application with appropriate fee) and granted by this office.

5 Any of the following shall also be grounds for removal of this Acceptance:

a) Unsatisfactory performance of this product or process;

b) Misuse of this Acceptance as an endorsement of any product, for sales, advertising or any other purposes.

6 The Notice of Acceptance 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 Notice of Acceptance is displayed, then it shall be done in its entirety.

7 A copy of this Acceptance as well as approved drawings and other documents, where it applies, shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at all times. The copies need not be resealed by the engineer.

8 Failure to comply with any section of this Acceptance shall be cause for termination and removal of Acceptance.

9 This Acceptance contains pages 1 through 48.

END OF THIS ACCEPTANCE

Frank Zuloaga, RRC
Roofing Product Control Examiner