



**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 96<sup>th</sup> 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 and the High Velocity Hurricane Zone of the Florida Building Code.

**DESCRIPTION: Firestone APP/SBS Modified Bitumen Roof Systems for Recover 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. 05-0830.08 and consists of pages 1 through 39.  
The submitted documentation was reviewed by Jorge L. Acebo.



**NOA No.: 08-0118.06  
Expiration Date: 03/08/11  
Approval Date: 07/10/08  
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## ROOFING SYSTEM APPROVAL

Category: Roofing  
Sub-Category: Modified Bitumen  
Material: APP/SBS  
Deck Type: Recover  
Maximum Design Pressure See Specific Deck Types

### TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
APP 180	39.4" x 32'10"	ASTM D 6222	Polyester reinforced modified bitumen, granule surfaced membrane. Torch applied.
APP 180 FR	39.4" x 32'10"	ASTM D 6222	Polyester reinforced, fire retardant modified bitumen, granule surfaced membrane. Torch applied.
APP 170	39.4" x 33'6"	ASTM D 6222	Polyester reinforced modified bitumen membrane. Torch applied.
APP 160	39.4" x 32'10"	ASTM D 6222	Polyester reinforced modified bitumen membrane. Torch applied.
APP 80 Glass Base COOL	39.4" x 65'4"	ASTM D 6222	Fiberglass reinforced modified bitumen, smooth surfaced membrane.
APP 180 COOL	39.4" x 32'10"	ASTM D 6222	Polyester reinforced modified bitumen, smooth surfaced membrane.
APP 180 FR COOL	39.4" x 32'10"	ASTM D 6222	Polyester reinforced, fire retardant modified bitumen, smooth surfaced membrane. Torch applied.
APP 170 COOL	39.6" x 33'6"	ASTM D 6222	Polyester reinforced modified bitumen, smooth surfaced membrane.
MB Base Sheet	36" x 108'	ASTM D 4601	Fiberglass reinforced base sheet, asphalt coated on both sides. Applied in hot asphalt or mechanically attached.
MB Base M	39.4" x 98.7' (1 m x 30.1 m)	ASTM D 4601	Fiberglass reinforced base sheet, asphalt coated on both sides. Applied in hot asphalt or mechanically attached.
SBS	39.4" x 33'10"	ASTM D 6164	Granule surfaced, modified bitumen membrane reinforced with non-woven polyester mat.
SBS FR	39.4" x 33'10"	ASTM D 6164	Ceramic granule surface, modified bitumen membrane reinforced with non-woven polyester mat.
SBS Premium FR	39.4" x 33'10"	ASTM D 6164	Ceramic granule surface, fire rated, modified bitumen membrane reinforced with non-woven polyester mat.



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<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
SBS Base Sheet	39.4" x 50'	ASTM D 6163	Fiberglass reinforced SBS base sheet. Applied in hot asphalt or mechanically attached.
SBS Smooth	39.4" x 33'10"	ASTM D 6164	Smooth surfaced, modified bitumen membrane reinforced with non-woven polyester mat. Applied in hot asphalt.
SBS Premium	39.4" x 33'10"	ASTM D 6164	Granule surfaced, modified bitumen membrane reinforced with polyester mat. Applied in hot asphalt.
SBS Glass Torch Base	39.4" x 33'10"	ASTM D 6163	Modified bitumen base sheet with a burn-off film and reinforced with non-woven fiberglass mat.
SBS Premium FR Torch	39.4" x 33'10"	ASTM D 6164	Ceramic granule surface, fire rated, modified bitumen membrane with a burn-off film and reinforced with non-woven polyester mat.
SBS Glass	39.4" x 33'10"	ASTM D 6163	Fiberglass reinforced, granule surfaced, modified bitumen membrane. Applied in hot asphalt.
SBS Glass FR	39.4" x 33'10"	ASTM D 6163	Granular surfaced, fiberglass reinforced, fire retardant, modified bitumen membrane. Applied in hot asphalt.
Rhoflex Base Sheet		ASTM D6509	Asphalt coated glass fiber base sheet
Rhoflex FR Granule		ASTM D6223	Glass/Polyester reinforced modified bitumen cap sheet
Type IV	33" x 180"	ASTM D2178	Fiberglass reinforced, asphalt impregnated, roofing ply. Applied in hot asphalt.
Type VI	33" x 180"	ASTM D2178	Fiberglass reinforced, asphalt impregnated, roofing ply. Applied in hot asphalt.
Type IV M	39.4" x 164.5' (1 m x 50.4 m)	ASTM D2178	Fiberglass reinforced, asphalt impregnated, roofing ply. Applied in hot asphalt.
Type VI M	39.4" x 164.5' (1 m x 50.1 m)	ASTM D2178	Fiberglass reinforced, asphalt impregnated, roofing ply. Applied in hot asphalt.



**APPROVED INSULATIONS:**

**TABLE 2**

<b>Product Name</b>	<b>Product Description</b>	<b>Manufacturer (With Current NOA)</b>
ACFoam II	Isocyanurate Insulation	Atlas Roofing Corp.
Hy-Tec, Hy-Tec 2, Hy-Therm AP, Hy-Therm White Line	Polyisocyanurate foam insulation	Celotex Corp.
ISO 95+, ISO 95+ GL, 95+ GW	Isocyanurate Insulation	Firestone
ISO 95+ Composite	Isocyanurate Insulation with perlite facer	Firestone
FiberTop Wood Fiber	Regular wood fiber insulation	Firestone
Rhoflex Composite	Polyisocyanurate foam / perlite insulation	Firestone
Dens Deck	Silicon treated gypsum	G-P Products
High Density Wood Fiberboard	High Density Wood Fiber insulation board.	Generic
Perlite Insulation Board	Perlite Insulation	Generic
Iso-Lite E	Polyisocyanurate foam insulation	International Permalite
ENRGY 3, PSI-25, UltraGard Gold II, UltraGard II	Isocyanurate Insulation	Johns Manville
Fesco Foam	Isocyanurate Insulation with perlite facer	Johns Manville
Barrier Board Plus	Polyisocyanurate foam / wood fiber insulation	NRG Barriers, Inc.
Multi-Max FA	Isocyanurate Insulation	Rmax, Inc.



**APPROVED FASTENERS:**

**TABLE 3**

<b>Fastener Number</b>	<b>Product Name</b>	<b>Product Description</b>	<b>Dimensions</b>	<b>Manufacturer (With Current NOA)</b>
1.	Firestone All-Purpose Fastener #15	Insulation and membrane fastener	Various	Firestone
2.	Firestone HD Fastener #15	Insulation and membrane fastener	Various	Firestone
3.	Firestone Concrete Drives	1/4" diameter concrete deck fastener.	Various	Firestone
4.	MB Barbed Metal Seam Plate	Metal plates used for membrane securement.	2" dia	Firestone
5.	Hexagonal Plate	Insulation attachment hexagonal plate	3- <sup>3</sup> / <sub>8</sub> " x 2- <sup>7</sup> / <sub>8</sub> "	Firestone
6.	Seam Plate	Membrane seam attachment plate.	2- <sup>3</sup> / <sub>8</sub> " dia	Firestone
7.	Metal Plate	Membrane attachment plate.	2" dia	Firestone
8.	Polymer Fastener	Glass reinforced nylon fastener for Gypsum or CWF decks	11/16" dia	Firestone
9.	Polymer Plate	Galvalume plate for use with the Polymer Fastener	3" square	Firestone
10.	TPR Fastener	Lightweight insulating concrete deck fastener	Various	Creative Construction Components
11.	FM-45, FM-60, FM-90 Fasteners and FM-30 Disc	Base ply fastening systems for lightweight concrete decks	Various	ES Products
12.	#14 & #15 Dekfast Fasteners	Insulation and membrane fastener	Various	SFS Intec
13.	Dekfast Hex Plate	Insulation and membrane fastener	Various	SFS Intec
14.	Insul-Fixx Fastener	Insulation fastener for use in wood, steel and concrete decks	Various	SFS Intec
15.	Insul-Fixx S	Galvalume AZ55 stress plate	3" round	SFS Intec
16.	Insul-Fixx PG	Polyethylene stress plate	3" round	SFS Intec
17.	#12 & #14 Roofgrip	Insulation and membrane fastener	Various	OMG
18.	Metal Plate	Galvalume AZ50 stress plate	3" square 3" round	OMG
19.	Plastic Plate	Polyethylene stress plate	3.2" round	OMG



**APPROVED FASTENERS:**

**TABLE 3**

<b>Fastener Number</b>	<b>Product Name</b>	<b>Product Description</b>	<b>Dimensions</b>	<b>Manufacturer (With Current NOA)</b>
20.	Olympic Fasteners #14 & #15	Insulation and membrane fastener	Various	OMG
21.	Olympic CR Fastener	Insulation fastener assembly for lightweight concrete	Various	OMG
22.	Olympic CR Base Sheet Disk	Galvalume disc for use with Olympic CR Fastener	Various	OMG
23.	Olympic Standard	Galvalume AZ55 stress plate	3" round	OMG
24.	Olympic Plastic Plates	Plastic plates for fasteners.	3" round	OMG
25.	Olympic Strap Toggle	Insulation Fastener		OMG
26.	Lite Weight Concrete Fastener	Corrosion resistant fastener for base sheet attachment to lightweight concrete decks	1.75" long 3" head dia.	OMG
27.	Tru-Fast HD Fastener	Insulation and membrane fastener	Various	The Tru-Fast Corp.
28.	Tru-Fast Fasteners	Insulation and membrane fastener	Various	The Tru-Fast Corp.
29.	Tru-Fast CF Fasteners	Insulation fastener with a steel or plastic plate for concrete	Various	The Tru-Fast Corp.
30.	Tru-Fast MP-3	Galvalume AZ50 steel plate	3.23" round	The Tru-Fast Corp.
31.	Tru-Fast Plastic Plate	Polyethylene stress plate	3" round	The Tru-Fast Corp.
32.	Rawl Drive/Spike	Insulation fastener for concrete decks	Various	Powers Fasteners, Inc.
33.	Rawl Speed-Lock Toggle Bolt	Insulation fastener for concrete decks	Various	Powers Fasteners, Inc.
34.	Rawlite Fastener	Insulation fastener for cementitious and gypsum decks	Various	Powers Fasteners, Inc.
35.	Rawl Fasteners	Insulation fastener	Various	Powers Fasteners, Inc.
36.	Rawl Plate	Galvalume AZ55 steel plate	3" round	Powers Fasteners, Inc.
37.	Insulation Fastening Plate	Insulation plate for use with Firestone Fasteners	3" round	Firestone



**EVIDENCE SUBMITTED:**

<u>Test Agency</u>	<u>Test Identifier</u>	<u>Description</u>	<u>Date</u>	
Factory Mutual Research Corp.	0Z5A3.AM	FM 4470	03/08/95	
	2Y3A3.AM	FM 4470	11/28/94	
	1D5A8.AM	FM 4470	09/09/98	
	3003597	FM 4470	07/14/99	
	3004786	FM 4470	05/16/00	
	3005030	FM 4470	08/08/00	
	0Z5A3.AM	FM 4470	03/08/95	
	2Y3A3.AM	FM 4470	11/28/94	
	3012095	FM 4470	06/30/04	
	3014692	FM 4470	08/05/03	
	3012321	FM 4470	07/29/02	
	3008978	FM 4471	08/13/04	
	3022502	FM 4470	01/29/07	
	3007328	FM 4470	07/12/02	
	Underwriters Laboratories	R9516/94NK11625	UL 790	08/08/94
		R9516/95NK2269	UL 790	02/03/95
Trinity   ERD	4810.01.96-1	PA 114(C) & PA 114(D)	01/31/96	
	4810.10.96-1	PA 114(J)	10/31/96	
	F10370.05.08	ASTM C 1289	05/08/08	
	F8800.01.08	TAS 114	01/17/08	
Atlantic & Caribbean Roof Consulting, LLC.	ACRC 07-074	TAS 114	12/05/07	
PRI Asphalt Technologies	FBP-018-02-01	ASTM D 6163	09/07/04	
	FBP-011-02-01	ASTM D 6164	09/02/04	
	FBP-008-02-01	ASTM D 6222	09/10/04	
	FBP-009-02-01	ASTM D 6222	08/31/04	
	FBP-010-02-01	ASTM D 6164	09/04/04	
	FBP-014-02-01	ASTM D 6164	09/02/04	
	FBP-015-02-01	ASTM D 6509	09/02/04	
	FBP-016-02-01	ASTM D 6509	09/02/04	
	FBP-017-02-01	ASTM D 6163	09/13/04	
	FBP-019-02-01	ASTM D 4601	09/14/04	
	FBP-023-02-01	ASTM D 6223	09/01/04	
	FBP-007-02-01	ASTM D 6222	09/14/04	
	FBP-020-02-01	ASTM D 2178	09/14/04	



**APPROVED ASSEMBLIES**

**Membrane Type:** APP

**Deck Type 7I:** Recover

**Deck Description:** Concrete/lightweight concrete/cementitious wood fiber/wood/steel

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

**All General and System Limitations apply.**

One or more layers of any of the following insulations:

<b>Base Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>Perlite Minimum ¾" thick</b>	N/A	N/A
<b>Hy-Tec, Hy-Tec II Minimum 1.2" thick</b>	N/A	N/A
<b>ACFoam II, ISO-Lite E, UltraGard Gold II Minimum 1.3" thick</b>	N/A	N/A
<b>ENRGY 3, PSI 25, ISO 95+ GL, GW, Composite Minimum 1.4" thick</b>	N/A	N/A
<b>Multi-Max Minimum 1.5" thick</b>	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<sup>2</sup>. 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:** (Optional) One ply of Firestone MB Base Sheet, MB Base M, Celotex Vaporbar GB, Manville GlasBase or Perma Ply 28 with a 4" side lap mechanically fastened to the deck as described below:

**Fastening:** Fasten anchor sheet with approved fasteners at the side lap 12" o.c. and two rows staggered in the center of the sheet 18" o.c.

**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, Type IV M, Type VI or Type VI M 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



**Membrane Type:** SBS  
**Deck Type 7I:** Recover  
**Deck Description:** Concrete/lightweight concrete/cementitious wood fiber/wood/steel  
**System Type A(2):** Anchor sheet mechanically fastened; all layers of insulation adhered with approved asphalt.

**All General and System Limitations apply.**

One or more layers of any of the following insulations:

<b>Base Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>Perlite</b> Minimum ¾" thick	N/A	N/A
<b>Hy-Tec, Hy-Tec II</b> Minimum 1.2" thick	N/A	N/A
<b>ACFoam II, ISO-Lite E, UltraGard Gold II</b> Minimum 1.3" thick	N/A	N/A
<b>ENRGY 3, PSI 25, ISO 95+ GL, GW, Composite</b> Minimum 1.4" thick	N/A	N/A
<b>Multi-Max</b> Minimum 1.5" thick	N/A	N/A

**Note:** All insulation shall be adhered to the anchor sheet in full mopping of approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft<sup>2</sup>. 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:** (Optional) One ply of Firestone MB Base Sheet, MB Base M, Celotex Vaporbar GB, Manville GlasBase or Perma Ply 28 with a 4" side lap mechanically fastened to the deck as described below:

**Fastening:** Fasten anchor sheet with approved fasteners at the side lap 12" o.c. and two rows staggered in the center of the sheet 18" o.c.

**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, Type IV M, Type VI or Type VI M 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, Type IV M, Type VI or Type VI M 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/SBS  
**Deck Type 7I:** Recover, Insulated  
**Deck Description:** Concrete  
**System Type A(3):** One or more layers of insulation adhered with approved adhesive to existing BUR; membrane fully adhered.

**All General and System Limitations apply.**

One or more layers of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft <sup>2</sup>
ISO 95+ GL Minimum 1.5" thick	N/A	N/A

**Note: All insulation shall be adhered to the existing deck with OlyBond 500 Adhesive in ¾" ribbons spaced 12" o.c. or Tite-Set Insulation Adhesive in 3-3½" ribbons spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.**

**System 1:**

**Base Sheet:** One or more plies of Firestone SBS Base, SBS Smooth Base, or SBS Premium base sheet fully adhered to the insulation with Firestone MB Cold Adhesive applied at 1½ - 2 gal/sq.  
**Membrane:** One ply of Firestone SBS, SBS FR, SBS Smooth, SBS Premium, or SBS Premium FR cap sheet fully adhered to the base sheet with Firestone MB Cold Adhesive applied at 1½ - 2 gal/sq.

**System 2:**

**Base Sheet:** One or more plies of Firestone APP 80 Glass Base COOL, MB Base M, SBS Base, or SBS Premium base sheet fully adhered to the insulation with Firestone MB Cold Adhesive applied at 1½ - 2 gal/sq.  
**Membrane:** One ply of Firestone, APP 170 COOL, APP 180 COOL or APP 180 FR COOL fully adhered to the base sheet with Firestone MB Cold Adhesive applied at 1½ - 2 gal/sq.

**Surfacing:**

- (Optional) Install one of the following to obtain required fire classification.
1. Gravel or slag at 400 lbs/sq or 300 lbs/sq, respectively, in a flood coat of approved asphalt at 60 lbs/sq.
  2. Karnak 97 Fibrated Aluminum Asphalt Roof Coating or Asbestos Free Aluminum Roof Coating at 1½ gal/sq.
  3. Kokem Products Sunguard Acrylic Roof Coating at 1 gal/sq.
  4. Monsey Endure Aluminum Roof Coating, Weather Check or Pro-Grade Aluminum Roof Coating at 1½ gal/sq.
  5. Grundy al MB Aluminum Roof Coating at 1-2 gal/sq.
  6. Fields F350 Heat Shield Aluminum Coating or F630 Heat Shield Fibrated Aluminum Coating at 1½ gal/sq.

**Maximum Design**

**Pressure:** -67.5 psf (See General Limitation #9)



**Membrane Type:** APP/SBS

**Deck Type 7I:** Recover, Insulated

**Deck Description:** Concrete

**System Type A(4):** One or more layers of insulation adhered with approved adhesive to existing BUR; membrane fully adhered.

**All General and System Limitations apply.**

One or more layers of the following insulations:

<b>Base Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>ISO 95+ GL Minimum 1.5" thick</b>	N/A	N/A

**Note: All insulation shall be adhered to the existing deck with OlyBond 500 Adhesive in ¾" ribbons spaced 12" o.c. or Tite-Set Insulation Adhesive in 3-3½" ribbons spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.**

**Base Sheet:** One or more plies of Firestone APP 80 Glass Base COOL, Type IV, Type IV M, Type VI or Type VI M Felt, MB Base M, SBS Base, or SBS Premium base sheet fully adhered to the insulation with Firestone MB Cold Adhesive applied at 1½ - 2 gal/sq.

**Membrane:** (Not with APP 80 Glass Base COOL) One ply of Firestone SBS, SBS FR, SBS Smooth, SBS Premium, or SBS Premium FR cap sheet fully adhered to the base sheet with Firestone MB Cold Adhesive applied at 1½ - 2 gal/sq.

OR

(Not with Type IV, Type IV M, Type VI or Type VI M Felt) One ply of Firestone, APP 170 COOL, APP 180 COOL or APP 180 FR COOL fully adhered to the base sheet with Firestone MB Cold Adhesive applied at 1½ - 2 gal/sq.

**Surfacing:** (Optional) Install one of the following to obtain required fire classification.

1. Gravel or slag at 400 lbs/sq or 300 lbs/sq, respectively, in a flood coat of approved asphalt at 60 lbs/sq.
2. Karnak 97 Fibrated Aluminum Asphalt Roof Coating or Asbestos Free Aluminum Roof Coating at 1½ gal/sq.
3. Kokem Products Sunguard Acrylic Roof Coating at 1 gal/sq.
4. Monsey Endure Aluminum Roof Coating, Weather Check or Pro-Grade Aluminum Roof Coating at 1½ gal/sq.
5. Grundy al MB Aluminum Roof Coating at 1-2 gal/sq.
6. Fields F350 Heat Shield Aluminum Coating or F630 Heat Shield Fibrated Aluminum Coating at 1½ gal/sq.

**Maximum Design Pressure:** -67.5 psf (See General Limitation #9)



**Membrane Type:** SBS

**Deck Type 7I:** Recover, Insulated

**Deck Description:** Concrete

**System Type A(5):** One or more layers of insulation adhered with approved adhesive to existing BUR; membrane fully adhered.

**All General and System Limitations apply.**

One or more layers of the following insulations:

<b>Base Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>ISO 95+ GL Minimum 1.5" thick</b>	N/A	N/A

**Note: All insulation shall be adhered to the existing deck with OlyBond 500 Adhesive in ¾" ribbons spaced 12" o.c. or Tite-Set Insulation Adhesive in 3-3½" ribbons spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.**

**Base Sheet:** One or more plies of Firestone SBS Base, SBS Premium Base, or SBS Smooth base sheet fully adhered to the insulation with Firestone MB Cold Adhesive at a rate of 1½ - 2 gal/sq.

**Membrane:** One ply of Firestone SBS, SBS FR, SBS Premium or SBS Premium FR cap sheet fully adhered to the base sheet with Firestone MB Cold Adhesive at a rate of 1½ - 2 gal/sq.

**Surfacing:** (Optional) Install one of the following to obtain required fire classification.

1. Gravel or slag at 400 lbs/sq or 300 lbs/sq, respectively, in a flood coat of approved asphalt at 60 lbs/sq.
2. Karnak 97 Fibrated Aluminum Asphalt Roof Coating or Asbestos Free Aluminum Roof Coating at 1½ gal/sq.
3. Kokem Products Sunguard Acrylic Roof Coating at 1 gal/sq.
4. Monsey Endure Aluminum Roof Coating, Weather Check or Pro-Grade Aluminum Roof Coating at 1½ gal/sq.
5. Grundy al MB Aluminum Roof Coating at 1-2 gal/sq.
6. Fields F350 Heat Shield Aluminum Coating or F630 Heat Shield Fibrated Aluminum Coating at 1½ gal/sq.

**Maximum Design Pressure:** -82.5 psf (See General Limitation #9)



**Membrane Type:** APP/SBS

**Deck Type 7I:** Recover, Insulated

**Deck Description:** Concrete

**System Type A(6):** One or more layers of insulation adhered with approved adhesive to existing BUR; membrane fully adhered.

**All General and System Limitations apply.**

One or more layers of the following insulations:

**Base Insulation Layer**

**Insulation Fasteners  
(Table 3)**

**Fastener  
Density/ft<sup>2</sup>**

**ISO 95+ GL**

**Minimum 1.5" thick**

N/A

N/A

**Note: All insulation shall be adhered to the existing deck with OlyBond 500 Adhesive in 3/4" ribbons spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.**

**Base Sheet:** One or more plies of Firestone Type IV, Type VI, Type IV M, or Type VI M felt fully adhered in full mopping of approved asphalt within the EVT range and at a rate of 20-40 lbs/100 ft<sup>2</sup>.

**Membrane:** One ply of Firestone SBS Premium FR Torch, Rhoflex FR Granule, APP 160, APP 170, APP 180 or APP 180 FR torch applied to the base sheet or one ply of Firestone SBS adhered in full mopping of approved asphalt within the EVT range and at a rate of 20-40 lbs/100 ft<sup>2</sup>.

**Surfacing:** (Optional) Install one of the following to obtain required fire classification.

1. Gravel or slag at 400 lbs/sq or 300 lbs/sq, respectively, in a flood coat of approved asphalt at 60 lbs/sq.
2. Karnak 97 Fibrated Aluminum Asphalt Roof Coating or Asbestos Free Aluminum Roof Coating at 1½ gal/sq.
3. Kokem Products Sunguard Acrylic Roof Coating at 1 gal/sq.
4. Monsey Endure Aluminum Roof Coating, Weather Check or Pro-Grade Aluminum Roof Coating at 1½ gal/sq.
5. Grundy al MB Aluminum Roof Coating at 1-2 gal/sq.
6. Fields F350 Heat Shield Aluminum Coating or F630 Heat Shield Fibered Aluminum Coating at 1½ gal/sq.

**Maximum Design**

**Pressure:** -120 psf (See General Limitation #9)



**Membrane Type:** APP/SBS

**Deck Type 7I:** Recover, Insulated

**Deck Description:** Concrete

**System Type A(7):** One or more layers of insulation adhered with approved adhesive to existing BUR; membrane fully adhered.

**All General and System Limitations apply.**

One or more layers of the following insulations:

<b>Base Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>ISO 95+ GL Minimum 1.5" thick</b>	N/A	N/A

**Note: All insulation shall be adhered to the existing deck with Tite-Set Insulation Adhesive in 3-3½" ribbons spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.**

**Base Sheet:** One or more plies of Firestone Type IV, Type VI, Type IV M, or Type VI M felt fully adhered in full mopping of approved asphalt within the EVT range and at a rate of 20-40 lbs/100 ft<sup>2</sup>.

**Membrane:** One ply of Firestone SBS Premium FR Torch, Rhoflex FR Granule, APP 160, APP 170, APP 180 or APP 180 FR torch applied to the base sheet or one ply of Firestone SBS adhered in full mopping of approved asphalt within the EVT range and at a rate of 20-40 lbs/100 ft<sup>2</sup>.

**Surfacing:** (Optional) Install one of the following to obtain required fire classification.

1. Gravel or slag at 400 lbs/sq or 300 lbs/sq, respectively, in a flood coat of approved asphalt at 60 lbs/sq.
2. Karnak 97 Fibrated Aluminum Asphalt Roof Coating or Asbestos Free Aluminum Roof Coating at 1½ gal/sq.
3. Kokem Products Sunguard Acrylic Roof Coating at 1 gal/sq.
4. Monsey Endure Aluminum Roof Coating, Weather Check or Pro-Grade Aluminum Roof Coating at 1½ gal/sq.
5. Grundy al MB Aluminum Roof Coating at 1-2 gal/sq.
6. Fields F350 Heat Shield Aluminum Coating or F630 Heat Shield Fibrated Aluminum Coating at 1½ gal/sq.

**Maximum Design Pressure:** -210 psf (See General Limitation #9)



**Membrane Type:** SBS  
**Deck Type 7I:** Recover, Insulated  
**Deck Description:** Concrete  
**System Type A(8):** One or more layers of insulation adhered with approved adhesive to existing BUR; membrane torch applied.

**All General and System Limitations apply.**

One or more layers of the following insulations:

<b>Base Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>ISO 95+ GL Minimum 2" thick</b>	N/A	N/A

**Note: Insulation shall be adhered to the existing deck with OlyBond 500 Adhesive in ¾" ribbons spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.**

<b>Top Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>Securock Minimum ¼" thick</b>	N/A	N/A

**Note: Top insulation layer shall be adhered in full mopping of approved asphalt within the EVT range and at a rate of 25 lbs/100 ft<sup>2</sup> or with OlyBond at a rate of 1 gal/sq. or Insta-Stik, OlyBond 500, Firestone I.S.O. FIX II, Firestone I.S.O. Twin Pack or Polyfoam Tite-Set in ribbons 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.**

**Note: (Optional) Securock may be primed with ASTM D41 asphalt primer and allowed to dry prior to application of base sheet.**

**Base Sheet:** One or more plies of Firestone SBS Glass Torch Base torch applied.  
**Membrane:** One ply of Firestone SBS Premium FR Torch torch applied.  
**Surfacing:** (Optional) Install one of the following to obtain required fire classification.  
 1. Gravel or slag at 400 lbs/sq or 300 lbs/sq, respectively, in a flood coat of approved asphalt at 60 lbs/sq.  
 2. Karnak 97 Fibrated Aluminum Asphalt Roof Coating or Asbestos Free Aluminum Roof Coating at 1½ gal/sq.  
 3. Kokem Products Sunguard Acrylic Roof Coating at 1 gal/sq.  
 4. Monsey Endure Aluminum Roof Coating, Weather Check or Pro-Grade Aluminum Roof Coating at 1½ gal/sq.  
 5. Grundy al MB Aluminum Roof Coating at 1-2 gal/sq.  
 6. Fields F350 Heat Shield Aluminum Coating or F630 Heat Shield Fibered Aluminum Coating at 1½ gal/sq.

**Maximum Design Pressure:** -120 psf (See General Limitation #9)



**Membrane Type:** SBS  
**Deck Type 7I:** Recover, Insulated  
**Deck Description:** Concrete  
**System Type A(9):** One or more layers of insulation adhered with approved adhesive to existing BUR; membrane torch applied.

**All General and System Limitations apply.**

One or more layers of the following insulations:

<b>Base Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>ISO 95+ GL Minimum 2" thick</b>	N/A	N/A

**Note:** Insulation shall be adhered to the existing deck with Tite-Set Insulation Adhesive in 3-3½" ribbons spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

<b>Top Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>Securock Minimum ¼" thick</b>	N/A	N/A

**Note:** Top insulation layer shall be adhered in full mopping of approved asphalt within the EVT range and at a rate of 25 lbs/100 ft<sup>2</sup> or with OlyBond at a rate of 1 gal/sq. or Insta-Stik, OlyBond 500, Firestone I.S.O. FIX II, Firestone I.S.O. Twin Pack or Polyfoam Tite-Set in ribbons 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

**Note: (Optional)** Securock may be primed with ASTM D41 asphalt primer and allowed to dry prior to application of base sheet.

**Base Sheet:** One or more plies of Firestone SBS Glass Torch Base torch applied.  
**Membrane:** One ply of Firestone SBS Premium FR Torch torch applied.  
**Surfacing:** (Optional) Install one of the following to obtain required fire classification.  
 1. Gravel or slag at 400 lbs/sq or 300 lbs/sq, respectively, in a flood coat of approved asphalt at 60 lbs/sq.  
 2. Karnak 97 Fibrated Aluminum Asphalt Roof Coating or Asbestos Free Aluminum Roof Coating at 1½ gal/sq.  
 3. Kokem Products Sunguard Acrylic Roof Coating at 1 gal/sq.  
 4. Monsey Endure Aluminum Roof Coating, Weather Check or Pro-Grade Aluminum Roof Coating at 1½ gal/sq.  
 5. Grundy al MB Aluminum Roof Coating at 1-2 gal/sq.  
 6. Fields F350 Heat Shield Aluminum Coating or F630 Heat Shield Fibrated Aluminum Coating at 1½ gal/sq.

**Maximum Design Pressure:** -262.5 psf (See General Limitation #9)



**Membrane Type:** APP  
**Deck Type 7I:** Recover  
**Deck Description:** Concrete/lightweight concrete/cementitious wood fiber/wood/steel  
**System Type B(1):** Base layers of insulation mechanically fastened, top layer adhered with approved asphalt.

**All General and System Limitations apply.**

One or more layers of any of the following insulations:

<b>Base Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>Perlite Minimum ¾" thick</b>	See Deck System	1:2 ft <sup>2</sup>
<b>ACFoam II Minimum 1.3" thick</b>	See Deck System	1:2.67 ft <sup>2</sup>
<b>ENRGY 3 Minimum 1.25" thick</b>	See Deck System	1:3 ft <sup>2</sup>

**Note:** All layers of insulation shall be mechanically attached using the fastener density listed above. The 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. Insulation fasteners shall be tested for withdrawal resistance in compliance with Testing Application Standard TAS 105 to confirm compliance with the wind load requirements. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

<b>Top Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>Perlite Minimum ¾" thick</b>	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 ft<sup>2</sup>. 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, Type IV M, Type VI or Type VI M 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 7I:** Recover  
**Deck Description:** Concrete/lightweight concrete/cementitious wood fiber/wood/steel  
**System Type B(2):** Base layers of insulation mechanically fastened, top layer adhered with approved asphalt.

**All General and System Limitations apply.**  
 One or more layers of any of the following insulations:

<b>Base Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>Perlite Minimum ¾" thick</b>	See Deck System	1:2 ft <sup>2</sup>
<b>ACFoam II Minimum 1.3" thick</b>	See Deck System	1:2.67 ft <sup>2</sup>
<b>ENRGY 3 Minimum 1.25" thick</b>	See Deck System	1:3 ft <sup>2</sup>

**Note:** All layers of insulation shall be mechanically attached using the fastener density listed above. The 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. Insulation fasteners shall be tested for withdrawal resistance in compliance with Testing Application Standard TAS 105 to confirm compliance with the wind load requirements. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

<b>Top Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>Perlite Minimum ¾" thick</b>	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 ft<sup>2</sup>. 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, Type IV M, Type VI or Type VI M 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, Type IV M, Type VI or Type VI M 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 7I:** Recover  
**Deck Description:** Concrete/lightweight concrete/cementitious wood fiber/wood/steel  
**System Type C(1):** All layers of insulation simultaneously attached.

**All General and System Limitations apply.**  
 One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft <sup>2</sup>
Perlite Minimum ¾" thick	N/A	N/A
ENRGY 3, Multi-Max Minimum 1.4" thick	N/A	N/A

**Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.**

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft <sup>2</sup>
Perlite Minimum ¾" thick	See Deck System	1:2 ft <sup>2</sup>

**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, Type IV M, Type VI or Type VI M 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 7I:** Recover  
**Deck Description:** Concrete/lightweight concrete/cementitious wood fiber/wood/steel  
**System Type C(2):** All layers of insulation simultaneously attached.

**All General and System Limitations apply.**

One or more layers of any of the following insulations:

<b>Base Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>Perlite Minimum ¾" thick</b>	N/A	N/A
<b>ENRGY 3, Multi-Max Minimum 1.4" thick</b>	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.**

<b>Top Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>Perlite Minimum ¾" thick</b>	See Deck System	1:2 ft <sup>2</sup>

**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, Type IV M, Type VI or Type VI M 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, Type IV M, Type VI or Type VI M 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:** SBS

**Deck Type 7I:** Recover, Insulated

**Deck Description:** Concrete

**System Type C(3):** All layers of insulation simultaneously attached.

**All General and System Limitations apply.**

<b>Base Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>ISO 300 Minimum 1.5" thick</b>	<b>1 or 2</b>	<b>1:2 ft<sup>2</sup></b>

**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 or more plies of Firestone SBS Smooth is fully adhered to the insulation with Firestone MB Cold Adhesive. at a rate of 1½ - 2 gal/sq.

**Membrane:** Firestone SBS, SBS FR, SBS Premium or SBS Premium FR is fully adhered to the base sheet with Firestone MB Cold Adhesive at a rate of 1½ - 2 gal/sq.

**Surfacing:** (Optional) Install one of the following to obtain required fire classification.

1. Gravel or slag at 400 lbs/sq or 300 lbs/sq, respectively, in a flood coat of approved asphalt at 60 lbs/sq.
2. Karnak 97 Fibrated Aluminum Asphalt Roof Coating or Asbestos Free Aluminum Roof Coating at 1½ gal/sq.
3. Kokem Products Sunguard Acrylic Roof Coating at 1 gal/sq.
4. Monsey Endure Aluminum Roof Coating, Weather Check or Pro-Grade Aluminum Roof Coating at 1½ gal/sq.
5. Grundy al MB Aluminum Roof Coating at 1-2 gal/sq.
6. Fields F350 Heat Shield Aluminum Coating or F630 Heat Shield Fibered Aluminum Coating at 1½ gal/sq.

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



**Membrane Type:** SBS  
**Deck Type 7I:** Recover, Insulated  
**Deck Description:** Concrete  
**System Type C(4):** All layers of insulation simultaneously attached.

**All General and System Limitations apply.**

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft <sup>2</sup>
ISO 95+ GL, ACFoam II Minimum 1.5" thick	N/A	N/A

**Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.**

Top Insulation Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft <sup>2</sup>
FiberTop Wood Fiber Insulation Minimum ½" thick	1, 2, 12 or 27	1:2 ft <sup>2</sup>
Dens-Deck Minimum ½" thick	1, 2, 12 or 27	1:2 ft <sup>2</sup>

**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 or two plies of Firestone Type IV, Type IV M, Type VI or Type VI M Felt, MB Base Sheet or Rhoflex Base Sheet fully adhered to the insulation with Firestone MB Cold Adhesive at a rate of 1½ - 2 gal/sq.

**Membrane:** One ply of Firestone Rhoflex FR Granule fully adhered to the insulation with Firestone MB Cold Adhesive at a rate of 1½ - 2 gal/sq.

**Surfacing:** (Optional) Install one of the following to obtain required fire classification.
 

1. Gravel or slag at 400 lbs/sq or 300 lbs/sq, respectively, in a flood coat of approved asphalt at 60 lbs/sq.
2. Karnak 97 Fibrated Aluminum Asphalt Roof Coating or Asbestos Free Aluminum Roof Coating at 1½ gal/sq.
3. Kokem Products Sunguard Acrylic Roof Coating at 1 gal/sq.
4. Monsey Endure Aluminum Roof Coating, Weather Check or Pro-Grade Aluminum Roof Coating at 1½ gal/sq.
5. Grundy al MB Aluminum Roof Coating at 1-2 gal/sq.
6. Fields F350 Heat Shield Aluminum Coating or F630 Heat Shield Fibered Aluminum Coating at 1½ gal/sq.

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



**Membrane Type:** APP/SBS  
**Deck Type 7I:** Recover, Insulated  
**Deck Description:** Concrete  
**System Type C(5):** All layers of insulation simultaneously attached.

**All General and System Limitations apply.**

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft <sup>2</sup>
ISO 95+ GL Minimum 1.5" thick	1, 2, 12 or 27	1:2 ft <sup>2</sup>

**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 or more plies of Firestone SBS Base, SBS Premium Base or APP 80 Glass Base Cool fully adhered to the insulation with Firestone MB Cold Adhesive at a rate of 1½ - 2 gal/sq.

**Membrane:** One ply of Firestone APP I70 COOL, APP 180 COOL or APP 180 FR COOL fully adhered to the base sheet with Firestone MB Cold Adhesive at a rate of 1½ - 2 gal/sq.

OR

(Not with APP 80 Glass Base Cool) One ply of Firestone APP 160, APP 170, APP 180 or APP 180 FR torch adhered to the base sheet.

OR

(Not with APP 80 Glass Base Cool) One ply of Firestone SBS, SBS FR, SBS Smooth, SBS Premium or SBS Premium FR fully adhered to the base sheet with Firestone MB Cold Adhesive at a rate of 1½ - 2 gal/sq.

**Surfacing:** (Optional) Install one of the following to obtain required fire classification.

1. Gravel or slag at 400 lbs/sq or 300 lbs/sq, respectively, in a flood coat of approved asphalt at 60 lbs/sq.
2. Karnak 97 Fibrated Aluminum Asphalt Roof Coating or Asbestos Free Aluminum Roof Coating at 1½ gal/sq.
3. Kokem Products Sunguard Acrylic Roof Coating at 1 gal/sq.
4. Monsey Endure Aluminum Roof Coating, Weather Check or Pro-Grade Aluminum Roof Coating at 1½ gal/sq.
5. Grundy al MB Aluminum Roof Coating at 1-2 gal/sq.
6. Fields F350 Heat Shield Aluminum Coating or F630 Heat Shield Fibered Aluminum Coating at 1½ gal/sq.

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



**Membrane Type:** APP/SBS  
**Deck Type 7I:** Recover, Insulated  
**Deck Description:** Concrete  
**System Type C(6):** All layers of insulation simultaneously attached.

**All General and System Limitations apply.**

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft <sup>2</sup>
ISO 95+ GL Minimum 2" thick	1 or 2	1:1.33 ft <sup>2</sup>

**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 or more plies of Firestone SBS Base, SBS Smooth, SBS Premium Base or APP 80 Glass Base Cool fully adhered to the insulation with Firestone MB Cold Adhesive at a rate of 1½ - 2 gal/sq.

**Membrane:** (Not with SBS Smooth) One ply of Firestone APP 170 COOL, APP I80 COOL or APP 180 FR COOL fully adhered to the base sheet with Firestone MB Cold Adhesive at a rate of 1½ - 2 gal/sq.  
 OR  
 (Not with SBS Smooth or APP 80 Glass Base Cool) One ply of Firestone APP 160, APP 170, APP 180 or APP 180 FR torch adhered to the base sheet.  
 OR  
 (Not with SBS Smooth or APP 80 Glass Base Cool) One ply of Firestone SBS Torch, SBS Torch FR, SBS Smooth Torch, SBS Premium Torch, or SBS Premium Torch FR torch adhered to the base sheet.  
 OR  
 (Not with APP 80 Glass Base Cool) One ply of Firestone SBS, SBS FR, SBS Smooth, SBS Premium or SBS Premium FR fully adhered to the base sheet with Firestone MB Cold Adhesive at a rate of 1½ - 2 gal/sq.

**Surfacing:** (Optional) Install one of the following to obtain required fire classification.

1. Gravel or slag at 400 lbs/sq or 300 lbs/sq, respectively, in a flood coat of approved asphalt at 60 lbs/sq.
2. Karnak 97 Fibrated Aluminum Asphalt Roof Coating or Asbestos Free Aluminum Roof Coating at 1½ gal/sq.
3. Kokem Products Sunguard Acrylic Roof Coating at 1 gal/sq.
4. Monsey Endure Aluminum Roof Coating, Weather Check or Pro-Grade Aluminum Roof Coating at 1½ gal/sq.
5. Grundy al MB Aluminum Roof Coating at 1-2 gal/sq.
6. Fields F350 Heat Shield Aluminum Coating or F630 Heat Shield Fibered Aluminum Coating at 1½ gal/sq.

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



**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 7I:** Recover  
**Deck Description:** Concrete/lightweight concrete/cementitious wood fiber/wood/steel  
**System Type D(2):** All layers of insulation and base sheet simultaneously attached.

**All General and System Limitations apply.**

One or more layers of any of the following insulations:

<b>Base Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>Perlite</b> Minimum ¾" thick	N/A	N/A
<b>Hy-Tec, Hy-Tec II</b> Minimum 1.2" thick	N/A	N/A
<b>ACFoam II, ISO-Lite E, UltraGard Gold II</b> Minimum 1.3" thick	N/A	N/A
<b>ENRGY 3, PSI 25, ISO 95+ GL, GW, Composite</b> Minimum 1.4" thick	N/A	N/A
<b>Multi-Max</b> Minimum 1.5" thick	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.

<b>Top Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>Perlite</b> Minimum ¾" thick	See Deck System	1:2 ft <sup>2</sup>

**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 or Perma Ply 28 with a 4" side lap mechanically fastened to the deck through the insulation as described below:

**Fastening:** Fasten anchor sheet with approved fasteners 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, Type IV M, Type VI or Type VI M 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:** SBS

**Deck Type 7I:** Recover, Insulated

**Deck Description:** Concrete

**System Type D(3):** All layers of insulation and base sheet simultaneously attached.

**All General and System Limitations apply.**

<b>Base Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>ISO 95+ GL Minimum 1.5" thick</b>	<b>N/A</b>	<b>N/A</b>

**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 SBS Base Sheet or SBS Premium Base Sheet with a 3" side lap mechanically fastened to the deck through the insulation as described below:

**Fastening:** Firestone Heavy Duty Fasteners and Hexagonal Plates at a 3" side lap 18" o.c. and two rows staggered in the center of the sheet 12" o.c..

**Membrane:** Firestone SBS, SBS FR, SBS Premium or SBS Premium FR fully adhered to the base sheet with Firestone MB Cold Adhesive at a rate of 1½ - 2 gal/sq..

**Surfacing:** (Optional) Install one of the following to obtain required fire classification.

1. Gravel or slag at 400 lbs/sq or 300 lbs/sq, respectively, in a flood coat of approved asphalt at 60 lbs/sq.
2. Karnak 97 Fibrated Aluminum Asphalt Roof Coating or Asbestos Free Aluminum Roof Coating at 1½ gal/sq.
3. Kokem Products Sunguard Acrylic Roof Coating at 1 gal/sq.
4. Monsey Endure Aluminum Roof Coating, Weather Check or Pro-Grade Aluminum Roof Coating at 1½ gal/sq.
5. Grundy al MB Aluminum Roof Coating at 1-2 gal/sq.
6. Fields F350 Heat Shield Aluminum Coating or F630 Heat Shield Fibrated Aluminum Coating at 1½ gal/sq.

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



**Membrane Type:** APP  
**Deck Type 7I:** Recover  
**Deck Description:** Concrete/lightweight concrete/cementitious wood fiber/wood/steel  
**System Type D(1):** All layers of insulation and base sheet simultaneously attached.

**All General and System Limitations apply.**  
 One or more layers of any of the following insulations:

<b>Base Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>Perlite</b> Minimum ¾" thick	N/A	N/A
<b>Hy-Tec, Hy-Tec II</b> Minimum 1.2" thick	N/A	N/A
<b>ACFoam II, ISO-Lite E, UltraGard Gold II</b> Minimum 1.3" thick	N/A	N/A
<b>ENRGY 3, PSI 25, ISO 95+ GL, GW, Composite</b> Minimum 1.4" thick	N/A	N/A
<b>Multi-Max</b> Minimum 1.5" thick	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.

<b>Top Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>Perlite</b> Minimum ¾" thick	See Deck System	1:2 ft <sup>2</sup>

**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, MB Base M, 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 approved fasteners at the side lap 12" o.c. and two rows staggered in the center of the sheet 18" o.c.

**Ply Sheet:** (Optional) One or more plies of Firestone MB Base Sheet, Type IV, Type IV M, Type VI or Type VI M 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 Type:** APP/SBS

**Deck Type 7I:** Recover, Insulated

**Deck Description:** Concrete

**System Type D(5):** All layers of insulation and base sheet simultaneously attached.

**All General and System Limitations apply.**

<b>Base Insulation Layer</b>	<b>Insulation Fasteners (Table 3)</b>	<b>Fastener Density/ft<sup>2</sup></b>
<b>ISO 95+ GL Minimum 1.5" thick</b>	<b>N/A</b>	<b>N/A</b>

**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 M mechanically fastened to the deck through the insulation with Firestone Heavy Duty Fasteners and Insulation Fastening Plates applied 12" o.c. through the 4" wide base sheet overlaps and 12" o.c. in 2 rows equally spaced and staggered in the field of the base sheet.

**Membrane:** One ply of Firestone APP 170 COOL, APP 180 COOL or APP 180 FR COOL fully adhered to the base sheet with Firestone MB Cold Adhesive applied at 1½ - 2 gal/sq.  
OR  
One ply of Firestone SBS, SBS FR, SBS Premium or SBS Premium FR cap sheet fully adhered to the base sheet with Firestone MB Cold Adhesive applied at 1½ - 2 gal/sq.

**Surfacing:** (Optional) Install one of the following to obtain required fire classification.

1. Gravel or slag at 400 lbs/sq or 300 lbs/sq, respectively, in a flood coat of approved asphalt at 60 lbs/sq.
2. Karnak 97 Fibrated Aluminum Asphalt Roof Coating or Asbestos Free Aluminum Roof Coating at 1½ gal/sq.
3. Kokem Products Sunguard Acrylic Roof Coating at 1 gal/sq.
4. Monsey Endure Aluminum Roof Coating, Weather Check or Pro-Grade Aluminum Roof Coating at 1½ gal/sq.
5. Grundy al MB Aluminum Roof Coating at 1-2 gal/sq.
6. Fields F350 Heat Shield Aluminum Coating or F630 Heat Shield Fibrated Aluminum Coating at 1½ gal/sq.

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



**Membrane Type:** APP/SBS  
**Deck Type 7I:** Recover, Insulated  
**Deck Description:** Lightweight Insulating Concrete, min. 250 psi  
**System Type D(6):** All layers of insulation and base sheet simultaneously attached.

**All General and System Limitations apply.**

**Deck:** Min. 22 ga., 1.5" type B, steel deck shall be attached to steel channel-framing joists. The joists are to be spaced 6' o.c. The metal deck shall be fastened with 5/8" puddle welds at 6" o.c. along the perimeter of the test frame, one 5/8" weld in each flute of the metal deck along the joist in the field of the test frame and at 6" o.c. along the side laps with #10 self drilling screws.

A 1/4" thick slurry of lightweight insulating concrete shall be placed over the deck. A layer of Dyplast EPS board with a minimum density of 1.0 pcf shall be firmly pressed over the slurry followed by an additional layer of lightweight insulating concrete to a minimum thickness of 2".

**Vapor Barrier:** A BUR System is installed over 2" minimum thickness of lightweight insulating concrete.

One or more layers of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft <sup>2</sup>
Dens-Deck Prime Minimum 1/2" thick	N/A	N/A

**Note:** 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 M with a 2" side lap mechanically fastened through the Dens-Deck and the lightweight concrete to the steel deck as described below:

**Fastening:** Firestone HD Fasteners and 3" insulation plates at the side lap 9" o.c. and two rows staggered in the center of the sheet 9" o.c.

**Ply Sheet:** One or more plies of Firestone SBS Base adhered to the base sheet in full mopping of approved asphalt within the EVT range and at a rate of 20-40 lbs/100 ft<sup>2</sup>.

**Membrane:** One ply of Firestone SBS FR adhered to the ply sheet in full mopping of approved asphalt within the EVT range and at a rate of 20-40 lbs/100 ft<sup>2</sup>.

**Surfacing:** (Optional) Install one of the following to obtain required fire classification.

1. Gravel or slag at 400 lbs/sq or 300 lbs/sq, respectively, in a flood coat of approved asphalt at 60 lbs/sq.
2. Karnak 97 Fibrated Aluminum Asphalt Roof Coating or Asbestos Free Aluminum Roof Coating at 1 1/2 gal/sq.
3. Kokem Products Sunguard Acrylic Roof Coating at 1 gal/sq.
4. Monsey Endure Aluminum Roof Coating, Weather Check or Pro-Grade Aluminum Roof Coating at 1 1/2 gal/sq.
5. Grundy al MB Aluminum Roof Coating at 1-2 gal/sq.
6. Fields F350 Heat Shield Aluminum Coating or F630 Heat Shield Fibered Aluminum Coating at 1 1/2 gal/sq.

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



**Membrane Type:** APP

**Deck Type 7I:** Recover

**Deck Description:** Concrete/lightweight concrete/cementitious wood fiber/wood/steel

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

**All General and System Limitations apply.**

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

**Fastening:** Fasten base sheet with approved fasteners at the side lap 12" o.c. and two rows staggered in the center of the sheet 18" o.c.; see System Limitation #5.

**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 7I:** Recover

**Deck Description:** Concrete/lightweight concrete/cementitious wood fiber/wood/steel

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

**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 through the insulation as described below:

**Fastening:** Approved fasteners at a 4" side lap 18" o.c. and two rows staggered in the center of the sheet 36" o.c.; see System Limitation #5.

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



## RECOVER SYSTEM LIMITATIONS:

1. All System Limitations and General Limitations shall apply. See specific deck type Notice of Acceptance for deck type System Limitations.

## 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**



NOA No.: 08-0118.06  
Expiration Date: 03/08/11  
Approval Date: 07/10/08  
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