



DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER)
BOARD AND CODE ADMINISTRATION DIVISION

NOTICE OF ACCEPTANCE (NOA)

MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION

11805 SW 26 Street, Room 208
Miami, Florida 33175-2474
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www.miamidade.gov/economy

Firestone Building Products Company, LLC
250 W. 96th Street
Indianapolis, IN 46260

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County RER - Product Control Section 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 Section (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. RER reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the Florida Building Code including the High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: Firestone Modified Bitumen Roof Systems over Lightweight Concrete 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 renews NOA No. 15-0224.09 and consists of pages 1 through 25.
The submitted documentation was reviewed by Alex Tigera.



NOA No.: 16-0202.09
Expiration Date: 03/08/21
Approval Date: 03/17/16
Page 1 of 25

ROOFING SYSTEM APPROVAL

Category:	Roofing
Sub-Category:	Modified Bitumen
Material:	APP/SBS
Deck Type:	Lightweight Concrete
Maximum Design Pressure:	-137.5 psf

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
APP 80 Glass Base	39.4" x 65'4"	ASTM D6509	Fiberglass reinforced modified bitumen, smooth surfaced base sheet.
SBS Glass Torch Base	39.4" x 33'10"	ASTM D6163	Modified bitumen base sheet with a burn-off film and reinforced with non-woven fiberglass mat.
SBS Base	39.4" x 50'	ASTM D6163	Fiberglass reinforced SBS base sheet. Applied in hot asphalt or mechanically attached.
SBS Premium Base	39.6" x 50'	ASTM D6163	Fiberglass reinforced SBS base sheet. Applied in hot asphalt or Multi-Purpose MB Cold Adhesive.
SBS PolyBase	39.6" x 50'	ASTM D6164	A smooth surfaced, non-woven polyester reinforced, modified bitumen base sheet.
SBS Poly Torch Base	45" x 39"	ASTM D6164	Fiberglass reinforced modified bitumen membrane, SBS rubber modified asphalt reinforced with a non-woven polyester mat.
Ply IV	33" x 180"	ASTM D2178	Fiberglass reinforced, asphalt impregnated, roofing ply. Applied in hot asphalt.
Ply VI	33" x 180"	ASTM D2178	Fiberglass reinforced, asphalt impregnated, roofing ply. Applied in hot asphalt.
MB Base	36" x 108'	ASTM D4601	Fiberglass reinforced base sheet, asphalt coated on both sides. Applied in hot asphalt or mechanically attached.
SBS Smooth	39.4" x 33'10"	ASTM D6164	Smooth surfaced, modified bitumen membrane reinforced with non-woven polyester mat. Applied in hot asphalt.
APP 160-P	39.4" x 32'9"	ASTM D6222	Polyester reinforced modified bitumen, smooth surfaced membrane. Torch applied for use as a base or ply sheet only.
APP 170 Cool	39.6" x 33'6"	ASTM D6222	Polyester reinforced modified bitumen, smooth surfaced membrane.
APP 180	39.4" x 32'10"	ASTM D6222	Polyester reinforced modified bitumen, granule surfaced membrane. Torch applied.



APP 180-P	39.4" x 32'9"	ASTM D6222	Polyester reinforced modified bitumen, granule surfaced membrane. Torch applied.
APP 180 UltraWhite	39.4" x 32'10"	ASTM D6222	Polyester reinforced modified bitumen, UltraWhite granule surfaced membrane. Torch applied.
APP 180 FR	39.4" x 32'10"	ASTM D6222	Polyester reinforced, fire retardant modified bitumen, granule surfaced membrane. Torch applied.
APP 180 FR UltraWhite	39.4" x 32'10"	ASTM D6222	Polyester reinforced, fire retardant modified bitumen, UltraWhite granule surfaced membrane. Torch applied.
APP 180 Cool	39.4" x 32'10"	ASTM D6222	Polyester reinforced modified bitumen, granule surfaced membrane.
APP 180 FR Cool	39.4" x 32'10"	ASTM D6222	Polyester reinforced, fire retardant modified bitumen, granule surfaced membrane. Torch applied.
SBS Glass	39.4" x 33'10"	ASTM D6163	Fiberglass reinforced, granule surfaced, modified bitumen membrane. Applied in hot asphalt.
SBS Glass FR	39.4" x 33'10"	ASTM D6163	Fiberglass reinforced, fire rated, granule surfaced, modified bitumen membrane. Applied in hot asphalt.
SBS Glass FR UltraWhite	39.4" x 33'10"	ASTM D6163	UltraWhite fiberglass reinforced, granule surfaced, modified bitumen membrane. Applied in hot asphalt.
SBS Torch	48" x 39"	ASTM D6164	Granule surfaced, SBS cap reinforced with a non-woven polyester mat, with burn off film and fiberglass enhanced.
SBS Torch UltraWhite	48" x 39"	ASTM D6164	UltraWhite granule surfaced, SBS cap reinforced with a non-woven polyester mat, with burn off film and fiberglass enhanced.
SBS FR Torch	48" x 39"	ASTM D6164	Granule surfaced, fire rated, SBS cap reinforced with a non-woven polyester mat, with burn off film and fiberglass enhanced.
SBS FR Torch UltraWhite	48" x 39"	ASTM D6164	UltraWhite granule surfaced, fire rated, SBS cap reinforced with a non-woven polyester mat, with burn off film and fiberglass enhanced.
SBS Glass FR Torch	39.4" x 33'10"	ASTM D6163	Fiberglass reinforced, fire rated, granule surfaced, modified bitumen membrane. with burn off film and fiberglass enhanced.
SBS Glass FR Torch UltraWhite	39.4" x 33'10"	ASTM D6163	UltraWhite fiberglass reinforced, fire rated, granule surfaced, modified bitumen membrane. with burn off film and fiberglass enhanced.



SBS Cap	39.4" x 33'10"	ASTM D6164	Granule surfaced, modified bitumen membrane reinforced with non-woven polyester mat.
SBS Cap UltraWhite	39.4" x 33'10"	ASTM D6164	UltraWhite granule surfaced, modified bitumen membrane reinforced with non-woven polyester mat.
SBS FR Cap	39.4" x 33'10"	ASTM D6164	Granule surfaced, modified bitumen membrane reinforced with non-woven polyester mat.
SBS FR Cap UltraWhite	39.4" x 33'10"	ASTM D6164	UltraWhite granule surfaced, modified bitumen membrane reinforced with non-woven polyester mat.
SBS Premium FR	39.4" x 33'10"	ASTM D6164	Granule surfaced, fire rated, modified bitumen membrane reinforced with non-woven polyester mat.
SBS Premium FR UltraWhite	39.4" x 33'10"	ASTM D6164	UltraWhite granule surfaced, fire rated, modified bitumen membrane reinforced with non-woven polyester mat.
SBS Premium	39.4" x 33'10"	ASTM D6164	Granule surfaced, modified bitumen membrane reinforced with polyester mat. Applied in hot asphalt.
SBS Premium Torch	39.4" x 33'10"	ASTM D6164	Granule surfaced, modified bitumen membrane with a burn-off film and reinforced with non-woven polyester mat.
SBS Premium Torch UltraWhite	39.4" x 33'10"	ASTM D6164	UltraWhite granule surfaced, modified bitumen membrane with a burn-off film and reinforced with non-woven polyester mat.
SBS Premium FR Torch	39.4" x 33'10"	ASTM D6164	Granule surfaced, fire rated, modified bitumen membrane with a burn-off film and reinforced with non-woven polyester mat.
SBS Premium FR Torch UltraWhite	39.4" x 33'10"	ASTM D6164	UltraWhite granule surfaced, fire rated, modified bitumen membrane with a burn-off film and reinforced with non-woven polyester mat.
I.S.O. Twin Pack Insulation Adhesive	Dual 750 ml cartridges	Proprietary	A two-component polyurethane insulation adhesive.
I.S.O. FIX II	30 lb.	Proprietary	A single component polyurethane insulation adhesive.
I.S.O. Stick	5 gal.	Proprietary	A two-component polyurethane insulation adhesive.
Multi-Purpose MB Cold Adhesive	55 gal.	Proprietary	An asphalt based adhesive.
LiquiGard Membrane Adhesive	6 gal.	Proprietary	A two-component, solvent-free, asphalt-based urethane adhesive.



APPROVED INSULATIONS:

TABLE 2

<u>Product Name</u>	<u>Product Description</u>	<u>Manufacturer (With Current NOA)</u>
ACFoam-II	Isocyanurate Insulation	Atlas Roofing Corp.
DensDeck, DensDeck Prime	Silicon treated gypsum	Georgia-Pacific Gypsum LLC
ENRGY 3, ENRGY 3 25 PSI	Isocyanurate Insulation	Johns Manville Corp.
High Density Wood Fiberboard	High Density Wood Fiber insulation board.	Generic
Perlite Insulation Board	Perlite Insulation	Generic
Ultra-Max FA-3	Isocyanurate Insulation	Rmax Operating, LLC
SECUROCK Gypsum-Fiber Roof Board	Gypsum Coverboard	United States Gypsum Corporation
ISO 95+ GL, RESISTA	Isocyanurate Insulation	Firestone Building Products Company, LLC

APPROVED FASTENERS:

TABLE 3

<u>Fastener Number</u>	<u>Product Name</u>	<u>Product Description</u>	<u>Dimensions</u>	<u>Manufacturer (With Current NOA)</u>
1.	Trufast FM-290 Base Sheet Fastener	Two piece fastener and plate		Altenloh, Brinck & Co, U.S., Inc.
2.	CR Assembled Base Sheet Fastener	Base sheet fastening assembly.	Various	OMG, Inc.
3.	CR Base Sheet Fastener	Base Sheet Fastener	Various	OMG, Inc,
4.	1.7 in. Assembled LWC Base Ply Fastener	Base ply fastening systems for lightweight concrete decks.		Firestone Building Products Company, LLC
5.	Firestone Heavy-Duty	Insulation and membrane fastener	Various	Firestone Building Products Company, LLC
6.	Two Piece Impact Nail	Base ply fastening systems for lightweight concrete decks.		Firestone Building Products Company, LLC
7.	Insulation Fastening Plate	Insulation plate for use with Firestone Fasteners	3” Round	Firestone Building Products Company, LLC
8.	Trufast Twin Loc-Nail Assembled Fastener	Fastener/plate assembly	Various	Altenloh, Brinck & Co, U.S., Inc.



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
	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
	3014031	FM 4470	07/22/02
	3022502	FM 4470	01/29/07
	3007328	FM 4470	07/12/02
	3014692	FM 4470	08/05/03
	3041534	FM 4470	03/09/11
	3038191	FM 4470	08/04/11
Underwriters Laboratories	R9516	UL 790	01/25/13
Trinity ERD	4810.01.96-1	TAS 114(C) & TAS 114(D)	01/31/96
	4810.10.96-1-R1	TAS 114(J)	03/09/09
	4674.11.01-1	TAS 114(J)	03/21/06
	02764.09.05	TAS 114	09/09/05
	02762.03.05	TAS 114	03/30/05
	F8800.01.08-R1	TAS 114	04/21/08
	F11330.10.08	TAS 114	10/20/08
	F10500.10.08-1R2	ASTM D6163	03/22/13
	F31960.05.10-1	ASTM D4977	05/19/10
	F31960.05.10-2	ASTM D4977	05/19/10
	F31960.08.10-1	ASTM D4977	08/25/10
Trinity ERD	F31960.08.10-2-R1	ASTM D4977	03/25/13
	F35400	ASTM Physical Properties	05/31/11
	5.11		
	F41070.08.12	ASTM D6222	08/24/12
	U41790.05.12-2-R2	ASTM D6222	02/11/13
	U41790.05.12-1-R1	ASTM D6222	01/21/13
IRT-ARCON, Inc.	02-010	TAS 114	01/28/02
Atlantic & Caribbean Roof Consulting, LLC.	03-002	TAS 114	03/06/03
	08-056	TAS 114	10/24/08
PRI Construction Materials Technologies LLC	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



EVIDENCE SUBMITTED:

<u>Test Agency</u>	<u>Test Identifier</u>	<u>Description</u>	<u>Date</u>
	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
	FBP-038-02-03	ASTM D 6164	01/12/11
	FBP-038-02-04	ASTM D 6164	01/12/11
	FBP-038-02-02	ASTM D 6164	01/12/11
	FBP-038-02-01	ASTM D 6164	12/27/10
	FBP-043-02-03	ASTM D 6164	07/26/11
	FBP-043-02-02	ASTM D 6164	08/02/11
	FBP-043-02-04	ASTM D 6164	07/26/11
	FBP-043-02-01	ASTM D 6164	08/02/11
	FBP-042-02-01	ASTM D 6164	07/26/11
	FBP-042-02-02	ASTM D 6164	07/27/11
	FBP-058-02-01	ASTM D 4601	12/12/08
	FBP-057-02-01	ASTM D 2178	12/12/08
	FBP-056-02-01	ASTM D 2178	12/12/08
	FBP-047-02-03	TAS 114-J	09/16/11
	FBP-059-02-01	ASTM D1876	07/20/12
	FBP-067-02-01	TAS 114-J	04/18/12
	FBP-047-02-01	ASTM C495/C796	09/15/11
	FBP-054-02-03	TAS 114-D	02/04/12
	FBP-047-02-04	ASTM D 1876	08/29/11
	FBP-087-02-01	ASTM D 4798	03/22/13
	FBP-088-02-01	ASTM D 4798	03/22/13
Certified Testing Laboratories	108R	TAS 114-J	10/17/08

DECK STRESS ANALYSIS CALCULATIONS/REPORTS

<u>Engineer/Agency</u>	<u>Identifier</u>	<u>Assemblies:</u>	<u>Date</u>
Robert Nieminen, P.E.	4674.11.01-1-R4	E(5), E(6)	10/06/15
Zachary Priest, P.E.	Letter	E(9), E(10), E(11), E(16)	02/09/16
FM Approval Deck Limitation		E(1), E(2), E(12), E(13)	03/04/16



APPROVED ASSEMBLIES

- Membrane Type:** SBS
- Deck Type 4:** Lightweight Concrete, Insulated
- Deck Description:** Lightweight Insulating Concrete, minimum 300 psi Elastizell cast in minimum 1/8” slurry coat over structural concrete deck, followed by minimum 1” EPS board, and minimum 2” thick top coat .
- System Type A(1):** One or more layers of insulation adhered with approved adhesive; membrane fully adhered.

All General and System Limitations apply.

One or more layers of the following insulations:

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
Dens Deck Prime Minimum 1/4” thick	N/A	N/A
ISOGARD HD Minimum 1/2” thick	N/A	N/A

Note: All Insulation shall be adhered. Dens Deck Prime shall be adhered with I.S.O. Stick applied in 3/4” – 1” ribbons spaced 12” o.c. & ISOGARD HD shall be adhered with I.S.O. Twin Pack Insulation Adhesive applied in 1/2” – 3/4” ribbons spaced 12” o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

- Base Sheet:** One ply of Firestone SBS Poly Base fully adhered with Multi-Purpose MB Cold Adhesive at a rate of 1.5 - 2 gal/100ft² .
- Ply Sheet:** (Optional) One or more plies of Firestone SBS Glass Torch Base or SBS PolyTorch Base torch adhered.
- Membrane:** One ply of Firestone SBS FR or SBS Premium FR fully adhered with Multi-Purpose MB Cold Adhesive or LiquiGard Adhesive at a rate of 1.5 - 2 gal/100ft², Or fully adhered adhered in full mopping of approved asphalt within the EVT range and at a rate of 20-30 lbs/100 ft².
- Maximum Design Pressure:** -137.5 psf (See General Limitation #9)



Membrane Type: SBS

Deck Type 4: Lightweight Concrete, Insulated

Deck Description: Lightweight Insulating Concrete, minimum 300 psi Celcore MF with Celcore HS Rheology Admixture cast in minimum 1/8" slurry coat over structural concrete deck, followed by minimum 1" EPS board, and minimum 2" thick top coat. Celcore PVA curing applied to top coat at a rate of 300 ft²/gal.

System Type A(2): One or more layers of insulation adhered with approved adhesive; membrane fully adhered.

All General and System Limitations apply.

One or more layers of the following insulations:

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
Dens Deck Prime Minimum 1/4" thick	N/A	N/A
ISOGARD HD Minimum 1/2" thick	N/A	N/A

Note: All Insulation shall be adhered. Dens Deck Prime shall be adhered with I.S.O. Stick applied in 3/4" – 1" ribbons spaced 12" o.c. & ISOGARD HD shall be adhered with I.S.O. Twin Pack Insulation Adhesive applied in 1/2" – 3/4" ribbons spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One ply of Firestone SBS Poly Base fully adhered with Multi-Purpose MB Cold Adhesive at a rate of 1.5 - 2 gal/100ft².

Ply Sheet: (Optional) One or more plies of Firestone SBS Glass Torch Base or SBS PolyTorch Base torch adhered.

Membrane: One ply of Firestone SBS FR or SBS Premium FR fully adhered with Multi-Purpose MB Cold Adhesive or LiquiGard Adhesive at a rate of 1.5 - 2 gal/100ft², Or fully adhered adhered in full mopping of approved asphalt within the EVT range and at a rate of 20-30 lbs/100 ft².

Maximum Design Pressure: -102.5 psf (See General Limitation #9)



Membrane Type: SBS

Deck Type 4: Lightweight Concrete, Insulated

Deck Description: Lightweight Insulating Concrete, minimum 200 psi Cellular Lightweight Concrete cast in minimum 1/8" slurry coat over structural concrete deck, followed by minimum 1" EPS board, and minimum 2" thick top coat. *Lightweight Concrete should record a Minimum Characteristic Resistance Force (MCRF) of 36.7 lbf. when tested with 1.7" LWC Base-Ply fasteners in accordance with TAS 105.

System Type A(3): One or more layers of insulation adhered with approved adhesive; membrane fully adhered.

All General and System Limitations apply.

One or more layers of the following insulations:

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
Dens Deck Prime Minimum 1/4" thick	N/A	N/A
ISOGARD HD Minimum 1/2" thick	N/A	N/A

Note: All Insulation shall be adhered. Dens Deck Prime shall be adhered with I.S.O. Stick applied in 3/4" – 1" ribbons spaced 12" o.c. & ISOGARD HD shall be adhered with I.S.O. Twin Pack Insulation Adhesive applied in 1/2" – 3/4" ribbons spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One ply of Firestone SBS Poly Base fully adhered with Multi-Purpose MB Cold Adhesive at a rate of 1.5 - 2 gal/100ft².

Ply Sheet: (Optional) One or more plies of Firestone SBS Glass Torch Base or SBS PolyTorch Base torch adhered.

Membrane: One ply of Firestone SBS FR or SBS Premium FR fully adhered with Multi-Purpose MB Cold Adhesive or LiquiGard Adhesive at a rate of 1.5 - 2 gal/100ft², Or fully adhered in full mopping of approved asphalt within the EVT range and at a rate of 20-30 lbs/100 ft².

Maximum Design Pressure: -72.5 psf (See General Limitation #9)



Membrane Type: APP
Deck Type 4: Lightweight Concrete, Non-insulated.
Deck Description: Celcore Cellular Lightweight Concrete (Min. 300 psi) over steel deck.
This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submittted Table.
System Type E(1): Base sheet mechanically fastened

All General and System Limitations apply.

Deck: Minimum 18-22 ga, Grade 33 steel deck shall be secured 6" o.c. to structural supports spaced a maximum of 5 ft on centers with 5/8" puddle welds and washers. Side laps are secured with two #10 steel self tapping screws evenly spaced between purlins.

Minimum 1" Apache Holey Board Polystyrene Insulation panels shall be placed in a minimum 1/8" slurry-coat of Celcore Cellular concrete and allowed to cure overnight. The following day the rigid insulation shall be covered with a minimum 2" topcoat cast of Celcore Cellular insulating concrete. Cured with Celcore PVA Curing Compound applied at a rate of 300ft²/gal.

Base Sheet: One ply of Firestone MB Base or APP 160-P with a 3" side lap mechanically fastened to the lightweight deck as described below:

Fastening: CR Assembled Base Sheet Fasteners at a 3" side lap 7" o.c. and two rows staggered in the center of the sheet 7" o.c.

Ply Sheet: (Optional) One or more plies of Firestone Ply IV or Ply 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. or one or more plies of Firestone APP 160-P, SBS Glass Torch Base or SBS PolyTorch Base torch adhered.

Membrane: One ply of Firestone APP 180, APP 180-P, APP 180 UltraWhite, APP 180 FR, APP 180 FR UltraWhite, torch applied to the base ply.

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. 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..

Maximum Design Pressure: -45 psf (See General Limitation #7.)



Membrane Type: SBS
Deck Type 4: Lightweight Concrete, Non-insulated.
Deck Description: Celcore Cellular Lightweight Concrete (Min. 300 psi) over steel deck.
This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.
System Type E(2): Base sheet mechanically fastened

All General and System Limitations apply.

Deck: Minimum 18-22 ga, Grade 33 steel deck shall be secured 6" o.c. to structural supports spaced a maximum of 5 ft on centers with 5/8" puddle welds and washers. Side laps are secured with two #10 steel self tapping screws evenly spaced between purlins.

Minimum 1" Apache Holey Board Polystyrene Insulation panels shall be placed in a minimum 1/8" slurry-coat of Celcore Cellular concrete and allowed to cure overnight. The following day the rigid insulation shall be covered with a minimum 2" topcoat cast of Celcore Cellular insulating concrete. Cured with Celcore PVA Curing Compound applied at a rate of 300ft²/gal.

Base Sheet: One ply of Firestone SBS Smooth, SBS Base, MB Base, SBS Premium Base or SBS PolyBase mechanically fastened to the lightweight deck as described below:

Fastening: CR Assembled Base Sheet Fasteners at a 3" side lap 7" o.c. and two rows staggered in the center of the sheet 7" o.c.

Ply Sheet: (Optional) One layer of MB Base, SBS Smooth, SBS Base, SBS Premium Base or SBS PolyBase or one or more plies of Firestone Ply IV or Ply 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. or one or more plies of Firestone SBS Glass Torch Base or SBS PolyTorch Base torch adhered.

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

OR

One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite torch adhered.

OR

(Not with MB Base) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.



OR

(Not with SBS Base, , SBS Smooth or SBS Glass Torch Base) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

Surfacing:

(Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. 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..

Maximum Design Pressure:

-45 psf (See General Limitation #7.)



Membrane Type: APP

Deck Type 4: Lightweight Concrete, Non-Insulated (See LWC Deck System Limitation)

Deck Description: Cellular or Aggregate Lightweight Insulating Concrete

This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.

System Type E(5): Base Sheet Mechanically Fastened

All General and System Limitations apply.

Deck: Minimum 18-22 ga, Grade 33 steel deck shall be secured 6" o.c. to structural supports spaced a maximum of 5 ft on centers with 5/8" puddle welds or structural concrete. Side laps are attached using 3 fasteners per span – knit screws at 15" o.c.

Minimum 325 psi Lightweight Insulation Concrete cast in minimum 1/8" slurry coat, followed by minimum 2" EPS board, and minimum 3" thick top coat. *Lightweight Concrete should record a Minimum Characteristic Resistance Force (MCRF) of 180 lbf. when tested with Two Piece Impact Nail fasteners in accordance with TAS 105.

Base Sheet: One ply of Firestone MB Base mechanically fastened as described below.

Fastening: Firestone Two Piece Impact Nail or Trufast Twin Loc-Nail Assembled Fastener at a fastener spacing of 9" o.c. at the 4" wide side laps and 9" o.c. in two equally spaced rows in the field of the base sheet.

Ply Sheet: (Optional) One or more plies of APP 160-P heat welded.

Or

One or more plies of Firestone MB Base, Ply IV, or Ply VI sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or one or more plies of Firestone SBS Glass Torch Base or SBS PolyTorch Base torch adhered.

Membrane: Firestone APP 180, APP 180-P, APP 180 UltraWhite, APP 180 FR, APP 180 FR UltraWhite, heat welded.

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lbs. and 300 lbs. respectively, set in a flood coat of Type III or IV asphalt at 60 lbs./sq.
2. Karnak No. 97, No. 97 AF or No. 169 at an application rate of 1-1/2 to 3 gal./sq.

Maximum Design Pressure: -60 psf. (See General Limitation #7.)



Membrane Type: SBS
Deck Type 4: Lightweight Concrete, Non-Insulated (See LWC Deck System Limitation)
Deck Description: Cellular or Aggregate Lightweight Insulating Concrete
This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.
System Type E(6): Base Sheet Mechanically Fastened

All General and System Limitations apply.

Deck: Minimum 18-22 ga, Grade 33 steel deck shall be secured 6" o.c. to structural supports spaced a maximum of 5 ft on centers with 5/8" puddle welds or structural concrete. Side laps are attached using 3 fasteners per span – knit screws at 15" o.c.

Minimum 325 psi Lightweight Insulation Concrete cast in minimum 1/8" slurry coat, followed by minimum 2" EPS board, and minimum 3" thick top coat. *Lightweight Concrete should record a Minimum Characteristic Resistance Force (MCRF) of 180 lbf. when tested with Two Piece Impact Nail fasteners in accordance with TAS 105.

Base Sheet: One ply of Firestone MB Base mechanically fastened as described below.

Fastening: Firestone Two Piece Impact Nail or Trufast Twin Loc-Nail Assembled fastener at a fastener spacing of 9" o.c. at the 4" wide side laps and 9" o.c. in two equally spaced rows in the field of the base sheet.

Ply Sheet: (Optional) One or more plies of SBS Base, SBS Smooth, MB Base, Ply IV , , or Ply 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. or one or more plies of Firestone SBS Glass Torch Base or SBS PolyTorch Base torch adhered.

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

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lbs. and 300 lbs. respectively, set in a flood coat of Type III or IV asphalt at 60 lbs./sq.
2. Karnak No. 97, No. 97 AF or No. 169 at an application rate of 1-1/2 to 3 gal./sq.

Maximum Design Pressure: -60 psf. (See General Limitation #7.)



Membrane Type: SBS
Deck Type 4: Lightweight Concrete, Non-Insulated
Deck Description: Lightweight Insulating Concrete, minimum 250 psi Elastizell.
This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.
System Type E(9): Base Sheet Mechanically Fastened

All General and System Limitations Apply.

Deck: Minimum 18-22 ga., Grade 33, vented steel deck shall be secured to structural supports spaced a maximum of 6 ft on centers with 5/8" puddle welds 6" o.c. (one in each flute of the steel deck) and side laps fastened 6" o.c. with #10 self drilling screws.

Minimum 1" Insulfoam EPS board (1.0 pcf) shall be placed in a minimum 1/4" slurry-coat of Elastizell Lightweight Insulating Concrete and allowed to cure overnight. The following day the rigid insulation shall be covered with a minimum 2" topcoat cast of Elastizell Lightweight Insulating Concrete.

Base Sheet: One ply of Firestone SBS Poly Torch Base mechanically fastened to the lightweight deck as described below:

Fastening: Firestone Two Piece Impact Nail or Trufast Twin Loc-Nails Assembled Fastener spaced 6" o.c. along batten bar centered within the 3" side laps followed by applying a 2" heatweld at the seam. Base sheet is reinforced by adding an additional batten bar 18" into the perimeter and fastened as stated above and heat welding a 6" minimum width strip over the exposed row of fasteners.

Membrane: One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite torch adhered to base sheet with the 3" sidelaps heat fused with a torch.

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



Membrane Type: SBS
Deck Type 4: Lightweight Concrete, Non-Insulated
Deck Description: Celcore MF Cellular Concrete
This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.
System Type E(10): Base Sheet Mechanically Fastened

All General and System Limitations Apply.

Deck: Minimum 22 ga., Grade 33 steel deck secured to structural supports spaced a maximum of 6 ft on centers with ½” puddle welds at the bottom of each corrugation and sidelaps using 3 evenly spaced ITW-Buildex screws between the supports.

Minimum 38 - 42 lb/ft³ slurry of Celcore MF Cellular Concrete with Celcore HS Rheology Modifying Admixture is placed onto deck. Minimum 1” Insulfoam EPS holey boards shall be placed in a minimum 1/8” slurry-coat of Celcore MF Cellular Concrete and allowed to cure overnight. The following day the rigid insulation shall be covered with a minimum 2” topcoat cast of Celcore MF Cellular Concrete with Celcore HS Rheology Modifying Admixture. Celcore PVA Curing Compound is spray applied to surface, once allowed to set overnight, at 0.5 gal/100ft³.

Base Sheet: One or more plies of Firestone SBS Poly Torch Base or SBS Glass Torch Base mechanically fastened to the lightweight deck as described below:

Fastening: Firestone Two Piece Impact Nail or Trufast Twin Loc-Nails Assembled Fastener spaced 6” o.c. along batten bar centered within the 3” side laps. Base sheet is reinforced by adding an additional batten bar 18” into the perimeter and fastened as stated above.

Ply Sheet: (Optional) One of more plies of SBS Glass Torch Base or SBS Poly Torch Base torched applied.

Membrane: One ply of Firestone SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite torch adhered.

Maximum Design Pressure: -60 psf (See General Limitation #7.)



Membrane Type: SBS
Deck Type 4: Lightweight Concrete, Non-Insulated
Deck Description: Cellular Lightweight Concrete (Min. 300 psi)
This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.
System Type E(11): Base sheet mechanically fastened.

All General and System Limitations Apply.

Deck: Minimum 22 ga, Grade 33, type B, vented steel deck shall be secured to each flute alone intermediate supports, spaced a maximum of 5 ft on centers, with ½” washers and #12-24 x 1-1/4” HWH self-drilling screws.

Minimum 1” EPS boards shall be placed in a minimum 1/8” slurry-coat of Cellular Lightweight Concrete and allowed to cure overnight. The following day the rigid insulation shall be covered with a minimum 2” topcoat cast of Cellular Lightweight Concrete.
*Lightweight Concrete should record a Minimum Characteristic Resistance Force (MCRF) of 176.3 lbf when tested with 1.7” LWC Base-Ply fasteners in accordance with TAS 105.

Base Sheet: One or more plies of Firestone MB Base, SBS Base, SBS Glass Torch Base, SBS Premium Base, SBS PolyBase, SBS Poly Torch Base mechanically fastened to the lightweight deck as described below:

Fastening: Firestone 1.7 in. Assembled LWC Base Ply Fastener spaced 7” o.c. at the 3” wide side laps and 7” o.c. in two staggered rows in the field of the base sheet.

Ply Sheet: (Optional) One or more plies of SBS Base, Ply VI , Ply VI (6) M, SBS PolyBase, MB Base, SBS Smooth, or SBS Premium Base fully bonded with LiquiGard Adhesive at rate of 1.5-2 gal/sq.

OR

One or more plies of SBS Base, Ply VI , Ply VI (6) M, SBS PolyBase, MB Base, SBS Smooth, or SBS Premium Base fully bonded with Multi-Purpose MB Cold Adhesive at rate of 1.5-2 gal/sq.

OR

One or more plies of SBS Base, Ply VI , Ply VI (6) M, SBS PolyBase, MB Base, SBS Smooth, or SBS Premium Base fully adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 2-30 lbs./sq.

OR

One of more plies of SBS Glass Torch Base or SBS Poly Torch Base torched applied.



Membrane:

One ply of Firestone SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS Preimum, SBS Premium FR or SBS Premium FR UltraWhite is fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.

OR

Firestone SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS Preimum, SBS Premium FR or SBS Premium FR UltraWhite is fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

OR

Firestone SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS Preimum, SBS Premium FR or SBS Premium FR UltraWhite adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 25-30 lbs./sq.

OR

SBS Torch, SBS Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, BS Premium FR Torch or SBS Premium FR Torch UltraWhite torch adhered.

*Cap sheets are to be applied to approved base/ply sheets.

Maximum Design Pressure:

-60 psf (See General Limitation #7.)



Membrane Type: APP
Deck Type 4: Lightweight Concrete, Non-Insulated
Deck Description: Concrecel Cellular Lightweight Concrete (Min. 300 psi)
This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.
System Type E(12): Base Sheet Mechanically Fastened

All General and System Limitations apply.

Deck: Minimum 18-22 ga, Grade 33 steel deck shall be secured 6" o.c. to structural supports spaced a maximum of 5 ft on centers with 5/8" puddle welds and washers. Side laps fastened 12" o.c. with #10 self drilling screws. A Bonding Agent is applied to deck at a rate of 600ft²/gal.
Minimum 1" Apache Holey Board Polystyrene Insulation panels shall be placed in a minimum 1/4" slurry-coat of Concrecel Cellular concrete and allowed to cure overnight. The following day the rigid insulation shall be covered with a minimum 2 1/4" topcoat cast of Concrecel Cellular insulating concrete. Cured with Concrecel Curing Compound applied at a rate of 600ft²/gal.

Base Sheet: One ply of Firestone MB Base or APP 160-P with a 3" side lap mechanically fastened to the lightweight deck as described below:

Fastening: CR Assembled Base Sheet Fasteners at a 3" side lap 7" o.c. and two rows staggered in the center of the sheet 7" o.c.

Ply Sheet: (Optional) One or more plies of Firestone Ply IV, or Ply 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. or one or more plies of Firestone APP 160-P, SBS Glass Torch Base or SBS PolyTorch Base torch adhered.

Membrane: One ply of Firestone APP 180, APP 180-P, APP 180 UltraWhite, APP 180 FR, APP 180 FR UltraWhite, torch applied to the base ply.

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lbs. and 300 lbs. respectively, set in a flood coat of Type III or IV asphalt at 60 lbs./sq.
2. Karnak No. 97, No. 97 AF or No. 169 at an application rate of 1-1/2 to 3 gal./sq.

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



Membrane Type: SBS
Deck Type 4: Lightweight Concrete, Non-Insulated
Deck Description: Concrecel Cellular Lightweight Concrete (Min. 300 psi)
This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.
System Type E(13): Base Sheet Mechanically Fastened

All General and System Limitations apply.

Deck: Minimum 18-22 ga, Grade 33 steel deck shall be secured 6" o.c. to structural supports spaced a maximum of 5 ft on centers with 5/8" puddle welds and washers. Side laps fastened 12" o.c. with #10 self drilling screws.

A Bonding Agent is applied to deck at a rate of 600 ft²/gal. Minimum 1" Apache Holey Board Polystyrene Insulation panels shall be placed in a minimum 1/4" slurry-coat of Concrecel Cellular concrete and allowed to cure overnight. The following day the rigid insulation shall be covered with a minimum 2 1/4" topcoat cast of Concrecel Cellular insulating concrete. Cured with Concrecel Curing Compound applied at a rate of 600ft²/gal.

Base Sheet: One ply of Firestone SBS Smooth, SBS Base, , MB Base, SBS Premium Base or SBS PolyBase mechanically fastened to the lightweight deck as described below:

Fastening: CR Assembled Base Sheet Fasteners at a 3" side lap 7" o.c. and two rows staggered in the center of the sheet 7" o.c.

Ply Sheet: (Optional) One layer of MB Base, SBS Smooth, SBS Base, SBS Premium Base or SBS PolyBase or one or more plies of Firestone Ply IV, or Ply 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. or one or more plies of SBS Glass Torch Base or SBS PolyTorch Base torch adhered.

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

OR

(Not with MB Base) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite is fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2.0 gal/square.

OR



One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite torch adhered.

OR

(Not with SBS Base, , SBS Smooth) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

Surfacing:

(Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lbs. and 300 lbs. respectively, set in a flood coat of Type III or IV asphalt at 60 lbs./sq.
2. Karnak No. 97, No. 97 AF or No. 169 at an application rate of 1-1/2 to 3 gal./sq.

Maximum Design Pressure:

-82.5 psf. (See General Limitation #7.)



Membrane Type: SBS
Deck Type 4: Lightweight Concrete, Non-insulated
Deck Description: Mearlcrete (Min. 463 psi after 28 day cure)
This Tested Assembly has been analyzed for allowable deck stress. See Evidence Submitted Table.
System Type E(16): Base sheet mechanically fastened.

All General and System Limitations Apply.

Deck: Minimum 22 ga, Grade 33, type B, vented steel deck shall be secured to each flute alone intermediate supports, spaced a maximum of 6ft on centers, with 5/8" puddle welds spaced 6" o.c. Panel side laps are stiched with #1/4 – 14 x7/8" DP1 HWH SD screws with 1/4" washers.

Steel Deck shall be washed with a weak acid solution prior to LWC application. Minimum 1" EPS boards shall be placed in a minimum 1/8" slurry-coat and shall be covered with a minimum 2" topcoat cast of Mearlcrete lightweight concrete.

Base Sheet: One or more plies of Firestone SBS Poly Torch Base mechanically fastened to the lightweight deck as described below:

Fastening: Trufast FM-290V Base Sheet Fastener fasteners spaced 7" o.c. at the 4" wide side laps and 7" o.c. in two staggered rows in the field of the base sheet.

Ply Sheet: (Optional) One or more plies of Firestone SBS Glass Torch Base or SBS PolyTorch Base torch adhered.

Membrane: One or more plies of SBS FR Torch, SBS FR Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite torch adhered.

Maximum Design Pressure: -45 psf (See General Limitation #7.)



LIGHTWEIGHT CONCRETE DECK SYSTEM LIMITATIONS:

1. If mechanical attachment to the structural deck through the lightweight insulating concrete is proposed, a field withdrawal resistance testing shall be performed to determine equivalent or enhanced fastener patterns and density. All testing and fastening design shall be in compliance with Testing Application Standard TAS 105 and Roofing Application Standard RAS 117, calculations shall be signed and sealed by a Florida Registered Engineer, Architect, or Registered Roof Consultant.
2. For steel deck application where specific deck construction is not referenced: The deck shall be a minimum 22 gage attached with 5/8” puddle welds with weld washers at every flute with maximum deck spans of 5 ft. o.c.
3. For systems where specific lightweight insulating concrete is not referenced, the minimum design mix shall be a minimum of 300 psi.



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 61G20-3 of the Florida Administrative Code.

END OF THIS ACCEPTANCE

