



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
T (786) 315-2590 F (786) 315-2599
www.miamidade.gov/economy

Mule-Hide Products Co., Inc.
1195 Prince Hall Drive
Beloit, WI 53511

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: Mule-Hide Self-Adhered Roof System over Steel 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 #19-0508.07 and consists of pages 1 through 14.
The submitted documentation was reviewed by Alex Tigera.



NOA No.: 22-0617.05
Expiration Date: 10/11/27
Approval Date: 10/06/22
Page 1 of 14

ROOFING ASSEMBLY APPROVAL

Category: Roofing
Sub-Category: Modified Bitumen
Materials SBS/APP
Deck Type: Steel
Maximum Design Pressure -90 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>
Nail Base	65' 8" x 3' 3-3/8"	ASTM D 6163, Type I	SBS modified asphalt coated fiberglass reinforced base sheet.
Nail Base P	65' 8" x 3' 3-3/8"	ASTM D 6164, Type I	SBS modified asphalt coated polyester reinforced base sheet.
SA Base Sheet FR	66' 8" x 3' 3-3/8"	ASTM D 6163, Type I	Self-adhered, fire-rated, fiberglass reinforced, SBS modified bitumen membrane with a self-adhering back face and a smooth top surface.
SA Base Sheet	66' 8" x 3' 3-3/8"	ASTM D 6163, Type I	Self-adhered, fiberglass reinforced, SBS modified bitumen membrane with a self-adhering back face and a smooth top surface.
SA-SBS Cap Sheet FR	32' 10" x 3' 3-3/8"	ASTM D 6164, Type I	Self-adhered, fire-rated, polyester reinforced, SBS modified bitumen membrane with a self-adhering back face and a granule top surface.
SA-SBS Cap Sheet	32' 10" x 3' 3-3/8"	ASTM D 6164, Type I	Self-adhered, fiberglass reinforced, SBS modified bitumen membrane with a self-adhering back face and a granule top surface.
SA-APP Cap Sheet	32' 10" x 3' 3-3/8"	ASTM D 6222, Type I	Self-adhered, polyester reinforced, APP modified bitumen membrane with a self-adhering back face and a granule top surface.
SA-APP Cap Sheet FR	32' 10" x 3' 3-3/8"	ASTM D 6222, Type I	Self-adhered, fire-rated, polyester reinforced, APP modified bitumen membrane with a self-adhering back face and a granule top surface.

APPROVED INSULATIONS:

TABLE 2

<u>Product Name</u>	<u>Product Description</u>	<u>Manufacturer (With Current NOA)</u>
ACFoam-II	Polyisocyanurate foam insulation	Atlas Roofing Corp.
ACFoam-III	Polyisocyanurate foam insulation	Atlas Roofing Corp.
Structodek High Density Fiberboard Roof Insulation	Wood fiber insulation board	Blue Ridge Fiberboard, Inc.
DensDeck	Gypsum insulation board	Georgia Pacific Gypsum, LLC.
DensDeck Prime	Gypsum insulation board	Georgia Pacific Gypsum, LLC.
H-Shield	Polyisocyanurate foam insulation	Hunter Panels, LLC.
ENRGY 3	Polyisocyanurate foam insulation	Johns Manville Corp.
Fesco Board	Expanded mineral fiber	Johns Manville Corp.
SECUROCK Gypsum-fiber Roof Board	Fiber reinforced coverboard	United States Gypsum Corporation
EnergyGuard Perlite Roof Insulation	Expanded mineral fiber	GAF
DEXcell Glass Mat Roof Board	Gypsum board	National Gypsum Co.
DEXcell FA Glass Mat Roof Board	Gypsum board	National Gypsum Co.
DEXcell Cement Roof Board	Cementitious insulation board	National Gypsum Co.
ISO 95 + GL	Polyisocyanurate foam insulation	Firestone Building Products Company, LLC.
Multi-Max FA-3	Polyisocyanurate foam insulation	Rmax Operating, 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.	Dekfast DF-#14-PH3	Insulation fastener for wood, steel and concrete decks		SFS Group USA, Inc.
2.	Dekfast DF-#15-PH3	Insulation fastener for wood, steel and concrete decks		SFS Group USA, Inc.
3.	Dekfast PLT-H-2-7/8	Galvalume hex stress plate.	2 7/8" x 3-1/4"	SFS Group USA, Inc.
4.	isofast PLT-S-2-3/4x2-3/4	Galvalume AZ50, 18-ga. oval barbed steel plate	2 3/4" x 2 3/4"	SFS Group USA, Inc.
5.	Mule-Hide HDP Fastener	Insulation fastener for wood, steel and concrete decks	Various	Mule-Hide Products Co., Inc.
6.	Mule-Hide EHD Fastener	Carbon steel fastener for use in concrete, steel and wood decks	Various	Mule-Hide Products Co., Inc.
7.	Mule-Hide 3" Metal Insulation Plate	Round Galvalume AZ50 steel plate	3 round	Mule-Hide Products Co., Inc.
8.	#12 Standard Roofgrip	Insulation fastener for wood, steel and concrete decks.	Various	OMG, Inc.
9.	#14 Roofgrip	Insulation fastener for wood, steel and concrete decks.	Various	OMG, Inc.
10.	#15 Roofgrip	Insulation fastener for wood, steel and concrete decks.	Various	OMG, Inc.
11.	AccuTrac Flat Bottom	Galvalume stress plate.	3" square	OMG, Inc.
12.	PG 100	A penetrating solution of solvent and a blend of selected asphalts used to promote adhesion.	1, 3, 5, 50, 55 gal, tube or 17 oz. spray can	Polyglass USA, Inc.
13.	PG 350	A fibered rubberized adhesive designed for use with modified bitumen membranes.	1, 3, 5, 50, 55 gal. or tube	Polyglass USA, Inc.
14.	PG 400	A thick, fibered, rubberized flashing cement for use in dry or damp conditions.	1, 3, 5, 50, 55 gal. or tube	Polyglass USA, Inc.
15.	PG 425	A thick, fibered, rubberized flashing cement for use in dry or damp conditions.	1, 3, 5, 50, 55 gal. or tube	Polyglass USA, Inc.
16.	PG 450	A thick, fibered, rubberized flashing cement.	1, 3, 5, 50, 55 gal. or tube	Polyglass USA, Inc.

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>
17.	PG 500	A thick, fibered, rubberized flashing cement for use with modified bitumen membranes.	1, 3, 5, 50, 55 gal. or tube	Polyglass USA, Inc.
18.	POLYPLUS 35	A fibered rubberized adhesive designed for use with modified bitumen membranes.	1, 3, 5, 50, 55 gal. or tube	Polyglass USA, Inc.
19.	POLYPLUS 45	A thick, fibered, rubberized flashing cement.	1, 3, 5, 50, 55 gal. or tube	Polyglass USA, Inc.
20.	POLYPLUS 50	A thick, fibered, rubberized flashing cement for use with modified bitumen membranes.	1, 3, 5, 50, 55 gal. or tube	Polyglass USA, Inc.
21.	XtraFlex 10	A penetrating solution of solvent and a blend of selected asphalts used to promote adhesion.	1, 3, 5, 50, 55 gal, tube or 17 oz. spray can	Polyglass USA, Inc.
22.	XtraFlex 35	A fibered rubberized adhesive designed for use with modified bitumen membranes.	1, 3, 5, 50, 55 gal. or tube	Polyglass USA, Inc.
23.	XtraFlex 50 Premium Modified Wet/Dry Cement	A thick, fibered, rubberized flashing cement for use with modified bitumen membranes.	1, 3, 5, 50, 55 gal. or tube	Polyglass USA, Inc.
24.	WB-3000	A low-VOC, water-based acrylic primer to enhance adhesion of self-adhered membranes.	5 gallon pail	Polyglass USA, Inc.

APPROVED SURFACING:**TABLE 4****Chosen components must be applied according to manufacturer's application instructions.**

<u>Number</u>	<u>Product Name</u>	<u>Product Description</u>	<u>Application Rate</u>	<u>Specification</u>	<u>Manufacturer</u>
1.	Gravel	To be installed in a flood coat of approved asphalt at 60 lbs/sq	400 lbs/sq	N/A	Generic
2.	Slag	To be installed in a flood coat of approved asphalt at 60 lbs/sq	300 lbs/sq	N/A	Generic
3.	KM Acryl 15	A premium white or tinted elastomeric acrylic based roof coating (water-based). A polyester fabric may be used for reinforcement with this coating.	1-1½ gal/sq	ASTM D6083	Polyglass USA, Inc.
4.	KM Acryl 15 QS	A premium white or tinted quick setting, elastomeric acrylic based roof coating (water-based). A polyester fabric may be used for reinforcement with this coating.	1-1½ gal/sq	ASTM D6083	Polyglass USA, Inc.
5.	KM Acryl 25	A premium white or tinted elastomeric acrylic based roof coating (water-based). A polyester fabric may be used for reinforcement with this coating.	1-1½ gal/sq	ASTM D6083	Polyglass USA, Inc.
6.	KM Acryl 25 QS	A premium white or tinted quick setting, elastomeric acrylic based roof coating (water-based). A polyester fabric may be used for reinforcement with this coating.	1-1½ gal/sq	ASTM D6083	Polyglass USA, Inc.
7.	KM-PS #220	A single component, solvent, white or tinted, silicone coating.	1.25 gal/sq	ASTM D6694	Polyglass USA, Inc.
8.	KM-PS #250	A premium grade high solids, white or tinted, single component, moisture cure, fluid applied silicone coating	1.25 gal/sq	ASTM D6694	Polyglass USA, Inc.
9.	PG 300	An asphalt cutback fibered roof coating. May be applied by brush or spray equipment to rejuvenate aged BUR	1½-2 gal/sq	ASTM D4479	Polyglass USA, Inc.

APPROVED SURFACING:**TABLE 4****Chosen components must be applied according to manufacturer's application instructions.**

<u>Number</u>	<u>Product Name</u>	<u>Product Description</u>	<u>Application Rate</u>	<u>Specification</u>	<u>Manufacturer</u>
10.	PG 600	Non-fibered aluminum roof coating.	½-1 gal/sq	ASTM D2824 Type I	Polyglass USA, Inc.
11.	PG 650	Fibered aluminum roof coating.	1½-2 gal/sq	ASTM D2824 Type III	Polyglass USA, Inc.
12.	PG 700	A premium white or tinted elastomeric acrylic based roof coating (water-based). A polyester fabric may be used for reinforcement with this coating.	1-1½ gal/sq	ASTM D6083	Polyglass USA, Inc.
13.	PG 700 QS	A premium white or tinted quick setting, elastomeric acrylic based roof coating (water-based). A polyester fabric may be used for reinforcement with this coating.	1-1½ gal/sq	ASTM D6083	Polyglass USA, Inc.
14.	PG 800	An asphalt based, non-fibered clay emulsion	3 gal/sq in two coats	ASTM D1227	Polyglass USA, Inc.
15.	PolyBrite 70	A premium white or tinted elastomeric acrylic based roof coating (water-based). A polyester fabric may be used for reinforcement with this coating.	1-1½ gal/sq	ASTM D6083	Polyglass USA, Inc.
16.	PolyBrite 70 QS	A premium white or tinted quick setting, elastomeric acrylic based roof coating (water-based). A polyester fabric may be used for reinforcement with this coating.	1-1½ gal/sq	ASTM D6083	Polyglass USA, Inc.
17.	PolyBrite 90	A premium grade high solids, white or tinted, single component, moisture cure, fluid applied silicone coating	1.25 gal/sq	ASTM D6694	Polyglass USA, Inc.
18.	PolyBrite 95	A single component, white or tinted, solvent, moisture cure silicone coating.	1.25 gal/sq	ASTM D6694	Polyglass USA, Inc.
19.	POLYPLUS 60	Non-fibered aluminum roof coating.	½-1 gal/sq	ASTM D2824 Type I	Polyglass USA, Inc.

APPROVED SURFACING:**TABLE 4****Chosen components must be applied according to manufacturer's application instructions.**

<u>Number</u>	<u>Product Name</u>	<u>Product Description</u>	<u>Application Rate</u>	<u>Specification</u>	<u>Manufacturer</u>
20.	POLYPLUS 65	Fibered aluminum roof coating.	1½-2 gal/sq	ASTM D2824 Type III	Polyglass USA, Inc.
21.	XtraFlex 60 Aluminum Roof Coating	Non-fibered aluminum roof coating.	½-1 gal/sq	ASTM D2824 Type I	Polyglass USA, Inc.
22.	XtraFlex 65 Aluminum Roof Coating Fibered	Fibered aluminum roof coating.	1½-2 gal/sq	ASTM D2824 Type III	Polyglass USA, Inc.
23.	XtraFlex 70 Premium Acrylic FR Roof Coating	A premium white or tinted elastomeric acrylic based roof coating (water-based). A polyester fabric may be used for reinforcement with this coating.	1-1½ gal/sq	ASTM D6083	Polyglass USA, Inc.
24.	XtraFlex 80 Emulsion Roof Coating	An asphalt based, non-fibered clay emulsion	3 gal/sq in two coats	ASTM D1227	Polyglass USA, Inc.
25.	XtraFlex 30 Bituminous Roof Coating Fibered	An asphalt cutback fibered roof coating. May be applied by brush or spray equipment to rejuvenate aged BUR	1½-2 gal/sq	ASTM D4479	Polyglass USA, Inc.
26.	XtraFlex SRC 8000	A single component, white or tinted, solvent, moisture cure silicone coating.	1.25 gal/sq	ASTM D6694	Polyglass USA, Inc.
27.	XtraFlex SRC 9600	A premium grade high solids, white or tinted, single component, moisture cure, fluid applied silicone coating	1.25 gal/sq	ASTM D6694	Polyglass USA, Inc.

EVIDENCE SUBMITTED:

<u>Test Agency</u>	<u>Test Name/Report</u>	<u>Report No.</u>	<u>Date</u>
Factory Mutual Research Corporation	4470	2W7A7.AM	08.04.94
	4450	2D5A9.AM	06.22.99
	4470	3000857	01.12.00
	4470	3004091	01.12.00
	4470	3001334	02.15.00
	4470	3014692	08.05.03
	4450	3014751	08.27.03
	4450	3019317	06.30.04
	4470	3012321	07.29.07
	4470	RR202591	10.22.15
Trinity ERD	TAS 117(B)-ASTM D6862	C8500SC.11.07	11.30.07
	TAS 114(D) – ASTM D1876	P10070.10.08	10.09.08
	TAS 114 (H)	P13760.09.09	09.10.09
	FM 4470 & TAS 114	P33970.03.11	03.15.11
	ASTM D6163 / ASTM D 4601	P33960.03.11	03.15.11
	ASTM D6163	P37590.03.13-2-R1	02.05.13
	ASTM D6164	P37590.03.13-3A	03.06.13
	TAS 114	11757.04.01-1-R1	04.30.13
	ASTM D6164	P37590.07.13-1	07.02.13
	TAS 114 & FM 4474	P41630.08.13	08.06.13
	ASTM D4601 / TAS 117	P45940.09.13	09.04.13
	ASTM D6222	P37590.09.13	09.12.13
	ASTM D4601 / TAS 117	P45970.05.14	05.12.14
	ASTM D6164	P35660.10.14	10.03.14
	ASTM D6162	SC5170.05.15	05/08/15
	ASTM D6162	SC5170.12.15-1	12/29/15
	FM 4470 & ASTM D1876	PLYG-SC9455.03.17	03.08.17
	TAS 114	11757.12.00-1-R2	03.17.17
	TAS 114 & FM 4474	CTL13945.05.17-3	05.30.17
PRI Construction Materials Technologies	ASTM D6222	PUSA-061-02-02	01.28.08
	ASTM D6163	PUSA-064-02-02	02.27.08
	ASTM D6222	PUSA-062-02-02	12.04.08
	ASTM D6694	PUSA-134-02-01	05.16.14
	ASTM D6694	PUSA-135-02-01	05.16.14
	Physical Properties	PUSA-213-02-01	05/02/17

DECK STRESS ANALYSIS CALCULATIONS/REPORTS

<u>Engineer/Agency</u>	<u>Identifier</u>	<u>Assemblies</u>	<u>Date</u>
Robert Nieminen, P.E.	Signed/Sealed Calculations	B, C(1), C(2), D	10/11/17

APPROVED ASSEMBLIES:

Membrane Type:	SBS/APP
Deck Type 2I:	Steel, Insulated
Deck Description:	18-22 ga. Type B, Grade 33 steel deck fastened 6 in. o.c. with Tek/5 screws to steel supports spaced 5 ft o.c. Deck side laps are attached with Tek/1 screws spaced 20" o.c. This Tested Assembly has been analyzed for allowable deck stress. See Deck Stress Analysis Table.
System Type B:	Base layer of insulation mechanically fastened, top layer adhered with approved asphalt. Membrane is subsequently adhered to insulation.

All General and System limitations apply.

One or more layers of any of the following insulations:

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ENRGY-3, ACFoam-II, ACFoam-III, H-Shield, ISO 95+ GL, Multi-Max FA-3 Minimum 1.5" thick	1, 2, with 3; 5, 6 with 7	1:1.33 ft ²

Note: Base layer shall be mechanically attached with fasteners and density described. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
Structodek High Density Fiberboard Roof Insulation Minimum ½" thick	N/A	N/A
Fesco Board Minimum ¾" thick	N/A	N/A

Note: Apply top layer of insulation in a full mopping of any approved mopping asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as Base Layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels may be used as a top layer placed with the polyisocyanurate side facing down.

Base Sheet:	One ply of Nail Base, adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Primer:	PG 100 or XtraFlex 10.
Ply Sheet:	One or more plies of SA Base Sheet or SA Base Sheet FR, self-adhered.
Membrane:	One ply of SA SBS Cap Sheet, SA SBS Cap Sheet FR, SA-APP Cap Sheet, SA-APP Cap Sheet FR, self-adhered.
Surfacing: (Optional)	Install one of the approved surfacing products listed in Table 4 to obtain desired coating or required fire classification.
Maximum Design Pressure:	-90 psf; (See General Limitation #7.)

Membrane Type: SBS/APP

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. Type B, Yield Strength 49.3 ksi. steel deck attached 6" o.c. with 5/8" puddle welds to steel supports spaced max. 6 ft. o.c. Deck side laps are attached with Tek/1 screws spaced 24" o.c.
This Tested Assembly has been analyzed for allowable deck stress. See Deck Stress Analysis Table.

System Type C(1): Insulation layers are mechanically attached through loose laid optional thermal barrier to roof deck. Membrane is subsequently adhered to insulation.

All General and System limitations apply.

Thermal Barrier: (Optional) Min. 1/4" thick DensDeck, DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board, DEXcell Glass FA Mat Roof Board, DEXcell Glass Mat Roof Board or min. 7/16" thick DEXcell Cement Roof Board or min. 3/4" thick EnergyGuard Perlite Roof Insulation or FescoBoard, loose laid.

One or more layers of any of the following insulations:

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
Any approved polyisocyanurate listed in Table 2 Minimum 1.0" thick	N/A	N/A
<u>Top Insulation Layer (Coverboard)</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
SECUROCK Gypsum-Fiber Roof Board Minimum 1/4" thick	1 or 2 with 3; 5, 6 with 7; 9, 10 with 11	1:1.78 ft ²
DensDeck Prime Minimum 1/4" thick	5, 6 with 7; 9, 10 with 11	1:1.78 ft ²

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.

Primer: (Optional) Apply WB-3000 at 1 gal. per 300 sq. ft.

Base Sheet: One ply of SA Base Sheet or SA Base Sheet FR, self-adhered.

Ply Sheet: (Optional) One or more plies of SA Base Sheet or SA Base Sheet FR, self-adhered.

Membrane: One ply of SA SBS Cap Sheet, SA SBS Cap Sheet FR, SA-APP Cap Sheet, SA-APP Cap Sheet FR, self-adhered.

Surfacing: (Optional) Install one of the approved surfacing products listed in Table 4 to obtain desired coating or required fire classification.

Maximum Design Pressure: -45.0 psf; (See General Limitation #7.)



Membrane Type: SBS/APP

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. Type B, Grade 33 steel deck fastened 6 in. o.c. with Traxx 5 screws to steel supports spaced 5 ft o.c. Deck side laps are attached with Traxx 1 screws spaced 20" o.c.
This Tested Assembly has been analyzed for allowable deck stress. See Deck Stress Analysis Table.

System Type C(2): Base layer of insulation mechanically fastened, top layer adhered with approved asphalt. Membrane is subsequently adhered to insulation.

All General and System limitations apply.

One or more layers of any of the following insulations:

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ENRGY-3, ACFoam-II, ACFoam-III, H-Shield, ISO 95+ GL, Multi-Max FA-3 Minimum 1.5" thick	1, 5, 6, 8, 9, 10 with 4	1:1.33 ft ²

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.

**Primer:
(Optional)** Apply WB-3000 at 1 gal. per 300 sq. ft.

Base Sheet: One ply of SA Base Sheet or SA Base Sheet FR, self-adhered.

**Ply Sheet:
(Optional)** One or more plies of SA Base Sheet or SA Base Sheet FR, self-adhered.

Membrane: One ply of SA SBS Cap Sheet, SA SBS Cap Sheet FR, SA-APP Cap Sheet, SA-APP Cap Sheet FR, self-adhered.

**Surfacing:
(Optional)** Install one of the approved surfacing products listed in Table 4 to obtain desired coating or required fire classification.

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



Membrane Type: SBS/APP

Deck Type 2I: Steel, Insulated

Deck Description: 18-22 ga. Type B, Grade 33 steel deck fastened 6 in. o.c. with Tek/5 screws to steel supports spaced 5 ft o.c. Deck side laps are attached with Tek/1 screws spaced 20" o.c.
This Tested Assembly has been analyzed for allowable deck stress. See Deck Stress Analysis Table.

System Type D: All insulation is loosed laid with preliminary attachment to deck. Base sheet is subsequently mechanically fastened through insulation to the roof deck.

All General and System limitations apply.

One or more layers of any of the following insulations:

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
Any approved Polyisocyanurate listed in Table 2 Minimum 1" thick	N/A	N/A
<u>Top Insulation Layer (Optional)</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
Fesco Board Minimum ¾" thick	N/A	N/A
Approved High Density Wood Fiberboard listed in Table 2 Minimum ½" thick	N/A	N/A
DensDeck, DensDeck Prime, SECUROCK Gypsum-Fiber Roof Board Minimum ¼" thick	N/A	N/A

Note: All insulation shall have preliminary attachment, prior to the installation of the roofing membrane 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.

Base Sheet: One ply of Nail Base or Nail Base P, fastened to the deck as described below.

Fastening: Attach base sheet using Dekfast DF-#14-PH3 or Dekfast DF-#15-PH3 fasteners with Dekfast PLT-H-2-7/8 plates, or Mule-Hide HDP Fastener or Mule-Hide EHD fasteners with Mule-Hide 3" Metal Insulation Plates, 12" o.c. in a 4" lap and 12" o.c. in two equally spaced staggered rows in the center of the sheet.

Ply Sheet: One or more plies of SA Base Sheet or SA Base Sheet FR, self-adhered.

Membrane: One ply of SA SBS Cap Sheet, SA SBS Cap Sheet FR, SA-APP Cap Sheet, SA-APP Cap Sheet FR, self-adhered.

**Surfacing:
(Optional)** Install one of the approved surfacing products listed in Table 4 to obtain desired coating or required fire classification.

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



STEEL 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.

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 side lap and one down the center of the sheet allowing a continuous area of ventilation. Encircling of the strips is not acceptable. A 6" break shall be placed every 12' in each ribbon to allow cross ventilation. Asphalt application of either system shall be at a minimum rate of 12 lbs./sq.

Note: Spot attached systems shall be limited to a maximum design pressure of -45 psf.

5. Fastener spacing for insulation attachment is based on a Minimum Characteristic Force (F') value of 275 lbf., as tested in compliance with Testing Application Standard TAS 105. If the fastener value, as field-tested, are below 275 lbf. insulation attachment shall not be acceptable.
6. Fastener spacing for mechanical attachment of anchor/base sheet or membrane attachment is based on a minimum fastener resistance value in conjunction with the maximum design value listed within a specific system. Should the fastener resistance be less than that required, as determined by the Building Official, a revised fastener spacing, prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant may be submitted. Said revised fastener spacing shall utilize the withdrawal resistance value taken from Testing Application Standards TAS 105 and calculations in compliance with Roofing Application Standard RAS 117.
7. Perimeter and corner areas shall comply with the enhanced uplift pressure requirements of these areas. Fastener densities shall be increased for both insulation and base sheet as calculated in compliance with Roofing Application Standard RAS 117. Calculations prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant **(When this limitation is specifically referred within this NOA, General Limitation #9 will not be applicable.)**
8. All attachment and sizing of perimeter nailers, metal profile, and/or flashing termination designs shall conform to 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