MIAMI-DADE

BUILDING CODE COMPLIANCE OFFICE (BCCO)
PRODUCT CONTROL DIVISION

MIAMI-DADE COUNTY, FLORIDA
METRO-DADE FLAGLER BUILDING
140 WEST FLAGLER STREET, SUITE 1603
MIAMI, FLORIDA 33130-1563
(305) 375-2901 FAX (305) 375-2908

NOTICE OF ACCEPTANCE (NOA)

Mule-Hide Products Co., Inc.
1195 Prince Hall Dr.
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 by the BCCO and accepted by the Building Code and Product Review Committee 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 BCCO (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. BCCO reserves the right to revoke this acceptance, if it is determined by BCCO that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the Florida Building Code, including the High Velocity Hurricane Zone.
DESCRIPTION: Mule-Hide Self-Adhering Bitumen Roof System Over Wood Decks

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, city, state and following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA consists of pages 1 through 43.
The submitted documentation was reviewed by Frank Zuloaga, RRC

PRODUCT CONTROL ACCEPTED

ROOFING ASSEMBLY APPROVAL

Category:	Roofing
Sub-Category:	SBS/APP Modified Bitumen
Deck Type:	Wood
Maximum Design Pressure	-82.5 psf
Fire Classification:	See General Limitation #1

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

Product	Dimensions	Test Specification	Product Description
SA-SBS Cap Sheet (FR)	32' 6" x 3' 3-3/8"	ASTM D 6164	Self-adhered, polyester reinforced, SBS modified bitumen membrane with a self-adhering back face and a granule top surface.
SA-SBS Cap Sheet	32' 6" x 3' 3-3/8"	ASTM D 6164	Self-adhered, polyester reinforced, SBS modified bitumen membrane with a self-adhering back face and a granule top surface.
SA-APP Cap Sheet (G) (FR)	32' 6" x 3' 3-3/8"	ASTM D 6222	Self-adhered, polyester reinforced, APP modified bitumen membrane with a self-adhering back face and a granule top surface.
SA-APP Cap Sheet (G)	32' 6" x 3' 3-3/8"	ASTM D 6222	Self-adhered, polyester reinforced, APP modified bitumen membrane with a self-adhering back face and a granule top surface.
SA-APP Cap Sheet (S)	32' 6" x 3' 3-3/8"	ASTM D 6222	Self-adhered, polyester reinforced, APP modified bitumen membrane with a self-adhering back face and a smooth or sanded top surface.
SA Base Sheet (FR)	32' 6" x 3' 3-3/8"	ASTM D 6163	Self-adhered, fiberglass reinforced, SBS modified bitumen membrane with a self-adhering back face and a smooth top surface.
SA Base Sheet	32' 6" x 3' 3-3/8"	ASTM D 6163	Self-adhered, fiberglass reinforced, SBS modified bitumen membrane with a self-adhering back face and a smooth top surface.
Elastoflex SA-V FR	32' 6" x 3' 3-3/8"	ASTM D 6163	Self-adhered, fiberglass reinforced, SBS modified bitumen membrane with a self-adhering back face and a granule top surface.
Nail Base	65' 2" x 3' 3-3/8"	ASTM D 6163	SBS modified asphalt coated fiberglass reinforced base sheet.
Elastoflex SA-V G	32' 6" x 3' 3-3/8"	ASTM D 6163	Self-adhered, fiberglass reinforced, SBS modified bitumen membrane with a self-adhering back face and a granule top surface.
Elastoflex SA-V	32' 6" x 3' 3-3/8"	ASTM D 6163	Self-adhered, fiberglass reinforced, SBS modified bitumen membrane with a self-adhering back face and a smooth top surface.

APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
Poly ISO 2	Polyisocyanurate foam insulation	Mule-Hide.
Poly ISO 2 Composite	Polyisocyanurate/perlite composite insulation.	Mule-Hide.
ACFoam II	Polyisocyanurate foam insulation	Atlas Energy Products
ConPearl	Expanded perlite mineral fiber	Conglas
Esgard Fiberboard	Wood fiber board	EMCO Ltd.
GAF Permalite	Expanded mineral fiber	GAF Mat. Corp.
GAF Fiberboard	Wood fiber board	GAF Mat. Corp.
GAF High Density Wood Fiberboard	High Density Wood Fiberboard	GAF Mat. Corp.
Wood Fiberboard	Wood fiber insulation board	Generic
High Density Wood Fiberboard	Wood fiber insulation board	Generic
Perlite Insulation	Perlite insulation board	Generic
Dens-Deck	Gypsum insulation board	Georgia-Pacific
Armor Board Regular Fiberboard	Wood fiber board	Honeywell Int'l. Inc.
Armor Board High Density Wood Fiberboard	Wood fiber insulation board	Honeywell Int'l. Inc.
Hubert Fiberboard	Wood fiber board	Huebert Fiberboard, Inc.
H-Sheld	Polyisocyanurate foam insulation	Hunter Panels, LLC
H-Sheld P	Polyisocyanurate/perlite composite insulation	Hunter Panels, LLC
Fesco Board	Expanded mineral fiber	Johns Manville Corp.
Kop-R Wood Fiber	Polyisocyanurate foam insulation	Koppers Industries, Inc.
Structodek, Structodek FS	Wood fiber board	Masonitec
Standard or Wide Flute Fiberglas Roof Insulation	Glass fiber insulation board	Owens-Corning
Multi-Max FA	Polyisocyanurate foam insulation	Rmax, Inc.
Thermaroof Composite	Polyisocyanurate/perlite composite insulation.	Rmax, Inc.
Fiber Base HD1, Fiber Base HD6	Wood fiber board	Temple Inland
Fiberbond	Type-x Gypsum	United States Gypsum Co.

APPROVED FASTENERS:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
1.	Dekfast Fasteners #15	Insulation fastener for wood, steel and concrete decks		Construction Fasteners Inc.
2.	Dekfast 2 ½" HS membrane Plate	Galvalume stress plate.	2.5" round	Construction Fasteners Inc.
3.	Lite Weight Concrete Fasteners	Insulation fastener for wood, steel and concrete decks.		ITW Buildex Corp.
4.	Lite Weight Concrete Plate	Galvalume stress plate.	2.7" round	ITW Buildex Corp.
5.	TruFast Fasteners TP, DP, CF, HD	Insulation and membrane fasteners for wood, steel and concrete decks.		TruFast Corp.
6.	TruFast Insulation Plates	Galvalume stress plate.		TruFast Corp.
7.	Mule-Hide Fasteners TP, DP, CF, HD	Insulation and membrane fasteners for wood, steel and concrete decks.		Mule-Hide Products Co., Inc.
8.	Mule-Hide Insulation Plates	Galvalume stress plate.		Mule-Hide Products Co., Inc.

EVIDENCE SUBMITTED:

Test Agency/Identifier	Report No.	Date
Factory Mutual Research Corporation	J.I. 2W7A7.AM	08/04/94
	J.I. 3001334	02/15/00
	J.I. 3000857	01/12/00
	J.I. 3004091	01/12/00
Exterior Research & Design, LLC.	#11752.09.99-1	02/08/00
	#11757.12.00-1	12/07/00
	#11757.04.01-1	04/25/01
	#11751.05.03	05/30/03
Underwriters Laboratories	00NK20869	06/08/00

APPROVED ASSEMBLIES

Deck Type 1I: Wood, Insulated

Deck Description: $^{19}/_{32}$" or greater plywood or wood plank, fastened with wood screws at 6" o.c.

System Type A(1): All insulation layers are adhered, to a mechanically attached anchor sheet. Membrane is subsequently adhered to insulation.

All General and System limitations apply.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Any approved Polyisocyanurate Minimum 1" thick	**N/A**	**N/A**
Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Dens Deck Prime Minimum ¼" thick	**N/A**	**N/A**
High Density Wood Fiber (coated six-sides only) Minimum ½" 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^2. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Dens Deck Prime must be primed with an ASTM D 41 primer. Composite insulation panels may be used as a top layer placed with the polyisocyanurate side facing down. Composite insulation with the perlite side facing up must have one ply of Nail Base adhered to the insulation in full mopping of approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft^2 .

Anchor Sheet: One ply of Nail Base fastened to the deck as described below:

Fastening: Attach base sheet using Mule-Hide Fasteners and Insulation Plates spaced 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: (Optional) One or more plies of SA Base Sheet self-adhered.

Membrane: One ply of SA-APP Cap Sheet (G)(FR), SA-APP Cap Sheet (G), SA-APP Cap Sheet (S), SA-SBS Cap Sheet, SA-SBS Cap Sheet (FR), Elastoflex SA V G (FR) or Elastoflex SA V G self-adhered.

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: -60 psf; (See general limitation #7.)

Deck Type 1I: Wood, Insulated

Deck Description: $^{19}/_{32}$" or greater plywood or wood plank, fastened with 8d common nails at 4" o.c.

System Type A(2): All insulation layers are adhered, to a mechanically attached anchor sheet. Membrane is subsequently adhered to insulation.

All General and System limitations apply.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Any approved Polyisocyanurate Minimum 1" thick	**N/A**	**N/A**

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Dens Deck Prime Minimum ¼" thick	**N/A**	**N/A**
High Density Wood Fiber (coated six-sides only) Minimum ½" 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^2. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Dens Deck Prime must be primed with an ASTM D 41 primer. Composite insulation panels may be used as a top layer placed with the polyisocyanurate side facing down. Composite insulation with the perlite side facing up must have one ply of Nail Base adhered to the insulation in full mopping of approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft^2.

Anchor Sheet: One ply of Nail Base fastened to the deck as described below:

Fastening: Attach base sheet using Mule-Hide Fasteners and Insulation Plates spaced 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: (Optional) One or more plies of SA-Base Sheet self adhered

Membrane: One ply of SA-APP Cap Sheet (G)(FR), SA-APP Cap Sheet (G), SA-APP Cap Sheet (S), SA-SBS Cap Sheet, SA-SBS Cap Sheet (FR), Elastoflex SA V G (FR) or Elastoflex SA V G self-adhered.

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:	-60 psf; (See general limitation #7.)

Deck Type 1I: Wood, Insulated

Deck Description: $^{19}/_{32}$" or greater plywood or wood plank, fastened with 8d common nails at 4" o.c.

System Type A(4): All insulation layers are adhered, to a mechanically attached anchor sheet. Membrane is subsequently adhered to insulation.

All General and System Limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft^2
Any approved Polyisocyanurate Minimum 1" 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^2. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels may be used as a top layer placed with the polyisocyanurate side facing down.

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft^2
High Density Wood Fiber (coated six-sides only) Minimum ½" thick	**N/A**	**N/A**
Dens Deck Prime Minimum ¼" 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 ft^2. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as Base Layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Dens Deck Prime must be primed with an ASTM D 41 primer. Composite insulation panels may be used as a top layer placed with the polyisocyanurate side facing down. Composite insulation with the perlite side facing up must have one ply of Nail Base adhered to the insulation in full mopping of approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft^2.

Anchor Sheet: One ply of Nail Base, CertainTeed Glasbase, Polyglass Base, Firestone MB Base, JM Perma-Ply #28, Tamko Glass Base or GAFGLAS #75 fastened to the deck as described below:

Fastening: Attach base sheet using 11 ga. annular ring shank and 1-5/8" diameter tin caps spaced 8" o.c. in a 4" lap and 8" o.c. in two equally spaced staggered rows in the center of the sheet.

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

Membrane:	One ply of SA-APP Cap Sheet (G)(FR), SA-APP Cap Sheet (G), SA-APP Cap Sheet (S), SA-SBS Cap Sheet, SA-SBS Cap Sheet (FR), Elastoflex SA V G (FR) or Elastoflex SA V G self-adhered.
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:	-60 psf; (See general limitation #7.)

Deck Type 1I: Wood, Insulated

Deck Description: $^{19}/_{32}$" or greater plywood or wood plank.

System Type A(5): All insulation layers are adhered, to a mechanically attached anchor sheet. Membrane is subsequently adhered to insulation.

All General and System Limitations apply.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Any approved Polyisocyanurate Minimum 1" 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^2. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels may be used as a top layer placed with the polyisocyanurate side facing down.

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
High Density Wood Fiber (coated six-sides only) Minimum ½" thick	**N/A**	**N/A**
Dens Deck Prime Minimum ¼" 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 ft^2. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as Base Layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Dens Deck Prime must be primed with an ASTM D 41 primer. Composite insulation panels may be used as a top layer placed with the polyisocyanurate side facing down. Composite insulation with the perlite side facing up must have one ply of Nail Base adhered to the insulation in full mopping of approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft^2.

Anchor Sheet: One ply of Nail Base, CertainTeed Glasbase, Polyglass Base, Firestone MB Base, JM Perma-Ply #28, Tamko Glass Base or GAFGLAS #75 fastened to the deck as described below:

Fastening #1: Attach base sheet using 11 ga. annular ring shank and 1-5/8" diameter tin caps spaced 8" o.c. in a 4" lap and 8" o.c. in two equally spaced staggered rows in the center of the sheet.

Fastening #2: Attach base sheet using Mule-Hide HD Fasteners and Insulation Plates or Tru-Fast HD with MP-3 Plates spaced 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: (Optional) One or more plies of SA Base Sheet self-adhered.

Membrane:	One ply of SA-APP Cap Sheet (G)(FR), SA-APP Cap Sheet (G), SA-APP Cap Sheet (S), SA-SBS Cap Sheet, SA-SBS Cap Sheet (FR), Elastoflex SA V G (FR) or Elastoflex SA V G self-adhered.
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.)

Deck Type 1I: Wood, Insulated

Deck Description: $^{19}/_{32}$" or greater plywood or wood plank, fastened with wood screws at 6" o.c.

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

All General and System Limitations apply.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY-2 or Poly ISO 2 Minimum 1.5" thick	**1 or 10**	**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).

Top Insulation Layer (Optional)	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
High Density Wood Fiber (coated six-sides only) Minimum ½" thick	**N/A**	**N/A**

Note: Optional top layer of insulation shall be adhered with approved asphalt within the EVT range and at a rate of 20-40 lbs/100 ft^2. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Composite insulation panels may be used as a top layer placed with the polyisocyanurate side facing down. Composite insulation with the perlite side facing up must have one ply of Nail Base adhered to the insulation in full mopping of approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft^2 .

Base Sheet: (Optional if using self-adhering ply 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.

Ply Sheet: (Optional if using base sheet in hot asphalt) One or more plies of SA Base Sheet self-adhered.

Membrane: One ply SA-SBS Cap Sheet (FR), SA-SBS Cap Sheet, SA-APP Cap Sheet (G) (FR), SA-APP Cap Sheet (G) SA-APP Cap Sheet (S), Elastoflex SA-V (G) FR or Elastoflex SA V G self-adhered.

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: -60 psf; (See general limitation #7.)

Deck Type 1I: Wood, Insulated

Deck Description: $^{19}/_{32}$" or greater plywood or wood plank, fastened with 8d common nails at 4" o.c.

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

All General and System Limitations apply.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY-2 or Poly ISO 2 Minimum 1.5" thick	**1 or 10**	**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).

Top Insulation Layer (Optional)	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
High Density Wood Fiber (coated six-sides only) Minimum ½" thick	**N/A**	**N/A**

Note: Optional top layer of insulation shall be adhered with approved asphalt within the EVT range and at a rate of 20-40 lbs/100 ft^2. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down. Composite insulation with the perlite side facing up must have one ply of Nail Base adhered to the insulation in full mopping of approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft^2 .

Base Sheet: (Optional if using SA Base Sheet as ply 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.

Ply Sheet: (Optional if using base sheet in hot asphalt) One or more plies of SA Base Sheet self-adhered.

Membrane: One ply SA-SBS Cap Sheet (FR), SA-SBS Cap Sheet, SA-APP Cap Sheet (G) (FR), SA-APP Cap Sheet (G), SA-APP Cap Sheet (S), Elastoflex SA-V (G) FR or Elastoflex SA V G self-adhered.

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: -60 psf; (See general limitation #7.)

Deck Type 1I: Wood, Insulated

Deck Description: $^{19}/_{32}$" or greater plywood or wood plank.

System Type B(3): Base layer of insulation mechanically fastened, optional top layer adhered with approved asphalt.

All General and System Limitations apply.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY-2 or Poly ISO 2 Minimum 1.5" thick	**1 or 10**	**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).

Top Insulation Layer (Optional)	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
High Density Wood Fiber (coated six-sides only) Minimum ½" thick	**N/A**	**N/A**

Note: Optional top layer of insulation shall be adhered with approved asphalt within the EVT range and at a rate of 20-40 lbs/100 ft^2. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

Base Sheet: (Optional if using SA Base Sheet as ply 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.

Ply Sheet: (Optional if using base sheet in hot asphalt) One or more plies of SA Base Sheet self-adhered.

Membrane: One ply of SA-SBS Cap Sheet (FR), SA-SBS Cap Sheet, SA-APP Cap Sheet (G) (FR), SA-APP Cap Sheet (G), SA-APP Cap Sheet (S), Elastoflex SA-V (G) FR or Elastoflex SA V G self-adhered.

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.)

Deck Type 1I: Wood, Insulated

Deck Description: $^{19}/_{32}$" or greater plywood or wood plank, fastened with wood screws at 6" o.c.

System Type C(1): All layers of insulation are mechanically attached to roof deck. Membrane is subsequently adhered to insulation.

All General and System Limitations apply.

Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft^2
ENRGY-2 or Poly ISO 2 Minimum 1.5" thick	**1, 7 or 10**	**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. Please refer to Roofing Application Standard RAS 117 for insulation attachment. If multiple layers are used the insulation listed above must be the top layer.

Base Sheet: None

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

Membrane: One ply of SA-SBS Cap Sheet (FR), SA-SBS Cap Sheet, SA-APP Cap Sheet (G) (FR), SA-APP Cap Sheet (G), SA-APP Cap Sheet (S), Elastoflex SA-V (G) FR or Elastoflex SA V (G) self-adhered.

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: -82.5 psf; (See General limitation #7.)

Deck Type 1I: Wood, Insulated

Deck Description: $^{19}/_{32}$" or greater plywood or wood plank, fastened with wood screws at 6" o.c.

System Type C(2): All layers of insulation are mechanically attached to roof deck. Membrane is subsequently adhered to insulation.

All General and System Limitations apply.

One or more layers of the following:

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Any approved Polyisocyanurate 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	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
High Density Wood Fiber (coated six-sides only) Minimum ½" thick	**1**	**1:1.33 ft^2**
Dens Deck Prime Minimum ¼" thick	**1**	**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. Please refer to Roofing Application Standard RAS 117 for insulation attachment. If using composite insulations, the polyisocyanurate side shall be on the top side. Dens Deck Prime must be primed with an ASTM D 41 asphalt primer.

Base Sheet: (Optional if using SA Base Sheet self-adhered) 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.

Ply Sheet: (Optional if using base sheet in hot asphalt) One or more plies of SA Base Sheet self-adhered.

Membrane: One ply of SA-SBS Cap Sheet (FR), SA-SBS Cap Sheet, SA-APP Cap Sheet (G) (FR), SA-APP Cap Sheet (G), SA-APP Cap Sheet (S), Elastoflex SA-V (G) FR or Elastoflex SA V G self-adhered.

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: -82.5 psf; (See General limitation #7.)

Deck Type 1I: Wood, Insulated

Deck Description: $^{19}/_{32}$" or greater plywood or wood plank, fastened with 8d common nails at 4" o.c.

System Type C(3): All layers of insulation are mechanically attached to roof deck. Membrane is subsequently adhered to insulation.

All General and System Limitations apply.

One or more layers of the following:

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Any approved Polyisocyanurate 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	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
High Density Wood Fiber (coated six-sides only) Minimum ½" thick	**1**	**1:1.33 ft^2**
Dens Deck Prime Minimum ¼" thick	**1**	**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. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Dens Deck Prime must be primed with an ASTM D 41 asphalt primer.

Base Sheet: (Optional if using SA Base Sheet self-adhered) 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.

Ply Sheet: (Optional if using base sheet in hot asphalt) One or more plies of SA Base Sheet self-adhered.

Membrane: One ply of SA-SBS Cap Sheet (FR), SA-SBS Cap Sheet, SA-APP Cap Sheet (G) (FR), SA-APP Cap Sheet (G), SA-APP Cap Sheet (S), Elastoflex SA-V (G) FR or Elastoflex SA V G self-adhered.

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: -67.5 psf; (See General limitation #7.)

Deck Type 1I: Wood, Insulated

Deck Description: $^{19}/_{32}$" or greater plywood or wood plank.

System Type C(4): All layers of insulation are mechanically attached to roof deck. Membrane is subsequently adhered to insulation.

All General and System Limitations apply.

One or more layers of the following:

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Any approved Polyisocyanurate 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	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
High Density Wood Fiber (coated six-sides only) Minimum ½" thick	**1**	**1:1.33 ft^2**
Dens Deck Prime Minimum ¼" thick	**1**	**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. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Dens Deck Prime must be primed with an ASTM D 41 asphalt primer.

Base Sheet: (Optional if using SA Base Sheet self-adhered) 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.

Ply Sheet: (Optional if using base sheet in hot asphalt) One or more plies of SA Base Sheet self-adhered.

Membrane: One ply of SA-SBS Cap Sheet (FR), SA-SBS Cap Sheet, SA-APP Cap Sheet (G) (FR), SA-APP Cap Sheet (G), SA-APP Cap Sheet (S), Elastoflex SA-V (G) FR or Elastoflex SA V G self-adhered.

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.)

Deck Type 1I: Wood, Insulated

Deck Description: $^{19}/_{32}$" or greater plywood or wood plank, fastened with 8d common nails at 4" o.c.

System Type C(5): All layers of insulation are mechanically attached to roof deck. Membrane is subsequently adhered to insulation.

All General and System Limitations apply.

Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft^2
ENRGY-2 or Poly ISO 2 Minimum 1.5" thick	**1, 7 or 10**	**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. Please refer to Roofing Application Standard RAS 117 for insulation attachment. If using multiple layers of insulation, the insulation listed above shall be the top layer.

Base Sheet: None

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

Membrane: One ply of SA-SBS Cap Sheet (FR), SA-SBS Cap Sheet, SA-APP Cap Sheet (G) (FR), SA-APP Cap Sheet (G), SA-APP Cap Sheet (S), Elastoflex SA-V (G) FR or Elastoflex SA V G self-adhered.

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: -67.5 psf; (See General limitation #7.)

Deck Type 1I: Wood, Insulated

Deck Description: $^{19}/_{32}$" or greater plywood or wood plank.

System Type C(6): All layers of insulation are mechanically attached to roof deck. Membrane is subsequently adhered to insulation.

All General and System Limitations apply.

Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY 2 or Poly ISO 2 Minimum 1.5" thick	**1, 7 or 10**	**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. Please refer to Roofing Application Standard RAS 117 for insulation attachment. If using multiple layers of insulation, the insulation listed above shall be the top layer.

Base Sheet: None

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

Membrane: One ply of SA-SBS Cap Sheet (FR), SA-SBS Cap Sheet, SA-APP Cap Sheet (G) (FR), SA-APP Cap Sheet (G), SA-APP Cap Sheet (S), Elastoflex SA-V (G) FR or Elastoflex SA V G self-adhered.

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.)

Deck Type 1I: Wood, Insulated

Deck Description: $^{19}/_{32}$" or greater plywood or wood plank, fastened with 8d common nails at 4" o.c.

System Type D(1): All insulation layers are adhered, to a mechanically attached base sheet. Membrane is subsequently adhered to insulation.

All General and System Limitations apply.

One or more layers of the following:

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Any approved Polyisocyanurate Minimum 1" thick	**N/A**	**N/A**

Top Insulation Layer (Optional)	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
High Density Wood Fiber (coated six-sides only) Minimum ½" thick	**N/A**	**N/A**
Dens Deck Prime 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. Dens Deck Prime must be primed with an ASTM D 41 asphalt primer.

Base Sheet: One ply of Nail Base fastened to the deck as described below:

Fastening: Attach base sheet using Mule-Hide Fasteners and Insulation Plates spaced 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: (Optional) One or more plies of SA Base Sheet self-adhered.

Membrane: One ply of SA-SBS Cap Sheet (FR), SA-SBS Cap Sheet, SA-APP Cap Sheet (G) (FR), SA-APP Cap Sheet (G), SA-APP Cap Sheet (S), Elastoflex SA-V (G) FR or Elastoflex SA V G self-adhered.

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: -60 psf; (See General limitation #7.)

Deck Type 1I: Wood, Insulated

Deck Description: $^{19}/_{32}$" or greater plywood or wood plank, fastened with wood screws at 6" o.c.

System Type D(2): All insulation layers are adhered, to a mechanically attached base sheet. Membrane is subsequently adhered to insulation.

All General and System Limitations apply.

One or more layers of the following:

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Any approved Polyisocyanurate Minimum 1" thick	**N/A**	**N/A**

Top Insulation Layer (Optional)	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
High Density Wood Fiber (coated six-sides only) Minimum ½" thick	**N/A**	**N/A**
Dens Deck Prime 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. Dens Deck Prime shall be primed with an ASTM D 41 asphalt primer.

Base Sheet: One ply of Nail Base fastened to the deck as described below:

Fastening: Attach base sheet using Mule-Hide Fasteners and Insulation Plates spaced 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: (Optional) One or more plies of SA Base Sheet self-adhered.

Membrane: One ply of SA-SBS Cap Sheet (FR), SA-SBS Cap Sheet, SA-APP Cap Sheet (G) (FR), SA-APP Cap Sheet (G), SA-APP Cap Sheet (S), Elastoflex SA-V (G) FR or Elastoflex SA V G self-adhered.

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: -60 psf; (See General limitation #7.)

Deck Type 1I: Wood, Insulated, New Construction

Deck Description: $^{19}/_{32}$" or greater plywood or wood plank.

System Type D(3): All insulation layers are adhered, to a mechanically attached base sheet. Membrane is subsequently adhered to insulation.

All General and System Limitations apply.

One or more layers of the following:

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Any approved Polyisocyanurate Minimum 1" thick	**N/A**	**N/A**

Top Insulation Layer (Optional)	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
High Density Wood Fiber (coated six-sides only) Minimum ½" thick	**N/A**	**N/A**
Dens Deck Prime 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. Dens Deck prime shall be primed with an ASTM D 41 asphalt primer.

Base Sheet: One ply of Nail Base, CertainTeed Glasbase, Polyglass Base, Firestone MB Base, JM Perma-Ply #28, Tamko Glass Base or GAFGLAS #75 fastened to the deck as described below:

Fastening: Attach base sheet using Mule-Hide Fasteners and Insulation Plates or Tru-Fast HD with MP-3 Plates spaced 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: (Optional) One or more plies of SA Base Sheet self-adhered.

Membrane: One ply of SA-SBS Cap Sheet (FR), SA-SBS Cap Sheet, SA-APP Cap Sheet (G) (FR), SA-APP Cap Sheet (G), SA-APP Cap Sheet (S), Elastoflex SA-V (G) FR or Elastoflex SA V G self-adhered.

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.)

Deck Type 1: Wood, Non-Insulated, New Construction

Deck Description: $^{19}/_{32}$" or greater plywood or wood plank.

System Type E(1): Base sheet is mechanically attached to roof deck.

All General and System Limitations apply.

Base Sheet: One ply of ASTM D 2626 roofing felt fastened to the deck as described below:

Fastening #1: Attach base sheet using 11 ga. annular ring shank and 1-5/8" diameter tin caps spaced 4" o.c. in a min. 2" lap and 4" o.c. in two equally spaced staggered rows in the center of the sheet. ***(Meets –45 psf, See General Limitation #9)***

Fastening #2: Attach base sheet using Simplex Mega Cap-Nails spaced 6" o.c. in a min. 2" lap and 9" o.c. in two equally spaced staggered rows in the center of the sheet. ***(Meets –45 psf, See General Limitation #9)***

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

Membrane: One ply of SA-SBS Cap Sheet (FR), SA-SBS Cap Sheet, SA-APP Cap Sheet (G) (FR), SA-APP Cap Sheet (G), SA-APP Cap Sheet (S), Elastoflex SA-V (G) FR or Elastoflex SA V G self-adhered.

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: See fastening options above.

Deck Type 1: Wood, Non-Insulated, New Construction

Deck Description: $^{19}/_{32}$" or greater plywood or wood plank.

System Type E(2): Base sheet is mechanically attached to roof deck.

All General and System Limitations apply.

Base Sheet: Two plies of ASTM D 2626 roofing felt fastened to the deck as described below:

Fastening: Attach base sheet using 11 ga. annular ring shank and 1-5/8" diameter tin caps spaced 9" o.c. in a min. 2" lap and 9" o.c. in two equally spaced staggered rows in the center of the sheet.

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

Membrane: One ply of SA-SBS Cap Sheet (FR), SA-SBS Cap Sheet, SA-APP Cap Sheet (G) (FR), SA-APP Cap Sheet (G), SA-APP Cap Sheet (S), Elastoflex SA-V (G) FR or Elastoflex SA V G self-adhered.

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)

Deck Type 1: Wood, Non-Insulated, New Construction

Deck Description: $^{19}/_{32}$" or greater plywood or wood plank, fastened with wood screws at 6" o.c.

System Type E(3): Base sheet is mechanically attached to roof deck.

All General and System Limitations apply.

Base Sheet: One ply of Nail Base fastened to the deck as described below:

Fastening: Attach base sheet using Mule-Hide Fasteners and Insulation Plates spaced 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: (Optional) One or more plies of SA Base Sheet self-adhered.

Membrane: One ply of SA-SBS Cap Sheet (FR), SA-SBS Cap Sheet, SA-APP Cap Sheet (G) (FR), SA-APP Cap Sheet (G), SA-APP Cap Sheet (S), Elastoflex SA-V (G) FR or Elastoflex SA V G self-adhered.

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: -60 psf; (See General limitation #7.)

Deck Type 1: Wood, Non-Insulated, New Construction

Deck Description: $^{19}/_{32}$" or greater plywood or wood plank, fastened with 8d common nails at 4" o.c

System Type E(4): Base sheet is mechanically attached to roof deck.

All General and System Limitations apply.

Base Sheet: One ply of Nail Base fastened to the deck as described below:

Fastening: Attach base sheet using Mule-Hide Fasteners and Insulation Plates spaced 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: (Optional) One or more plies of SA Base Sheet self-adhered.

Membrane: One ply of SA-SBS Cap Sheet (FR), SA-SBS Cap Sheet, SA-APP Cap Sheet (G) (FR), SA-APP Cap Sheet (G), SA-APP Cap Sheet (S), Elastoflex SA-V (G) FR or Elastoflex SA V G self-adhered.

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: -60 psf; (See General limitation #7.)

Deck Type 1: Wood, Non-Insulated, New Construction

Deck Description: $^{19}/_{32}$" or greater plywood or wood plank, fastened with wood screws at 6" o.c.

System Type E(5): Base sheet is mechanically attached to roof deck.

All General and System Limitations apply.

Base Sheet: One ply of Nail Base fastened to the deck as described below:

Fastening: Attach base sheet using 11 ga. annular ring shank and 1-5/8" diameter tin caps spaced 8" o.c. in a 4" lap and 8" o.c. in two equally spaced staggered rows in the center of the sheet.

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

Membrane: One ply of SA-SBS Cap Sheet (FR), SA-SBS Cap Sheet, SA-APP Cap Sheet (G) (FR), SA-APP Cap Sheet (G), SA-APP Cap Sheet (S), Elastoflex SA-V (G) FR or Elastoflex SA V G self-adhered.

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: -60 psf; (See General limitation #7.)

Deck Type 1: Wood, Non-Insulated, New Construction

Deck Description: $^{19}/_{32}$" or greater plywood or wood plank, fastened with 8d common nails at 4" o.c

System Type E(6): Base sheet is mechanically attached to roof deck.

All General and System Limitations apply.
Note: if using a base sheet other than Nail Base, a layer of Nail Base must be adhered to the base sheet in full mopping of approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft^2.

Base Sheet: One ply of CertainTeed Glasbase, Polyglass Base, Nail Base, Firestone MB Base, JM Perma-Ply #28, Tamko Glass Base or GAFGLAS #75 fastened to the deck as described below:

Fastening: Attach base sheet using 11 ga. annular ring shank and 1-5/8" diameter tin caps spaced 8" o.c. in a 4" lap and 8" o.c. in two equally spaced staggered rows in the center of the sheet.

Ply Sheet: (Optional if using Nail Base as Base Sheet) One ply of Nail Base adhered in 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 SA Base Sheet self-adhered (requires the use of Nail Base).

Membrane: One ply of SA-SBS Cap Sheet (FR), SA-SBS Cap Sheet, SA-APP Cap Sheet (G) (FR), SA-APP Cap Sheet (G), SA-APP Cap Sheet (S), Elastoflex SA-V (G) FR or Elastoflex SA V G self-adhered

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: -60 psf; (See General limitation #7.)

Deck Type 1: Wood, Non-Insulated, New Construction

Deck Description: $^{19}/_{32}$" or greater plywood or wood plank.

System Type E(7): Base sheet is mechanically attached to roof deck.

All General and System Limitations apply.
Note: if using a base sheet other than Nail Base, a layer of Nail Base must be adhered to the base sheet in full mopping of approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft^2.

Base Sheet: One ply of Nail Base, CertainTeed Glasbase, Polyglass Base, Firestone MB Base, JM Perma-Ply #28, Tamko Glass Base or GAFGLAS #75 fastened to the deck as described below:

Fastening #1: Attach base sheet using 11 ga. annular ring shank and 1-5/8" diameter tin caps spaced 8" o.c. in a 4" lap and 8" o.c. in two equally spaced staggered rows in the center of the sheet.

Fastening #2: Attach base sheet using Mule-Hide Fasteners and Insulation Plates, Dekfast #14 with Hex Plates or Tru-Fast HD with MP-3 Plates spaced 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: (Optional only if using Nail Base as base sheet) One ply of Nail Base adhered in full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or SA Base Sheet self-adhered (requires use of Nail Base),

Membrane: One ply of SA-SBS Cap Sheet (FR), SA-SBS Cap Sheet, SA-APP Cap Sheet (G) (FR), SA-APP Cap Sheet (G), SA-APP Cap Sheet (S), Elastoflex SA-V (G) FR or Elastoflex SA V G self-adhered.

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.).

Deck Type 1I: Wood, Non-Insulated

Deck Description: $^{19}/_{32}$" or greater plywood or wood plank.

System Type: Tile underlayment, Base sheet is mechanically attached to roof deck.

All General and System Limitations apply.

Base Sheet: One ply of ASTM D 226 Type II or ASTM D 2626 roofing felt fastened to the deck with a minimum 2" side lap and a minimum 6"end lap. Base sheet may be applied at a right angle (90^0) to the slope of the deck with approved annular ring shank nails and tin caps at a fastener spacing of 6" o.c. at the 2" side lap, and two 12" o.c. staggered rows along the center of the sheet.

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

Membrane: One ply of SA-SBS Cap Sheet (FR), SA-SBS Cap Sheet, SA-APP Cap Sheet (G) (FR), SA-APP Cap Sheet (G), SA-APP Cap Sheet (S), Elastoflex SA-V (G) FR or Elastoflex SA V G self-adhered.

* Membrane may also be installed parallel to the slope of the roof (i.e. strapping). If membrane is strapped, then anchor sheet and ply sheet must also be strapped.

Maximum Design Pressure: Must comply with Roof Assembly NOA.

Maximum Fire Classification: Must comply with Tile System Fire Classification

Maximum Slope: Must Comply with Roofing Application Standard RAS 118, RAS 119, RAS 120

WOOD DECK SYSTEM LIMITATIONS:

1. A slip sheet is required with Ply 4 and Ply 6 when used as a mechanically fastened base or anchor sheet.

GENERAL LIMITATIONS:

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