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 Miami-Dade County Product Control Division and accepted by the Board of Rules and Appeals (BORA) to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Division (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. BORA reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Division that this product or material fails to meet the requirements of the applicable building code.

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

DESCRIPTION: Mule-Hide Single Ply EPDM Roof Systems over Recover Decks

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

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

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

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

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

This NOA revises NOA # 01-0504.05 and consists of pages 1 through 16.
The submitted documentation was reviewed by Frank Zuloaga, RRC

ROOFING SYSTEM APPROVAL

Category:	Roofing
Sub-Category:	07530 Single Ply
Material:	EPDM
Deck Type:	Recover
Maximum Design Pressure	See specific deck type
Fire Classification:	See General Limitation #1

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

Product Name	Dimensions	Test Specifications	Product Description
Standard Black EPDM	various	ASTM D 4637	Non-reinforced EPDM membrane.
FR EPDM FR-Plus EPDM	various	ASTM D 4637	Non-reinforced, fire retardant EPDM membrane.
Reinforced EPDM Sure-Tough	various	ASTM D 4637	Reinforced EPDM membrane.
Reinforced FR EPDM	various	ASTM D 4637	Reinforced, fire retardant EPDM membrane.
Fleece BACK Fleece BACK AFX	various	ASTM D 4637	EPDM membrane with fleece backing..
White-on-Black EPDM	various	ASTM D 4637	Non-reinforced white on black EPDM membrane.
White-on-Black Fleece BACK EPDM	Various	ASTM D4637	Non-reinforced white on black fleece backed EPDM membrane.
RMS	various	ASTM D 4637	Reinforced securement strip.
Tape Primer	various	TAS 110	Solvent-Based Primer
CCW 702LT Primer	various	TAS 110	Low-Temperature Solvent-Based Primer
CCW 714 Primer	various	TAS 110	Water-Based Primer
CCW 725 Vapor Barrier	various	TAS 110	Vapor Barrier
FAST 100 Adhesive FAST 100-LV Adhesive FAST 100-P Adhesive FAST 102 Adhesive	various	TAS 110	Spray Polyurethane Adhesive
All Purpose Sealant Black Lap Sealant		TAS 110	Lap Sealant for White-on-Black, Black EPDM membranes.
White Splice Cement Black Splice Cement		TAS 110	Splicing Adhesive for EPDM membranes.
In-Seam Tape		TAS 110	Tape Adhesive for EPDM membranes.

Product Name	Dimensions	Test Specifications	Product Description
Mule-Hide Bonding Adhesive		TAS 110	Solvent-based bonding adhesive.
B-500 Bonding Adhesive		TAS 110	Water-based bonding adhesive.
Mule-Hide Water Base Bonding Adhesive		TAS 110	Water-based bonding adhesive.
Metal Fastening Bars, ST Fastening Bars	1" wide		Metal bars used for membrane securement.

APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
ACFoam Composite	Isocyanurate Insulation with perlite facer	Atlas Roofing Corp.
ACFoam II, III	Isocyanurate Insulation	Atlas Roofing Corp.
Poly ISO 2	Isocyanurate Insulation with perlite facer	Mule-Hide Products Co., Inc.
Poly ISO 2 Composite	Isocyanurate Insulation	Mule-Hide Products Co., Inc.
Polyisocyanurate HP, HP-N, HP-H, HP-W	Polyisocyanurate roof insulation.	Carlisle SynTec, Inc.
Sure-Seal HP Recovery Board	High Density Wood Fiberboard.	Carlisle SynTec, Inc.
EPS/Fiberboard	High Density Wood Fiberboard bonded to EPS.	Carlisle SynTec, Inc.
EPS Insulation	Expanded Polystyrene.	Carlisle SynTec, Inc.
Carlisle Foamular ½" Board	Extruded Polystyrene recovery board.	Carlisle SynTec, Inc.
Hytherm, Hytherm AP	Isocyanurate Insulation	Dow Chemical
Styrofoam	Extruded Polystyrene.	Dow Chemical
ISO 95+ GL, 95+ GW	Polyisocyanurate foam insulation	Firestone
Dens Deck, Dens Deck Prime	Silicon treated gypsum	G-P Products
Sturdi-Top	Wood fiber insulation board.	G-P Products
High Density Wood Fiberboard	High Density Wood Fiber insulation board.	Generic
High Density Wood Fiberboard	High Density Wood Fiber insulation board.	Knight-Celotex
Perlite Insulation Board	Perlite Insulation	Generic
Type X Gypsum, Gypsum	Gypsum Wallboard	Generic
EPS or XPS Insulation	Expanded or Extruded Polystyrene.	Generic
Ultra/M-II	Isocyanurate Insulation	Homasote Co.

APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
H-Shield	Isocyanurate Insulation	Hunter Panels
ENRGY 2, ENERGY 3, PSI-25	Isocyanurate Insulation	Johns Manville
Foamular, Thermapink, Durapink	Extruded Polystyrene.	Owens Corning
Strataguard	Gypsum Wallboard	Owens Corning
Green Guard	Extruded Polystyrene insulation	Pactiv
Multi-Max, Multi-Max FA	Polyisocyanurate foam insulation	Rmax, Inc.
Fiber Base	Asphalt coated wood fiber insulation	Temple Inland Forest Products Corp.
Structodeck	High Density Wood Fiber insulation board.	Mosonites

APPROVED FASTENERS:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
1.	Sure-Seal HP, HP-X, HP-Xtra Fasteners, Sure-Tite, Sure-FAST	Insulation and membrane fastener	Various	Carlisle SynTec, Inc.
2.	Sure-Seal HP Concrete Spikes, HD 14-10, CD-10	Insulation and membrane fastener	Various	Carlisle SynTec, Inc.
3.	Sure-Seal ASAP	Pre-assembled fastener & plate for insulation and membrane	Various	Carlisle SynTec, Inc.
4.	Sure-Seal Seam Fastening Plates	Metal plates for membrane securement.		Carlisle SynTec, Inc.
5.	Sure-Seal HP Lightweight Fasteners	Fastener for cementitious and gypsum decks	Various	Carlisle SynTec, Inc.
6.	Sure-Seal Lightweight Insulation Plates	Metal plates used for insulation securement.	3" dia	Carlisle SynTec, Inc.
7.	Sure-Seal Insulation Plates	Metal plates used for insulation securement.	2-$^{7}/_{8}$"	Carlisle SynTec, Inc.
8.	Sure-Seal Polymer Seam Plates	Plastic plates used for membrane securement.	2" dia	Carlisle SynTec, Inc.
9.	Piranha, Piranha Xtra Plates	Plates used for membrane securement.	2-$^{3}/_{8}$" dia	Carlisle SynTec, Inc.

APPROVED FASTENERS:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
10.	#14 Roofgrip	Insulation and membrane fastener	Various	ITW Buildex
11.	Metal Plate	Galvalume AZ50 stress plate	3" square	ITW Buildex
12.	Plastic Plate	Polyethylene stress plate	3.2" round	ITW Buildex
13.	Olympic Fasteners #14	Insulation and membrane fastener	Various	Olympic Mfg. Group
14.	Olympic Stainless Fasteners #14	Stainless steel insulation and membrane fastener	Various	Olympic Mfg. Group
15.	Strap Toggle	Fastener for steel, wood, CWF and gypsum decks.	Various	Olympic Mfg. Group
16.	Iron-Lok Toggle	Fastener for steel, wood, CWF and gypsum decks.	Various	Olympic Mfg. Group
17.	Olympic ASAP	Pre-assembled fastener & plate for insulation and membrane	Various	Olympic Mfg. Group
18.	Lite-Deck Plate	Galvalume AZ55 stress plate	3" round	Olympic Mfg. Group
19.	NTB Plate	Galvalume AZ55 stress plate	3" round	Olympic Mfg. Group
20.	NTB Metal Barbed Stress Plate	Galvalume AZ55 stress plate	2" round	Olympic Mfg. Group
21.	NTB Plastic Plate	Plastic plates for NTB 2" head fasteners.	3" round	Olympic Mfg. Group
22.	Olympic Standard	Galvalume AZ55 stress plate	3" round	Olympic Mfg. Group
23.	Olympic Plastic, ASAP	Plastic plates for fasteners.	3" round	Olympic Mfg. Group
24.	Rawl Fasteners #14	Fastener for steel and wood decks	Various	Powers Fasteners Inc.
25.	Rawl Drive	Fastener for concrete decks		Powers Fasteners Inc.
26.	Rawl Spike	Fastener for concrete decks		Powers Fasteners Inc.
27.	Rawl Speed-Lock Toggle Bolt	Insulation fastener assembly		Powers Fasteners Inc.
28.	Powerlite	Insulation fastener for cementitious and gypsum decks.		Powers Fasteners Inc.
29.	Powerlite	Galvalume AZ55 stress plate	3" round	Powers Fasteners Inc.
30.	Rawl Insulation Plate	Galvalume AZ55 stress plate	3" round	Powers Fasteners Inc.

APPROVED FASTENERS:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
31.	Insul-Fixx Fastener	Insulation fastener for steel and wood decks	Various	SFS Intec, Inc.
32.	Isofast Fasteners	Insulation fastener for steel and wood decks	Various	SFS Intec, Inc.
33.	Insul-Fixx S	Galvalume AZ55 stress plate	3" round	SFS Intec, Inc.
34.	Insul-Fixx P	Polyethylene stress plate	3" round	SFS Intec, Inc.
35.	Isofast Plate	Square or oblong Galvalume steel plates for use with Isofast fasteners		SFS Intec, Inc.
36.	Dekfast Fasteners #14, #15	Insulation and membrane fastener	Various	SFS Intec, Inc.
37.	Dekfast Hex Plate	Insulation plate.	Various	SFS Intec, Inc.
38.	Tru-Fast Fasteners	Insulation and membrane fastener	Various	The Tru-Fast Corp.
39.	Tru-Fast Ultra Stainless Fasteners	Stainless steel insulation and membrane fastener	Various	The Tru-Fast Corp.
40.	Tru-Fast MP-3	Galvalume AZ50 steel plate	3" round	The Tru-Fast Corp.
41.	Tru-Fast Plastic Plate	Polyethylene stress plate	3" round	The Tru-Fast Corp.
42.	Mule-Hide Fasteners	Insulation and membrane fastener	Various	Mule-Hide Products Co., Inc.
43.	Mule-Hide Ultra Stainless Fasteners	Stainless steel insulation and membrane fastener	Various	Mule-Hide Products Co., Inc.
44.	Mule-Hide metal plates (MP-3)	Galvalume AZ50 steel plate	3" round	Mule-Hide Products Co., Inc.
45.	Mule-Hide Plastic Plate	Polyethylene stress plate	3" round	Mule-Hide Products Co., Inc.
46.	Mule-Hide Seam Plates	Metal plates for membrane securement	2" round 2" round barbed	Mule-Hide Products Co., Inc.
47.	Mule-Hide Polymer Seam Plates	Plastic plates for membrane securement	2" dia.	Mule-Hide Products Co., Inc.

EVIDENCE SUBMITTED:

Test Agency	Test Identifier	Description	Date
Factory Mutual Research Corp.	J.I. 4D9A6.AM	Approval Report	08/03/98
Factory Mutual Research Corp.	3003326	Class 4470	04/12/99
Factory Mutual Research Corp.	3000348	Class 4470	04/19/99
Factory Mutual Research Corp.	3012458	Class 4470	02/23/02
Factory Mutual Research Corp.	3016162	Class 4470	10/25/03
Factory Mutual Research Corp.	3020353	Class 4470	03/25/04
Factory Mutual Research Corp.	J.I. 1B7A4.AM	Class 4470	07/08/99
Underwriters Laboratories, Inc.	02NK46936	UL 790	12/15/03

APPROVED ASSEMBLIES

Membrane Type: Single Ply, Thermoset, EPDM, Fleece Backed

Deck Type 7I: Recover

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

System Type A(1): One or more layers of insulation adhered with approved asphalt or Fast Adhesive. Membrane fully adhered.

All General and System Limitations apply.

Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Multi-Max FA, WHITELINE, Hytherm AP, Ultra/M-II Iso/glas, ENRGY-2, ENRGY-3, PSI-25, AC Foam II, Poly ISO 2, Polyisocyanurate HP, HP-W, HP-H, HP-N, ISO 95+GL, HF, Rhoflex GL, HF		
Minimum 1.5" thick	**N/A**	**N/A**

Note: Existing roof shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of base sheet. All insulation shall be adhered to the deck in full mopping of approved asphalt within the EVT range and at a rate of 20-40 lbs/100 ft^2 or FAST Adhesive at minimum rate 1 gal/sq. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Vapor Retarder: None.

Barrier: None.

Membrane: FleeceBACK or White-on-Black FleeceBACK 100 or 115 mil membrane fully adhered to the insulation using FAST 100 LV Adhesive applied to the substrate at a rate of 1 gal./sq.
Or
Standard or White-on-Black 45 to 90 mil membrane fully adhered to the insulation using Mule-Hide Bonding Adhesive applied to the substrate at a rate of 1 gal/60ft.^{2}, or B-500 applied to the substrate at 1 gal/sq.
Or
FleeceBack AFX or AFX Plus membrane adhered to the insulation in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Surfacing: (Optional) A two-part surfacing consisting of EM-8 Hypalon applied at the rate of 1 gal./150 ft^2 and silica sand applied into the wet coating at a rate of 35 lbs./sq. or two coats of Mule-Hide Acrylic Coating at a rate 1.5 gal/sq. per coat.

Maximum Design Pressure: -330 psf (See General Limitation #9)
-562.5 psf (For FleeceBACK membranes) (See General Limitation #9)

Membrane Type: Single Ply, Thermoset, EPDM, Fleece Backed

Deck Type 7I: Recover

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

System Type A(2): One or more layers of insulation adhered with FAST Adhesive. Membrane fully adhered.

All General and System Limitations apply.

One or more layers of the following.

Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Multi-Max FA, WHITELINE, Hytherm AP, Ultra/M-II Iso/glas, ENRGY-2, ENRGY-3, PSI-25, AC Foam II, Poly ISO 2, Polyisocyanurate HP, HP-W, HP-H, HP-N, ISO 95+GL, HF, Rhoflex GL, HF, Extruded or Expanded Polystyrene		
Minimum 1" thick	**N/A**	**N/A**
Dens Deck, Dens Deck Prime, Strataguard		
Minimum ¼" thick	**N/A**	**N/A**
HP Recovery, High Density Wood Fiberboard		
Minimum ½" thick	**N/A**	**N/A**

Note: Existing roof shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of base sheet. All insulation shall be adhered to the existing roof with FAST Adhesive at minimum rate 1 gal/sq. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Vapor Retarder: None.

Barrier: None.

Membrane: FleeceBACK or White-on-Black FleeceBACK 100 or 115 mil membrane fully adhered to the insulation using FAST Adhesive applied to the substrate at a rate of 1 gal./sq.

Or

Standard or White-on-Black 45 to 90 mil membrane fully adhered to the insulation using Mule-Hide Bonding Adhesive applied to the substrate at a rate of 1 gal/60ft.^{2}, or B-500 applied to the substrate at 1 gal/sq.

Or

FleeceBack AFX or AFX Plus membrane adhered to the insulation in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Surfacing: (Optional) A two-part surfacing consisting of EM-8 Hypalon applied at the rate of 1 gal./150 ft^2 and silica sand applied into the wet coating at a rate of 35 lbs./sq. or two coats of Mule-Hide Acrylic Coating at a rate 1.5 gal/sq. per coat.

Maximum Design Pressure: -420 psf (For Extruded Polystyrene) (See General Limitation #9)
-322.5 psf (For Expanded Polystyrene) (See General Limitation #9)

Membrane Type:	Single Ply, Thermoset, EPDM, Reinforced, Nonreinforced, Fleece Backed.
Deck Type 7I:	Recover
Deck Description:	Concrete/lightweight concrete/cementitious wood fiber/wood/steel/gypsum
System Type C:	All layers of insulation simultaneously attached; membrane fully adhered.

All General and System Limitations apply.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
One of the following covered with the boards listed in Top Layer or Base or Top Layer.		
Extruded or Expanded Polystyrene		
Minimum 1" thick	**N/A**	**N/A**
Perlite		
Minimum ¾" thick	**N/A**	**N/A**

Note: All layers shall be simultaneously fastened; see top or base 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. Single and multiple layers of insulation can be adhered with any FAST Adhesive in a full coverage application. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base or Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Multi-Max FA, Hytherm AP, Ultra/M-II Iso/glas		
Minimum 1.2" thick	**Approved Fastener for Deck Type**	**1:2 ft^2**
ENRGY-2, ENRGY-3, PSI-25, AC Foam II, Poly ISO 2, AC Foam III, H-Shield, Polyisocyanurate HP, Polyisocyanurate HP-W, HP-H, Polyisocyanurate HP-N		
Minimum 1.5" thick	**Approved Fastener for Deck Type**	**1:2 ft^2**
Minimum 2" thick	**Approved Fastener for Deck Type**	**1:4 ft^2**
ACFoam Composite, Poly ISO 2 Composite, Rhoflex Composite, Fesco Foam		
Minimum 1.5" thick	**Approved Fastener for Deck Type**	**1:3 ft^2**
High Density Wood Fiberboard		
Minimum ¾" thick	**Approved Fastener for Deck Type**	**1:2.67 ft^2**
ISO 95+GL, HF, Rhoflex GL, HF		
Minimum 1.2" thick	**Approved Fastener for Deck Type**	**1:2 ft^2**
Minimum 1.4" thick	**Approved Fastener for Deck Type**	**1:3 ft^2**
Structodeck, Fiber Base, HP Recovery, High Density Wood Fiberboard		
Minimum ½" thick	**Approved Fastener for Deck Type**	**1:2 ft^2**
Dens Deck, Dens Deck Prime, Strataguard		
Minimum ¼"thick	**Approved Fastener for Deck Type**	**1:2 ft^2**

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**

Required over the insulations listed in Base Layer or optional over any of the insulations listed as Base or Top Layer:
HP Recovery (for use over all insulation types) **Fiber Base** (for use over polyisocyanurate, gypsum or perlite) **High Density Wood Fiberboard** (for use over all insulation types).
Minimum ½" thick **Approved Fastener for Deck Type** **1:2 ft^2**

Vapor Retarder:	(Optional) Any UL or FM approved vapor retarder applied to the roof deck or over a base layer of insulation.
Barrier:	None.
Membrane #1:	Standard or White-on-Black 45 to 90 mil membrane fully adhered to the insulation using Mule-Hide Bonding Adhesive applied to the substrate at a rate of 1 gal/60 ft.^{2}, B-500 applied to the substrate at a rate of 1 gal./sq. or Mule-Hide Water Base Bonding Adhesive applied to High Density Wood Fiberboard at a rate of 1 gal./sq. ***Maximum Design Pressure –45 psf (See General Limitation #9)***
Membrane #2:	FleeceBACK or White on-Black FleeceBACK 100 or 115 mil membrane fully adhered to the insulation using FAST Adhesive applied to the substrate at a rate of 1 gal/sq. ***Maximum Design Pressure –60 psf. (See General Limitation #7)***
Membrane #3	FleeceBack AFX or AFX Plus membrane adhered to the insulation in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-25 lbs./sq. ***Maximum Design Pressure – 60 psf. (See General Limitation #7).***
Surfacing:	(Optional) A two-part surfacing consisting of EM-8 Hypalon applied at the rate of 1 gal./150 ft^2 and silica sand applied into the wet coating at a rate of 35 lbs./sq. or two coats of Mule-Hide Acrylic Coating at a rate of 1.5 gal/sq. per coat.
Maximum Design Pressure:	See Membrane Options Above

Membrane Type: Single Ply, Thermoset, EPDM, Reinforced

Deck Type 7I: Recover

Deck Description: Steel/concrete (See Deck Type noted below)

System Type D(1): Membrane mechanically attached over preliminarily fastened insulation.

All General and System Limitations apply.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
One of the following covered with the boards listed in Top Layer or Base or Top Layer.		
Extruded or Expanded Polystyrene		
Minimum 1" thick	**N/A**	**N/A**
Perlite		
Minimum ¾" thick	**N/A**	**N/A**

Base or Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY-2, ENRGY-3, PSI-25, H-Shield, AC Foam II, Poly ISO 2, AC Foam III, Polyisocyanurate HP, HP-W, HP-H, Polyisocyanurate HP-N, Multi-Max FA, Hytherm AP, Ultra/M-II Iso/glas, ISO 95+ HF, Rhoflex HF, ISO 95+GL, GW, Rhoflex GL, GW, UltraGard Gold, Isolite E, ACFoam Composite, Poly ISO 2 Composite, Rhoflex Composite, Fesco Foam		
Minimum 1" thick	**N/A**	**N/A**
HP Recovery, Structodeck, Fiber Base, High Density Fiberboard		
Minimum ½" thick	**N/A**	**N/A**
Dens Deck, Dens Deck Prime, Strataguard		
Minimum ¼" thick	**N/A**	**N/A**

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Required over the insulations listed in Base Layer or optional over any of the insulations listed as Base or Top Layer:		
HP Recovery (for use over all insulation. types) **Fiber Base** (for use over polyisocyanurate, gypsum or perlite) **High Density Wood Fiberboard** (for use over all insulation types).		
Minimum ½" thick	**N/A**	**N/A**

Note: All layers of insulation and membrane shall be simultaneously attached. See membrane below for fasteners and density. Refer to Roofing Application Standard RAS 117 for insulation attachment requirements. Insulation shall have preliminary attachment, prior to the installation of the roofing membrane. At an 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. Single and multiple layers of insulation can be attached with any FAST Adhesive.

Vapor Retarder: (Optional) Any UL or FM approved vapor retarder applied to the roof deck or over a base layer of insulation.

Barrier: None.

Membrane:	Reinforced, FR Reinforced or Sure-Tough secured through the preliminarily attached insulation as specified below.
Deck:	Structural Concrete Deck or Minimum 22 gage ASTM A653 Grade C Steel deck fastened to steel support at a maximum span of 6 feet o.c. Steel deck shall be fastened with minimum ITW Buildex Traxx/5 at a maximum spacing of 6 inches o.c. Side laps shall be fastened with Traxx/1 at a maximum spacing of 24 inches o.c.
Fastening #1:	Metal Fastening Bars with Mule-Hide EHD Fasteners or ST Fastening Bar With Sure-Tite Fasteners spaced 12" o.c. installed through the reinforced membrane in the lap or through an RMS strip in rows spaced maximum 6'-6" o.c. ***Maximum Design Pressure –45 psf (See General Limitation #7)***
Fastening #2:	Metal Fastening Bars with Mule-Hide EHD Fasteners or ST Fastening Bar With Sure-Tite Fasteners spaced 6" o.c. installed through the reinforced lap or through an RMS strip in rows spaced maximum 9'-6" o.c. ***Maximum Design Pressure –52.5 psf (See General Limitation #7)***
Fastening #3:	Mule-Hide HD Fasteners with Polymer Plates spaced 6" o.c. through the reinforced membrane in the lap or through an RMS strip in rows spaced maximum 9'-6" o.c. ***Maximum Design Pressure -45 psf. (See General Limitation #7)***
Fastening #4:	Mule-Hide HD Fasteners with Polymer Plates spaced 6" o.c. through the reinforced membrane in the lap or through an RMS strip in rows spaced maximum 6'-6" o.c. ***Maximum Design Pressure –52.5 psf. (See General Limitation #7)***
Fastening #5:	Metal Fastening Bars with Mule-Hide EHD Fasteners or ST Fastening Bar With Sure-Tite Fasteners spaced 6" o.c. installed through the reinforced membrane in the lap or through an RMS strip in rows spaced maximum 6'-6" o.c. ***Maximum Design Pressure –67.5 psf (See General Limitation #7)***
Fastening #6:	Mule-Hide HD Fasteners with Polymer Plates 6" o.c. installed through the Sure-Tough Membrane in rows spaced maximum 9'-6" o.c. ***Maximum Design Pressure -52.5 psf. (See General Limitation #7)***
Surfacing:	(Optional) A two-part surfacing consisting of EM-8 Hypalon applied at the rate of 1 gal./150 ft^2 and silica sand applied into the wet coating at a rate of 35 lbs./sq. or two coats of Mule-Hide Acrylic Coating at a rate 1.5 gal/sq. per coat.
Maximum Design Pressure:	See Fastening Options Above

Membrane Type: Single Ply, Thermoset, EPDM, Reinforced

Deck Type 7I: Recover

Deck Description: Steel/concrete (See Deck Type noted below)

System Type D(2): Membrane mechanically attached over preliminarily fastened insulation.

All General and System Limitations apply.

Base Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
One of the following covered with the boards listed in Top Layer or Base or Top Layer.		
Extruded or Expanded Polystyrene		
Minimum 1" thick	**N/A**	**N/A**
Perlite		
Minimum ¾" thick	**N/A**	**N/A**

Base or Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ENRGY-2, ENRGY-3, PSI-25, H-Shield, AC Foam II, Poly ISO 2, AC Foam III, Polyisocyanurate HP, HP-W, HP-H, Polyisocyanurate HP-N, Multi-Max FA, Hytherm AP, Ultra/M-II Iso/glas, ISO 95+ HF, Rhoflex HF, ISO 95+GL, GW, Rhoflex GL, GW, UltraGard Gold, Isolite E, ACFoam Composite, Poly ISO 2 Composite, Rhoflex Composite, Fesco Foam		
Minimum 1" thick	**N/A**	**N/A**
HP Recovery, Structodeck, Fiber Base, High Density Fiberboard		
Minimum ½" thick	**N/A**	**N/A**
Dens Deck, Dens Deck Prime, Strataguard		
Minimum ¼" thick	**N/A**	**N/A**

Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Required over the insulations listed in Base Layer or optional over any of the insulations listed as Base or Top Layer:		
HP Recovery (for use over all insulation. types) **Fiber Base** (for use over polyisocyanurate, gypsum or perlite)		
Minimum ½" thick	**N/A**	**N/A**

Note: All layers of insulation and membrane shall be simultaneously attached. See membrane below for fasteners and density. Refer to Roofing Application Standard RAS 117 for insulation attachment requirements. Insulation shall have preliminary attachment, prior to the installation of the roofing membrane. At an 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. Single and multiple layers of insulation can be attached with any FAST Adhesive.

Vapor Retarder: (Optional) Any UL or FM approved vapor retarder applied to the roof deck or over a base layer of insulation.

Barrier: None.

Membrane:	Reinforced, FR Reinforced or Sure-Tough secured through the preliminarily attached insulation as specified below.
Deck:	Structural Concrete Deck or Minimum 22 gage ASTM A653 Grade E Type B Steel deck fastened to steel support at a maximum span of 6 feet o.c. Steel deck shall be fastened with minimum ITW Buildex Traxx/5 at a maximum spacing of 6 inches o.c. Side laps shall be fastened with Traxx/1 at a maximum spacing of 30 inches o.c.
Fastening #1:	ST Fastening Bar With Sure-Tite Fasteners spaced 12" o.c. installed through the reinforced membrane in the lap or through an RMS strip in rows spaced maximum 9'-6" o.c. ***Maximum Design Pressure –45 psf (See General Limitation #7)***
Fastening #2:	Metal Fastening Bars with Mule-Hide EHD Fasteners or ST Fastening Bar With Sure-Tite Fasteners spaced 6" o.c., installed through the reinforced membrane in the lap or through an RMS strip in rows spaced maximum 9'-6" o.c. ***Maximum Design Pressure –60 psf (See General Limitation #7)***
Fastening #3:	Metal Fastening Bars with Mule-Hide EHD Fasteners or ST Fastening Bar With Sure-Tite Fasteners spaced 6" o.c., installed through the reinforced membrane in the lap or through an RMS strip in rows spaced maximum 6'-6" o.c. ***Maximum Design Pressure –75 psf (See General Limitation #7)***
Fastening #4:	Mule-Hide HD fasteners and Polymer Plates 6" o.c. installed through the reinforced membrane in the lap or through an RMS strip in rows spaced maximum 9'-6" o.c. ***Maximum Design Pressure –52.5 psf. (See General Limitation #7)***
Fastening #5:	Mule-Hide HD Fasteners and Polymer Plates spaced 6" o.c. installed through the Sure-Tough Membrane in rows spaced maximum 9'-6" o.c. ***Maximum Design Pressure –60 psf (See General Limitation #7)***
Surfacing:	(Optional) A two-part surfacing consisting of EM-8 Hypalon applied at the rate of 1 gal./150 ft^2 and silica sand applied into the wet coating at a rate of 35 lbs./sq. or two coats of Mule-Hide Acrylic Coating at a rate 1.5 gal/sq. per coat.
Maximum Design Pressure:	See Fastening Options Above

Membrane Type: Single Ply, Thermoplastic, FleeceBACK

Deck Type 7: Recover

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

System Type F: Membrane fully adhered.

All General and System Limitations apply.

Vapor Retarder: None.

Barrier: None.

Membrane: Standard or White-on-Black 45 to 90 mil membrane fully adhered to the existing roof using Mule-Hide Bonding Adhesive applied to the substrate at a rate of 1 gal/60ft.^{2}, or B-500 applied to the substrate at 1 gal/sq.

Surfacing: (Optional) A two-part surfacing consisting of EM-8 Hypalon applied at the rate of 1 gal./150 ft^2 and silica sand applied into the wet coating at a rate of 35 lbs./sq. or two coats of Mule-Hide Acrylic Coating at a rate 1.5 gal/sq. per coat.

Maximum Design Pressure: -240 psf (See General Limitation #9)

Deck Type 7: Recover

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

System Type F(2): Membrane fully adhered.

All General and System Limitations apply.

Vapor Retarder: None.

Barrier: None.

Membrane: FleeceBACK or White-on-Black FleeceBACK 100 or 115 mil membrane fully adhered to the existing roof using FAST Adhesive applied to the substrate at a rate of 1 gal./sq.
Or
FleeceBACK AFX or AFX Plus membrane adhered to the existing roof in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-25 lbs./sq.

Surfacing: (Optional) A two-part surfacing consisting of EM-8 Hypalon applied at the rate of 1 gal./150 ft^2 and silica sand applied into the wet coating at a rate of 35 lbs./sq. or two coats of Mule-Hide Acrylic Coating at a rate 1.5 gal/sq. per coat.

Maximum Design Pressure: -585 pfs. (See General Limitation #9)

RECOVER SYSTEM LIMITATIONS:

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

GENERAL LIMITATIONS:

1. Fire classification is not part of this acceptance, refer to a current Approved Roofing Materials Directory for fire ratings of this product.
2. Insulation may be installed in multiple layers. The first layer shall be attached in compliance with Product Control Approval guidelines. All other layers shall be adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq., or mechanically attached using the fastening pattern of the top layer
3. All standard panel sizes are acceptable for mechanical attachment. When applied in approved asphalt, panel size shall be 4' x 4' maximum.
4. An overlay and/or recovery board insulation panel is required on all applications over closed cell foam insulations when the base sheet is fully mopped. If no recovery board is used the base sheet shall be applied using spot mopping with approved asphalt, 12" diameter circles, 24" o.c.; or strip mopped 8" ribbons in three rows, one at each sidelap and one down the center of the sheet allowing a continuous area of ventilation. Encircling of the strips is not acceptable. A 6" break shall be placed every 12' in each ribbon to allow cross ventilation. Asphalt application of either system shall be at a minimum rate of 12 lbs./sq. **Note: Spot attached systems shall be limited to a maximum design pressure of -45 psf.**
5. Fastener spacing for insulation attachment is based on a Minimum Characteristic Force (F') value of 275 lbf., as tested in compliance with Testing Application Standard TAS 105. If the fastener value, as field-tested, are below 275 lbf. insulation attachment shall not be acceptable.
6. Fastener spacing for mechanical attachment of anchor/base sheet or membrane attachment is based on a minimum fastener resistance value in conjunction with the maximum design value listed within a specific system. Should the fastener resistance be less than that required, as determined by the Building Official, a revised fastener spacing, prepared, signed and sealed by a Florida Registered Engineer, Architect, or Registered Roof Consultant may be submitted. Said revised fastener spacing shall utilize the withdrawal resistance value taken from Testing Application Standards TAS 105 and calculations in compliance with Roofing Application Standard RAS 117.
7. Perimeter and corner areas shall comply with the enhanced uplift pressure requirements of these areas. Fastener densities shall be increased for both insulation and base sheet as calculated in compliance with Roofing Application Standard RAS 117. **(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