



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

MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION
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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 and accepted by Miami-Dade County RER - Product Control Section to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

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

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

DESCRIPTION: Mule-Hide Single Ply PVC Roof Systems over Concrete Decks

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

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

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

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

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

This NOA consists of pages 1 through 8.

The submitted documentation was reviewed by Alex Tigera.



NOA No: 16-0822.04
Expiration Date: 08/17/21
Approval Date: 06/15/17
Page 1 of 8

ROOFING SYSTEM APPROVAL

Category: Roofing
Sub-Category: Single Ply
Material: PVC
Deck Type: Concrete
Maximum Design Pressure -330 psf

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

<u>Product Name</u>	<u>Dimensions</u>	<u>Test Specifications</u>	<u>Product Description</u>
PVC Membrane	various	TAS131	Reinforced white or colored PVC membrane

APPROVED INSULATIONS:

TABLE 2

<u>Product Name</u>	<u>Product Description</u>	<u>Manufacturer (With Current NOA)</u>
ACFoam Composite	Polyisocyanurate Insulation with perlite facer	Atlas Roofing Corp.
Poly ISO 2 Composite	Polyisocyanurate Insulation with perlite facer	Atlas Roofing Corp.
ACFoam-II	Polyisocyanurate Insulation	Atlas Roofing Corp.
Poly ISO 2	Polyisocyanurate Insulation	Mule-Hide Products Co., Inc.
DensDeck, DensDeck Prime	Silicon treated gypsum	Georgia-Pacific Gypsum LLC
ENRGY 3, ENRGY 3 25 PSI	Polyisocyanurate Insulation	Johns Manville Corp.
Structodek High Density Fiberboard Roof Insulation	High Density Wood Fiber insulation board	Blue Ridge Fiberboard, Inc.
H-Shield	Polyisocyanurate Insulation	Hunter Panels, LLC.
Mule-Hide Poly ISO 1	Polyisocyanurate Insulation	Mule-Hide Products Co., Inc.



APPROVED FASTENERS / ADHESIVES:

TABLE 3

<u>Fastener Number</u>	<u>Product Name</u>	<u>Product Description</u>	<u>Dimensions</u>	<u>Manufacturer (With Current NOA)</u>
1.	OMG OlyBond 500	Spray Polyurethane Adhesive	Various	OMG, Inc.
2.	FAST 100 LV	Spray Polyurethane Adhesive	Various	Carlisle SynTec, a division of Carlisle Construction Materials, Inc.
3.	Low VOC PVC Bonding Adhesive	Solvent-based bonding adhesive	Various	Carlisle SynTec, a division of Carlisle Construction Materials, Inc.

EVIDENCE SUBMITTED:

<u>Test Agency</u>	<u>Test Identifier</u>	<u>Description</u>	<u>Date</u>
Factory Mutual Research Corp.	3014692	FM 4470	08/05/03
	3021764	FM 4470	01/11/06
Trinity ERD	C14040.03.12-R1	ASTM D 2196-99	03/28/12



APPROVED ASSEMBLIES

Membrane Type:	Single Ply, PVC
Deck Type 3I:	Concrete Decks, Insulated
Deck Description:	2500 psi structural concrete.
System Type A(1):	One or more layers of insulation adhered with approved asphalt, OMG OlyBond 500 or FAST 100 LV adhesive; Membrane fully adhered.

All General and System Limitations apply. Roof accessories not listed in Table 1 of this NOA are not approved and shall not be installed unless said accessories demonstrate compliance with prescriptive Florida Building Code requirements and are field fabricated utilizing the approved membranes listed in Table 1.

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ACFoam-II, Poly ISO 2, H-Shield, Mule-Hide Poly ISO 1 Minimum 1.5" thick	N/A	N/A

Note: 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 ft², OMG OlyBond 500 adhesive in ribbons spaced 12" o.c. or FAST 100 LV adhesive at a rate of 1.2 gal./sq. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Membrane: PVC Membrane, 50, 60 or 80 mil membrane fully adhered to the insulation using Low VOC PVC Bonding Adhesive applied to the substrate at a rate of 1 gal/60 ft.² The outside 1.5" of the roof cover lap is heat welded.

Maximum Design Pressure: -225 psf. (See General Limitation #9.) with Fast 100 LV adhesive
-150 psf. (See General Limitation #9.) with OMG OlyBond 500



Membrane Type: Single Ply, PVC
Deck Type 3I: Concrete Decks, Insulated
Deck Description: 2500 psi structural concrete.
System Type A(2): One or more layers of insulation adhered with approved asphalt, OMG OlyBond 500; Membrane fully adhered.

All General and System Limitations apply. Roof accessories not listed in Table 1 of this NOA are not approved and shall not be installed unless said accessories demonstrate compliance with prescriptive Florida Building Code requirements and are field fabricated utilizing the approved membranes listed in Table 1.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ACFoam-II, Poly ISO 2, ACFoam Composite, Poly ISO 2 Composite, H-Shield, Mule-Hide Poly ISO 1 Minimum 1.5” thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
DensDeck, DensDeck Prime Minimum ¼” thick	N/A	N/A

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of insulation. All insulation shall be adhered to the deck with OMG OlyBond 500 adhesive in ribbons spaced 12” o.c. 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 used as a top layer shall be placed with the polyisocyanurate side facing down. Insulation can be adhered to the deck with FAST 100 LV adhesive.

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

Membrane: PVC Membrane, 50, 60 or 80 mil membrane fully adhered to the insulation using Low VOC PVC Bonding Adhesive applied to the substrate at a rate of 1 gal/60 ft.² The outside 1.5” of the roof cover lap is heat welded.

Maximum Design Pressure: -150 psf. (See General Limitation #9.)



Membrane Type: Single Ply, PVC
Deck Type 3I: Concrete Decks, Insulated
Deck Description: 2500 psi structural concrete.
System Type A(3): One or more layers of insulation adhered with FAST 100 LV adhesive; Membrane fully adhered.

All General and System Limitations apply. Roof accessories not listed in Table 1 of this NOA are not approved and shall not be installed unless said accessories demonstrate compliance with prescriptive Florida Building Code requirements and are field fabricated utilizing the approved membranes listed in Table 1.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
ACFoam-II, Poly ISO 2, ACFoam Composite, Poly ISO 2 Composite, H-Shield, Mule-Hide Poly ISO 1, ENRGY 3 Minimum 1.5” thick	N/A	N/A
<u>Top Insulation Layer (Optional)</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
DensDeck, DensDeck Prime Minimum ¼” thick	N/A	N/A

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of insulation. All insulation shall be adhered to the deck with FAST 100 LV adhesive at a rate of 1.2 gal./sq. 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 used as a top layer shall be placed with the polyisocyanurate side facing down. Insulation can be adhered to the deck with FAST 100 LV adhesive.

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

Membrane: PVC Membrane, 50, 60 or 80 mil membrane fully adhered to the insulation using Low VOC PVC Bonding Adhesive applied to the substrate at a rate of 1 gal/60 ft.² The outside 1.5” of the roof cover lap is heat welded.

Maximum Design Pressure: -330 psf. (without DensDeck) with FAST 100 LV adhesive or Asphalt (See General Limitation #9.)
-180 psf. (with DensDeck) with Fast 100 LV adhesive or Asphalt (See General Limitation #9.)



Membrane Type: Single Ply, PVC
Deck Type 3I: Concrete Decks, Insulated
Deck Description: 2500 psi structural concrete.
System Type A(4): One or more layers of insulation adhered with OMG OlyBond 500; Membrane fully adhered.

All General and System Limitations apply. Roof accessories not listed in Table 1 of this NOA are not approved and shall not be installed unless said accessories demonstrate compliance with prescriptive Florida Building Code requirements and are field fabricated utilizing the approved membranes listed in Table 1.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
Structodek High Density Fiberboard Roof Insulation Minimum ½” thick	N/A	N/A

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of insulation. All insulation shall be adhered to the deck with OMG OlyBond 500 adhesive in ribbons spaced 12” o.c. 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 used as a top layer shall be placed with the polyisocyanurate side facing down. Insulation can be adhered to the deck with FAST 100 LV adhesive.

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

Membrane: PVC Membrane, 50, 60 or 80 mil membrane fully adhered to the insulation using Low VOC PVC Bonding Adhesive applied to the substrate at a rate of 1 gal/60 ft². The outside 1.5” of the roof cover lap is heat welded.

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



CONCRETE DECK SYSTEM LIMITATIONS:

1. If mechanical attachment to the structural deck through the lightweight insulating concrete is proposed, a field withdrawal resistance testing shall be performed to determine equivalent or enhanced fastener patterns and density. All testing and fastening design shall be in compliance with Testing Application Standard TAS 105 and Roofing Application Standard RAS 117, calculations shall be signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant.

GENERAL LIMITATIONS:

1. Fire classification is not part of this acceptance; refer to a current Approved Roofing Materials Directory for fire ratings of this product.
2. Insulation may be installed in multiple layers. The first layer shall be attached in compliance with Product Control Approval guidelines. All other layers shall be adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq., or mechanically attached using the fastening pattern of the top layer
3. All standard panel sizes are acceptable for mechanical attachment. When applied in approved asphalt, panel size shall be 4' x 4' maximum.
4. An overlay and/or recovery board insulation panel is required on all applications over closed cell foam insulations when the base sheet is fully mopped. If no recovery board is used the base sheet shall be applied using spot mopping with approved asphalt, 12" diameter circles, 24" o.c.; or strip mopped 8" ribbons in three rows, one at each side lap and one down the center of the sheet allowing a continuous area of ventilation. Encircling of the strips is not acceptable. A 6" break shall be placed every 12' in each ribbon to allow cross ventilation. Asphalt application of either system shall be at a minimum rate of 12 lbs./sq. **Note: Spot attached systems shall be limited to a maximum design pressure of -45 psf.**
5. Fastener spacing for insulation attachment is based on a Minimum Characteristic Force (F') value of 275 lbf., as tested in compliance with Testing Application Standard TAS 105. If the fastener value, as field-tested, are below 275 lbf. Insulation attachment shall not be acceptable.
6. Fastener spacing for mechanical attachment of anchor/base sheet or membrane attachment is based on a minimum fastener resistance value in conjunction with the maximum design value listed within a specific system. Should the fastener resistance be less than that required, as determined by the Building Official, a revised fastener spacing, prepared, signed and sealed by a Florida Registered Engineer, Architect, or Registered Roof Consultant may be submitted. Said revised fastener spacing shall utilize the withdrawal resistance value taken from Testing Application Standards TAS 105 and calculations in compliance with Roofing Application Standard RAS 117.
7. Perimeter and corner areas shall comply with the enhanced uplift pressure requirements of these areas. Fastener densities shall be increased for both insulation and base sheet as calculated in compliance with Roofing Application Standard RAS 117. Calculations prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant **(When this limitation is specifically referred within this NOA, General Limitation #9 will not be applicable.)**
8. All attachment and sizing of perimeter nailers, metal profile, and/or flashing termination designs shall conform to Roofing Application Standard RAS 111 and applicable wind load requirements.
9. The maximum designed pressure limitation listed shall be applicable to all roof pressure zones (i.e. field, perimeters, and corners). Neither rational analysis, nor extrapolation shall be permitted for enhanced fastening at enhanced pressure zones (i.e. perimeters, extended corners and corners). **(When this limitation is specifically referred within this NOA, General Limitation #7 will not be applicable.)**
10. All products listed herein shall have a quality assurance audit in accordance with the Florida Building Code and Rule 61G20-3 of the Florida Administrative Code.

END OF THIS ACCEPTANCE