



**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.
2924 Wyetta 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 and the High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: Self Adhering Modified Bitumen Roof System 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 renews NOA No. 03-0716.07 and consists of pages 1 through 14.
The submitted documentation was reviewed by Jorge L. Acebo.



**NOA No.: 08-0924.15
Expiration Date: 11/22/12
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ROOFING ASSEMBLY APPROVAL

Category: Roofing
Sub-Category: Modified Bitumen
Materials: SBS/APP/TPO
Deck Type: Concrete
Maximum Design Pressure: -315 psf

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

| <u>Product</u> | <u>Dimensions</u> | <u>Test Specification</u> | <u>Product Description</u> |
|---------------------------|--------------------|---------------------------|--|
| 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 6164 | 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 6164 | 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 6164 | 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 (G) 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. |
| 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. |
| Nail Base | 65' 2" x 3' 3-3/8" | ASTM D 4601 | SBS modified asphalt coated fiberglass reinforced base sheet. |



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APPROVED INSULATIONS:

TABLE 2

| Product Name | Product Description | Manufacturer (With Current NOA) |
|--|--|--|
| Poly Iso 2 | Polyisocyanurate foam insulation | Mule-Hide Products Co., Inc. |
| Poly Iso 2 Composite | Polyisocyanurate/perlite composite insulation | Mule-Hide Products Co., Inc. |
| Polytherm Composite | Polyisocyanurate/perlite composite insulation. | Polyglass USA, Inc. |
| 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 Material. Corp. |
| GAF Fiberboard | Wood fiber board | GAF Material. Corp. |
| GAF High Density Wood Fiberboard | High Density Wood Fiberboard | GAF Material. 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. |
| Armor-R Glas (Standard & Wide Flute) | Glass fiber insulation board | Honeywell Int'l. Inc. |
| Hubert Fiberboard | Wood fiber board | Huebert Fiberboard, Inc. |
| H-Shield | Polyisocyanurate foam insulation | Hunter Panels, LLC |
| H-Shield P | Polyisocyanurate/perlite composite insulation | Hunter Panels, LLC |
| ENRGY-2 | Polyisocyanurate foam insulation | Johns Manville Corp. |
| Fesco Board | Expanded mineral fiber | Johns Manville Corp. |
| Fiber Glass (Standard & Wide Flute) | Glass fiber insulation board | Johns Manville Corp. |
| Kop-R Wood Fiber | Polyisocyanurate foam insulation | Koppers Industries, Inc. |
| Structodek, Structodek FS | Wood fiber board | Masonitec |



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APPROVED INSULATIONS:

TABLE 2

| Product Name | Product Description | Manufacturer (With Current NOA) |
|--|--|--|
| Standard or Wide Flute Fiberglas Roof Insulation | Glass fiber insulation board | Owens-Corning |
| Multi-Max FA | Polyisocyanurate foam insulation | RMax, Inc. |
| Thermarroof Composite | Polyisocyanurate/perlite composite insulation. | RMax, Inc. |
| Fiberbond | Type-x Gypsum | United States Gypsum Co. |

APPROVED FASTENERS:

TABLE 3

| Fastener Number | Product Name | Product Description | Dimensions | Manufacturer (With Current NOA) |
|------------------------|-----------------------------------|---|-------------------|--|
| 1. | Polygrip Fasteners #12, #14 & #15 | Insulation fastener for wood, steel and concrete decks | | Polyglass USA, Inc. |
| 2. | Polygrip Hex Plate | Galvalume hex stress plate. | 2 7/8" x 3-1/4" | Polyglass USA, Inc. |
| 3. | Polygrip 2-1/2" Membrane Plate | Galvalume barbed stress plate | 2.5" round | Polyglass USA, Inc. |
| 4. | Dekfast Fasteners #12, #14 & #15 | Insulation fastener for wood, steel and concrete decks | | Construction Fasteners Inc. |
| 5. | HWH Dekfast Fasteners | Insulation fastener for wood, and steel decks | | Construction Fasteners Inc. |
| 6. | Omega Fasteners | Insulation fastener for wood, and steel decks | | Construction Fasteners Inc. |
| 7. | Dekfast Hex Plate | Galvalume hex stress plate. | 2 7/8" x 3 1/4" | Construction Fasteners Inc. |
| 8. | Dekfast Autoset Plate | Galvalume stress plate. | 2-7/8" x 3-1/4" | Construction Fasteners Inc. |
| 9. | Dekfast 2 1/2" HS membrane Plate | Galvalume stress plate. | 2.5" round | Construction Fasteners Inc. |
| 10. | #14 & #15 Roofgrip Fasteners | Insulation fastener for wood, steel and concrete decks. | | ITW Buildex Corp. |



APPROVED FASTENERS:

TABLE 3

| Fastener Number | Product Name | Product Description | Dimensions | Manufacturer (With Current NOA) |
|------------------------|---|--|--|--|
| 11. | Metal Plate | Galvalume stress plate. | 3" round 3" square | ITW Buildex Corp. |
| 12. | Flat Bottom Metal Plate | Galvalume stress plate. | 3" square | ITW Buildex Corp. |
| 13. | 2- ³ / ₈ " Round Barbed Seam Plates | Galvalume stress plate. | 2- ³ / ₈ " round | ITW Buildex Corp. |
| 14. | #14 HD Insul-Fixx Fastener | Insulation fastener for wood, steel and concrete decks | | SFS Stadler, Inc. |
| 15. | Extra Load Fasteners | Insulation fastener for concrete decks | | SFS Stadler, Inc. |
| 16. | Insul-Fixx S Plate | Galvalume AZ50 steel plate | 3" round | SFS Stadler, Inc. |
| 17. | IF-2.375 Plates | Galvalume AZ55 steel plate | 2.37" round | SFS Stadler, Inc. |
| 18. | IF/IFT-70x70 Plates | Galvalume steel plate | 2.75" square | SFS Stadler, Inc. |
| 19. | Tru-Fast HD & CF | .235" dia. fastener for wood, steel and concrete decks | 0.235 dia | The Tru-Fast Corp. |
| 20. | Tru-Fast Plates | 3" round galvalume AZ55 steel plate | 3" round | The Tru-Fast Corp. |
| 21. | Tru-Fast MP-3 | 3.23" diameter round galvalume AZ50 steel plate | 3.23 round 3" round | The Tru-Fast Corp. |
| 22. | Mule-Hide HD and CF (#14) Fasteners | .235" dia. fastener for wood, steel and concrete decks | 0.235 dia. | Mule-Hide Products Co., Inc. |
| 23. | Mule-Hide Plate | 3" round galvalume AZ55 steel plate | 3" round | Mule-Hide Products Co., Inc. |
| 24. | Mule-Hide Plate MP-3 | 3.23" diameter round galvalume AZ50 steel plate | 3.23 round 3" round | Mule-Hide Products Co., Inc. |



EVIDENCE SUBMITTED:

| <u>Test Agency</u> | <u>Test Name/Report</u> | <u>Report No.</u> | <u>Date</u> |
|-------------------------------------|-------------------------|-------------------|-------------|
| Factory Mutual Research Corporation | 4470 | J.I. 2W7A7.AM | 08.04.94 |
| | 4450 | 2D5A9.AM | 06.22.99 |
| | 4470 | J.I. 3001334 | 02.15.00 |
| | 4470 | J.I. 3000857 | 01.12.00 |
| | 4470 | J.I. 3004091 | 01.12.00 |
| | 4470 | 3012321 | 07.29.07 |
| | 4450 | 3014751 | 08.27.03 |
| | 4450 | 3019317 | 06.30.04 |
| | 4470 | 3014692 | 08.05.03 |
| Exterior Research & Design, LLC. | TAS 114 | 11752.09.99-1 | 02.08.00 |
| | | 02764.09.05 | 09.09.05 |
| | | 020843.02.05-1 | 02.10.05 |
| | | 02762.03.05 | 03.30.05 |
| | | 020841.06.04 | 06.02.04 |
| | | 02843.07.07 | 07.23.07 |
| Trinity ERD | TAS 117(B)-ASTM D903 | P1734.07.06-R1 | 02.27.07 |
| | TAS 114 | P1738.02.07 | 02.05.07 |
| | | P1739.01.07 | 01.23.07 |
| | | | |



APPROVED ASSEMBLIES:

- Deck Type 3I:** Concrete Decks, Insulated
- Deck Description:** 2500 psi structural concrete or concrete plank
- System Type B(1):** Base layer of insulation mechanically fastened, optional top layer adhered with approved asphalt.

All General and System limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|--|---|--|
| H-Shield, H-Shield P, Polytherm or Polytherm Composite P Minimum 1.5" thick | 1, 4, 19 or 22 | 1:4 ft² |

Note: Base layer shall be mechanically attached with fasteners and density described above. 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 RAS 117 for fastening details.

| Top Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|--|---|--|
| ConPerl, GAFTEMP Permalite, Permalite or Fesco Board Minimum 3/4" 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./sq. Refer to RAS 117 for insulation attachment. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down. Top Insulation layers listed above and composite insulation with perlite side facing up shall require one layer of Nail Base adhered to the insulation with approved asphalt within the EVT range and at a rate of 20-40 lbs./sq.

- Base Sheet:** (Optional if using one or more plies of self-adhered membranes noted below) 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) One or more plies of SA Base Sheet (FR) or SA Base Sheet self-adhered to Nail Base or SA Base Sheet (FR) or SA Base Sheet self-adhered to a listed polyisocyanurate layer (no coverboard).
- Membrane:** One ply of SA-APP Cap Sheet (G) (FR), SA-APP Cap Sheet (G), SA-APP Cap Sheet (S), SA-SBS Cap Sheet (FR), SA SBS Cap Sheet, 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.)



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- Deck Type 3I:** Concrete Decks, Insulated
- Deck Description:** 2500 psi structural concrete or concrete plank
- System Type B(2):** Base layer of insulation mechanically fastened, top layer adhered with approved asphalt.

All General and System limitations apply.

One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|---|---|--|
| ENRGY-2 or Polytherm, or Poly ISO 2 Minimum 1.5" thick | 4 or 15 | 1:1.33 ft² |

Note: Base layer shall be mechanically attached with fasteners and density described above. 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 RAS 117 for fastening details.

| Top Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|--|---|--|
| High Density Wood Fiberboard (coated six-sides only) Minimum ½" thick | N/A | N/A |
| Fesco Board Minimum ¾" thick | N/A | N/A |

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

- Base Sheet:** (Optional if using SA Base Sheet or SA Base Sheet (FR) self adhered to the High Density Wood Fiberboard (coated six-sides only). 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 Nail Base in hot asphalt) One or more plies of SA base Sheet (FR) or SA-Base Sheet self-adhered to High Density Wood Fiberboard (coated six-sides only).
- Membrane:** One ply of SA-APP Cap Sheet (G) (FR), SA-APP Cap Sheet (G), SA-APP Cap Sheet (S), SA-SBS Cap Sheet (FR), SA SBS Cap Sheet, 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 Fibrated Aluminum Coating at 1½ gal/sq.

Maximum Design

Pressure:

-90 psf; (See general limitation #7.)



Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

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.

One or more layers of any of the following insulations:

| Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|--|---|--|
| ENRGY-2, Polytherm Minimum 1.5" thick | 4, 11, 15, 19 or 22 | 1:1.33 ft² |

Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Insulation fasteners shall be tested for withdrawal resistance in compliance with Testing Application Standard TAS 105 to confirm compliance with the wind load requirements. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: None

Ply Sheet: One or more plies of SA Base Sheet (FR) or 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 (FR), SA SBS Cap Sheet, 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 3I: Concrete Decks, Insulated
Deck Description: 2500 psi structural concrete or concrete plank
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 any of the following insulations:

| 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 |
|--|-----------------------------------|-------------------------------------|
| Dens-Deck Prime Minimum ¼" thick | 4, 15, 19 or 22 | 1:1.33 ft ² |
| High Density Wood Fiberboard (coated six-sides only) Minimum ½" thick | 4, 15, 19 or 22 | 1:1.33 ft ² |

Note: Dens Deck Prime shall be primed with an ASTM D 41 asphalt primer and allowed to dry prior to application of self-adhering SA Base Sheet.

- Base Sheet: (Optional if using SA Base Sheet (FR) or SA Base Sheet self adhered to top insulation layer) 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 Nail Base adhered to top insulation layer in hot asphalt) One or more plies of SA Base Sheet (FR) or 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 (FR), SA SBS Cap Sheet, 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 3I: Concrete Decks, Insulated
Deck Description: 2500 psi structural concrete or concrete plank
System Type D: All insulation is loose laid with preliminary attachment to deck. Base sheet is subsequently mechanically fastened through insulation to the roof deck.

All General and System limitations apply.
 One or more layers of any of the following insulations:

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|---|---|--|
| Any approved Polyisocyanurate Minimum 1" thick | N/A | N/A |
| (Optional) Top Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
| Fesco Board Minimum 3/4" thick | N/A | N/A |
| High Density Wood Fiber Minimum 1/2" thick | N/A | N/A |
| Dens Deck Minimum 1/4" thick | N/A | N/A |

Note: All insulation shall have preliminary attachment, prior to the installation of the roofing membrane at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft.

Base Sheet: One ply of Nail Base fastened to the deck as described below:
Fastening: Attach base sheet using Mule-Hide HD (#14) or CF (#14) Fasteners and Mule-Hide Insulation Plates or Buildex #14 or #15 Roofgrip Fasteners and Flat Bottom 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 or SA Base Sheet (FR) 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 (FR), SA SBS Cap Sheet, 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 3: Concrete Decks, Non-Insulated
Deck Description: 2500 psi structural concrete or concrete plank
System Type F: Optional base sheet self-adhered.

All General and System Limitations apply.

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of base sheet.

Base Sheet: (Optional) One or more plies of SA Base Sheet or SA Base Sheet (FR) self-adhered to the primed deck.

Ply Sheet: none.

Membrane: One ply of SA-APP Cap Sheet (G) (FR), SA-APP Cap Sheet (G), SA-APP Cap Sheet (S), SA-SBS Cap Sheet (FR), SA-SBS Cap Sheet, Elastoflex SA V G FR or Elastoflex SA V G self-adhered to the base sheet or to the primed deck.

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 Fibrated Aluminum Coating at 1½ gal/sq.

Maximum Design Pressure: -315 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 Professional Engineer, Registered Architect, or Registered Roof Consultant may be submitted. Said revised fastener spacing shall utilize the withdrawal resistance value taken from Testing Application Standards TAS 105 and calculations in compliance with Roofing Application Standard RAS 117.
7. Perimeter and corner areas shall comply with the enhanced uplift pressure requirements of these areas. Fastener densities shall be increased for both insulation and base sheet as calculated in compliance with Roofing Application Standard RAS 117. Calculations prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant **(When this limitation is specifically referred within this NOA, General Limitation #9 will not be applicable.)**
8. All attachment and sizing of perimeter nailers, metal profile, and/or flashing termination designs shall conform to Roofing Application Standard RAS 111 and applicable wind load requirements.
9. The maximum designed pressure limitation listed shall be applicable to all roof pressure zones (i.e. field, perimeters, and corners). Neither rational analysis, nor extrapolation shall be permitted for enhanced fastening at enhanced pressure zones (i.e. perimeters, extended corners and corners). **(When this limitation is specifically referred within this NOA, General Limitation #7 will not be applicable.)**
10. All products listed herein shall have a quality assurance audit in accordance with the Florida Building Code and Rule 9B-72 of the Florida Administrative Code.

END OF THIS ACCEPTANCE



NOA No.: 08-0924.15
Expiration Date: 11/22/12
Approval Date: 11/27/08
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