



**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)

**Performance Roof Systems, Inc.
4800 Blue Parkway
Kansas City, MO 64130**

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 of the Florida Building Code.

DESCRIPTION: Performance Modified 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 revises NOA No. 06-0817.06 and consists of pages 1 through 41.

The submitted documentation was reviewed by Alex Tigera.



**NOA No 08-0821.08
Expiration Date: 08/23/11
Approval Date: 10/09/08
Page 1 of 41**

ROOFING ASSEMBLY APPROVAL

Category: Roofing
Sub-Category: APP/SBS Modified Bitumen

Deck Type: Concrete
Maximum Design Pressure -495 psf
Fire Classification: See General Limitation #1

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT

| <u>Product</u> | <u>Dimensions</u> | <u>TABLE 1 Test Specification</u> | <u>Product Description</u> |
|-----------------|--------------------------------------|---|---|
| Derbigum GP | 33'4" x 39.4"; roll weight: 90 lbs. | ASTM D 6223 | Modified bitumen glass fiber and polyester reinforced membrane for torch application or Permastic cold adhesive application. |
| Derbigum XPS | 33'4" x 39.4"; roll weight: 90 lbs. | ASTM D 6223 | Modified bitumen glass fiber and polyester reinforced membrane for torch application or Permastic cold adhesive application. |
| Derbicolor GP | 33'4" x 39.4"; roll weight: 100 lbs. | ASTM D 6223 | Mineral surfaced modified bitumen glass fiber and polyester reinforced membrane for torch application or Permastic cold adhesive application. |
| Derbicolor XPS | 33'4" x 39.4"; roll weight: 100 lbs. | ASTM D 6223 | Mineral surfaced modified bitumen glass fiber and polyester reinforced membrane for torch application or Permastic cold adhesive application. |
| PRS 190 | 33'4" x 39.4"; roll weight: 90lbs. | ASTM D 6222 | Modified bitumen glass fiber reinforced membrane for torch application or Permastic cold adhesive application |
| PRS 190 Mineral | 33'4" x 39.4"; roll weight: 90lbs. | ASTM D 6222 | Mineral surfaced modified bitumen glass fiber reinforced membrane for torch application or Permastic cold adhesive application. |



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> |
|-------------------|--------------------------------------|---------------------------|---|
| Derbigum GP/FR | 33'4" x 39.4"; roll weight: 90 lbs. | ASTM D 6223 | Fire resistant modified bitumen glass fiber and polyester reinforced membrane for torch application or Permastic cold adhesive application. |
| Derbigum XPS/FR | 33'4" x 39.4"; roll weight: 90 lbs. | ASTM D 6223 | Fire resistant modified bitumen glass fiber and polyester reinforced membrane for torch application or Permastic cold adhesive application. |
| Derbicolor GP/FR | 33'4" x 39.4"; roll weight: 100 lbs. | ASTM D 6223 | Mineral surfaced fire resistant modified bitumen glass fiber and polyester reinforced membrane for torch application or Permastic cold adhesive application. |
| Derbicolor XPS/FR | 33'4" x 39.4"; roll weight: 100 lbs. | ASTM D 6223 | Mineral surfaced fire resistant modified bitumen glass fiber and polyester reinforced membrane for torch application or Permastic cold adhesive application. |
| DerbiBrite | 33'4" x 39.4"; roll weight: 90 lbs. | ASTM D 6223 | Fire resistant modified bitumen fiberglass and polyester composite mat with an acrylic top coating membrane for torch application or Permastic cold adhesive application. |
| Derbibase | 66' x 39.4"; roll weight: 90 lbs. | ASTM D 5147 | APP modified bitumen glass fiber base sheet for mechanical attachment or Permastic cold adhesive application. |
| Derbibase Ultra | 49.5' x 39.4" roll weight: 102 lbs. | ASTM D5147 | APP modified bitumen glass fiber base sheet for mechanical attachment of Permastic cold adhesive application. |
| PRS Glass Base | 108' x 36"; roll weight: 82 lbs. | ASTM D 4601 | Asphalt coated fiberglass base sheet for use in hot-mop, mechanically fastened or Permastic cold adhesive application. |



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> |
|----------------------------|-----------------------------------|---------------------------|--|
| PRS Glass Ply IV | 180' x 36"; roll weight: 60 lbs. | ASTM D 2178 Type IV | Asphalt coated fiberglass ply sheet for use in hot-mop, or mechanically fastened or Permastic cold adhesive application. |
| PRS Glass Ply VI | 180' x 36"; roll weight: 60 lbs. | ASTM D 2178 Type IV | Asphalt coated fiberglass ply sheet for use in hot-mop or mechanically fastened or Permastic cold adhesive application. |
| PRS Modified Base | 180' x 36" roll weight: 82 lbs. | ASTM D 5147 | SBS polymer modified bitumen base sheet. |
| Permax B-Base | | ASTM D 5147 | SBS polymer modified bitumen base sheet. |
| Permax Ultra Base | 49' x 39.4" roll | ASTM D 5147 | SBS polymer modified bitumen base sheet. |
| Permax B-Economy | 39 1/2" x 33'11" | ASTM D 6164 | SBS polymer modified bitumen, polyester reinforced membrane. |
| Permax A-Economy | 39.4" x 33' roll weight: 89 lbs. | ASTM D 6222 | APP polymer modified bitumen, polyester reinforced membrane. |
| Permax A-Economy (Mineral) | 39.4" x 33' roll weight: 103 lbs. | ASTM D 6222 | Mineral surfaced APP polymer modified bitumen, polyester reinforced membrane. |
| Permax S | 39 1/2" x 33'11" | ASTM D 6164 | SBS polymer modified bitumen, polyester reinforced membrane. |
| Permax S-FR | 39 1/2" x 33'11" | ASTM D 6164 | SBS polymer modified bitumen, polyester reinforced membrane. |
| Bitutak MB | 33' x 39.4 roll weight: 89 lbs | ASTM D 6222 | APP polymer modified bitumen polyester reinforced membrane. |
| Bitutak MB (Mineral) | 39.4" x 33' roll weight: 103 lbs. | ASTM D 6222 | Mineral surfaced APP polymer modified bitumen, polyester reinforced membrane |



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> |
|---------------------|---|---------------------------|--|
| Permastic | 5-gallon pails 55-gallon drums 350-gallon tanks | | Asphalt-based adhesive formulated especially for adhering Derbigum/Derbicolor roofing membranes, Derbibase/Ultra , glass ply sheets and glass base sheets. |
| Permastic IA | 5-gallon pails 55-gallon drums 350-gallon tanks | | Asphalt-based adhesive formulated especially for adhering base sheets and Derbiboard insulation to concrete, non-nailable substrates or polyisocyanurate. |
| Permastic IA Strips | 125 LF/Roll 6 Rolls/Box 30 Boxes/Pallet | | Asphalt-based adhesive formulated especially for adhering Derbiboard insulation to concrete, non-nailable substrates or polyisocyanurate. |

APPROVED INSULATIONS:

TABLE 2

| <u>Product</u> | <u>Dimensions</u> | <u>Test Specification</u> | <u>Product Description</u> | <u>Manufacturer</u> |
|--|-------------------|---------------------------|----------------------------------|-----------------------|
| ACFoam I | various | TAS 110 | Polyisocyanurate foam insulation | Atlas Energy Products |
| ACFoam II Derbiboard | various | TAS 110 | Polyisocyanurate foam insulation | Atlas Energy Products |
| ACFoam III Derbiboard CA Derbiboard Composite | various | TAS 110 | Polyisocyanurate foam insulation | Atlas Energy Products |
| Hy-Therm AP | various | TAS 110 | Polyisocyanurate foam insulation | Celotex Corp. |
| Thermax Hy-Tec | various | TAS 110 | Polyisocyanurate foam insulation | Celotex Corp. |
| High Density Wood Fiberboard | various | TAS 110 | Wood fiber insulation board | generic |
| Perlite Insulation | Various | TAS 110 | Perlite insulation board | generic |
| Type X Gypsum | various | TAS 110 | Fire resistant rated gypsum | Generic |
| E'NERG'Y PSI-25 | various | TAS 110 | Polyisocyanurate foam insulation | NRG Barriers, Inc. |
| E'NRG'Y-2 | various | TAS 110 | Polyisocyanurate foam insulation | NRG Barriers, Inc. |



APPROVED INSULATIONS:

TABLE 2

| <u>Product</u> | <u>Dimensions</u> | <u>Test Specification</u> | <u>Product Description</u> | <u>Manufacturer</u> |
|----------------|-------------------|---------------------------|----------------------------------|----------------------------------|
| Fiberglas | various | TAS 110 | Fiber glass roof insulation | Owens-Corning Fiberglas Corp. |
| Multi-Max | various | TAS 110 | Polyisocyanurate foam insulation | RMAX |

APPROVED FASTENERS:

TABLE 3

| <u>Fastener Number</u> | <u>Product Name</u> | <u>Product Description</u> | <u>Dimensions</u> | <u>Manufacturer (With Current NOA)</u> |
|------------------------|---|-------------------------------|-------------------|--|
| 1. | Olympic/Perlok #12 Standard & #14 Heavy Duty Roofing Fastener | Base sheet fastening assembly | Various | Olympic Manufacturing Group, Inc. |
| 2. | Dekfast fasteners | Insulation fastener/Plate | Various | Construction Fasteners, Inc. |
| 3. | Tru-Fast Fastener | Insulation fastener/Plate | Various | Tru-Fast |
| 4. | HD Insul-Fixx Fastener | Insulation fastener/Plate | Various | SFS/Stradler |
| 5. | Insul-Fixx Fastener | Insulation fastener/Plate | Various | SFS/Stradler |
| 6. | Rawl #14, #15 fasteners | Insulation fastener/Plate | Various | The Rawplug Company Inc. |
| 7. | OlyBond 500 | Insulation adhesive | Various | Olympic Manufacturing Group, Inc. |
| 8. | Insta-Stik | Insulation adhesive | Various | Flexible Products |
| 9. | Pliodeck | Insulation adhesive | | Ashland Specialty |



TRADE NAMES OF PRODUCTS MANUFACTURED BY OTHERS:

| <u>Product</u> | <u>Dimensions</u> | <u>Test Specification</u> | <u>Product Description</u> | <u>Manufacturer</u> |
|-----------------------------|------------------------------|---------------------------|---|---------------------|
| Al MB Aluminum Roof Coating | | TAS 121 | Aluminum roof coating | Grundy Industries |
| Grundy 20 F | | TAS 121 | Asphalt emulsion | Grundy Industries |
| Henry 220 | | TAS 121 | Roof coating | Henry Co. |
| Karnak 97 | | TAS 121 | Roof coating | Karnak |
| Asphalt Emulsion | | TAS 121 | Asphalt emulsion | Pure Asphalt |
| GlassBase | 36' x 108' weight: 72 lb. | ASTM D 4601 | Type II fiberglass base sheet | Johns Manville. |
| PermaPly 28 | 36" x 324 sq. ft. | ASTM D 4601 | Glass fiber, asphalt impregnated base sheet | Johns Manville |
| PermaPly VI | 36" x 540 sq. ft. | ASTM D 2178 | Type VI asphalt impregnated glass felt | Johns Manville |
| PermaPly IV | 36" x 540 sq. ft. | ASTM D 2178 | Type IV asphalt impregnated glass felt | Johns Manville |

EVIDENCE SUBMITTED

| <u>Test Agency</u> | <u>Test Identifier</u> | <u>Description</u> | <u>Date</u> |
|-------------------------------------|------------------------|---------------------|-----------------|
| Exterior Research & Design, LLC | 10720.10.97-1 | Uplift TAS 114 | 10/17/97 |
| Factory Mutual Research Corporation | 2W3A6.AM | Class 4470 | 02/21/97 |
| | 2Y3A2.AM | | |
| | 2B5A5.AM | Class 4470 | 05/14/97 |
| | 1D7A4.AM | Class 4470 | 11/9/98 03/1/99 |
| | 2B5A7.AM | | |
| | JI 3002688 | | |
| | JI3007274 | Class 4470 | 2/7/01 |
| | JI 3003642 | | |
| | JI 3001472 | | |
| IRT-ARCON | PC03-001 | Uplift TAS 114-95 | 01/17/03 |
| | PC03-002 | | |
| Underwriters Laboratories | R13327 | Fire Classification | 11/23/92 |



EVIDENCE SUBMITTED

| <u>Test Agency</u> | <u>Test Identifier</u> | <u>Description</u> | <u>Date</u> |
|-------------------------------------|---|----------------------------------|----------------------|
| Factory Mutual Research Corporation | JI 3008869 | Windstorm Classification | 03/19/01 |
| Factory Mutual Research Corporation | JI 3017037 | Windstorm Classification | 03/10/05 |
| Factory Mutual Research Corporation | JI 2D5A9.AM | Windstorm Classification | 06/22/99 |
| Factory Mutual Research Corporation | JI 1Y7A5.AM | Windstorm Classification | 01/03/96 |
| Factory Mutual Research Corporation | ID 1039-267 JI 3014452 | Product Name Change Windstorm | 07/08/04 07/28/03 |
| Factory Mutual Research Corporation | ID 01669-267 JI 3009502 | Product Name Change Windstorm | 10/26/05 12/21/00 |
| Factory Mutual Research Corporation | JI 3014692 | Windstorm Classification | 08/02/03 |
| Factory Mutual Research Corporation | JI 3015444 | Windstorm Classification | 07/11/03 |
| Factory Mutual Research Corporation | JI 3012321 | Windstorm Classification | 07/29/02 |
| Factory Mutual Research Corporation | JI 3027878 | Windstorm Classification | 01/22/07 |
| Atlantic Carribean Roof Consulting | ACRC 07-020 ACRC 07-021 ACRC 07-022 | Windstorm Classification | 05/01/07 |

APPROVED ASSEMBLIES

- Membrane Type:** APP
- Deck Type 3I:** Concrete Decks, Insulated
- Deck Description:** 2500-psi structural concrete or concrete plank
- System Type A(1):** Insulation attached to concrete substrate or optional vapor retarder in Permastic or Permastic IA at an application rate of 1.5 to 2 gal/sq., or a full mopping of any approved asphalt within the EVT range at 20-40 lbs/100 ft² or (Permastic IA strip at 12" o.c.) or (Pliodeck adhesive at an application rate of ½" wide bead 12" o.c.) or TITSESET or Fas Tac at an application rate of 3 to 3-1/2" wide ribbon in rows 12" o.c.

All General and System Limitations apply.

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|--|---|--|
| Derbiboard, Derbiboard CA, Derbiboard Composite Minimum 1.5" thick | N/A | N/A |
| AC-Foam I, AC-Foam II Minimum 1.3" thick | N/A | N/A |
| E"NRG"Y-2, PSI-25 Minimum 1.4" thick | N/A | N/A |

Note: Insulation panels listed are minimum sizes and dimensions. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One ply of Perma Ply IV, VI, or #28, PRS Ply IV, VI, GAF #75 Base Sheet, Derbibase, Performance Modified Base Sheet, Permax Ultra Base, PRS Glass Base, or Derbibase Ultra or Derbigum GP adhered to the insulated substrate with a full mopping of approved mopping asphalt at an application rate of 25 lb./sq. ± 15% or, Permastic or Permastic IA adhesive at an application rate of 1.5 to 2 gal/sq.

Ply Sheet: (Optional) One or two plies of Perma Ply IV, VI, or #28, PRS Ply IV, VI or Derbibase, Derbigum/Derbicolor GP or XPS, Performance Modified Base Sheet, Permax Ultra Base, PRS Glass Base, ply sheets, or Derbibase Ultra or Derbigum GP adhered to the insulated substrate with a full mopping of approved mopping asphalt at an application rate of 25 lb./sq. ± 15% or Permastic adhesive at an application rate of 1.5 to 2gal./sq.

Membrane: Derbigum/Derbicolor GP or Derbigum/Derbicolor XPS, Derbigum/Derbicolor GP-FR or Derbigum/Derbicolor XPS-FR, DerbiBrite PRS 190, PRS 190 Mineral or Permax A-Economy or Permax A-Economy Mineral, Bitutak MB, Bitutak MB Mineral torch applied or in Permastic adhesive to base sheet.

Surfacing: Install one of the following (except over Derbicolor GP-XPS/FR or Derbicolor XPS/FR or DerbiBrite):

1. Gravel or slag applied at an application rate of 400 lbs. or 300 lbs. respectively adhered to the insulated substrate with approved mopping asphalt at an application rate of 60 lb./sq. \pm 15% or Permastic adhesive at an application rate of 1.5 to 2gal./sq.
2. APOC 400 applied at 1.3 gal./sq.. Karnak 97, Grundy al MB, Permalume aluminum, Permalume Premium or Perma-Cool applied at an application rate of 1.5 gal./sq. Grundy 20F or Pure Asphalt emulsion at 2 gal./sq. with optional roofing granules. APOC # 302 or ATCO 1851 FR applied at an application rate of 3 gal./sq.. VIP-400 or ATCO 1846 applied at an application rate of 3.5 gal./sq.

Maximum Design Pressure:

- 52.5 psf. with Permastic (See General Limitation #9).
- 135 psf. with Permastic IA. (See General Limitation #9).
- 45 psf. With Hot Asphalt. (See General Limitation #9).
- 60 psf. With Permastic IA Strips (See General Limitation #9)
- 105 psf. With Pliodeck adhesive (See General Limitation #9)
- 120 psf. With TITASET or Fas Tac (See General Limitation #9)

- Membrane Type:** SBS
- Deck Type 3I:** Concrete Decks, Insulated
- Deck Description:** 2500-psi structural concrete or concrete plank
- System Type A(2):** Insulation attached to concrete substrate or optional vapor retarder in Permastic or Permastic IA at an application rate of 1.5 to 2 gal/sq., or a full mopping of any approved asphalt within the EVT range at 20-40 lbs/100 ft² or (Permastic IA strip at 12" o.c.) or (Pliodeck adhesive at an application rate of 1/2" wide bead 12" o.c.) or TITSESET or Fas Tac at an application rate of 3 to 3-1/2" wide ribbon in rows 12" o.c.

All General and System Limitations apply.

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|--|---|--|
| Derbiboard, Derbiboard CA, Derbiboard Composite Minimum 1.5" thick | N/A | N/A |
| AC-Foam I, AC-Foam II Minimum 1.3" thick | N/A | N/A |
| E"NRG"Y-2, PSI-25 Minimum 1.4" thick | N/A | N/A |

Note: Insulation panels listed are minimum sizes and dimensions. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One ply of Perma Ply IV, VI, or #28, PRS Ply IV, VI, GAF #75 Base Sheet, Derbibase, Performance Modified Base Sheet, Permax Ultra Base, PRS Glass Base, or Derbibase Ultra or Derbigum GP adhered to the insulated substrate with a full mopping of approved mopping asphalt at an application rate of 25 lb./sq. ± 15% or, Permastic or Permastic IA adhesive at an application rate of 1.5 to 2 gal/sq.

Ply Sheet: (Optional) One or two plies of Perma Ply IV, VI, or #28, PRS Ply IV, VI or Derbibase, Derbigum/Derbicolor GP or XPS, Performance Modified Base Sheet, Permax Ultra Base, PRS Glass Base, ply sheets, or Derbibase Ultra or Derbigum GP adhered to the insulated substrate with a full mopping of approved mopping asphalt at an application rate of 25 lb./sq. ± 15% or Permastic adhesive at an application rate of 1.5 to 2gal./sq.



Membrane: One ply of Permax B-Economy or Permax B-FR, Permax S, Permax S-FR, torch applied or adhered with approved mopping asphalt at an application rate of 25-lb./sq. \pm 15% or Permastic adhesive at an application rate of 1.5 to 2 gal./sq.█

Surfacing: Install one of the following (except over Derbicolor GP-XPS/FR or Derbicolor XPS/FR or DerbiBrite):

1. Gravel or slag applied at an application rate of 400 lbs. or 300 lbs. respectively adhered to the insulated substrate with approved mopping asphalt at an application rate of 60 lb./sq. \pm 15% or Permastic adhesive at an application rate of 1.5 to 2gal./sq.
2. APOC 400 applied at 1.3 gal./sq.. Karnak 97, Grundy al MB, Permalume aluminum, Permalume Premium or Perma-Cool applied at an application rate of 1.5 gal./sq. Grundy 20F or Pure Asphalt emulsion at 2 gal./sq. with optional roofing granules. APOC # 302 or ATCO 1851 FR applied at an application rate of 3 gal./sq.. VIP-400 or ATCO 1846 applied at an application rate of 3.5 gal./sq.

Maximum Design Pressure:

- 52.5 psf. with Permastic (See General Limitation #9).
- 135 psf. with Permastic IA. (See General Limitation #9).
- 45 psf. With Hot Asphalt. (See General Limitation #9).
- 60 psf. With Permastic IA Strips (See General Limitation #9)
- 105 psf. With Pliodeck adhesive (See General Limitation #9)
- 120 psf. With TITASET or Fas Tac (See General Limitation #9)

- Membrane Type:** APP
- Deck Type 3I:** Concrete Decks, Insulated
- Deck Description:** 2500-psi structural concrete or concrete plank
- System Type A(3):** Insulation attached to concrete substrate or optional vapor retarder in Insta-Stik in continuous ¾" to 1" wide beads 12" o.c.

All General and System Limitations apply.

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|--|---|--|
| Derbiboard, Derbiboard CA, Derbiboard Composite Minimum 1.5" thick | N/A | N/A |
| AC-Foam I, AC-Foam II Minimum 1.3" thick | N/A | N/A |
| E"NRG"Y-2, PSI-25 Minimum 1.4" thick | N/A | N/A |

Note: Insulation panels listed are minimum sizes and dimensions. Apply Insta-Stik in continuous ¾" to 1" wide beads 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One ply of Perma Ply IV, VI, or #28, PRS Ply IV, VI, GAF #75 Base Sheet, Derbibase, Performance Modified Base Sheet, Permax Ultra Base, PRS Glass Base, or Derbibase Ultra or Derbigum GP adhered to the insulated substrate with a full mopping of approved mopping asphalt at an application rate of 25 lb./sq. ± 15% or, Permastic or Permastic IA adhesive at an application rate of 1.5 to 2 gal/sq.

Ply Sheet: (Optional) One or two plies of Perma Ply IV, VI, or #28, PRS Ply IV, VI or Derbibase, Derbigum/Derbicolor GP or XPS, Performance Modified Base Sheet, Permax Ultra Base, PRS Glass Base, ply sheets, or Derbibase Ultra or Derbigum GP adhered to the insulated substrate with a full mopping of approved mopping asphalt at an application rate of 25 lb./sq. ± 15% or Permastic adhesive at an application rate of 1.5 to 2gal./sq., or torch applied.



Membrane: Derbigum/Derbicolor GP or Derbigum/Derbicolor XPS, Derbigum/Derbicolor GP-FR or Derbigum/Derbicolor XPS-FR, Derbibrute PRS 190, PRS 190 Mineral or Permax A-Economy or Permax A-Economy Mineral, Bitutak MB, Bitutak MB Mineral torch applied or in Permastic adhesive to base sheet.

Surfacing: Install one of the following (except over Derbicolor GP-XPS/FR or Derbicolor XPS/FR or DerbiBrite):

1. Gravel or slag applied at an application rate of 400 lbs. or 300 lbs. respectively adhered to the insulated substrate with approved mopping asphalt at an application rate of 60 lb./sq. \pm 15% or Permastic adhesive at an application rate of 1.5 to 2gal./sq.
2. APOC 400 applied at 1.3 gal./sq.. Karnak 97, Grundy al MB, Permalume aluminum, Permalume Premium or Perma-Cool applied at an application rate of 1.5 gal./sq. Grundy 20F or Pure Asphalt emulsion at 2 gal./sq. with optional roofing granules. APOC # 302 or ATCO 1851 FR applied at an application rate of 3 gal./sq.. VIP-400 or ATCO 1846 applied at an application rate of 3.5 gal./sq.

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



- Membrane Type:** SBS
- Deck Type 3I:** Concrete Decks, Insulated
- Deck Description:** 2500-psi structural concrete or concrete plank
- System Type A(4):** Insulation attached to concrete substrate or optional vapor retarder in Insta-Stik in continuous ¾" to 1" wide beads 12" o.c.

All General and System Limitations apply.

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|--|---|--|
| Derbiboard, Derbiboard CA, Derbiboard Composite Minimum 1.5" thick | N/A | N/A |
| AC-Foam I, AC-Foam II Minimum 1.3" thick | N/A | N/A |
| E"NRG"Y-2, PSI-25 Minimum 1.4" thick | N/A | N/A |

Note: Insulation panels listed are minimum sizes and dimensions. Apply Insta-Stik in continuous ¾" to 1" wide beads 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One ply of Perma Ply IV, VI, or #28, PRS Ply IV, VI, GAF #75 Base Sheet, Derbibase, Performance Modified Base Sheet, Permax Ultra Base, PRS Glass Base, or Derbibase Ultra or Derbigum GP adhered to the insulated substrate with a full mopping of approved mopping asphalt at an application rate of 25 lb./sq. ± 15% or, Permastic or Permastic IA adhesive at an application rate of 1.5 to 2 gal/sq.

Ply Sheet: (Optional) One or two plies of Perma Ply IV, VI, or #28, PRS Ply IV, VI or Derbibase, Derbigum/Derbicolor GP or XPS, Performance Modified Base Sheet, Permax Ultra Base, PRS Glass Base, ply sheets, or Derbibase Ultra or Derbigum GP adhered to the insulated substrate with a full mopping of approved mopping asphalt at an application rate of 25 lb./sq. ± 15% or Permastic adhesive at an application rate of 1.5 to 2gal./sq., or torch applied.



Membrane: One ply of Permax B-Economy or Permax B-FR, Permax S, Permax S-FR, torch applied or adhered with approved mopping asphalt at an application rate of 25-lb./sq. \pm 15% or Permastic adhesive at an application rate of 1.5 to 2 gal./sq.

Surfacing: Install one of the following (except over Derbicolor GP-XPS/FR or Derbicolor XPS/FR or DerbiBrite):

1. Gravel or slag applied at an application rate of 400 lbs. or 300 lbs. respectively adhered to the insulated substrate with approved mopping asphalt at an application rate of 60 lb./sq. \pm 15% or Permastic adhesive at an application rate of 1.5 to 2gal./sq.
2. APOC 400 applied at 1.3 gal./sq.. Karnak 97, Grundy al MB, Permalume aluminum, Permalume Premium or Perma-Cool applied at an application rate of 1.5 gal./sq. Grundy 20F or Pure Asphalt emulsion at 2 gal./sq. with optional roofing granules. APOC # 302 or ATCO 1851 FR applied at an application rate of 3 gal./sq.. VIP-400 or ATCO 1846 applied at an application rate of 3.5 gal./sq.

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



- Membrane Type:** APP
- Deck Type 3I:** Concrete Decks, Insulated
- Deck Description:** 2500-psi structural concrete or concrete plank
- System Type A(5):** Insulation attached to concrete substrate or optional vapor retarder in Olybond Adhesive Fastener.

All General and System Limitations apply.

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|--|---|--|
| Derbiboard, Derbiboard CA, Derbiboard Composite Minimum 1.5" thick | N/A | N/A |
| AC-Foam I, AC-Foam II Minimum 1.3" thick | N/A | N/A |
| E"NRG"Y-2, PSI-25 Minimum 1.4" thick | N/A | N/A |

Note: Insulation panels listed are minimum sizes and dimensions. Apply Olybond Adhesive Fastener through a spray application device at approximately 1 gallon/square and allow to rise to a 1/8" to 1/4" thickness. When the adhesive becomes tacky, the insulation board is placed onto the adhesive and walked in until fully bonded. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One ply of Perma Ply IV, VI, or #28, PRS Ply IV, VI, GAF #75 Base Sheet, Derbibase, Performance Modified Base Sheet, Permax Ultra Base, PRS Glass Base, or Derbibase Ultra or Derbigum GP adhered to the insulated substrate with a full mopping of approved mopping asphalt at an application rate of 25 lb./sq. ± 15% or, Permastic or Permastic IA adhesive at an application rate of 1.5 to 2 gal/sq.

Ply Sheet: (Optional) One or two plies of Perma Ply IV, VI, or #28, PRS Ply IV, VI or Derbibase, Derbigum/Derbicolor GP or XPS, Performance Modified Base Sheet, Permax Ultra Base, PRS Glass Base, ply sheets, or Derbibase Ultra or Derbigum GP adhered to the insulated substrate with a full mopping of approved mopping asphalt at an application rate of 25 lb./sq. ± 15% or Permastic adhesive at an application rate of 1.5 to 2gal./sq., or torch applied.



Membrane: Derbigum/Derbicolor GP or Derbigum/Derbicolor XPS, Derbigum/Derbicolor GP-FR or Derbigum/Derbicolor XPS-FR, DerbiBrite PRS 190, PRS 190 Mineral or Permax A-Economy or Permax A-Economy Mineral, Bitutak MB, Bitutak MB Mineral torch applied or in Permastic adhesive to base sheet.

Surfacing: Install one of the following (except over Derbicolor GP-XPS/FR or Derbicolor XPS/FR or DerbiBrite):

1. Gravel or slag applied at an application rate of 400 lbs. or 300 lbs. respectively adhered to the insulated substrate with approved mopping asphalt at an application rate of 60 lb./sq. \pm 15% or Permastic adhesive at an application rate of 1.5 to 2gal./sq.
2. APOC 400 applied at 1.3 gal./sq.. Karnak 97, Grundy al MB, Permalume aluminum, Permalume Premium or Perma-Cool applied at an application rate of 1.5 gal./sq. Grundy 20F or Pure Asphalt emulsion at 2 gal./sq. with optional roofing granules. APOC # 302 or ATCO 1851 FR applied at an application rate of 3 gal./sq.. VIP-400 or ATCO 1846 applied at an application rate of 3.5 gal./sq.

Maximum Design Pressure: -67.5 psf (See General Limitation #9).

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500-psi structural concrete or concrete plank

System Type A(6): Insulation attached to concrete substrate or optional vapor retarder in Olybond Adhesive Fastener.

All General and System Limitations apply.

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|--|---|--|
| Derbiboard, Derbiboard CA, Derbiboard Composite Minimum 1.5" thick | N/A | N/A |
| AC-Foam I, AC-Foam II Minimum 1.3" thick | N/A | N/A |
| E"NRG"Y-2, PSI-25 Minimum 1.4" thick | N/A | N/A |

Note: Insulation panels listed are minimum sizes and dimensions. Apply Olybond Adhesive Fastener through a spray application device at approximately 1 gallon/square and allow to rise to a 1/8" to 1/4" thickness. When the adhesive becomes tackey, the insulation board is placed onto the adhesive and walked in until fully bonded. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One ply of Perma Ply IV, VI, or #28, PRS Ply IV, VI, GAF #75 Base Sheet, Derbibase, Performance Modified Base Sheet, Permax Ultra Base, PRS Glass Base, or Derbibase Ultra or Derbigum GP adhered to the insulated substrate with a full mopping of approved mopping asphalt at an application rate of 25 lb./sq. ± 15% or, Permastic or Permastic IA adhesive at an application rate of 1.5 to 2 gal/sq.

Ply Sheet: (Optional) One or two plies of Perma Ply IV, VI, or #28, PRS Ply IV, VI or Derbibase, Derbigum/Derbicolor GP or XPS, Performance Modified Base Sheet, Permax Ultra Base, PRS Glass Base, ply sheets, or Derbibase Ultra or Derbigum GP adhered to the insulated substrate with a full mopping of approved mopping asphalt at an application rate of 25 lb./sq. ± 15% or Permastic adhesive at an application rate of 1.5 to 2gal./sq., or torch applied.



Membrane: One ply of Permax B-Economy or Permax B-FR, Permax S, Permax S-FR, torch applied or adhered with approved mopping asphalt at an application rate of 25-lb./sq. \pm 15% or Permastic adhesive at an application rate of 1.5 to 2 gal./sq.

Surfacing: Install one of the following (except over Derbicolor GP-XPS/FR or Derbicolor XPS/FR or DerbiBrite):

1. Gravel or slag applied at an application rate of 400 lbs. or 300 lbs. respectively adhered to the insulated substrate with approved mopping asphalt at an application rate of 60 lb./sq. \pm 15% or Permastic adhesive at an application rate of 1.5 to 2gal./sq.
2. APOC 400 applied at 1.3 gal./sq.. Karnak 97, Grundy al MB, Permalume aluminum, Permalume Premium or Perma-Cool applied at an application rate of 1.5 gal./sq. Grundy 20F or Pure Asphalt emulsion at 2 gal./sq. with optional roofing granules. APOC # 302 or ATCO 1851 FR applied at an application rate of 3 gal./sq.. VIP-400 or ATCO 1846 applied at an application rate of 3.5 gal./sq.

Maximum Design Pressure: -67.5 psf (See General Limitation #9).

Membrane Type: APP

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500-psi structural concrete or concrete plank

System Type A(7): Insulation attached to concrete substrate or optional vapor retarder in Olybond 500 Adhesive Fastener.

All General and System Limitations apply.

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|--|---|--|
| Derbiboard, Derbiboard CA, Derbiboard Composite Minimum 1.5" thick | N/A | N/A |
| AC-Foam I, AC-Foam II Minimum 1.3" thick | N/A | N/A |
| E"NRG"Y-2, PSI-25 Minimum 1.4" thick | N/A | N/A |
| Multi-Max Minimum 1.5" thick | N/A | N/A |
| Securock (Optional) Minimum .5" thick | N/A | N/A |

Note: Insulation panels listed are minimum sizes and dimensions. Apply Olybond 500 Adhesive Fastener in a ¾" to 1" wide bead at 6" o.c. When the adhesive becomes tacky, the insulation board is placed onto the adhesive and walked in until fully bonded. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One ply of Derbibase, Derbibase Ultra or Derbigum GP adhered to the insulated substrate with Permastic or Permastic IA adhesive at an application rate of 1.5 to 2 gal/sq. or torch applied.

Ply Sheet: (Optional) One or two plies of Perma Ply IV, VI, or #28, PRS Ply IV, VI or Derbibase, Derbigum/Derbicolor GP or XPS, Performance Modified Base Sheet, Permax Ultra Base, PRS Glass Base, ply sheets, or Derbibase Ultra or Derbigum GP adhered to the insulated substrate with a full mopping of approved mopping asphalt at an application rate of 25 lb./sq. ± 15% or Permastic adhesive at an application rate of 1.5 to 2gal./sq., or torch applied.



Membrane: Derbigum/Derbicolor GP or Derbigum/Derbicolor XPS, Derbigum/Derbicolor GP-FR or Derbigum/Derbicolor XPS-FR, DerbiBrite PRS 190, PRS 190 Mineral or Permax A-Economy or Permax A-Economy Mineral, Bitutak MB, Bitutak MB Mineral torch applied or installed in Permastic adhesive at an application rate of 1-1/2" to 2 gal/sq. to base sheet.

Surfacing: Install one of the following (except over Derbigum GP/XPS-FR or Derbicolor GP/XPS-FR or DerbiBrite):

1. Gravel or slag applied at an application rate of 400 lbs. or 300 lbs. respectively adhered to the insulated substrate with approved mopping asphalt at an application rate of 60 lb./sq. \pm 15% or Permastic adhesive at an application rate of 1.5 to 2gal./sq.
2. APOC 400 applied at 1.3 gal./sq.. Karnak 97, Grundy al MB, Permalume aluminum, Permalume Premium or Perma-Cool applied at an application rate of 1.5 gal./sq. Grundy 20F or Pure Asphalt emulsion at 2 gal./sq. with optional roofing granules. APOC # 302 or ATCO 1851 FR applied at an application rate of 3 gal./sq.. VIP-400 or ATCO 1846 applied at an application rate of 3.5 gal./sq.

Maximum Design Pressure: -222.5 psf. With OlyBond 500 and ISO and torch applied base sheet
-212.5 psf. With OlyBond 500 and ISO and Permastic applied base sheet
-195 psf. With OlyBond 500 and ISO and Securock and Permastic applied base sheet
(See General Limitation #9).

- Membrane Type:** APP
- Deck Type 3I:** Concrete Decks, Insulated
- Deck Description:** 2500-psi structural concrete or concrete plank
- System Type A(8):** Insulation attached to concrete substrate in a full mopping of any approved asphalt within the EVT range at 20-40 lbs/100 ft²

All General and System Limitations apply.

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|--|---|--|
| Derbiboard, Derbiboard CA, Derbiboard Composite Minimum 1.5" thick | N/A | N/A |
| AC-Foam I, AC-Foam II Minimum 1.3" thick | N/A | N/A |
| E"NRG"Y-2, PSI-25 Minimum 1.4" thick | N/A | N/A |

Note: Insulation panels listed are minimum sizes and dimensions. Apply a full mopping of any approved asphalt within the EVT range at 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One ply of Perma Ply IV, VI, or #28, PRS Ply IV, VI, GAF #75 Base Sheet, Derbibase, Performance Modified Base Sheet, Permax Ultra Base, PRS Glass Base, or Derbibase Ultra or Derbigum GP adhered to the insulated substrate with a full mopping of approved mopping asphalt at an application rate of 25 lb./sq. ± 15% or, Permastic or Permastic IA adhesive at an application rate of 1.5 to 2 gal/sq.

Ply Sheet: (Optional) One or two plies of Perma Ply IV, VI, or #28, PRS Ply IV, VI or Derbibase, Derbigum/Derbicolor GP or XPS, Performance Modified Base Sheet, Permax Ultra Base, PRS Glass Base, ply sheets, or Derbibase Ultra or Derbigum GP adhered to the insulated substrate with a full mopping of approved mopping asphalt at an application rate of 25 lb./sq. ± 15% or Permastic adhesive at an application rate of 1.5 to 2gal./sq., or torch applied.



Membrane: Derbigum/Derbicolor GP or Derbigum/Derbicolor XPS, Derbigum/Derbicolor GP-FR or Derbigum/Derbicolor XPS-FR, DerbiBrite PRS 190, PRS 190 Mineral or Permax A-Economy or Permax A-Economy Mineral, Bitutak MB, Bitutak MB Mineral torch applied or in Permastic adhesive to base sheet.

Surfacing: Install one of the following (except over Derbicolor GP-XPS/FR or Derbicolor XPS/FR or DerbiBrite):

1. Gravel or slag applied at an application rate of 400 lbs. or 300 lbs. respectively adhered to the insulated substrate with approved mopping asphalt at an application rate of 60 lb./sq. \pm 15% or Permastic adhesive at an application rate of 1.5 to 2gal./sq.
2. APOC 400 applied at 1.3 gal./sq.. Karnak 97, Grundy al MB, Permalume aluminum, Permalume Premium or Perma-Cool applied at an application rate of 1.5 gal./sq. Grundy 20F or Pure Asphalt emulsion at 2 gal./sq. with optional roofing granules. APOC # 302 or ATCO 1851 FR applied at an application rate of 3 gal./sq.. VIP-400 or ATCO 1846 applied at an application rate of 3.5 gal./sq.

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

- Membrane Type:** APP
- Deck Type 3I:** Concrete Decks, Insulated
- Deck Description:** 2500-psi structural concrete or concrete plank
- System Type A(9):** Insulation attached to concrete substrate in a full mopping of any approved asphalt within the EVT range at 20-40 lbs/100 ft²

All General and System Limitations apply.

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|--|---|--|
| Derbiboard, Derbiboard CA, Derbiboard Composite Minimum 1.5" thick | N/A | N/A |
| AC-Foam I, AC-Foam II Minimum 1.3" thick | N/A | N/A |
| E"NRG"Y-2, PSI-25 Minimum 1.4" thick | N/A | N/A |
| Top Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
| Temple Inland Fiber Base HD6 Minimum .5" thick | N/A | N/A |

Note: Insulation panels listed are minimum sizes and dimensions. Apply a full mopping of any approved asphalt within the EVT range at 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One ply of Perma Ply IV, VI, or #28, PRS Ply IV, VI, GAF #75 Base Sheet, Derbibase, Performance Modified Base Sheet, Permax Ultra Base, PRS Glass Base, or Derbibase Ultra or Derbigum GP adhered to the insulated substrate with a full mopping of approved mopping asphalt at an application rate of 25 lb./sq. ± 15% or, Permastic or Permastic IA adhesive at an application rate of 1.5 to 2 gal/sq.

Ply Sheet: (Optional) One or two plies of Perma Ply IV, VI, or #28, PRS Ply IV, VI or Derbibase, Derbigum/Derbicolor GP or XPS, Performance Modified Base Sheet, Permax Ultra Base, PRS Glass Base, ply sheets, or Derbibase Ultra or Derbigum GP adhered to the insulated substrate with a full mopping of approved mopping asphalt at an application rate of 25 lb./sq. ± 15% or Permastic adhesive at an application rate of 1.5 to 2gal./sq., or torch applied.

Membrane: Derbigum/Derbicolor GP or Derbigum/Derbicolor XPS, Derbigum/Derbicolor GP-FR or Derbigum/Derbicolor XPS-FR, DerbiBrite PRS 190, PRS 190 Mineral or Permax A-Economy or Permax A-Economy Mineral, Bitutak MB, Bitutak MB Mineral torch applied or in Permastic adhesive to base sheet.

Surfacing: Install one of the following (except over Derbicolor GP-XPS/FR or Derbicolor XPS/FR or DerbiBrite):

1. Gravel or slag applied at an application rate of 400 lbs. or 300 lbs. respectively adhered to the insulated substrate with approved mopping asphalt at an application rate of 60 lb./sq. \pm 15% or Permastic adhesive at an application rate of 1.5 to 2gal./sq.
2. APOC 400 applied at 1.3 gal./sq.. Karnak 97, Grundy al MB, Permalume aluminum, Permalume Premium or Perma-Cool applied at an application rate of 1.5 gal./sq. Grundy 20F or Pure Asphalt emulsion at 2 gal./sq. with optional roofing granules. APOC # 302 or ATCO 1851 FR applied at an application rate of 3 gal./sq.. VIP-400 or ATCO 1846 applied at an application rate of 3.5 gal./sq.

Maximum Design -262.5 psf (See General Limitation #9).

Membrane Type: APP

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500-psi structural concrete or concrete plank

System Type A(10): Insulation attached to concrete substrate in a full mopping of any approved asphalt within the EVT range at 20-40 lbs/100 ft²

All General and System Limitations apply.

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|--|---|--|
| Derbiboard, Derbiboard CA, Derbiboard Composite Minimum 1.5" thick | N/A | N/A |
| AC-Foam I, AC-Foam II Minimum 1.3" thick | N/A | N/A |
| E"NRG"Y-2, PSI-25 Minimum 1.4" thick | N/A | N/A |
| Top Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
| Fresco Board or Retro-Fit Board Minimum .5" thick | N/A | N/A |

Note: Insulation panels listed are minimum sizes and dimensions. Apply a full mopping of any approved asphalt within the EVT range at 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One ply of Perma Ply IV, VI, or #28, PRS Ply IV, VI, GAF #75 Base Sheet, Derbibase, Performance Modified Base Sheet, Permax Ultra Base, PRS Glass Base, or Derbibase Ultra or Derbigum GP adhered to the insulated substrate with a full mopping of approved mopping asphalt at an application rate of 25 lb./sq. ± 15% or, Permastic or Permastic IA adhesive at an application rate of 1.5 to 2 gal/sq.

Ply Sheet: (Optional) One or two plies of Perma Ply IV, VI, or #28, PRS Ply IV, VI or Derbibase, Derbigum/Derbicolor GP or XPS, Performance Modified Base Sheet, Permax Ultra Base, PRS Glass Base, ply sheets, or Derbibase Ultra or Derbigum GP adhered to the insulated substrate with a full mopping of approved mopping asphalt at an application rate of 25 lb./sq. ± 15% or Permastic adhesive at an application rate of 1.5 to 2gal./sq., or torch applied.



Membrane: Derbigum/Derbicolor GP or Derbigum/Derbicolor XPS, Derbigum/Derbicolor GP-FR or Derbigum/Derbicolor XPS-FR, Derbibrite PRS 190, PRS 190 Mineral or Permax A-Economy or Permax A-Economy Mineral, Bitutak MB, Bitutak MB Mineral torch applied or in Permastic adhesive to base sheet.

Surfacing: Install one of the following (except over Derbicolor GP-XPS/FR or Derbicolor XPS/FR or DerbiBrite):

1. Gravel or slag applied at an application rate of 400 lbs. or 300 lbs. respectively adhered to the insulated substrate with approved mopping asphalt at an application rate of 60 lb./sq. \pm 15% or Permastic adhesive at an application rate of 1.5 to 2gal./sq.
2. APOC 400 applied at 1.3 gal./sq.. Karnak 97, Grundy al MB, Permalume aluminum, Permalume Premium or Perma-Cool applied at an application rate of 1.5 gal./sq. Grundy 20F or Pure Asphalt emulsion at 2 gal./sq. with optional roofing granules. APOC # 302 or ATCO 1851 FR applied at an application rate of 3 gal./sq.. VIP-400 or ATCO 1846 applied at an application rate of 3.5 gal./sq.

Maximum Design -180 psf (See General Limitation #9).

Membrane Type: APP

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500-psi structural concrete or concrete plank

System Type A(11): Insulation attached to concrete substrate in a full mopping of any approved asphalt within the EVT range at 20-40 lbs/100 ft²

All General and System Limitations apply.

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|--|---|--|
| Structodek High Density Fiberboard Minimum .5" thick | N/A | N/A |

Note: Insulation panels listed are minimum sizes and dimensions. Apply a full mopping of any approved asphalt within the EVT range at 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One ply of Perma Ply IV, VI, or #28, PRS Ply IV, VI, GAF #75 Base Sheet, Derbibase, Performance Modified Base Sheet, Permax Ultra Base, PRS Glass Base, or Derbibase Ultra or Derbigum GP adhered to the insulated substrate with a full mopping of approved mopping asphalt at an application rate of 25 lb./sq. ± 15% or, Permastic or Permastic IA adhesive at an application rate of 1.5 to 2 gal/sq.

Ply Sheet: (Optional) One or two plies of Perma Ply IV, VI, or #28, PRS Ply IV, VI or Derbibase, Derbigum/Derbicolor GP or XPS, Performance Modified Base Sheet, Permax Ultra Base, PRS Glass Base, ply sheets, or Derbibase Ultra or Derbigum GP adhered to the insulated substrate with a full mopping of approved mopping asphalt at an application rate of 25 lb./sq. ± 15% or Permastic adhesive at an application rate of 1.5 to 2gal./sq., or torch applied.

Membrane: Derbigum/Derbicolor GP or Derbigum/Derbicolor XPS, Derbigum/Derbicolor GP-FR or Derbigum/Derbicolor XPS-FR, Derbibrute PRS 190, PRS 190 Mineral or Permax A-Economy or Permax A-Economy Mineral, Bitutak MB, Bitutak MB Mineral torch applied or in Permastic adhesive to base sheet.



Surfacing:

Install one of the following (except over Derbicolor GP-XPS/FR or Derbicolor XPS/FR or DerbiBrite):

1. Gravel or slag applied at an application rate of 400 lbs. or 300 lbs. respectively adhered to the insulated substrate with approved mopping asphalt at an application rate of 60 lb./sq. \pm 15% or Permastic adhesive at an application rate of 1.5 to 2gal./sq.
2. APOC 400 applied at 1.3 gal./sq.. Karnak 97, Grundy al MB, Permalume aluminum, Permalume Premium or Perma-Cool applied at an application rate of 1.5 gal./sq. Grundy 20F or Pure Asphalt emulsion at 2 gal./sq. with optional roofing granules. APOC # 302 or ATCO 1851 FR applied at an application rate of 3 gal./sq.. VIP-400 or ATCO 1846 applied at an application rate of 3.5 gal./sq.

Maximum Design -210 psf (See General Limitation #9).



Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500-psi structural concrete or concrete plank

System Type C(1): All layers of insulation simultaneously attached.

All General and System Limitations apply.

| Base Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|--|---|--|
| Derbiboard, Derbiboard CA, Derbiboard Composite Minimum 1.5" thick | N/A | N/A |
| Perlite Minimum 1" thick | N/A | N/A |
| AC-Foam I Minimum 1.3" 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/ft² |
|--|---|--|
| Perlite Minimum 1" thick | 1, 3 | 1: 2ft. ² |
| AC-Foam I Minimum 1.3" thick | 1, 3 | 1: 2ft. ² |

Note: 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. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: GAFGLAS # 75, PRS Glass Base, Owens Corning Fiberglas base sheet, PRS Modified Base, Permax Ultra Base, PRS Glass Ply IV, PRS Glass Ply VI Derbibase, or Derbibase Ultra adhered to the insulated substrate with approved mopping asphalt at an application rate of 25 lb./sq. ± 15% or Permastic or Permastic IA adhesive at an application rate of 1.5 to 2gal./sq.

Ply Sheet: Derbigum GP, PRS Glass Ply IV, PRS Glass Base Sheet, Permax Ultra Base, Glass Ply VI, Derbibase or Derbibase Ultra.



Membrane: One ply of Permax B-Economy Permax B-FR, Permax S, Permax S-FR torch applied or adhered with approved mopping asphalt at an application rate of 25 lb./sq. \pm 15% or Permastic adhesive at an application rate of 1.5 to 2gal./sq.

Surfacing: Install one of the following: (except over Permax B-FR or Permax S-FR)

1. 400 lbs. gravel set adhered in hot asphalt.
2. Grundy al MB, Permalume, Permalume Premium or Perma-Cool applied at a rate of 1-1/2 gal./sq., Karnak 97 applied at a rate of 2 gal./sq..
3. A two part surfacing consisting of a base coat of Thermo 202 at 2 gal./sq. and a final coat of Thermo 101.
4. A two part surfacing consisting of a base coat of Thermo 202 at 2 gal./sq. with a fine gravel embedded in the wet coating and a final surfacing of Thermo # 101 at the manufacturer's specified installation rate.

Maximum Design Pressure: - 45 psf. with Permastic. (See General Limitation #9)



Membrane Type: APP

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500-psi structural concrete or concrete plank

System Type D(1): All layers of insulation and base sheet simultaneously attached.

All General and System Limitations apply.

One or more layers the approved insulations listed below:

| Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|---|---|--|
| Derbiboard, Derbiboard CA, Derbiboard Composite, Multi-Max Minimum 1.5" thick | N/A | N/A |
| Perlite Minimum 3/4" thick | N/A | N/A |
| AC-Foam I, AC-Foam II Minimum 1.3" thick | N/A | N/A |
| E"NRG"Y-2, PSI-25 Minimum 1.4" thick | N/A | N/A |
| Fiberglas Minimum 15/16" thick | N/A | N/A |
| High Density Wood Fiber Minimum 1/2" thick | N/A | N/A |

Note: All layers of insulation and base sheet shall be simultaneously attached. See base sheet 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.

Base Sheet: Two plies GAFGLAS # 75, PRS Glass Base, Owens Corning Fiberglas base sheet, PRS Modified Base, Permax Ultra Base, PRS Glass Ply IV, PRS Glass Ply VI, Derbigum GP, Derbibase, or Derbibase Ultra mechanically fastened to the deck through the insulation as detailed below:

Fastening: Fasten base sheet with Rawl Spikes, Drives or Speed-Lock Toggles with Rawl stress plates at a 4" side lap 24" o.c. and one rows in the center of the sheet 24 o.c..

Ply Sheet: Derbigum GP, PRS Glass Ply IV, PRS Glas Base Sheet, Permax Ultra Base, PRS Ply VI, Derbibase or Derbibase Ultra.



Membrane: Derbigum/Derbicolor GP or Derbigum/Derbicolor XPS, Derbigum/Derbicolor GP-FR or Derbigum/Derbicolor XPS-FR, Permax A-Economy, Permax A-Economy Mineral, Bitutak MB, or Bitutak MB Mineral, PRS 190, PRS 190 Mineral, torch applied or in Permastic adhesive to base sheet.

Surfacing: Install one of the following (except over Derbicolor GP-XPS/FR or Derbicolor GP-XPS/FR or DerbiBrite):

1. Gravel or slag applied at an application rate of 400 lbs. or 300 lbs. respectively adhered to the insulated substrate with approved mopping asphalt at an application rate of 60 lb./sq. \pm 15%.
2. APOC 400 applied at 1.3 gal./sq.. Karnak 97, Grundy al MB, Permalume aluminum, Permalume Premium or Perma-Cool applied at an application rate of 1.5 gal./sq.. Grundy 20F or Pure Asphalt emulsion at 2 gal./sq. with optional roofing granules. APOC # 302 or ATCO 1851 FR applied at an application rate of 3 gal./sq.. VIP-400 or ATCO 1846 applied at an application rate of 3.5 gal./sq.

Maximum Design Pressure:

-45 psf. (See General Limitation #9.)

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500-psi structural concrete or concrete plank

System Type D(2): All layers of insulation and base sheet simultaneously attached.

All General and System Limitations apply.

| Insulation Layer | Insulation Fasteners (Table 3) | Fastener Density/ft² |
|---|---|--|
| Derbiboard, Derbiboard CA, Derbiboard Composite, Multi-Max Minimum 1.5" thick | N/A | N/A |
| Perlite Minimum 2" thick | N/A | N/A |
| AC-Foam I, AC-Foam II Minimum 1.3" thick | N/A | N/A |
| E"NRG"Y-2, PSI-25 Minimum 1.4" thick | N/A | N/A |
| Fiberglas Minimum 15/16" thick | N/A | N/A |
| High Density Wood Fiber Minimum 1/2" thick | N/A | N/A |

Note: All layers of insulation and base sheet shall be simultaneously attached. See base sheet 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 dimensions greater than 8 ft.

Base Sheet: GAFGLAS # 75, PRS Glass Ply VI, PRS Glass Base Sheet, PRS Modified Base Sheet, Permax Ultra Base, Owens Corning Fiberglas base sheet, Derbibase or Derbibase Ultra fastened to the deck through the insulation as detailed below.

Fastening: Fasten base sheet with Olympic or Tru-Fast fasteners and metal plates at a 4" side lap 12" o.c. and two rows staggered in the center of the sheet 18" o.c..

Ply Sheet: Derbigum GP, Derbibase or Derbibase Ultra.

Membrane: One ply of Permax B-Economy, Permax B-FR, Permax S, Permax S-FR, torch applied, adhered with approved mopping asphalt at an application rate of 25 lb./sq. ± 15% or in Permastic adhesive at an application rate of 1.5 to 2gal./sq..



Surfacing:

Install one of the following (except over Permax B-FR or Permax S-FR):

1. 400 lbs. gravel set adhered in hot asphalt.
2. Grundy al MB, Permalume, Permalume Premium or Perma-Cool applied at a rate of 1-1/2 gal./sq., Karnak 97 applied at a rate of 2 gal./sq..
3. A two part surfacing consisting of a base coat of Thermo 202 at 2 gal./sq. and a final coat of Thermo 101.
4. A two part surfacing consisting of a base coat of Thermo 202 at 2 gal./sq. with a fine gravel embedded in the wet coating and a final surfacing of Thermo # 101 at the manufacturer's specified installation rate.

**Maximum Design
Pressure:**

-45 psf. (See General Limitation #9).



Membrane Type: SBS

Deck Type 3: Concrete Decks, Non-insulated

Deck Description: 2500-psi structural concrete or concrete plank

System Type E: Base sheet mechanically attached.

All General and System Limitations apply.

Base Sheet: GAFGLAS # 75, Derbibase, PRS Modified base sheet, Permax Ultra Base, PRS Glass Base Sheet, PRS Ply VI, Owens Corning Fiberglas base sheet, Derbibase or Derbibase Ultra fastened to the deck as described below:

Fastening: Fasten base sheet with Olympic or Tru-Fast fasteners and metal plates at a 4" side lap 12" o.c. and two rows staggered in the center of the sheet 18" o.c.

Ply Sheet: Derbigum GP, Derbibase, or Derbibase Ultra.

Membrane: One ply of Permax B-Economy, Permax B-FR, Permax S-FR, torch applied, adhered with approved mopping asphalt at an application rate of 25 lb./sq. ± 15% or in Permastic adhesive at an application rate of 1.5 to 2gal./sq.

Surfacing: Install one of the following (except over Permax B-FR or Permax S-FR):

1. 400-lbs. gravel set adhered in hot asphalt.
2. Grundy al MB, Permalume, Permalume Premium or Perma-Cool applied at a rate of 1-1/2 gal./sq., Karnak 97 applied at a rate of 2 gal./sq..
3. A two part surfacing consisting of a base coat of Thermo 202 at 2 gal./sq. and a final coat of Thermo 101.
4. A two part surfacing consisting of a base coat of Thermo 202 at 2 gal./sq. with a fine gravel embedded in the wet coating and a final surfacing of Thermo # 101 at the manufacturer's specified installation rate.

Maximum Design Pressure: -45 psf. (See General Limitation #9).

Membrane Type: APP
Deck Type 3: Concrete Decks, Non-insulated
Deck Description: 2500-psi structural concrete or concrete plank
System Type F(1): (Optional) Base sheet adhered with approved asphalt or Permastic - Permastic IA

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 anchor sheet.

Base Sheet: (Optional) GAFGLAS #75, Owens Corning Fiberglas base sheet, PRS Modified Base Sheet, Permax Ultra Base, PRS Glass Base Sheet or PRS Glass Ply VI adhered to the insulated substrate with approved mopping asphalt at an application rate of 25 lb/sq. \pm 15% or Permastic or Permastic IA at an application rate of 1.5 to 2gal./sq.

Ply Sheet: (Optional) One ply of Derbibase, Derbigum GP/XPS, PRS 190 or Derbibase Ultra torch adhered to the substrate or in Permastic adhesive in an application rate of 1.5 to 2gal/sq.

Membrane: Derbigum/Derbicolor GP or Derbigum/Derbicolor XPS, Derbigum/Derbicolor GP-FR or Derbigum/Derbicolor XPS-FR, Permax A-Economy, Permax A-Economy Mineral, Bitutak MB, or Bitutak MB Mineral, PRS 190, PRS 190 Mineral torch applied or in Permastic adhesive at an application rate of 1.5 to 2gal/sq. to the base sheet.

Surfacing: Install one of the following (except over Derbigum GP/XPS-FR, Derbicolor GP/XPS-FR or DerbiBrite):

1. 400 lbs. gravel set adhered in hot asphalt.
2. Grundy al MB, Permalume, Permalume Premium , Perma-Cool, Monsey Aqua Brite aluminum applied at a rate of 1-1/2 gal./sq., Karnak 97, Grundy asphalt emulsion or Pure Asphalt's asphalt emulsion applied at a rate of 2 gal./sq..
3. A two part surfacing consisting of a base coat of Thermo 202 at 2 gal./sq. with a fine gravel embedded in the wet coating and a final surfacing of Thermo # 101 at the manufacturer's specified installation rate.

Maximum Design Pressure: -255 psf. with Permastic. (See General Limitation #9).
-495 psf. with Permastic IA. (See General Limitation #9).

Membrane Type: SBS

Deck Type 3: Concrete Decks, Non-insulated

Deck Description: 2500-psi structural concrete or concrete plank

System Type F(2): (Optional) Base sheet adhered with approved asphalt.

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 anchor sheet.

Base Sheet: (Optional) GAFGLAS #75, Owens Corning Fiberglas base sheet, PRS Modified Base Sheet, Permax Ultra Base, PRS Glass Base, PRS Ply VI adhered to the insulated substrate with approved mopping asphalt at an application rate of 25 lb./sq. \pm 15% or in Permastic adhesive at an application rate of 1.5 to 2gal./sq.

Ply Sheet: Derbigum GP, Derbibase or Derbibase Ultra.

Membrane: One ply of Permax B-Economy, Permax B-FR, Permax S, Permax S-FR torch applied or adhered with approved mopping asphalt at an application rate of 25 lb./sq. \pm 15% or in Permastic adhesive at an application rate of 1.5 to 2gal./sq.

Surfacing: Install one of the following (except over Permax B-FR or Permax S-FR):

1. 400-lbs. gravel set adhered in hot asphalt.
2. Grundy al MB, Permalume, Permalume Premium or Perma-Cool applied at a rate of 1-1/2 gal./sq., Karnak 97 applied at a rate of 2 gal./sq.
3. A two part surfacing consisting of a base coat of Thermo 202 at 2 gal./sq. and a final coat of Thermo 101.
4. A two part surfacing consisting of a base coat of Thermo 202 at 2 gal./sq. with a fine gravel embedded in the wet coating and a final surfacing of Thermo # 101 at the manufacturer's specified installation rate.

Maximum Design Pressure:

-45 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 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 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 membranes or packaging shall bear the imprint or identifiable marking of the manufacturer's name or logo and the following statement: "Miami-Dade County Product Control Approved" or the Miami-Dade County Product Control Seal as shown below.

MIAMI-DADE COUNTY
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11. 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

MIAMI-DADE COUNTY
APPROVED

NOA No 08-0821.08
Expiration Date: 08/23/11
Approval Date: 10/09/08
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