



**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)

**Greenshield Products, LLC
P.O. Box 550347
Houston, TX. 77255**

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: Greenseal SPF & Greenblock Acrylic Coatings over Steel Deck

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

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

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

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

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

This NOA consists of pages 1 through 8.

The submitted documentation was reviewed by Alex Tigera.



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ROOFING SYSTEM APPROVAL

Category: Roofing
Sub-Category: Spray Applied Polyurethane Foam
Material: Polyurethane Foam
Deck Type: Steel
Maximum Design Pressure -437.5 psf

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

<u>Product</u>	<u>Dimensions</u>	<u>Test Specifications</u>	<u>Product Description</u>
Greenseal 3.0	N/A	TAS 110	Polyurethane spray applied foam that utilizes an HFC blowing agent intended for roofing applications
Greenblock II / Greenblock Base	27 mil. Thickness	TAS 129	Elastomeric acrylic coating for application over polyurethane spray applied foam.
Greenblock II	N/A	TAS 129	White top base coat of 100% elastomeric acrylic latex coating for spray applied polyurethane foam.
Greenblock Base	N/A	TAS 129	Gray base coat of 100% elastomeric acrylic latex coating for spray applied polyurethane foam.
Greenblock Prime 100	N/A	N/A	Single component water based general purpose primer for spray applied polyurethane foam to various substrates.
Greenblock Prime NR	N/A	N/A	Single component water based general purpose primer for spray applied polyurethane foam to various substrates.
Any Miami-Dade County Approved Roof Coating	Various	As Required by Miami-Dade County PCA	Generic. (with current PCA)



EVIDENCE SUBMITTED:

<u>Test Agency</u>	<u>Test Identifier</u>	<u>Test Name/Report</u>	<u>Date</u>
Trinity Engineering, Inc.	#4680.11.95-1	TAS 114 Appendix "D"	11/29/95
Underwriters Laboratories Inc.	R12134 (N)	UL 1897	12/09/93
	90NK28403	UL 790	03/22/91
Center for Applied Engineering, Inc.	257497	TAS 129 TAS 143	06/06/96
Celotex Corporation Testing Services	257994	ASTM E 96 ASTM D 1623 ASTM C 273	04/23/97
	528639	ASTM D 2842 ASTM D 2126 ASTM D 1621	10/12/98
	520067	ASTM D 6083 ASTM D 522	11/11/98
	520067	ASTM D 6083 ASTM D 2370	11/25/98
	520067	ASTM D 6083 ASTM D 4798	05/10/99
	520596	ASTM D 6083 ASTM C 794	04/17/00
Factory Mutual	3016938	4470	01/13/05
	3022954		03/24/05
	3026505		03/21/06
Atlantic & Caribbean Roof Consulting, LLC	09-003	TAS 114-J	03/27/09
	09-002	TAS 114-D	02/27/09



AMBIENT HUMIDITY APPLICATION LIMITS SPRAYED POLYURETHANE FOAM:

Table 1

Maximum Wet Bulb and Relative Humidity for a Given Dry Bulb Reading						
Dry Bulb Temp. (°F)	Wet Bulb Temp. (°F)	R.H. (%)		Dry Bulb Temp. (°F)	Wet Bulb Temp. (°F)	R.H. (%)
45	43	81		73	69	82
46	44	81		74	70	82
47	45	81		75	71	82
48	46	81		76	72	82
49	47	81		77	73	82
50	48	81		78	73	82
51	48	81		79	74	82
52	49	81		80	75	82
53	50	81		81	76	82
54	51	81		82	77	82
55	52	81		83	78	82
56	52	81		84	79	82
57	53	81		85	80	82
58	54	81		86	81	82
59	55	81		87	82	82
60	56	81		88	83	82
61	57	81		89	84	82
62	58	82		90	85	82
63	59	82		91	86	82
64	60	82		92	87	82
65	61	82		93	88	82
66	62	82		94	89	82
67	63	82		95	90	82
68	64	82		96	91	82
69	65	82		97	92	82
70	66	82		98	93	82
71	67	82		99	94	82
72	68	82		100	95	82

NOTE: Greenseal SPF shall not be sprayed when environmental conditions are beyond the temperature and relative humidity limits listed in this Table, (see System Limitations 1).



APPROVED SYSTEMS:

- Deck Type 2:** Steel
- Deck Description:** Minimum 26 gage steel.
- System Type A(1):** Sprayed polyurethane foam covered with an approved coating adhered to steel deck.

All General and System Limitations apply.

Deck Requirements: Steel decking and attachment thereof shall be in compliance with the Florida Building Code and Roofing Application Standard RAS 109. Deck shall be washed with a trisodium phosphate (TSP) and water solution, rinsed, and allowed to dry.

Surface Preparation: Metal surfaces should be primed with epoxy primer or Greenblock Prime 100 or NR Primer. Primer shall be thoroughly cured prior to application of foam.

For ferrous metal, remove loose rust and unsound primer from shop-primed iron and steel surfaces by scraping, wire brushing or sandblasting. Prime according to BaySystems recommendations. For non-ferrous metals, clean and prime aluminum, copper and stainless steel surfaces as recommended by BaySystems.

Primers shall be applied in accordance with their manufacturer's instructions. All primers must be thoroughly dry and cured prior to foam application.

Polyurethane Foam Application: The Greenseal SPF shall be applied uniformly over the entire surface at the specified thickness in compliance with the requirements set forth in Miami-Dade County Roofing Application Standard RAS 109. The Greenseal SPF shall be feathered at the edges to produce a smooth transition.

Protective Coating Application:
(Choose One) Greenblock II / Greenblock Base elastomeric acrylic coating shall be applied to achieve a minimum dry thickness of 27 mils.

Or

Apply a Miami-Dade County approved roof coating with a current NOA, that is compatible with this system and is applied in accordance with the guidelines listed in the products NOA.

Greenseal SPF surface shall be free of moisture, dust, debris, oils, tars, grease or other materials that will impair adhesion of the protective coverings. Any damage or defects to the Greenseal SPF surface shall be repaired prior to the coating application. The base coat shall be applied the same day as the foam when possible. If more than 72 hours elapse prior to the application of the base coat, the polyurethane foam shall be inspected for UV degradation.

Maximum Design Pressure:

-105 psf (See General Limitation #4)



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Deck Type 2: Steel
Deck Description: Minimum 24 gage steel.
System Type A(2): Sprayed polyurethane foam covered with an approved coating adhered to steel deck.

All General and System Limitations apply.

Deck Requirements: Steel decking and attachment thereof shall be in compliance with the Florida Building Code and Roofing Application Standard RAS 109. Deck shall be washed with a trisodium phosphate (TSP) and water solution, rinsed, and allowed to dry.

Surface Preparation: Metal surfaces should be primed with Greenblock Prime NR Primer at an application rate of 1 gallon per 300 ft². Primer shall be thoroughly cured prior to application of foam.

For ferrous metal, remove loose rust and unsound primer from shop-primed iron and steel surfaces by scraping, wire brushing or sandblasting. Prime according to BaySystems recommendations. For non-ferrous metals, clean and prime aluminum, copper and stainless steel surfaces as recommended by BaySystems.

Primers shall be applied in accordance with their manufacturer's instructions. All primers must be thoroughly dry and cured prior to foam application.

Polyurethane Foam Application: The Greenseal SPF shall be applied uniformly over the entire surface at the specified thickness in compliance with the requirements set forth in Miami-Dade County Roofing Application Standard RAS 109 but in no case shall it be less than 1.5" thick. The Greenseal SPF shall be feathered at the edges to produce a smooth transition.

Protective Coating Application:
(Choose One) Greenblock II / Greenblock Base elastomeric acrylic coating shall be applied to achieve a minimum dry thickness of 27 mils.

Or

Apply a Miami-Dade County approved roof coating with a current NOA, that is compatible with this system and is applied in accordance with the guidelines listed in the products NOA.

Greenseal SPF surface shall be free of moisture, dust, debris, oils, tars, grease or other materials that will impair adhesion of the protective coverings. Any damage or defects to the Greenseal SPF surface shall be repaired prior to the coating application. The base coat shall be applied the same day as the foam when possible. If more than 72 hours elapse prior to the application of the base coat, the polyurethane foam shall be inspected for UV degradation.

Maximum Design Pressure: -437.5 psf (See General Limitation #4)



- Deck Type 2:** Steel
- Deck Description:** Minimum 22 gage 1.5" type B steel deck with 5/8" puddle welds in each flute; with maximum support spans of 6 ft. o.c. Deck side laps are attached with #12 screws spaced 12" o.c.
- System Type C(1):** Sprayed polyurethane foam covered with an approved coating adhered to insulation mechanically fastened to steel deck.

All General and System Limitations apply.

Deck Requirements: Steel decking and attachment thereof shall be in compliance with the Florida Building Code and Roofing Application Standard RAS 109. Deck shall be washed with a trisodium phosphate (TSP) and water solution, rinsed, and allowed to dry.

Surface Preparation: For ferrous metal, remove loose rust and unsound primer from shop-primed iron and steel surfaces by scraping, wire brushing or sandblasting. Prime according to BaySystems recommendations. For non-ferrous metals, clean and prime aluminum, copper and stainless steel surfaces as recommended by BaySystems.

Primers shall be applied in accordance with their manufacturer's instructions. All primers must be thoroughly dry and cured prior to foam application.

<u>Insulation Layer</u>	<u>Insulation Fasteners</u>	<u>Fastener Density/ft²</u>
SECUROCK [®] Minimum 1/2" thick	OMG #15 fastener & 3" galvalume round ribbed plate	1: 1.78

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. Refer to Roofing Application Standard RAS 117 for insulation attachment requirements.

Polyurethane Foam Application: The Greenseal SPF shall be applied uniformly over the entire surface at the specified thickness in compliance with the requirements set forth in Miami-Dade County Roofing Application Standard RAS 109 but in no case shall it be less than 1.5" thick. The Greenseal SPF shall be feathered at the edges to produce a smooth transition.

Protective Coating Application: Greenblock II / Greenblock Base elastomeric acrylic coating shall be applied to achieve a minimum dry thickness of 27 mils.

(Choose One)

Or

Apply a Miami-Dade County approved roof coating with a current NOA, that is compatible with this system and is applied in accordance with the guidelines listed in the products NOA.

Greenseal SPF surface shall be free of moisture, dust, debris, oils, tars, grease or other materials that will impair adhesion of the protective coverings. Any damage or defects to the Greenseal SPF surface shall be repaired prior to the coating application. The base coat shall be applied the same day as the foam when possible. If more than 72 hours elapse prior to the application of the base coat, the polyurethane foam shall be inspected for UV degradation.

Maximum Design Pressure:

-60 psf (See General Limitation #7)



SYSTEM LIMITATIONS:

1. Greenseal SPF shall not be sprayed when environmental conditions are beyond the temperature and relative humidity limits listed in Table 1 of this approval. Contractor shall monitor and record environmental conditions in job log in compliance with RAS 109. Job log shall be maintained at the job site and accessible to The Building Official.
2. Adhesion testing of foam to substrate and coating to foam shall be performed in compliance with Roofing Application Standard RAS 109.
3. If mechanical attachment to the structural deck through 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 Engineer, 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. All work shall performed by a BaySystems' trained and approved applicator familiar with the details and specifications published by Polythane Systems.
3. 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.
4. 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.)**
5. 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.
6. Fastener spacing for mechanical attachment of anchor/base sheet or insulation attachment is based on a minimum fastener resistance value in conjunction with the maximum design value listed within a specific system. Should the fastener resistance be less than that required, as determined by the Building Official, a revised fastener spacing, prepared, signed and sealed by a Florida Registered Engineer, Architect, or Registered Roof Consultant may be submitted. Said revised fastener spacing shall utilize the withdrawal resistance value taken from Testing Application Standards TAS 105 and calculations in compliance with Roofing Application Standard RAS 117.
7. Perimeter and corner areas shall comply with the enhanced uplift pressure requirements of these areas. Fastener densities shall be increased for both insulation and base sheet as calculated in compliance with Roofing Application Standard RAS 117. Calculations prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant **(When this limitation is specifically referred within this NOA, General Limitation #4 will not be applicable.)**

END OF THIS ACCEPTANCE



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