



MIAMI-DADE COUNTY, FLORIDA
METRO-DADE FLAGLER BUILDING

BUILDING CODE COMPLIANCE OFFICE
METRO-DADE FLAGLER BUILDING
140 WEST FLAGLER STREET, SUITE 1603
MIAMI, FLORIDA 33130-1563
(305) 375-2901 FAX (305) 375-2908

PRODUCT CONTROL NOTICE OF ACCEPTANCE

Sarnafil U.S.A. Inc.
100 Dan Road
Canton

MA 02021

CONTRACTOR LICENSING SECTION
(305) 375-2527 FAX (305) 375-2558

CONTRACTOR ENFORCEMENT SECTION
(305) 375-2966 FAX (305) 375-2908

PRODUCT CONTROL DIVISION
(305) 375-2902 FAX (305) 372-6339

Your application for Product Approval of:

Waterproofing and Roofing Membranes & Related Products

under Chapter 8 of the Code of Miami-Dade County governing the use of Alternate Materials and Types of Construction, and completely described herein, has been recommended for acceptance by the Miami-Dade County Building Code Compliance Office (BCCO) under the conditions specified herein.

This approval shall not be valid after the expiration date stated below. BCCO reserves the right to secure this product or material at anytime from a jobsite or manufacturer's plant for quality control testing.

If this product or material fails to perform in the approved manner, BCCO may revoke, modify, or suspend the use of such product or material immediately. BCCO reserves the right to revoke this approval, if it is determined BCCO that this product or material fails to meet the requirements of the South Florida Building Code.

The expense of such testing will be incurred by the manufacturer.

Acceptance No.: 99-0920.03

Expires: 04/21/2003

Raul Rodriguez
Chief Product Control Division

THIS IS THE COVERSHEET, SEE ADDITIONAL PAGES FOR SPECIFIC AND GENERAL CONDITIONS

BUILDING CODE & PRODUCT REVIEW COMMITTEE

This application for Product Approval has been reviewed by the BCCO and approved by the Building Code and Product Review Committee to be used in Dade County, Florida under the conditions set forth above.

Francisco J. Quintana, R.A.
Director

Miami-Dade County
Building Code Compliance Office

Approved: 04/21/2000

1 of 11



**PRODUCT CONTROL NOTICE OF ACCEPTANCE
ROOFING COMPONENT APPROVAL**

Applicant:
Sarnafil Inc.
100 Dan Road
Canton, MA 02021

Product Control No.: 99-0920.03

Approved: April 21, 2000

Expires: April 21, 2003

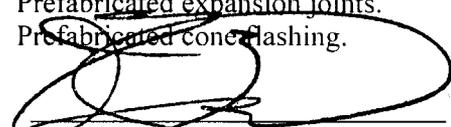
Category: Waterproofing
Sub-Category: Single-Ply/PVC

Maximum Fire Classification:

<u>Deck Type</u> Concrete	<u>Classification</u> See General Limitation #1
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**TRADE NAMES OF PRODUCTS MANUFACTURED OR
LABELED BY APPLICANT**

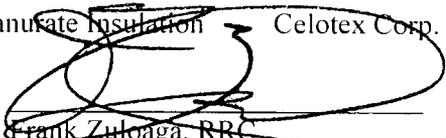
<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
G410	Various	ASTM D 4434	Fiberglass reinforced PVC roofing membrane
G410 Felt	Various	ASTM D 4434	Fiberglass reinforced PVC roofing membrane with a non-woven felt backing.
S327	Various	ASTM D 4434	Polyester reinforced PVC roofing membrane
S327 Felt	Various	ASTM D 4434	Fiberglass reinforced PVC roofing membrane with a non-woven felt backing.
G459	Various	ASTM D 4434	Fiberglass reinforced PVC Alloy asphalt compatible flashing membrane.
Sarnastop	1" x 10'	PA 114	Aluminum termination bar.
Sarnafelt	82" X 135"		
Sarnareglet	2.15" x 10'		Aluminum surface mount reglet (term. bar).
Sarnacol 2170	5 gallons		Solvent based bonding adhesive.
Sarnacol 2121	5 gallons		Water based bonding adhesive.
Sarnafiller	2 gallons		Urethane pitch pocket filler.
Sarnasolv	1 gallon		Membrane cleaner.
Sarnacorner	5", 6", 8.5"		Prefabricated inside and outside corner flashing.
Sarnaflash	18" x 40"		Prefabricated expansion joints.
Sarnastack	Various		Prefabricated corner flashing.


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 Roofing Product Control Examiner

<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
Sarnadrain RAC Sarnaclad	Various Various		Aluminum drain insert. Heat weldable PVC laminated to galvanized steel flashing product.

**TRADE NAMES OF PRODUCTS MANUFACTURED
BY OTHERS**

<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>	<u>Manufacturer</u>
#14 Screw	Various	PA 114	Insulation and membrane fastener	Olympic Mfg. (with current NOA)
ACFoam 25 PSI	Various	PA 110	Isocyanurate Insulation	Atlas Roofing Corp. (with current NOA)
ACFoam II	Various	PA 110	Isocyanurate Insulation	Atlas Roofing Corp. (with current NOA)
ACFoam III	Various	PA 110	Isocyanurate Insulation	Atlas Roofing Corp. (with current NOA)
ACFoam Supreme	Various	PA 110	Isocyanurate Insulation	Atlas Roofing Corp. (with current NOA)
Asphalt Asphalt Primer		ASTM D 312 ASTM D 41	Type III or IV hot asphalt Primer	Generic Generic
CD-10 Fastener	Various	PA 114	Insulation and membrane fastener	Olympic Mfg. (with current NOA)
Concrete Spike	Various	PA 114	Insulation and membrane fastener	SFS Stadler, Inc. (with current NOA)
E'NRG'Y 2	Various	PA 110	Isocyanurate Insulation	Johns Manville (with current NOA)
E'NRG'Y 2 PSI-25	Various	PA 110	Isocyanurate Insulation	Johns Manville (with current NOA)
EPS	Various	PA 110	Expanded polystyrene	Generic
Hy-Tec	Various	PA 110	Isocyanurate Insulation	Celotex Corp. (with current NOA)
Hy-Therm AP	Various	PA 110	Isocyanurate Insulation	Celotex Corp. (with current NOA)
Hy-Therm SP	Various	PA 110	Isocyanurate Insulation	Celotex Corp. (with current NOA)
ISO 95+ GL	Various	PA 110	Isocyanurate Insulation	Firestone (with current NOA)
Multi-Max FA	Various	PA 110	Isocyanurate Insulation	Rmax, Inc. (with current NOA)
Multi-Max FA 25 PSI	Various	PA 110	Isocyanurate Insulation	Rmax, Inc. (with current NOA)
Pyrox	Various	PA 110	Isocyanurate Insulation	Apache Products (with current NOA)
Star AP	Various	PA 110	Isocyanurate Insulation	Celotex Corp.


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<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>	<u>Manufacturer</u>
Thermarroof Plus	Various	PA 110	Isocyanurate Insulation	(with current NOA) Rmax, Inc.
Top R-II	Various	PA 110	Isocyanurate Insulation	(with current NOA) Celotex Corp.
Ultra M-II AEF	Various	PA 110	Isocyanurate Insulation	(with current NOA) Homasote Co. (with current NOA)

EVIDENCE SUBMITTED

<u>Test Agency</u>	<u>Test Identifier</u>	<u>Description</u>	<u>Date</u>
Factory Mutual Research Corporation	J.I. 0P6A6.AM	Wind Uplift	03/03/94
	J.I. 0X3A3.AM		07/31/94
Factory Mutual Research Corporation	J.I.2X2A5.AM	Wind Uplift	07/31/94
Factory Mutual Research Corporation	J.I. 4B3A2.AM	Wind Uplift	06/19/97
	J.I. IZ5A6.AM		07/18/97
Factory Mutual Research Corporation	J.I. OB9A0.AM	Wind Uplift	10/22/96
Factory Mutual Research Corporation	2B8A4.AM	Wind Uplift	07/02/97
Underwriters Laboratories, Inc.	R8992	Fire Classification	1994
University of Lowell	45767	ASTM D 4434	12/12/85
Factory Mutual Research Corporation	J.I. IZ5A6.AM	Wind Uplift	07/18/97
Factory Mutual Research Corporation	J.I. 4B3A2.AM	Wind Uplift	06/19/97
Factory Mutual Research Corporation	J.I. 0B9A0.AM	Wind Uplift	10/22/96
Factory Mutual Research Corporation	3001396	Wind Uplift	05/28/99
IRT of S. Florida	99023-24	PA 114	06/30/99
	99025-26		



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SYSTEMS

- Deck Type 3I:** Concrete, insulated, New Construction
- Deck Description:** 2500 psi structural concrete or concrete plank
- System Type F:** Membrane adhered.

All General and System Limitations shall apply.

<u>Insulation</u> <u>Base Layer</u>	<u>Fastener</u> <u>Type</u>	<u>Fastening</u> <u>Detail No.</u>	<u>Fasteners</u> <u>Per Board</u>	<u>Fastener</u> <u>Density</u>
Approved Type(s): Polyisocyanurate (35 psi), flat or tapered				
Minimum: 1.5" x 4' x 4'	N/A	N/A	N/A	N/A

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of base sheet. All insulation shall be adhered to the deck in full moppings of approved asphalt within the EVT range and at a rate of 20-40 lbs. Please refer to Miami-Dade County Roofing Application Standard RAS 117 for insulation attachment. Insulations listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels used as a top layer shall be placed with the polyisocyanurate side facing down.

Membrane: Apply over insulation Sarnacol 2170 Adhesive roller applied at a rate of 1 to 1.25 gal/sq. and allowed to dry as primer. Followed with Sarnafil G410, felt back roof membrane adhered with Sarnacol 2170 Adhesive roller applied at a rate of 1 gal/sq.

Integrity

Test: Allow system to dry sufficiently to allow foot traffic. Verify that the structure can support the deadload weight of a watertight test before proceeding. Plug drains and provide necessary barriers to contain flood water. Flood deck with 2" head of water and check for leaks after 24 hours. Any leaks found shall be repaired immediately and the area shall be retested.

Protection

Course: Sarnafil G445 Protection Course, protection layer shall be adhered with Sarnacol 2170 Adhesive roller applied at a rate of 1 gal/sq. Top side of protection layer shall be cover with a film of Sarnacol 2121 Adhesive applied at rate of 2.25 gal/sq. using a ¼" notched squeegee.

Inspection: Inspection shall be witnessed by the Building Official, waterproofing contractor, and a representative of Sarnafil Inc.

Surfacing: Poured in place minimum 2" thick reinforced concrete slab.

Maximum Design

Pressure: -367.50 psf (See General Limitation #9)

Maximum Fire

Classification: See General Limitation #1.

Maximum Slope: See General Limitation #1.



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- Deck Type 3:** Concrete, New Construction
- Deck Description:** 2500 psi structural concrete or concrete plank
- System Type F-1:** Membrane adhered.

All General and System Limitations shall apply.

Membrane: Apply to deck Sarnacol 2170 Adhesive roller applied at a rate of 1 to 1.25 gal/sq. and allowed to dry as primer. Followed with Sarnafil G410, felt back roof membrane adhered with Sarnacol 2170 Adhesive roller applied at a rate of 1 gal/sq.

Integrity

Test: Allow system to dry sufficiently to allow foot traffic. Verify that the structure can support the deadload weight of a watertight test before proceeding. Plug drains and provide necessary barriers to contain flood water. Flood deck with 2" head of water and check for leaks after 24 hours. Any leaks found shall be repaired immediately and the area shall be retested.

Protection

Course: Sarnafil G445 Protection Course, protection layer shall be adhered with Sarnacol 2170 Adhesive roller applied at a rate of 1 gal/sq. Top side of protection layer shall be cover with a film of Sarnacol 2121 Adhesive applied at rate of 2.25 gal/sq. using a ¼" notched squeegee.

Inspection: Inspection shall be witnessed by the Building Official, waterproofing contractor, and a representative of Sarnafil Inc.

Surfacing: Poured in place minimum 2" thick reinforced concrete slab.

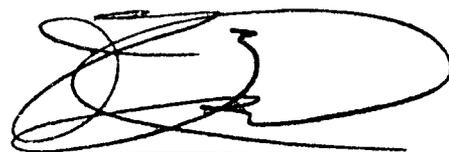
Maximum Design

Pressure: -432.50 psf (See General Limitation #9)

Maximum Fire

Classification: See General Limitation #1.

Maximum Slope: See General Limitation #1.



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Roofing Product Control Examiner

- Deck Type 3:** Concrete, New Construction
- Deck Description:** 2500 psi structural concrete or concrete plank
- System Type F-2:** Membrane adhered.

All General and System Limitations shall apply.

Membrane: Sarnafil G410 Felt Back membrane shall be adhered with Sarnacol 2121 Adhesive squeegee applied at a rate of 2 gal/sq.

Integrity

Test: Allow system to dry sufficiently to allow foot traffic. Verify that the structure can support the deadload weight of a watertight test before proceeding. Plug drains and provide necessary barriers to contain flood water. Flood deck with 2" head of water and check for leaks after 24 hours. Any leaks found shall be repaired immediately and the area shall be retested.

Protection

Course: Apply over membrane Sarnacol 2170 Adhesive roller applied at a rate of 1 to 1.25 gal/sq. and allowed to dry as primer. Followed with Sarnafil G445 Protection Course, protection course is adhered with Sarnacol 2170 Adhesive roller applied at a rate of 1 gal/sq.

Inspection: Inspection shall be witnessed by the Building Official, waterproofing contractor, and a representative of Sarnafil Inc.

Surfacing: Concrete pavers (ASTM C936/minimum 2" thick) adhered to protection course with Sarnacol 2121 Adhesive applied at rate of 2.25 gal/sq. using a 1/4" notched squeegee.

Maximum Design

Pressure: -432.50 psf (See General Limitation #9)

Maximum Fire

Classification: See General Limitation #1.

Maximum Slope: See General Limitation #1.



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- Deck Type 3:** Concrete, New Construction
- Deck Description:** 2500 psi structural concrete or concrete plank
- System Type F-3:** Membrane adhered.

All General and System Limitations shall apply.

Membrane: Sarnafil G410 Felt Back membrane shall be adhered with Sarnacol 2121 Adhesive squeegee applied at a rate of 2 gal/sq.

Integrity

Test: Allow system to dry sufficiently to allow foot traffic. Verify that the structure can support the deadload weight of a watertight test before proceeding. Plug drains and provide necessary barriers to contain flood water. Flood deck with 2" head of water and check for leaks after 24 hours. Any leaks found shall be repaired immediately and the area shall be retested.

Protection

Course: Apply over membrane Sarnacol 2170 Adhesive roller applied at a rate of 1 to 1.25 gal/sq. and allowed to dry as primer. Followed with Sarnafil G445 Protection Course, protection course is adhered with Sarnacol 2170 Adhesive roller applied at a rate of 1 gal/sq. Top side of protection layer shall be cover with a film of Sarnacol 2121 Adhesive applied at rate of 2.25 gal/sq. using a 1/4" notched squeegee.

Inspection: Inspection shall be witnessed by the Building Official, waterproofing contractor, and a representative of Sarnafil Inc.

Surfacing: 12" x 12" x 1" exterior grade saltillo clay tiles set into 1/2" thick bed of exterior grade thinset.

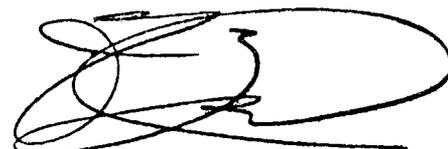
Maximum Design

Pressure: -410.83 psf (See General Limitation #9)

Maximum Fire

Classification: See General Limitation #1.

Maximum Slope: See General Limitation #1.



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Deck Type 3I: Concrete, insulated, New Construction
Deck Description: 2500 psi structural concrete or concrete plank
System Type F: Insulation adhered to deck.

All General and System Limitations shall apply.

<u>Insulation Base Layer</u>	<u>Fastener Type</u>	<u>Fastening Detail No.</u>	<u>Fasteners Per Board</u>	<u>Fastener Density</u>
Approved Type(s): Polyisocyanurate (min. 35 psi), flat or tapered Minimum: 1.5" x 4' x 4'	N/A	N/A	N/A	N/A

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of base sheet. All insulation shall be adhered to the deck in full moppings of approved asphalt within the EVT range and at a rate of 20-40 lbs. Please refer to Miami-Dade County Roofing Application Standard RAS 117 for insulation attachment. Insulations listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels used as a top layer shall be placed with the polyisocyanurate side facing down.

Membrane: Apply over insulation Sarnacol 2170 Adhesive roller applied at a rate of 1 to 1.25 gal/sq. and allowed to dry as primer. Followed with Sarnafil G410, felt back roof membrane adhered with Sarnacol 2170 Adhesive roller applied at a rate of 1 gal/sq.

Integrity

Test: Allow system to dry sufficiently to allow foot traffic. Verify that the structure can support the deadload weight of a watertight test before proceeding. Plug drains and provide necessary barriers to contain flood water. Flood deck with 2" head of water and check for leaks after 24 hours. Any leaks found shall be repaired immediately and the area shall be retested.

Protection

Course: Sarnafil G445 Protection Course, protection layer shall be adhered with Sarnacol 2170 Adhesive roller applied at a rate of 1 gal/sq. Top side of protection layer shall be cover with a film of Sarnacol 2121 Adhesive applied at rate of 2.25 gal/sq. using a ¼" notched squeegee.

Inspection: Inspection shall be witnessed by the Building Official, waterproofing contractor, and a representative of Sarnafil Inc.

Surfacing: 12" x 12" x 1" exterior grade saltillo clay tiles set into ½" thick bed of exterior grade thinset.
 Or
 Concrete pavers (ASTM C936/minimum 2" thick) adhered to protection course with Sarnacol 2121 Adhesive applied at rate of 2.25 gal/sq. using a ¼" notched squeegee.

Maximum Design

Pressure: -367.50 psf (See General Limitation #9)

Maximum Fire

Classification: See General Limitation #1.

Maximum Slope:

See General Limitation #1.



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GENERAL LIMITATIONS

- 1 Fire classification is not part of this acceptance, refer to a current Approved Roofing Materials Directory for fire ratings of this product.
- 2 Insulation may be installed in multiple layers. The first layer shall be attached in compliance with Product Control Approval guidelines. All other layers shall be adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq., or mechanically attached using the fastening pattern of the top layer
- 3 All standard panel sizes are acceptable for mechanical attachment. When applied in approved asphalt, panel size shall be 4' x 4' maximum.
- 4 An overlay and/or recovery board insulation panel is required on all applications over closed cell foam insulations when the base sheet is fully mopped. If no recovery board is used the base sheet shall be applied using spot mopping with approved asphalt, 12" diameter circles, 24" o.c.; or strip mopped 8" ribbons in three rows, one at each sidelap and one down the center of the sheet allowing a continuous area of ventilation. Encircling of the strips is not acceptable. A 6" break shall be placed every 12' in each ribbon to allow cross ventilation. Asphalt application of either system shall be at a minimum rate of 12 lbs./sq. **Note: Spot attached systems shall be limited to a maximum design pressure of -45 psf.**
- 5 Fastener spacing for insulation attachment is based on a Minimum Characteristic Force (F') value of 275 lbf., as tested in compliance with Testing Application Standard TAS 105. If the fastener value, as field-tested, are below 275 lbf. insulation attachment shall not be acceptable.
- 6 Fastener spacing for mechanical attachment of anchor/base sheet or membrane attachment is based on a minimum fastener resistance value in conjunction with the maximum design value listed within a specific system. Should the fastener resistance be less than that required, as determined by the Building Official, a revised fastener spacing, prepared, signed and sealed by a Florida Registered Engineer or Architect may be submitted. Said revised fastener spacing shall utilize the withdrawal resistance value taken from Miami-Dade County Testing Application Standards TAS 105 and calculations in compliance with Miami-Dade Roofing Application Standard RAS 117.
- 7 Perimeter and corner areas shall comply with the enhanced uplift pressure of these areas, as calculated in compliance with Chapter 23 of the South Florida Building Code. Fastener densities shall be increase for both insulation and base sheet as calculated in compliance with Miami-Dade County Roofing Application Standard RAS 117. **(When this limitation is specifically referred within this NOA, General Limitation #9 will not be applicable.)**
- 8 All attachment and sizing of perimeter nailers, metal profile, and/or flashing termination designs shall conform with Miami-Dade County Roofing Application Standard RAS 111 and the wind load requirements of Chapter 23 of the South Florida Building Code.
- 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.)**



Frank Zuloaga, RRC
Roofing Product Control Examiner

Sarnafil, Inc.
100 Dan Road
Canton, MA 02021

ACCEPTANCE NO: 99-0920.03
APPROVED: April 21, 2000
EXPIRES: April 21, 2003

NOTICE OF ACCEPTANCE STANDARD CONDITIONS

- 1 Renewal of this Acceptance (approval) shall be considered after a renewal application has been filed and the original submitted documentation, including test supporting data, engineering documents, are no older than eight (8) years.
- 2 Any and all approved products shall be permanently labeled with the manufacturer's name, city, state, and the following statement: "Miami-Dade County Product Control Approved", or as specifically stated in the specific conditions of this Acceptance.
- 3 Renewals of Acceptance will not be considered if:
 - a) There has been a change in the South Florida Building Code affecting the evaluation of this product and the product is not in compliance with the code changes;
 - b) The product is no longer the same product (identical) as the one originally approved;
 - c) If the Acceptance holder has not complied with all the requirements of this acceptance, including the correct installation of the product;
 - d) The engineer who originally prepared, signed and sealed the required documentation initially submitted, is no longer practicing the engineering profession.
- 4 Any revision or change in the materials, use, and/or manufacture of the product or process shall automatically be cause for termination of this Acceptance, unless prior written approval has been requested (through the filing of a revision application with appropriate fee) and granted by this office.
- 5 Any of the following shall also be grounds for removal of this Acceptance:
 - a) Unsatisfactory performance of this product or process;
 - b) Misuse of this Acceptance as an endorsement of any product, for sales, advertising or any other purposes.
- 6 The Notice of Acceptance 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 Notice of Acceptance is displayed, then it shall be done in its entirety.
- 7 A copy of this Acceptance as well as approved drawings and other documents, where it applies, shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at all times. The copies need not be resealed by the engineer.
- 8 Failure to comply with any section of this Acceptance shall be cause for termination and removal of Acceptance.
- 9 This Acceptance contains pages 1 through 11.

END OF THIS ACCEPTANCE



Frank Zuloaga, RRC
Roofing Product Control Examiner