MIAMI-DADE COUNTY, FLORIDA
METRO-DADE FLAGLER BUILDING

BUILDING CODE COMPLIANCE OFFICE
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CONTRACTOR ENFORCEMENT DIVISION
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PRODUCT CONTROL DIVISION
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PRODUCT CONTROL NOTICE OF ACCEPTANCE

Sarnafil U.S.A. Inc.
100 Dan Road
Canton ,MA 02021

Your application for Notice of Acceptance (NOA) of:
Sarnafil PVC Single Ply Roofing Membrane Over Cementitious Wood Fiber
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 NOA shall not be valid after the expiration date stated below. BCCO reserves the right to secure this product or material at any time 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 by 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.: 01-0502.03
EXPIRES: 08/02/2006

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 Miami-Dade County, Florida under the conditions set forth above.

Francisco J. Quintana, R.A.
Director
Miami-Dade County
Building Code Compliance Office

APPROVED: 08/02/2001

Roofing System Approval:

Category: Roofing
Sub-Category: Single-Ply
Material: PVC
Deck Type: Cemetitious Wood Fiber
Maximum Design Pressure: **-45.0 psf.**
Fire Classification: See General Limitation #1

Approval Date: **August 2, 2001**
Expiration Date: **August 2, 2006**

Table 1
TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

Product	Dimensions	Test Specification	Product Description
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	Polyester reinforced PVC roofing membrane.
G459	Various	ASTM D 4434	Fiberglass reinforced PVC Alloy asphalt compatible flashing membrane.
Sarna Dens Deck®	4' x 8'	PA 110	Silicon treated gypsum board
Sarnatape	Various		Air flow barrier tape
Sarnabar	1.25" x 15'	PA 114	Galv. or stainless steel membrane fastening bar.
Sarnastop	1" x 10'	PA 114	Aluminum termination bar.
SarnaAirguard			PVC air/vapor barrier
Sarnavap-10	20' x 100'		Polyethylene air/vapor barrier
Sarnabarrier			Polyester separation sheet.
Sarnafelt	82" x 135"		Asphalt protection or leveling layer.
Sarnafastener	Various		Membrane and insulation fastener.
Sarnadisc	Various		Membrane fastening stress plate.
Sarnaplate	Various		Insulation fastening plate.
Sarnacord	4mm x 328'	PA 114	Reinforcement cord for use with Sarnabar.
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.

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Product	Dimensions	Test Specification	Product Description
Sarnaflash	18" x 40"		Prefabricated expansion joints.
Sarnatred	3.25' x 32.8'		PVC walkway protection sheet.
SarnaWalkways	Various		PVC walkway protection sheet.
Sarnastack	Various		Prefabricated cone flashing.
Sarnadrain RAC	Various		Aluminum drain insert.
Sarnamatic			Seam welding equipment.
Sarnatherm	Various	PA 110	Isocyanurate insulation board.
Sarnatherm Composite	Various	PA 110	Isocyanurate insulation board with perlite facer.
Sarnatherm Plus		PA 110	Isocyanurate board with wood fiberboard facer.
Sarnatherm 25 PSI	Various	PA 110	Polyisocyanurate insulation board.
Sarnaclad	Various		Heat weldable PVC/galvanized steel flashing
Edge-Tite	Various		Prefabricated metal edge system.
Anchor-Tite	Various		Prefabricated metal edge system.

Table 2

APPROVED INSULATIONS:

Product	Product Description	Manufacturer (with current NOA)
ACFoam 25 PSI	Isocyanurate Insulation	Atlas Roofing Corp. (with current NOA)
ACFoam Composite	Isocyanurate Insulation with perlite facer	Atlas Roofing Corp. (with current NOA)
ACFoam II	Isocyanurate Insulation	Atlas Roofing Corp. (with current NOA)
ACFoam III	Isocyanurate Insulation	Atlas Roofing Corp. (with current NOA)
ACFoam Supreme	Isocyanurate Insulation	Atlas Roofing Corp. (with current NOA)
Dens Deck	Silicon treated gypsum	G-P Products (with current NOA)
E'NRG'Y 2	Isocyanurate Insulation	Johns Manville (with current NOA)
E'NRG'Y 2 Composite	Isocyanurate Insulation with perlite facer	Johns Manville (with current NOA)
E'NRG'Y 2 Plus	Isocyanurate Insulation with wood fiberboard facer	Johns Manville (with current NOA)
E'NRG'Y 2 PSI-25	Isocyanurate Insulation	Johns Manville (with current NOA)
E'NRG'Y Gypsum Composite	Isocyanurate Insulation with gypsum board facer.	Johns Manville (with current NOA)
EPS	Expanded polystyrene	Generic
High Density Wood Fiberboard	Wood fiber insulation	Generic

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ISO 95+ GL	Isocyanurate Insulation	Firestone (with current NOA)
Millox	Isocyanurate Insulation with wood fiberboard facer	Apache Products (with current NOA)
Millox 25 PSI	Isocyanurate Insulation with wood fiberboard facer	Apache Products (with current NOA)
Multi-Max FA	Isocyanurate Insulation	Rmax, Inc. (with current NOA)
Multi-Max FA 25 PSI	Isocyanurate Insulation	Rmax, Inc. (with current NOA)
Pyrox	Isocyanurate Insulation	Apache Products (with current NOA)
Pyrox 25 PSI	Isocyanurate Insulation	Apache Products (with current NOA)
Perlite Insulation Board	Perlite Insulation	Generic
Thermaroof	Isocyanurate Insulation	Rmax, Inc. (with current NOA)
Thermaroof Plus	Isocyanurate Insulation	Rmax, Inc. (with current NOA)
Type X Gypsum	Gypsum Wallboard	Generic
Ultra M-II Iso/glas	Isocyanurate Insulation	Homasote Co. (with current NOA)
Whiteline	Isocyanurate Insulation	Apache Products (with current NOA)
XPS	Extruded polystyrene	Generic

Table 3

APPROVED FASTENERS:

Product Name	Product Description	Dimensions	Manufacturer (with current NOA)
Olympic NTB-2HWW	Glass-filled nylon auger fastener with a built-in 2""stress plate and locking wire barbs	Various (min.2")	Olympic MFG. Group (with current NOA)
Olympic GTL	Glass reinforced nylon	Various	Olympic MFG. Group (with current NOA)
Olympic Lite-Deck with the 3"plate	Carbon Steel CR-10 Coating (black)	Various (min.2")	Olympic MFG. Group (with current NOA)

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EVIDENCE SUBMITTED:

Test Agency	Test Identifier	Description	Date
Factory Mutual Research Corporation	J.I. 0X3A3.AM	Wind Uplift	07/31/94
Factory Mutual Research Corporation	J.I. 0P6A6.AM	Wind Uplift	03/03/94
Factory Mutual Research Corporation	J.I.2X2A5.AM	Wind Uplift	07/31/94
Underwriters Laboratories, Inc.	R8992	Fire Classification	1994
FMRC	J.I. 1Z5A6.AM	Wind Uplift	07/18/97
FMRC	J.I. 4B3A2.AM	Wind Uplift	06/19/97
FMRC	J.I. 0B9A0.AM	Wind Uplift	10/22/96
Celotex Technical Center	MTS Job No. 258215	Wind Uplift	09/09/97

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APPROVED ASSEMBLIES:

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 5I: Cementitious Wood Fiber, Insulated, New Construction

Deck Description: Cementitious Wood Fiber

System Type B: Base Layer of insulation mechanically attached, top insulation layer fully adhered with approved asphalt..

All General and System Limitations apply.

Insulation Base Layer	Fasteners Densit/ft^2	Fastener Type
AC Foam II, AC Foam Composite (bottom layer only), AC Foam - 25 PSI, Pyrox, Millox, Pyrox-25 PSI, Millox-25 PSI , Whiteline (bottom layer only), any of the above tapered		
Minimum: 1.3' Thick	1:2	Any approved fastener listed in table 3
Minimum 2" Thick	1:4	
Sarnatherm, Sarnatherm-25 PSI, Sarnatherm-Composite (bottom layer only), Sarnatherm Plus, E'NRG'Y-2, E'NRG'Y 2 Composite (bottom layer only), E'NRG'Y 2 Plus, PSI-25, any of the above tapered		
Minimum 1.4" Thick	1:3	Any approved fastener listed in table 3
Minimum 2" Thick	1:4	
Dens-Deck		
Minimum ¼" Thick	1:1.2	Any approved fastener listed in table 3
Minimum ½" Thick	1:1.7	
Multi-Max FA, Multi-Max FA - 25 PSI, Thermaroof Composite (bottom layer only), any of the above tapered		
Minimum 1.25" Thick	1:2	Any approved fastener listed in table 3
Minimum 2" Thick	1:4	
High Density Wood Fiber (base layer only)		
Minimum: 1" Thick	1:2	Any approved fastener listed in table 3
Perlite (base layer only)		
Minimum: ¾" Thick	1:2	Any approved fastener listed in table 3

Note: Base layer shall be mechanically attached with fasteners and density described. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

Any of the insulations listed for Base Layer, above.

Note: Optional top layer of insulation shall be adhered with approved asphalt within the EVT range and at a rate of 20-40 lbs/100 ft^2. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

Vapor Retarder:	(Optional) Any FMRC approved vapor barrier approved for use with hot asphalt may be applied to the deck or perlite base layer.
Barrier:	None
Membrane:	G410, smooth backed adhered with Sarnacol 2170 applied at 1.25gal/sq. to the substate and .5 gal/sq. to the back of the Membrane, or Sarnocol V949 applied at 1 to 2 gal./sq. to the substrate and .5 gal./sq. to the Membrane, or Sarnocol 2121 applied to the substrate only at 1.5 to 2.5 gal./sq.
Maximum Design Pressure:	-45 psf. (See General Limitation #9)

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Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 1I: Cementitious Wood Fiber, Insulated, New Construction

Deck Description: Cementitious Wood Fiber

System Type C: All layers of insulation simultaneously fastened; membrane fully adhered.

All General and System Limitations apply.

Insulation Base Layer	Fasteners Densit/ft^2	Fastener Type
AC Foam II, ACFoam III, AC Foam - 25 PSI, ACFoam Composite (bottom layer only), ACFoam Supreme, Pyrox, Millox, Pyrox-25 PSI, Millox-25 PSI, Whiteline, any of the above tapered		
Minimum: 1.3" Thick	N/A	N/A
Sarnatherm, Sarnatherm-25 PSI, Sarnatherm-Composite (bottom layer only), E'NRG'Y 2, E'NRG'Y 2 Composite (bottom layer only), E'NRG'Y 2 Plus, PSI-25, ISO 95+ GL, any of the above tapered		
Minimum: 1.4" Thick	N/A	N/A
Hy-Therm AP, Hy-Therm SP, Top-R II, Star Ap, Hy-tec, any of the above tapered		
Minimum: 1.5 " Thick	N/A	N/A
High Density Wood Fiberboard, or tapered		
Minimum: 1" Thick	N/A	N/A
Ultra M-II Iso/glas, or tapered		
Minimum: 1.2" Thick	N/A	N/A
Multi-Max FA, Multi-Max FA - 25 PSI, Thermaroof, Thermaroof Plus, any of the above tapered		
Minimum: 1.25" Thick	N/A	N/A
Dens-Deck		
Minimum: ¼" Thick	N/A	N/A
Perlite (base layer only)		
Minimum: ¾" Thick	N/A	N/A

Note: All insulation 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 Roofing Application Standard RAS 117 for insulation attachment.

Insulation Base Layer	Fasteners Densit/ft^2	Fastener Type
AC Foam II, AC Foam Composite (bottom layer only), AC Foam - 25 PSI, Pyrox, Millox, Pyrox-25 PSI, Millox-25 PSI, Whiteline (bottom layer only), any of the above tapered.		
Minimum: 1.3" Thick	1:2	Any approved fastener listed in table 3
Minimum 2" Thick	1:4	
Sarnatherm, Sarnatherm-25 PSI, Sarnatherm-Composite (bottom layer only), Sarnatherm Plus, E'NRG'Y-2, E'NRG'Y 2 Composite (bottom layer only), E'NRG'Y 2 Plus, PSI-25, any of the above tapered		
Minimum 1.4" Thick	1:3	Any approved fastener listed in table 3
Minimum 2" Thick	1:4	
Dens-Deck		
Minimum 1/4" Thick	1:1.2	Any approved fastener listed in table 3
Minimum 1/2" Thick	1:1.7	
Multi-Max FA, Multi-Max FA - 25 PSI, Thermaroof Composite (bottom layer only), any of the above tapered		
Minimum 1.25" Thick	1:2	Any approved fastener listed in table 3
Minimum 2" Thick	1:4	

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High Density Wood Fiber (base layer only)		
Minimum: 1" Thick	1:2	Any approved fastener listed in table 3
Perlite (base layer only)		
Minimum: ¾ " Thick	1:2	Any approved fastener listed in table 3

Note: 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.

Vapor Retarder:	(Optional) An FMRC approved vapor barrier approved for use with hot asphalt may be applied to the deck or perlite base layer.
Barrier:	None
Membrane:	G410, smooth backed adhered with Sarnacol 2170 applied at 1.25gal/sq. to the substate and .5 gal/sq. to the back of the Membrane, or Sarnocol V949 applied at 1 to 2 gal./sq. to the substrate and .5 gal./sq. to the Membrane, or Sarnocol 2121 applied to the substrate only at 1.5 to 2.5 gal./sq.
Maximum Design Pressure:	-45 psf. (See General Limitation #9)

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Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 5I: Cementitious Wood Fiber, Insulated, New Construction

Deck Description: Cementitious Wood Fiber

System Type D: Membrane mechanically attached over perliminary fastened insulation.

All General and System Limitations apply.

Insulation Base Layer	Fasteners Densit/ft^2	Fastener Type
AC Foam II, ACFoam III, AC Foam - 25 PSI, ACFoam Composite (bottom layer only), ACFoam Supreme, Pyrox, Millox, Pyrox-25 PSI, Millox-25 PSI, Whiteline, any of the above tapered		
Minimum: 1.3" Thick	N/A	N/A
Sarnatherm, Sarnatherm-25 PSI, Sarnatherm-Composite (bottom layer only), E'NRG'Y 2, E'NRG'Y 2 Composite (bottom layer only), E'NRG'Y 2 Plus, PSI-25, ISO 95+ GL, any of the above tapered		
Minimum: 1.4" Thick	N/A	N/A
Hy-Therm AP, Hy-Therm SP, Top-R II, Star AP, Hy-Tec, any of the above tapered		
Minimum: 1.5" Thick	N/A	N/A
High Density Wood Fiberboard, or tapered (base layer only)		
Minimum: 1" Thick	N/A	N/A
Ultra M-II Iso/glas, or tapered		
Minimum: 1.2" Thick	N/A	N/A
Multi-Max FA, Multi-Max FA - 25 PSI, Thermaroof, Thermaroof Plus, any of the above tapered		
Minimum: 1.25" Thick	N/A	N/A
Dens-Deck		
Minimum: ¼" Thick	N/A	N/A
Perlite (base layer only)		
Minimum: ¾" Thick	N/A	N/A

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

Vapor Retarder:	(Optional) Sarnavap vapor barrier applied directly to the deck or over the base insulation layer.
Barrier:	(Optional) Minimum 1/4" gypsum or Dens-Deck or Atlas FR10 or FR50.
Membrane:	S327 attached to deck as specified below.
Fastening:	Approved fasteners with approved discs spaced 6" o.c. within the 5.5" side lap spaced 73" o.c. and sealed with a minimum 1.5" weld or approved fasteners with approved discs spaced 6" o.c. in rows 12' o.c. maximum, or Sarnabars spaced 12' o.c. maximum fastened with Sarnafasteners spaced 6 in. o.c. through the field of the membrane and covered with a 7" minimum width coverstrip with 1.5" welds on each side.
Maximum Design Pressure:	-52.5 psf. (See General Limitations #9)

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STEEL DECK LIMITATIONS:

1. If mechanical attachment to the structural deck trough the lightweight insulating concrete is proposed, a field withdrawal resistance testing shall be performed to determine fastener patterns and density. All testing and fastening design shall be in compliance with TestingApplication Standard TAS 105 and Roofing Application Standard RAS 117, calculations shall be signed and sealed by 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. 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, 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. **(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 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.)**

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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: "Metro-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 Metro-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 2 through 11.

END OF THIS ACCEPTANCE

Frank Zuloaga, RRC
Roofing Product Control Examiner