



**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)

**Sika Sarnafil Inc.
 100 Dan Road
 Canton, MA 02021**

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: Sika Sarnafil PVC Single Ply Roofing Membrane Over Steel 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. 07-0614.04 and consists of pages 1 through 35.
 The submitted documentation was reviewed by Alex Tigera.



**NOA No 08-0717.09
 Expiration Date: 07/05/11
 Approval Date: 02/04/09
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ROOFING SYSTEM APPROVAL

Category: Roofing
Sub-Category: Single Ply
Material: PVC

Deck Type: Steel
Maximum Design Pressure -112.5 psf

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
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.
Sikaplan 45	45 mil thick	ASTM D 4434	White polyester reinforced PVC roofing membrane
G459	Various	ASTM D 4434	Fiberglass reinforced PVC Alloy asphalt compatible flashing membrane.
Sarna Dens Deck®	4' x 8'	TAS 110	Silicon treated gypsum board
Sarnatape	Various		Air flow barrier tape
Sarnabar	1.25" x 15'	TAS 114	Galvanized or stainless steel membrane fastening bar.
Sarnastop	1" x 10'	TAS 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.
Sarnarail Polymer Batten Strip	0.75" x 250'		Polymer batten bar
Sarnafastener-XP	Various		Membrane and insulation fastener.
Sarnafil MAXLoad	Various		Membrane and insulation fastener.
Sarnadisc-XPN	1.5" x 3.75"		Membrane and insulation fastening plate.
Sarnacord	4mm x 328'	TAS 114	Reinforcement cord for use with Sarnabar.
Sarnareglet	2.15" x 10'		Aluminum surface mount reglet (term. bar).

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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.
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	TAS 110	Isocyanurate insulation board.
Sarnatherm Composite	Various	TAS 110	Isocyanurate insulation board with perlite facer.
Sarnatherm Plus		TAS 110	Isocyanurate board with wood fiberboard facer.
Sarnatherm 25 PSI	Various	TAS 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.

APPROVED INSULATIONS:

TABLE 2

<u>Product Name</u>	<u>Product Description</u>	<u>Manufacturer (With Current NOA)</u>
ACFoam 25 PSI	Isocyanurate Insulation	Atlas Roofing Corp.
ACFoam Composite	Isocyanurate Insulation with perlite facer	Atlas Roofing Corp.
ACFoam II	Isocyanurate Insulation	Atlas Roofing Corp.
ACFoam III	Isocyanurate Insulation	Atlas Roofing Corp.
ACFoam Supreme	Isocyanurate Insulation	Atlas Roofing Corp.
Dens Deck, DensDeck Prime	Silicon treated gypsum	G-P Products
E'NRG'Y 2, E'NRG'Y 3	Isocyanurate Insulation	Johns Manville
E'NRG'Y 2 Composite	Isocyanurate Insulation with perlite facer	Johns Manville
E'NRG'Y 2 Plus	Isocyanurate Insulation with wood fiberboard facer	Johns Manville
E'NRG'Y 2 PSI-25	Isocyanurate Insulation	Johns Manville
E'NRG'Y Gypsum-Composite	Isocyanurate Insulation with gypsum board facer	Johns Manville
EPS	Expanded polystyrene	Generic
High Density Wood Fiberboard	Wood fiber insulation	Generic
H-Shield	Isocyanurate Insulation	Hunter Panels
ISO 95+ GL	Isocyanurate Insulation	Firestone



APPROVED INSULATIONS:

TABLE 2
Product Description

<u>Product Name</u>	<u>Product Description</u>	<u>Manufacturer</u> <u>(With Current NOA)</u>
Millox	Isocyanurate Insulation with wood fiberboard facer	Apache Products
Millox 25 PSI	Isocyanurate Insulation with wood fiberboard facer	Apache Products
Multi-Max FA	Isocyanurate Insulation	Rmax, Inc.
Multi-Max FA 25 PSI	Isocyanurate Insulation	Rmax, Inc.
Pyrox	Isocyanurate Insulation	Apache Products
Pyrox 25 PSI	Isocyanurate Insulation	Apache Products
Perlite Insulation Board	Perlite Insulation	Generic
Therमारooof	Isocyanurate Insulation	Rmax, Inc.
Therमारooof Plus	Isocyanurate Insulation	Rmax, Inc.
Type X Gypsum	Gypsum Wallboard	Generic
Ultra M-II Iso/glas	Isocyanurate Insulation	Homasote Co.
Whiteline	Isocyanurate Insulation	Apache Products
XPS	Extruded polystyrene	Generic



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 Fasteners	Insulation and membrane fastener	Various	OMG, Inc.
2	Rawl Fasteners	Insulation and membrane fastener	Various	Powers Fasteners, Inc.
3	SFS Fasteners	Insulation and membrane fastener	Various	SFS Intec, Inc.
4	True Fast Fasteners	Insulation and membrane fastener	Various	The Tru-Fast Corp.
5	Sarnafil Fasteners	Insulation and membrane fastener	Various	Sarnafil, Inc.
6	OlyBond Insulation Adhesive	Insulation adhesive	Various	OMG, Inc.
7	OlyBond 500, Spot Shot	Insulation adhesive	Various	OMG, Inc.
8	PVC Rhino Plates	Insulation fastener	Various	OMG, Inc.

EVIDENCE SUBMITTED:

<u>Test Agency</u>	<u>Test Identifier</u>	<u>Description</u>	<u>Date</u>
Celotex Technical Center	MTS Job No. 258215	Wind Uplift	09/09/97
Factory Mutual Research Corporation	J.I. 0P6A6.AM	4470	03/03/94
	J.I. 0X3A3.AM	4470	07/31/94
	J.I.2X2A5.AM	4470	07/31/94
	J.I. 0B9A0.AM	4470	10/22/96
	J.I. 1Z5A6.AM	4470	07/18/97
	J.I. 4B3A2.AM	4470	06/19/97
	J.I. 3012964	4470	06/11/02
	J.I. 3015643	4470	12/06/02
	J.I. 3016201	4470	01/28/03
	J.I. 3006785	4470	05/06/04
	J.I. 3017292	4470	09/03/04
	J.I. 3021131	4470	07/07.05
	J.I. 3024229	4470	11/16/05
	3030053	FM 4470	09-12/07
3028309	FM 4470	03/30/07	
3029404	FM 4470	09/09/08	
Underwriters Laboratories, Inc.	R8992	Fire Classification	1994



APPROVED ASSEMBLIES:

Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 2I: Steel, Insulated

Deck Description: 18 – 22ga. steel

System Type B(1): Base Layer of insulation mechanically attached, optional top insulation layer fully adhered with approved asphalt.

All General and System Limitations apply:

<u>Base Insulation Layer</u>	<u>Insulation Fasteners</u> <u>(Table 3)</u>	<u>Fastener</u> <u>Density/ft²</u>
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), H-Shield		
Minimum 1.3" thick or tapered	1, 2, 3, 4, or 5	1:2 ft ²
Minimum 2" thick or tapered	1, 2, 3, 4, or 5	1:4 ft ²
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		
Minimum 1.4" thick or tapered	1, 2, 3, 4, or 5	1:3 ft ²
Minimum 2" thick or tapered	1, 2, 3, 4, or 5	1:4 ft ²
DensDeck, DensDeck Prime		
Minimum 1/4" thick	1, 2, 3, 4, or 5	1:1.2 ft ²
Minimum 1/2" thick	1, 2, 3, 4, or 5	1:1.7 ft ²
Multi-Max FA, Multi-Max FA - 25 PSI, TherमारooF Composite (bottom layer only)		
Minimum 1.25" thick	1, 2, 3, 4, or 5	1:2 ft ²
Minimum 2" thick	1, 2, 3, 4, or 5	1:4 ft ²
Ultra M-II Iso/glas, or tapered		
Minimum 1.2" thick or tapered	1, 2, 3, 4, or 5	1:2 ft ²
Minimum 2" thick or tapered	1, 2, 3, 4, or 5	1:4 ft ²
High Density Wood Fiber (base layer only)		
Minimum 1" thick or tapered	1, 2, 3, 4, or 5	1:2 ft ²
Minimum 1.4" thick or tapered	1, 2, 3, 4, or 5	1:2 ft ²
Perlite		
Minimum 3/4" thick	1, 2, 3, 4, or 5	1:1 ft ²

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).



Top Insulation Layer

Insulation Fasteners

Fastener Density/ft2

(Table 3)

AC Foam II, AC Foam - 25 PSI, Pyrox, Millox, Pyrox-25 PSI, Millox-25 PSI Minimum 1.3" thick or tapered	N/A	N/A
Sarnatherm, Sarnatherm-25 PSI, Sarnatherm Plus, E'NRG'Y-2, E'NRG'Y 2 Plus, PSI-25 Minimum 1.4" thick or tapered	N/A	N/A
DensDeck, DensDeck Prime Minimum 1/4" thick	N/A	N/A
Ultra M-II Iso/glas Minimum 1.2" thick or tapered	N/A	N/A
Multi-Max FA, Multi-Max FA - 25 PSI Minimum 1.25" thick or tapered	N/A	N/A

Note: Optional top layer of insulation shall be adhered with approved asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². 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) An FMRC approved vapor barrier approved for use with hot asphalt may be applied to the deck or perlite base layer.
- Barrier:** (Optional) Minimum 5/8" gypsum or 1/4" DensDeck or Atlas FR10 or FR 50
- Membrane:** G410 or S327, smooth backed, adhered with Sarnacol 2170 applied at a rate of 1.25gal/sq. to the substrate and 0.5 gal/sq. to the back of the Membrane, or Sarnacol 2121 adhesive applied at a rate of 1.75 to substrate. G410 Felt or S327 Felt, adhered with Sarnacol 2170 applied at a rate of 1.25gal/sq. to the substrate followed by a second coat at a rate of 1.0gal/sq to the substrate.
- Maximum Design Pressures:** -45 psf. (See General Limitation #9)



Membrane Type: Single Ply, Thermoplastic, PVC
Deck Type 2I: Steel, Insulated
Deck Description: 18 – 22ga. steel
System Type B(2): Base Layer of insulation mechanically attached, optional top insulation layer fully adhered with approved asphalt or adhesive.

All General and System Limitations apply.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners</u> <u>(Table 3)</u>	<u>Fastener</u> <u>Density/ft²</u>
ACFoam II, ACFoam III, H-Shield, ISO 95+GL, ENRGY2, ENRGY3, Sarnatherm Minimum 1.4" thick or tapered	1	1:2 ft ²

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).

<u>Insulation for Top Layer(Optional)</u>	<u>Insulation Fasteners</u> <u>(Table 3)</u>	<u>Fastener</u> <u>Density/ft²</u>
ACFoam II, ACFoam III, H-Shield, ISO 95+GL, ENRGY2, ENRGY3, Sarnatherm Minimum 1.4" thick or tapered	N/A	N/A
DensDeck, DensDeck Prime Minimum 1/4" thick or tapered	N/A	N/A

Note: Optional top layer of insulation shall be adhered to the deck in full coating of OlyBond Adhesive Fastener at a rate of 1 gal/sq. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate

Vapor Retarder: (Optional) Any UL or FMRC approved vapor barrier approved for use with hot asphalt may be applied to the deck or perlite base layer.
Barrier: (Optional) Minimum 1/4" gypsum or DensDeck or Atlas FR10 or FR 50
Membrane: G410, G410 Felt S327 or S327 Felt adhered with Sarnacol 2170 adhesive. Adhesive rolled applied as a primer at a rate 1.0-1.25 gal/sq. to the insulation allowed to dry. Following a second coat roller applied of adhesive at 0.5 gal/sq. The roof cover is immediately placed into the adhesive and the top surface rolled with a weighted roller.

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



Membrane Type: Single Ply, Thermoplastic, PVC
Deck Type 2I: Steel, Insulated
Deck Description: Min. 18-22 ga. steel
System Type B(3): Base Layer of insulation mechanically attached, optional top insulation layer adhered with approved adhesive.

All General and System Limitations apply:

<u>Base Insulation Layer</u>	<u>Insulation Fasteners</u> <u>(Table 3)</u>	<u>Fastener</u> <u>Density/ft²</u>
ACFoam Supreme, H-Shield, Sarnatherm or H-Shield CG Minimum 1.5" thick or tapered	1, 2, 3, 4, or 5	1:4 ft ²

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).

<u>Insulation for Top Layer(Optional)</u>	<u>Insulation Fasteners</u> <u>(Table 3)</u>	<u>Fastener</u> <u>Density/ft²</u>
ACFoam Supreme, H-Shield, Sarnatherm or H-Shield CG Minimum 1.5" thick or tapered	N/A	N/A
DensDeck Prime, DensDeck DuraGuard Minimum 1/4" thick or tapered	N/A	N/A

Note: Optional top layer of insulation shall be adhered with approved asphalt within the EVT range and at a rate of 25 lbs/sq. or 0.75" wide beads of Olympic OlyBond 500 or Spot Shot spaced 12" o.c.

Vapor Retarder: (Optional) Any UL or FMRC approved vapor barrier approved for use with hot asphalt may be applied to the deck or perlite base layer.
Barrier: (Optional) Minimum 1/4 " gypsum or DensDeck or Atlas FR10 or FR 50
Membrane: G410 PS, self-adhered to insulation and installed with a 3" wide heat welded seam. Membrane is rolled into insulation with a weighted roller.
Maximum Design Pressure: -45 psf. (See General Limitation #9)



Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 2I: Steel, Insulated

Deck Description: 18 – 22ga. steel

System Type C(1): All layers of insulation simultaneously fastened; membrane fully adhered.

All General and System Limitations apply.

<u>Insulation for Base Layer</u>	<u>Fastener Type</u>	<u>Fastener Density/ft²</u>
AC Foam II, AC Foam III, AC Foam - 25 PSI, AC Foam Composite (bottom layer only), AC Foam Supreme, Pyrox, Millox, Pyrox-25 PSI, Millox-25 PSI, Whiteline, H-Shield Minimum 1.3" thick or tapered	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 Minimum 1.4" thick or tapered	N/A	N/A
High Density Wood Fiberboard (base layer only) Minimum 1" thick	N/A	N/A
Ultra M-II Iso/glas Minimum 1.2" thick or tapered	N/A	N/A
Multi-Max FA, Multi-Max FA - 25 PSI, Thermarroof, Thermarroof Plus Minimum 1.25" thick or tapered	N/A	N/A
DensDeck, DensDeck Prime Minimum ¼" thick	N/A	N/A
Perlite (base layer only) Minimum ¾" 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.

<u>Insulation for Top Layer</u>	<u>Insulation Fasteners</u> <u>(Table 3)</u>	<u>Fastener</u> <u>Density/ft²</u>
AC Foam II AC Foam - 25 PSI, Pyrox, Millox, Pyrox-25 PSI, Millox-25 PSI Minimum 1.3" thick or tapered	1, 2, 3, 4, or 5	1:2 ft ²
Minimum 2" thick or tapered	1, 2, 3, 4, or 5	1:4 ft ²
Sarnatherm, Sarnatherm-25 PSI, Sarnatherm Plus, E'NRG'Y-2, E'NRG'Y 2 Plus, PSI-25 Minimum 1.4" thick or tapered	1, 2, 3, 4, or 5	1:3 ft ²
Minimum 2" thick or tapered	1, 2, 3, 4, or 5	1:4 ft ²
DensDeck, DensDeck Prime Minimum 1/4" thick	1, 2, 3, 4, or 5	1:1.2 ft ²
Minimum 1/2" thick	1, 2, 3, 4, or 5	1:1.7 ft ²
Multi-Max FA, Multi-Max FA - 25 PSI Minimum 1.25" thick	1, 2, 3, 4, or 5	1:3 ft ²
Minimum 2" thick	1, 2, 3, 4, or 5	1:4 ft ²

Ultra M-II Iso/glas

Minimum 1.2" thick or tapered

1, 2, 3, 4, or 5

1:3 ft²

Minimum 2" thick or tapered

1, 2, 3, 4, or 5

1:4 ft²

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: (Optional) Minimum 5/8 " gypsum or 1/4 "DensDeck or Atlas FR10 or FR 50

Membrane: G410 or S327, smooth backed, adhered with Sarnacol 2170 applied at a rate of 1.25gal/sq. to the substrate and 0.5 gal/sq. to the back of the Membrane, or Sarnacol 2121 adhesive applied at a rate of 1.75 to substrate. G410 Felt or S327 Felt, adhered with Sarnacol 2170 applied at a rate of 1.25gal/sq. to the substrate followed by a second coat at a rate of 1.0gal/sq to the substrate.

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



Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 2I: Steel, Insulated

Deck Description: 18 – 22ga. steel

System Type C(2): All layers of insulation simultaneously fastened; membrane fully adhered.

All General and System Limitations apply.

<u>Insulation for Base Layer</u>	<u>Fastener Type</u>	<u>Fastener Density/ft²</u>
Any approved polyisocyanurate		
Minimum 1.5” thick	N/A	N/A

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

<u>Insulation for Top Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
DensDeck Prime		
Minimum 5/8” thick	5	1:2 ft ²

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) Sarnavap vapor barrier applied directly to the deck.

Barrier: None.

Membrane: G410 or S327, adhered with Sarnacol 2170 applied at a rate of 0.75 – 2 gal/sq. to the substrate and 0.5 gal/sq. to the back of the membrane. Minimum 3” wide side lap is sealed with a 1.5” wide heat weld.

Maximum Design Pressures: -60.0 psf. (See General Limitation #7)



Membrane Type: Single Ply, Thermoplastic, PVC
Deck Type 2I: Steel, Insulated
Deck Description: 18 – 22ga. steel
System Type C(3): All layers of insulation simultaneously fastened; membrane fully adhered.

All General and System Limitations apply.

<u>Insulation for Base Layer</u>	<u>Fastener Type</u>	<u>Fastener Density/ft²</u>
Any approved polyisocyanurate		
Minimum 1.5” thick	N/A	N/A

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

<u>Insulation for Top Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
DensDeck Prime		
Minimum 5/8” thick	5	1:2 ft ²

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) Sarnavap vapor barrier applied directly to the deck.
Barrier: None.
Membrane: G410 Felt or S327 Felt, adhered with Sarnocol 2121 adhesive applied at a rate of 2.0 – 2.5 gal/sq to substrate. Minimum 3” wide side lap is sealed with a 1.5” wide heat weld.
Maximum Design Pressures: -52.5 psf. (See General Limitation #7)



Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 2I: Steel, Insulated

Deck Description: 18 ga. steel deck fastened to supports spaced maximum 6 ft. o.c. with Traxx 5 fasteners spaced 6 in. o.c. and with side laps fastened with two Traxx 1 fasteners spaced maximum 24 in. o.c.

System Type C(4): All layers of insulation simultaneously fastened; membrane bonded.

All General and System Limitations apply.

<u>Insulation for Base Layer</u>	<u>Fastener Type</u>	<u>Fastener Density/ft²</u>
Any approved insulation		
Minimum 0.25" 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.

<u>Insulation for Top Layer</u>	<u>Fastener Density/ft²</u>	<u>Fastener Type</u>
(Optional) Any approved cover board		
Minimum 0.25" thick	See Design Pressure	Sarnafastener-XP and PVC Rhino Plates

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.

Membrane: S327, S327 Felt Backed or Sikaplan 45 bonded to PVC Rhino Plates with Rhino Plate bonding tool at 6 seconds per plate so the tool reaches 400°F. Side lap is sealed with minimum 3/4" wide heat weld.

	Maximum Pressure	Fastener Spacing	Fastener Row Spacing
Maximum Design Pressures:	-105 psf (See General Limitation #7)	6 in.	5 ft.
	-52.5 psf (See General Limitation #7)	12 in.	5 ft.
	-90 psf (See General Limitation #7)	6 in.	6 ft.
	-45 psf (See General Limitation #7)	12 in.	6 ft.



Membrane Type: Single Ply, Thermoplastic, PVC
Deck Type 2I: Steel, Insulated
Deck Description: 18 – 22ga. steel deck fastened to supports spaced maximum 6 ft. o.c. with Traxx 5 fasteners spaced 6 in. o.c. and with side laps fastened with Traxx 1 fasteners spaced maximum 24 in. o.c.
System Type C(5): All layers of insulation simultaneously fastened; membrane bonded.

All General and System Limitations apply.

<u>Insulation for Base Layer</u>	<u>Fastener Type</u>	<u>Fastener Density/ft²</u>
Any approved insulation		
Minimum 0.25" 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.

<u>Insulation for Top Layer</u>	<u>Fastener Density/ft²</u>	<u>Fastener Type</u>
(Optional) Any approved cover board		
Minimum 0.25" thick	See Design Pressure	OMG Super XHD and PVC Rhino Plates

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.

Membrane: S327, S327 Felt Backed or Sikaplan 45 bonded to PVC Rhino Plates with Rhino Plate bonding tool at 6 seconds per plate so the tool reaches 400°F. Side lap is sealed with minimum 3/4" wide heat weld.

Maximum Design Pressures:	Maximum Pressure	Fastener Spacing	Fastener Row Spacing
	-60 psf (See General Limitation #7)	2 ft.	2 ft.



Membrane Type: Single Ply, Thermoplastic, PVC

Deck Type 2I: Steel, Insulated

Deck Description: 18 – 22ga. steel deck fastened to supports spaced maximum 6 ft. o.c. with Traxx 5 fasteners spaced 6 in. o.c. and with side laps fastened with Traxx 1 fasteners spaced maximum 24 in. o.c.

System Type C(6): All layers of insulation simultaneously fastened; membrane bonded.

All General and System Limitations apply.

<u>Insulation for Base Layer</u>	<u>Fastener Density/ft²</u>	<u>Fastener Type</u>
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Any approved insulation

Minimum 0.25" 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.

<u>Insulation for Top Layer</u>	<u>Fastener Density/ft²</u>	<u>Fastener Type</u>
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(Optional) Any approved cover board

Minimum 0.25" thick

See Design Pressure

OMG Super XHD and
PVC Rhino Plates

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.

Membrane: S327, S327 Felt Backed or Sikaplan 45 bonded to PVC Rhino Plates with Rhino Plate bonding tool at 6 seconds per plate so the tool reaches 400°F. Side lap is sealed with minimum ¼" wide heat weld.

Maximum Design Pressures:	Maximum Pressure -45 psf (See General Limitation #7)	Fastener Spacing 2 ft.	Fastener Row Spacing 3 ft.
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Membrane Type: Single Ply, Thermoplastic, PVC
Deck Type 2I: Steel, Insulated
Deck Description: 18 – 22ga., Grade 80 steel deck fastened to supports spaced maximum 6 ft. o.c. with Traxx 5 fasteners spaced 6 in. o.c. and with side laps fastened with Traxx 1 fasteners spaced maximum 24 in. o.c.
System Type C(7): All layers of insulation simultaneously fastened; membrane bonded.

All General and System Limitations apply.

<u>Insulation for Base Layer</u>	<u>Fastener Density/ft²</u>	<u>Fastener Type</u>
Any approved insulation		
Minimum 0.25" 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.

<u>Insulation for Top Layer</u>	<u>Fastener Density/ft²</u>	<u>Fastener Type</u>
(Optional) Any approved cover board		
Minimum 0.25" thick	See Design Pressure	OMG Super XHD or Sarnafastener-XP and PVC Rhino Plates

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.

Membrane: S327, S327 Felt Backed or Sikaplan 45 bonded to PVC Rhino Plates with Rhino Plate bonding tool at 6 seconds per plate so the tool reaches 400°F. Side lap is sealed with minimum ¼" wide heat weld.

	Maximum Pressure	Fastener Spacing	Fastener Row Spacing
Maximum Design Pressures:	-60 psf (See General Limitation #7)	2 ft.	2 ft.
	-45 psf (See General Limitation #7)	2 ft.	3 ft.



Membrane Type: Single Ply, Thermoplastic, PVC
Deck Type 2I: Steel, Insulated
Deck Description: 18 – 22ga., Grade 80 steel deck fastened to supports spaced maximum 6 ft. o.c. with Traxx 5 fasteners spaced 6 in. o.c. and with side laps fastened with Traxx 1 fasteners spaced maximum 24 in. o.c.
System Type C(8): All layers of insulation simultaneously fastened, membrane adhered

<u>Base Insulation Layer (Barrier)</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
DensDeck, DensDeck Prime, Dens Deck Duraguard Minimum: ½" 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 per board shall be increased maintaining the same fastener density (See Roofing Application RAS 117 for fastener details).

<u>Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft²</u>
Sarnatherm, Sarnatherm(a), H-Shield, H-Shield CG, AC-Foam-II, ACFoam Supreme, E'NRG'Y 3, Multi Max FA3, or ISO 95+ GL Minimum 1.5" thick	1, 3, or 5	1:2 ft 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 (See Roofing Application RAS 117 for fastener details).

Membrane: Minimum 45mil G410 or S327 adhered with Sarnacol 2166 adhesive applied at 0.4 gal/sq. and with a minimum 1.25in. wide heat-welded seam.
Maximum Design Pressure: -52.5 psf (with E'NRG'Y 3) (See General Limitation #7)
-45 psf (with all other polyisocyanurate insulations) (See General Limitation #7)



Membrane Type: Single Ply, Thermoplastic, PVC
Deck Type 2I: Steel, Insulated
Deck Description: 18 – 22ga., steel deck fastened to supports spaced maximum 6 ft. o.c. with Traxx 5 fasteners spaced 6 in. o.c. and with side laps fastened with Traxx 1 fasteners spaced maximum 24 in. o.c.
System Type C(9): All layers of insulation simultaneously fastened, membrane adhered

All General and System Limitations apply:

<u>Base Insulation Layer (Barrier)</u>	<u>Insulation Fasteners</u> <u>(Table 3)</u>	<u>Fastener</u> <u>Density/ft²</u>
DensDeck, DensDeck Prime, Dens Deck Duraguard Minimum: ½" Thick	N/A	N/A
<u>Intermediate Insulation Layer</u>	<u>Insulation Fasteners</u> <u>(Table 3)</u>	<u>Fastener</u> <u>Density/ft²</u>
Sarnatherm, Sarnatherm(a), H-Shield, H-Shield CG, AC-Foam-II, ACFoam Supreme, E'NRG'Y 3, Multi Max FA3, or ISO 95+ GL Minimum: 1.5" thick	N/A	N/A

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application RAS 117 for fastener details).

<u>Top Insulation Layer</u>	<u>Insulation Fasteners</u> <u>(Table 3)</u>	<u>Fastener</u> <u>Density/ft²</u>
DensDeck, DensDeck Prime Minimum 1/4" thick	1, 3, or 5	1:2 ft 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 (See Roofing Application RAS 117 for fastener details).

Membrane: Minimum 45mil G410 or S327 adhered with Sarnacol 2166 adhesive applied at 0.4 gal/sq. and with a minimum 1.25in. wide heat-welded seam.

Maximum Design Pressure: -45 psf (See General Limitation #7)



Membrane Type: Single Ply, Thermoplastic, PVC
Deck Type 2I: Steel, Insulated
Deck Description: 18-22 ga. steel
System Type D(1): Membrane attached over preliminary fastened insulation.

The following assembly is approved to a maximum design pressure listed with specific fastening patterns. No substitutions shall be made. All General and System Limitations apply.

Deck: Minimum 18-22 ga Grade E steel deck shall be secured to 1/4" thick structural supports spaced a maximum of 6 ft on centers with ITW Buildex Traxx/5 at the bottom of each rib (6" o/c.)

All General and System Limitations apply.

One or more of the following.

<u>Insulation for Base Layer</u>	<u>Fastener Type</u>	<u>Fastener Density/ft²</u>
AC Foam II, AC Foam III, AC Foam - 25 PSI, AC Foam Composite (bottom layer only), AC Foam Supreme, Pyrox, Millox, Pyrox-25 PSI, Millox-25 PSI, Whiteline, H-Shield Minimum 1.3" thick or tapered	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 Minimum 1.4" thick or tapered	N/A	N/A
High Density Wood Fiberboard (base layer only) Minimum 1" thick	N/A	N/A
Ultra M-II Iso/glas Minimum 1.2" thick or tapered	N/A	N/A
Multi-Max FA, Multi-Max FA - 25 PSI, Thermarroof, Thermarroof Plus Minimum 1.25" thick or tapered	N/A	N/A
DensDeck, DensDeck Prime Minimum 1/4" thick	N/A	N/A
Perlite (base layer only) Minimum 3/4" thick	N/A	N/A

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

Vapor Retarders: (Optional) Sarnavap or a FMRC approved vapor barrier applied directly to the deck or over the base insulation layer.



- Barrier:** (Optional) Minimum 5/8" gypsum or ¼ " Dens-Deck or Atlas FR10 or FR50
- Membrane:** S327 or Sikaplan 45 attached to deck as specified below.
- Fastening #1:** Sarnafastener-XP screws (#15 SPM Buildex) with Sarnadisc-XP plates (Heavy Duty SPM Plate-Buildex) spaced 12 in. o.c. within 5.5 in. wide side laps. Laps spaced 73 in. o.c. and sealed with a 1.5 in. wide heat weld.
Maximum Design Pressure -45 psf. (See General Limitations # 7)
- Fastening # 2:** Sarnafastener-XP screws (#15 SPM Buildex) with 2" Sarnadisc- plates (20 ga. Starlock Plate-Buildex) spaced 12 in. o.c. within 6 in. wide side laps. Laps spaced 72.5 in. and sealed with a 0.75 in. wide heat weld on the inside and a 1.5 in. heat weld on the outside.
Maximum Design Pressure -45 psf. (See General Limitations # 7)
- Fastening #3:** Sarnafastener-XP screws (#15 SPM Buildex) with Sarnadisc-XP plates (Heavy Duty SPM Plate-Buildex) spaced 6 in. o.c. within 5.5 in. wide side laps. Laps spaced 73.5 in. o.c. and sealed with a 1.5 in. wide heat weld.
Maximum Design Pressure -75 psf. (See General Limitations # 7)
- Fastening #4:** Sarnafastener-XP screws (#15 SPM Buildex) with 2" Sarnadisc plates (20 ga. Starlock Plate-Buildex) spaced 6 in. o.c. within the 6 in. wide side laps. Laps spaced 72.5 in. and sealed with a 0.75 in. wide heat weld on the inside and a 1.5 in. heat weld on the outside.
Maximum Design Pressure -82.5 psf. (See General Limitations # 7)
- Fastening # 5:** Sarnabars spaced 3' o.c. maximum fastened with Sarnafasteners-XP spaced 6 in. o.c. through the field of the membrane and covered with a 7" minimum width cover strip with 1.5" welds on each side.
Maximum Design Pressure -112.5 psf. (See General Limitations # 7)
- Maximum Design Pressures:** See Fastening Pattern. (See General Limitations # 7)

Membrane Type: Single Ply, Thermoplastic, PVC
Deck Type 2I: Steel, Insulated
Deck Description: Minimum 18-22 ga. steel
System Type D(2): Membrane attached over preliminary fastened insulation.

All General and System Limitations apply.

One or more layers of the following.

<u>Insulation Layer</u>	<u>Fastener Type</u>	<u>Fastener Density/ft²</u>
AC Foam II, AC Foam III, AC Foam - 25 PSI, AC Foam Composite (bottom layer only), AC Foam Supreme, Pyrox, Millox, Pyrox-25 PSI, Millox-25 PSI, Whiteline Minimum 1.3" thick or tapered	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 Minimum 1.4" thick or tapered	N/A	N/A
Ultra M-II Iso/glas Minimum 1.2" thick or tapered	N/A	N/A
Multi-Max FA, Multi-Max FA - 25 PSI, Thermarroof, Thermarroof Plus Minimum 1.25" thick or tapered	N/A	N/A
High Density Wood Fiberboard (base layer only) Minimum 1" thick or tapered	N/A	N/A
DensDeck, DensDeck Prime Minimum 1/4" thick	N/A	N/A
Perlite (base layer only) Minimum 3/4" thick	N/A	N/A

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

Vapor Retarders: (Optional) Sarnavap vapor barrier applied directly to the deck or over the base insulation layer.



- Barrier:** (Optional) Minimum 5/8" gypsum, 1/4" Dens-Deck, or Atlas FR10 or FR50 secured with Dade County approved insulation fasteners at not less than 2 fasteners for a board with no dimension greater than 4' and not less than four fasteners for any board with any greater dimension than 4'.
- Membrane:** S327 or Sikaplan 45 attached to deck as specified below.
- Fastening #1:** Sarnafasteners or SFS 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.
- Fastening #2:** Sarnafasteners 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 cover strip with 1.5" welds on each side.
- Maximum Design Pressures:** -52.5 psf. (See General Limitation #9)

Membrane Type: Single Ply, Thermoplastic, PVC
Deck Type 2I: Steel, Insulated
Deck Description: Minimum 18-22 ga. steel
System Type D(3): Membrane attached over preliminary fastened insulation.

All General and System Limitations apply.

One or more layers of any approved insulation.

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

Vapor Retarders: (Optional) Sarnavap or a FMRC approved vapor barrier applied directly to the deck or over the base insulation layer.

Barrier: (Optional) Minimum 5/8" gypsum, 1/4" Dens-Deck, or Atlas FR10 or FR50 secured with Dade County approved insulation fasteners at not less than 2 fasteners for a board with no dimension greater than 4' and not less than four fasteners for any board with any greater dimension than 4'.

Membrane: S327 or Sikaplan 45 attached to deck as specified below with Sarnarail Polymer Batten Strips spaced at 14.5" o.c. within a 5.5" wide lap.

Fastening #1: Sarnafasteners-XP fasteners spaced 6" o.c. through batten strip. Batten strip is lapped 8" and sealed with a 1.25" wide heat weld on outside edge and a 0.75" wide heat weld on inside edge.

Maximum Design Pressure -52.5 psf. (See General Limitation #7)

Fastening #2: Sarnafil MAXLoad fasteners spaced 12" o.c. through batten strip. Batten strip is lapped 14" and sealed with a 1.25" wide heat weld on outside edge and a 0.75" wide heat weld on inside edge.

Maximum Design Pressure -52.5 psf. (See General Limitation #7)

Fastening #3: Sarnafil MAXLoad fasteners spaced 6" o.c. through batten strip. Batten strip is lapped 8" and sealed with a 1.25" wide heat weld on outside edge and a 0.75" wide heat weld on inside edge.

Maximum Design Pressure -67.5 psf. (See General Limitation #7)

Maximum Design Pressures: See Fastening Pattern. (See General Limitation #7)



Membrane Type: Single Ply, Thermoplastic, PVC
Deck Type 2I: Steel, Insulated
Deck Description: Minimum 18-22 ga. steel
System Type D(4): Membrane attached over preliminary fastened insulation.

All General and System Limitations apply.

One or more layers of any approved insulation.

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

Vapor Retarders: (Optional) Sarnavap or a FMRC approved vapor barrier applied directly to the deck or over the base insulation layer.

Barrier: (Optional) Minimum 5/8" gypsum, 1/4" Dens-Deck, or Atlas FR10 or FR50 secured with Dade County approved insulation fasteners at not less than 2 fasteners for a board with no dimension greater than 4' and not less than four fasteners for any board with any greater dimension than 4'.

Membrane: S327 or Sikaplan 45 attached to deck as specified below.

Fastening #1: Sarnafasteners-XP fasteners and Sarnadisc-XPN plates spaced 6" o.c. within 5.5" wide laps spaced 114.5" o.c. Laps are sealed with a 1.75" wide heat weld on outside edge of lap.

Maximum Design Pressure -60.0 psf. (See General Limitation #7)

Maximum Design Pressures: See Fastening Pattern. (See General Limitation #7)

Membrane Type: Single Ply, Thermoplastic, PVC
Deck Type 2I: Steel, Insulated
Deck Description: Minimum 18-22 ga. Steel with supports at maximum 6' o.c.
System Type D(5): Membrane attached over preliminary fastened insulation.

All General and System Limitations apply.

One or more layers of any approved insulation.

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

Vapor Retarders: (Optional) Sarnavap or a FMRC approved vapor barrier applied directly to the deck or over the base insulation layer.

Barrier: (Optional) Minimum 5/8" gypsum, 1/4" Dens-Deck, or Atlas FR10 or FR50 secured with Dade County approved insulation fasteners at not less than 2 fasteners for a board with no dimension greater than 4' and not less than four fasteners for any board with any greater dimension than 4'.

Membrane: Minimum 45 mil thick S327 or Sikaplan 45 attached to deck as specified below with Sarnarail Polymer Batten Strips.

Fastening #1: Sarnafasteners-XP fasteners spaced 6" o.c. through batten strip spaced maximum 73.25" o.c. within the 5.5" wide side lap. Batten strip splice joints are made by overlapping the batten 12" and securing with two Sarnafastener XP screws spaced 6" o.c. Laps are sealed with at 1.5" wide heat weld on the outside edge and 1.0" wide heat weld on the inside edge.

Maximum Design Pressure -75.0 psf. (See General Limitation #7)

Fastening #2: Sarnafasteners-XP fasteners spaced 6" o.c. through batten strip spaced maximum 144" o.c. within the 5.5" wide side lap. Batten strip splice joints are made by overlapping the batten 12" and securing with two Sarnafastener XP screws spaced 6" o.c. Laps are sealed with at 1.5" wide heat weld on the outside edge and 1.0" wide heat weld on the inside edge.

Maximum Design Pressure -52.5 psf. (See General Limitation #7)

Fastening #3: Sarnafil MAXLoad fasteners spaced 18" o.c. through batten strip spaced maximum 73.25" o.c. within the 5.5" wide side lap. Batten strip splice joints are made by overlapping the batten 24" and securing with two Sarnafil MAXLoad screws spaced 18" o.c. Laps are sealed with at 1.5" wide heat weld on the outside edge and 1.0" wide heat weld on the inside edge.

Maximum Design Pressure -45.0 psf. (See General Limitation #7)

Fastening #4: Sarnafasteners-XP fasteners spaced 12" o.c. through batten strip spaced maximum 73.25" o.c. within the 5.5" wide side lap. Batten strip splice joints are made by overlapping the batten 18" and securing with two Sarnafastener XP screws spaced 12" o.c. Laps are sealed with at 1.5" wide heat weld on the outside edge and 1.0" wide heat weld on the inside edge.

Maximum Design Pressure -45.0 psf. (See General Limitation #7)

Maximum Design Pressures: See Fastening Pattern. (See General Limitation #7)

Membrane Type: Single Ply, Thermoplastic, PVC
Deck Type 2I: Steel, Insulated
Deck Description: Minimum 18-22 ga. Steel with supports at maximum 6' o.c.
System Type D(6): Membrane attached over preliminary fastened insulation.

All General and System Limitations apply.

One or more layers of any approved insulation.

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

Vapor Retarders: (Optional) Sarnavap or a FMRC approved vapor barrier applied directly to the deck or over the base insulation layer.

Barrier: (Optional) Minimum 5/8" gypsum, 1/4" Dens-Deck, or Atlas FR10 or FR50 secured with Dade County approved insulation fasteners at not less than 2 fasteners for a board with no dimension greater than 4' and not less than four fasteners for any board with any greater dimension than 4'.

Membrane: Minimum 48 mil thick S327 or Sikaplan 45 attached to deck as specified below with Sarnarail Polymer Batten Strips.

Fastening #1: Sarnafil MAXLoad fasteners spaced 18" o.c. through batten strip spaced maximum 73.25" o.c. within the 5.5" wide side lap. Batten strip splice joints are made by overlapping the batten 24" and securing with two Sarnafil MAXLoad screws spaced 18" o.c. Laps are sealed with at 1.5" wide heat weld on the outside edge and 1.0" wide heat weld on the inside edge.

Maximum Design Pressure -52.5 psf. (See General Limitation #7)

Maximum Design Pressures: See Fastening Pattern. (See General Limitation #7)



Membrane Type: Single Ply, Thermoplastic, PVC
Deck Type 2I: Steel, Insulated
Deck Description: Minimum 18-22 ga. Steel with supports at maximum 5.5' o.c.
System Type D(7): Membrane attached over preliminary fastened insulation.

All General and System Limitations apply.

One or more layers of any approved insulation.

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

Vapor Retarders: (Optional) Sarnavap or a FMRC approved vapor barrier applied directly to the deck or over the base insulation layer.

Barrier: (Optional) Minimum 5/8" gypsum, 1/4" Dens-Deck, or Atlas FR10 or FR50 secured with Dade County approved insulation fasteners at not less than 2 fasteners for a board with no dimension greater than 4' and not less than four fasteners for any board with any greater dimension than 4'.

Membrane: Minimum 48 mil thick S327 or Sikaplan 45 attached to deck as specified below with Sarnarail Polymer Batten Strips.

Fastening #1: Sarnafasteners-XP fasteners spaced 6" o.c. through batten strip spaced maximum 144" o.c. within the 5.5" wide side lap. Batten strip splice joints are made by overlapping the batten 12" and securing with two Sarnafastener XP screws spaced 6" o.c. Laps are sealed with at 1.5" wide heat weld on the outside edge and 1.0" wide heat weld on the inside edge.

Maximum Design Pressure -60.0 psf. (See General Limitation #7)

Maximum Design Pressures: See Fastening Pattern. (See General Limitation #7)



Membrane Type: Single Ply, Thermoplastic, PVC
Deck Type 2I: Steel, Insulated
Deck Description: Minimum 18-22 ga. Steel with supports at maximum 6' o.c.
System Type D(8): Membrane attached over preliminary fastened insulation.

All General and System Limitations apply.

One or more layers of any approved insulation.

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

Vapor Retarders: (Optional) Sarnavap or a FMRC approved vapor barrier applied directly to the deck or over the base insulation layer.

Barrier: (Optional) Minimum 5/8" gypsum, 1/4" Dens-Deck, or Atlas FR10 or FR50 secured with Dade County approved insulation fasteners at not less than 2 fasteners for a board with no dimension greater than 4' and not less than four fasteners for any board with any greater dimension than 4'.

Membrane: Minimum 45 mil thick S327 or Sikaplan 45 attached to deck as specified below.

Fastening #1: Sarnafasteners-XP fasteners and Sarnadic XPN plates spaced 12" o.c. within 5.5" wide side laps spaced maximum 54" o.c. Laps are sealed with a minimum 1.6" wide outside heat weld.
Maximum Design Pressure -60.0 psf. (See General Limitation #7)

Fastening #2: Sarnafasteners-XP fasteners and Sarnadic XPN plates spaced 6" o.c. within 5.5" wide side laps spaced maximum 54" o.c. Laps are sealed with a minimum 1.6" wide outside heat weld.
Maximum Design Pressure -90.0 psf. (See General Limitation #7)

Fastening #3: Sarnafasteners-XP fasteners and Sarnarail Polymer Batten Strip spaced 12" o.c. within 5.5" wide side laps spaced maximum 54" o.c. Laps are sealed with a minimum 1" wide outside heat weld and a minimum 5/8" wide inside heat weld.
Maximum Design Pressure -52.5 psf. (See General Limitation #7)

Fastening #4: Sarnafastener MAXLoad fasteners and Sarnarail Polymer Batten Strip spaced 24" o.c. within 5.5" wide side laps spaced maximum 54" o.c. Laps are sealed with a minimum 1" wide outside heat weld and a minimum 5/8" wide inside heat weld.
Maximum Design Pressure -45.0 psf. (See General Limitation #7)

Fastening #5: Sarnafastener MAXLoad fasteners and Sarnarail Polymer Batten Strip spaced 18" o.c. within 5.5" wide side laps spaced maximum 54" o.c. Laps are sealed with a minimum 1" wide outside heat weld and a minimum 5/8" wide inside heat weld.
Maximum Design Pressure -52.5 psf. (See General Limitation #7)

Fastening #6: Sarnafastener MAXLoad fasteners and Sarnarail Polymer Batten Strip spaced 12" o.c. within 5.5" wide side laps spaced maximum 54" o.c. Laps are sealed with a

minimum 1" wide outside heat weld and a minimum 5/8" wide inside heat weld.
Maximum Design Pressure -67.5 psf. (See General Limitation #7)

Fastening #7: Sarnafastener MAXLoad fasteners and Sarnarail Polymer Batten Strip spaced 6" o.c. within 5.5" wide side laps spaced maximum 54" o.c. Laps are sealed with a minimum 1" wide outside heat weld and a minimum 5/8" wide inside heat weld.
Maximum Design Pressure -112.5 psf. (See General Limitation #7)

Fastening #8: Sarnafastener MAXLoad fasteners and Sarnadisc MAXLoad plates spaced 24" o.c. within 6.5" wide side laps spaced maximum 53" o.c. Laps are sealed with a minimum 1.6" wide outside heat weld.
Maximum Design Pressure -45.0 psf. (See General Limitation #7)

Fastening #9: Sarnafastener MAXLoad fasteners and Sarnadisc MAXLoad plates spaced 18" o.c. within 6.5" wide side laps spaced maximum 53" o.c. Laps are sealed with a minimum 1.6" wide outside heat weld.
Maximum Design Pressure -52.5 psf. (See General Limitation #7)

Fastening #10: Sarnafastener MAXLoad fasteners and Sarnadisc MAXLoad plates spaced 12" o.c. within 6.5" wide side laps spaced maximum 53" o.c. Laps are sealed with a minimum 1.6" wide outside heat weld.
Maximum Design Pressure -60.0 psf. (See General Limitation #7)

Fastening #11: Sarnafastener MAXLoad fasteners and Sarnadisc MAXLoad plates spaced 6" o.c. within 6.5" wide side laps spaced maximum 53" o.c. Laps are sealed with a minimum 1.6" wide outside heat weld.
Maximum Design Pressure -105.0 psf. (See General Limitation #7)

Fastening #12: Sarnafastener MAXLoad fasteners and Sarnadisc MAXLoad plates spaced 12" o.c. within 7" wide side laps spaced maximum 113" o.c. Laps are sealed with a minimum 1.5" wide outside heat weld.
Maximum Design Pressure -45.0 psf. (See General Limitation #7)

Maximum Design Pressures:

See Fastening Pattern. (See General Limitation #7)

Membrane Type: Single Ply, Thermoplastic, PVC
Deck Type 2I: Steel, Insulated
Deck Description: Minimum 18-22 ga. Steel with supports at maximum 6' o.c.
System Type D(9): Membrane attached over preliminary fastened insulation.

All General and System Limitations apply.

One or more layers of any approved insulation.

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

Vapor Retarders: (Optional) Sarnavap or a FMRC approved vapor barrier applied directly to the deck or over the base insulation layer.

Barrier: (Optional) Minimum 5/8" gypsum, 1/4" Dens-Deck, or Atlas FR10 or FR50 secured with Dade County approved insulation fasteners at not less than 2 fasteners for a board with no dimension greater than 4' and not less than four fasteners for any board with any greater dimension than 4'.

Membrane: Minimum 45 mil thick S327 or Sikaplan 45 attached to deck as specified below.

Fastening #1: Sarnafil MAXLoad fasteners and 3/4" wide Sarnarail Polymer Batten Strip spaced 6" o.c. within 5.5" wide side laps spaced maximum 114.5" o.c. Batten Strip is lapped 8" within lap to provide a minimum 2 screw securement in lap. Laps are sealed with a minimum 1.25" wide outside edge heat weld and minimum 0.75" wide inside edge heat weld.

Maximum Design Pressure -67.5 psf (See General Limitation #7)

Fastening #2: Sarnafil MAXLoad fasteners and 3/4" wide Sarnarail Polymer Batten Strip spaced 12" o.c. within 5.5" wide side laps spaced maximum 114.5" o.c. Batten Strip is lapped 14" within lap to provide a minimum 2 screw securement in lap. Laps are sealed with a minimum 1.25" wide outside edge heat weld and minimum 0.75" wide inside edge heat weld.

Maximum Design Pressure -45.0 psf (See General Limitation #7)

Fastening #3: Sarnafasteners-XP fasteners or ITW Buildex Large Head #15 Roofgrip fasteners and 3/4" wide Sarnarail Polymer Batten Strip spaced 6" o.c. within 5.5" wide side laps spaced maximum 114.5" o.c. Batten Strip is lapped 8" within lap to provide a minimum 2 screw securement in lap. Laps are sealed with a minimum 1.25" wide outside edge heat weld and minimum 0.75" wide inside edge heat weld.

Maximum Design Pressure -60.0 psf. (See General Limitation #7)

Maximum Design Pressures: See Fastening Pattern. (See General Limitation #7)

Membrane Type: Single Ply, Thermoplastic, PVC
Deck Type 2I: Steel, Insulated
Deck Description: Minimum 18-22 ga. Steel with supports at maximum 5.5' o.c.
System Type D(10): Membrane attached over preliminary fastened insulation.

All General and System Limitations apply.

One or more layers of any approved insulation.

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

Vapor Retarders: (Optional) Sarnavap or a FMRC approved vapor barrier applied directly to the deck or over the base insulation layer.

Barrier: (Optional) Minimum 5/8" gypsum, 1/4" Dens-Deck, or Atlas FR10 or FR50 secured with Dade County approved insulation fasteners at not less than 2 fasteners for a board with no dimension greater than 4' and not less than four fasteners for any board with any greater dimension than 4'.

Membrane: Minimum 45 mil thick S327 or Sikaplan 45 attached to deck as specified below.

Fastening #1: Sarnafil MAXLoad fasteners and 3/4" wide Sarnarail Polymer Batten Strip spaced 6" o.c. within 5.5" wide side laps spaced maximum 114.5" o.c. Batten Strip is lapped 8" within lap to provide a minimum 2 screw securement in lap. Laps are sealed with a minimum 1.25" wide outside edge heat weld and minimum 0.75" wide inside edge heat weld.

Maximum Design Pressures: Maximum Design Pressure -75.0 psf (See General Limitation #7)



Membrane Type: Single Ply, Thermoplastic, PVC
Deck Type 2I: Steel, Insulated
Deck Description: Minimum 18-22 ga. Steel with supports at maximum 6' o.c.
System Type D(11): Membrane attached over preliminary fastened insulation.

All General and System Limitations apply.

One or more layers of any approved insulation.

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

Vapor Retarders: (Optional) Sarnavap or a FMRC approved vapor barrier applied directly to the deck or over the base insulation layer.

Barrier: (Optional) Minimum 5/8" gypsum, 1/4" Dens-Deck, or Atlas FR10 or FR50 secured with Dade County approved insulation fasteners at not less than 2 fasteners for a board with no dimension greater than 4' and not less than four fasteners for any board with any greater dimension than 4'.

Membrane: Minimum 45 mil thick S327 or Sikaplan 45 attached to deck as specified below.

Fastening #1: Sarnafil MAXLoad fasteners and Sarnadisc MAXLoad plates spaced 6" o.c. within 7" wide side laps spaced maximum 113" o.c. Laps are sealed with a minimum 0.875" wide outside edge heat weld.

Maximum Design Pressure -60.0 psf (See General Limitation #7)

Fastening #2: Sarnafasteners-XP fasteners and Sarnadisc XPN plates spaced 6" o.c. within 5.5" wide side laps spaced maximum 114.5" o.c. Laps are sealed with a minimum 0.5" wide outside edge heat weld.

Maximum Design Pressure -45.0 psf. (See General Limitation #7)

Maximum Design Pressures: See Fastening Pattern. (See General Limitation #7)

Membrane Type: Single Ply, Thermoplastic, PVC
Deck Type 2I: Steel, Insulated
Deck Description: 18 ga. steel deck fastened to supports spaced maximum 6 ft. o.c. with Traxx 5 fasteners spaced 6 in. o.c. and with side laps fastened with two Traxx 1 fasteners spaced maximum 24 in. o.c.
System Type D(12): Membrane attached over preliminary fastened insulation.

The following assembly is approved to a maximum design pressure listed with specific fastening patterns. No substitutions shall be made. All General and System Limitations apply.

Deck: Minimum 18 ga. steel deck shall be secured to structural supports spaced a maximum of 6 ft. o.c. with Traxx 5 fasteners spaced 6 in. o.c. and with side laps fastened with two Traxx 1 fasteners minimum 24 in. o.c.

All General and System Limitations apply.

One or more of the following.

<u>Base Insulation Layer</u>	<u>Fastener Density/ft²</u>	<u>Fastener Type</u>
Any Approved Insulation		
Minimum 0.25" thick	N/A	N/A
<u>Top Insulation Layer</u>	<u>Fastener Density/ft²</u>	<u>Fastener Type</u>
(Optional) Any Approved Cover Board		
Minimum 0.25" thick	N/A	N/A

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

Membrane: S327, S327 Felt Backed or Sikaplan 45 attached to deck as specified below.
Fastening: Sarnafastener-XP fasteners with Sarnadisc-XP plates spaced 6 in. o.c. in staggered rows spaced 9.5 ft. o.c. Side lap is sealed with minimum 3/4" wide heat weld.
Maximum Design Pressures: -52.5 psf (See General Limitations # 7)



STEEL 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 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. 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 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.)**

END OF THIS ACCEPTANCE