



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  
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**NOTICE OF ACCEPTANCE (NOA)**

**Soprema, Inc.**  
**310 Quadral Drive**  
**Wadsworth, OH 44281**

**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 the BCCO and accepted by the Building Code and Product Review Committee 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 BCCO (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. BCCO reserves the right to revoke this acceptance, if it is determined by BCCO that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the Florida Building Code and the High Velocity Hurricane Zone of the Florida Building Code.

**DESCRIPTION: Soprema Modified Bitumen Roofing Systems 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 NOA revises NOA No. 07-1217.06 and consists of pages 1 through 61.  
 The submitted documentation was reviewed by Jorge L. Acebo.



NOA No.: 09-0402.16  
 Expiration Date: 03/01/11  
 Approval Date: 06/10/09  
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## ROOFING SYSTEM APPROVAL

Category: Roofing  
Sub-Category: Modified Bitumen  
Material: SBS  
Deck Type: Steel  
Maximum Design Pressure -165 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>
Sopra-G	39" x 108' (3.5 sq.)	ASTM D 4601	Fiberglass reinforced oxidized asphalt base sheet for bonding or mechanically attaching to substrate.
Modified Sopra-G	39" x 108' (3.5 sq.)	ASTM D 4601	Fiberglass reinforced modified asphalt base sheet for bonding or mechanically attaching to substrate.
Sopraglass M	39" x 66' (2 sq.)	ASTM D 5147 ASTM D 6163	Fiberglass reinforced modified bitumen base sheet. Applied in hot asphalt, cold adhesive or ribbon stripping.
Sopraglass M GR	39" x 33' (1 sq.)	ASTM D 5147 ASTM D 6163	Fiberglass reinforced modified bitumen base sheet with a mineral granular top surface. Applied in hot asphalt, cold adhesive or ribbon stripping.
Sopra ESHAvent	39" x 49' (1.5 sq.)	ASTM D 1970	Fiberglass reinforced modified bitumen membrane with self-adhering round areas on back side and a sanded top side.
Sopraglass 40	39" x 82' (2.5 sq.)	ASTM D 4601 Type I	Fiberglass reinforced oxidized asphalt base sheet for bonding, mechanically attaching or ribbon stripping to substrate.
Sopraglass 100	39" x 66' (2 sq.)	ASTM D 4601	Fiberglass reinforced oxidized asphalt base sheet for bonding or mechanically attaching to substrate.
Soprabase	39" x 99' (3 sq.)	ASTM D 6164	Oxidized asphalt, polyester reinforced base sheets. Primarily used as a mechanically attached anchor sheet. Applied in hot asphalt, cold adhesive or ribbon stripped.
Sopra IV or VI	36" x 180' (5 sq.)	ASTM D 2178 Type IV or VI	Type IV or VI, fiberglass reinforced, smooth surfaced ply sheet. Sopra IV or VI are used in multi-ply systems and complies with ASTM and UL Standards. Applied in hot asphalt or cold adhesive.
Colvent TG	39" x 49' (1.5 sq.)	ASTM D 6163	Fiberglass reinforced, modified bitumen membrane with 1" wide factory applied heat weldable strips on back side.



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Colvent SA	39" x 49' (1.5 sq.)	ASTM D 6163	Fiberglass reinforced, modified bitumen membrane with 1" wide factory applied self-adhering strips on back side
Colvent 180 TG	39" x 33' (1 sq.)	ASTM D 6164	Polyester reinforced, modified bitumen membrane with 1" wide factory applied heat weld strips on back side.
Colvent 180 SA	39" x 33' (1 sq.)	ASTM D6164	Polyester reinforced, modified bitumen membrane with 1" wide factory applied self-adhering strips on back side
Colvent 180 TG GR	39" x 33' (1 sq.)	ASTM D 6164	Polyester reinforced, modified bitumen membrane with 1" wide factory applied heat weld strips on back side, and a mineral granular top surface.
Colvent 180 SA GR	39" x 33' (1 sq.)	ASTM D6164	Polyester reinforced, modified bitumen membrane with 1" wide factory applied self-adhering strips on back side and a mineral granular top surface.
Elastophene Sanded, Elastophene FR	39" x 49' (1.5 sq.)	ASTM D 6163	Fiberglass reinforced modified bitumen membrane sanded on both sides, used as a base and top ply. Applied in hot asphalt, cold adhesive or ribbon stripping.
Elastophene Sanded 3.0	39" x 33' (1sq.)	ASTM D 6163	Fiberglass reinforced modified bitumen membrane sanded on both sides, used as a base and top ply. Applied in hot asphalt, cold adhesive or ribbon stripped.
Elastophene HD	39" x 33' (1 sq.)	ASTM D 6163	Fiberglass reinforced modified bitumen membrane sanded on both sides, used as a base and top ply. Applied in hot asphalt, cold adhesive or ribbon stripped.
Elastophene HS FR	39" x 66' (2 sq.)	ASTM D 6162	Woven fiberglass/polyester composite reinforced modified bitumen membrane with fire retardants and sanded on both sides. Applied in hot asphalt, cold adhesive or ribbon stripping.
Elastophene Sanded FR	39" x 49' (1.5 sq.)	ASTM D 6163	Fiberglass reinforced modified bitumen membrane with fire retardants and sanded on both sides. Applied in hot asphalt, cold adhesive or ribbon stripping.
Elastophene HR	39" x 49' (1.5 sq.)	ASTM D 6163	Fiberglass scrim reinforced modified bitumen membrane sanded on both sides. Applied in hot asphalt, cold adhesive or ribbon stripping.
Elastophene HR FR	39" x 49' (1.5 sq.)	ASTM D 6163	Fiberglass scrim reinforced modified bitumen membrane with fire retardants and sanded on both sides. Applied in hot asphalt, cold adhesive or ribbon stripping.
Elastophene HP	39" x 66' (2 sq.)	ASTM D 5147 ASTM D 6162	Fiberglass/non-woven polyester reinforced modified bitumen membrane sanded on both sides. Applied in hot asphalt, cold adhesive or ribbon stripping.



Elastophene PS, Elastophene PS 3.0	39" x 49' (1.5 sq.)	ASTM D 6163	Glass reinforced modified bitumen membrane with a plastic burn-off film for heat weld bonding to the top side. Applied in hot asphalt, cold adhesive or ribbon stripping.
Elastophene SP 2.2mm	39" x 49' (1.5 sq.)	ASTM D 6163	Glass reinforced modified bitumen membrane with a plastic burn-off film on the bottom and sanded on the top. Applied b heat welding or ribbon stripping (after removal of plastic burn-off film).
Elastophene SP 3.0mm	39" x 49' (1 sq.)	ASTM D 6163	Glass reinforced modified bitumen membrane with a plastic burn-off film on the bottom and sanded on the top. Applied b heat welding or ribbon stripping (after removal of plastic burn-off film).
Elastophene Flam	39" x 33' (1 sq.)	ASTM D 6163	Fiberglass reinforced modified bitumen membrane covered on both sides with a plastic burn-off film. Applied by heat welding.
Elastophene Flam 2.2	39" x 49' (1.5 sq.)	ASTM D 6163	Fiberglass reinforced modified bitumen membrane covered on both sides with a plastic burn-off film. Applied by heat welding.
Elastophene Flam HS FR	39" x 33' (1 sq.)	ASTM D6162	Woven fiberglass/polyester composite reinforced modified bitumen membrane with fire retardants and plastic burn-off film on both sides. Applied by heat welding.
Elastophene Flam HP	39" x 66' (2 sq.)	ASTM D 5147 ASTM D 6162	Fiberglass/non-woven polyester reinforced modified bitumen membrane with plastic burn-off film on both sides. Applied by heat welding.
Elastophene 180 Sanded	39" x 49' (1.5 sq.)	ASTM D 6164	Non-woven polyester reinforced modified bitumen membrane sanded on both sides. Applied in hot asphalt, cold adhesive or ribbon stripping.
Elastophene 180 PS	39" x 49' (1.5 sq.)	ASTM D 6164	Non-woven polyester reinforced modified bitumen membrane with a sanded bottom and a plastic burn-off film on the top, used as a base sheet. Applied in hot asphalt, cold adhesive or ribbon stripping.
Elastophene GR, Elastophene LS FR GR	39" x 33' (1 sq.)	ASTM D 6163	Fiberglass reinforced modified bitumen membrane with fire retardants, sanded on the bottom and mineral granules on the top. Applied in hot asphalt, cold adhesive or ribbon stripping.
Elastophene FR GR or FR+ GR	39" x 33' (1 sq.)	ASTM D 6163	Fiberglass reinforced modified bitumen membrane with fire retardants, sanded on the bottom and mineral granules on the top. Applied in hot asphalt, cold adhesive or ribbon stripping.
Elastophene HR FR GR	39" x 33' (1 sq.)	ASTM D 6163	Fiberglass scrim reinforced modified bitumen membrane with fire retardants, sanded on the bottom and mineral granules on the top. Applied in hot asphalt, cold adhesive or ribbon stripping.



Elastophene HS FR GR	39" x 33' (1 sq.)	ASTM D 6162	Woven fiberglass/polyester composite reinforced modified bitumen membrane with fire retardants, sanded on the bottom and mineral granules on the top. Applied in hot asphalt, cold adhesive or ribbon stripping.
Elastophene HP FR GR	39" x 33' (1 sq.)	ASTM D 5147 ASTM D 6162	Fiberglass/non-woven polyester reinforced modified bitumen membrane with fire retardants, sanded on the bottom and mineral granules on the top. Applied in hot asphalt, cold adhesive or ribbon stripping.
Elastophene Flam GR, Elastophene Flam LS FR GR	39" x 33' (1 sq.)	ASTM D 6163	Fiberglass reinforced modified bitumen membrane with fire retardants, a plastic burn-off film on the bottom and mineral granules on the top. Applied by heat welding.
Elastophene Flam FR GR or FR+ GR	39" x 33' (1 sq.)	ASTM D 6163	Fiberglass reinforced modified bitumen membrane with fire retardants a plastic burn-off film on the bottom and mineral granules on the top. Applied by heat welding.
Elastophene Flam HR FR GR	39" x 33' (1 sq.)	ASTM D 6163	Fiberglass scrim reinforced modified bitumen membrane with fire retardants, a plastic burn-off film on the bottom and mineral granules on the top. Applied by heat welding or ribbon stripping (after removal of plastic burn-off film).
Elastophene Flam HS FR GR	39" x 33' (1 sq.)	ASTM D 6162	Woven fiberglass composite reinforced modified bitumen membrane with fire retardants, a plastic burn-off film on the bottom and mineral granules on the top. Applied by heat welding or ribbon stripping (after removal of plastic burn-off film).
Elastophene Flam HP FR GR	39" x 33' (1 sq.)	ASTM D 5147 ASTM D 6162	Fiberglass/non-woven polyester reinforced modified bitumen membrane with fire retardants, a plastic burn-off film on the bottom and mineral granules on the top. Applied by heat welding or ribbon stripping (after removal of plastic burn-off film).
Sopralene 180, 250 or 350	39" x 33' (1 sq.) 39" x 26' (¾ sq.)	ASTM D 6164	Non-woven polyester reinforced modified bitumen membrane sanded on both sides, used as a base/ply/cap. Applied in hot asphalt, cold adhesive or ribbon stripping.
Sopralene 180 SP 3.5 mm	39" x 33' (1 sq.)	ASTM D 6164	Non-woven polyester reinforced modified bitumen membrane with a plastic burn-off film on the bottom and sanded on the top. Applied by heat welding or ribbon stripping (after removal of plastic burn-off film).
Soprafix [S], [H], [F] and [X]	39" x 33' (1 sq.)	ASTM D 6164	Non-woven polyester reinforced modified bitumen membrane. Applied by mechanical attachment.



Soprafix	39" x 33' (1 sq.)	ASTM D 6164	Non-woven polyester reinforced modified bitumen membrane with a 4-inch or 5-inch wide side lap with a plastic burn-off film on the bottom and sanded on the top. Applied by mechanical attachment. Lap heat welded or sealed with an approved cold adhesive.
Soprafix-e	39" x 33' (1 sq.)	ASTM D 6164	Non-woven polyester reinforced modified bitumen membrane with a 5-inch wide side lap with a self-adhering compound and release film and sanded on the bottom and top surfaces. Applied by mechanical attachment. Lap self-adhered or sealed with approved cold adhesive.
Soprafix (X)	39" x 33' (1 sq.)	ASTM D 6164	Non-woven polyester reinforced modified bitumen membrane with plastic burn-off film or sanded on the top and bottom surfaces and a 6-inch wide side lap. Applied by heat welding.
Sopralene Flam 180, 250 or 350	39" x 33' (1 sq.)	ASTM D 6164	Non-woven polyester reinforced SBS modified bitumen membrane, both sides covered with a plastic burn-off film, used as a base/ply. Applied by heat welding or ribbon stripping (after removal of plastic burn-off film).
Sopralene 180, 250 or 350 GR or FR GR	39" x 33' (1 sq.)	ASTM D 6164	Non-woven polyester reinforced modified bitumen membrane with fire retardants a sanded bottom and a mineral granules top. Applied in hot asphalt, cold applied adhesive or ribbon stripping (after removal of plastic burn-off film).
Sopralene Flam 180, 250 or 350 GR	39" x 33' (1 sq.)	ASTM D 6164	Non-woven polyester reinforced modified bitumen membrane with a plastic burn-off film on the bottom and mineral granules on the top. Applied by heat welding or ribbon stripping (after removal of plastic burn-off film).
Sopralene Flam 180, 250 or 350 FR GR or FR+ GR	39" x 33' (1 sq.)	ASTM D 6164	Non-woven polyester reinforced modified bitumen membrane with fire retardants a plastic burn-off film on the bottom and mineral granules on the top. Applied by heat welding or ribbon stripping (after removal of plastic burn-off film).
Sopralene Flam 180 2.7 mm	39" x 33' (1 sq.)	ASTM D6164	Non-woven polyester reinforced modified bitumen membrane with fire retardants a plastic burn-off film on the bottom and mineral granules on the top. Applied by heat welding or ribbon stripping (after removal of plastic burn-off film).
Sopralast	various	ASTM D 6298	Fiberglass reinforced modified bitumen sheeting faced with aluminum, copper or stainless steel foil. Applied by heat welding of ribbon stripping (after removal of plastic burn-off film).
SopraStar Flam	39" x 33' (1 sq.)	ASTM D6163	Fiberglass reinforced SBS modified bitumen membrane with a plastic burn-off film on the bottom side and a reflective white top surface. Applied by heat welding.



Soprastar Stick	39" x 33' (1 sq)	ASTM D6163	Fiberglass reinforced SBS modified bitumen membrane with a release film covered self-adhering bottom side and a reflective white top surface.
Soprastar 180 Sanded	39"x33' (1sq)	ASTM D6162 ASTM D6164	Non-woven polyester reinforced SBS modified bitumen membrane with a sanded bottom side and reflective white top surface. Applied by hot asphalt, cold adhesive or ribbon stripping.
Soprastar Flam 180	39"x33' (1sq)	ASTM D6162 ASTM D6164	Non-woven polyester reinforced SBS modified bitumen membrane with a plastic burn-off film on the bottom side and reflective white top surface. Applied by heat welding.
UNILAY	39" x 33' (1 sq.)	ASTM D 6164	Non-woven polyester reinforced modified bitumen membrane with fire retardants and surfaced with mineral granules. Applied by mechanical attachment, heat welding or ribbon stripping (after removal of plastic burn-off film).
Sopralene Stick	39" x 33' (1 sq.)	ASTM D 6164	Self adhered, polyester reinforced membrane with a release film on the bottom and a sanded top.
Sopralene Flam Stick	39" x 33' (1 sq.)	ASTM D 6164	Self adhered, polyester reinforced membrane with a release film on the bottom and a plastic burn-off film on the top.
EPS Flam Stick	39" x 33' (1 sq.)	ASTM D 6163	Self adhered, film surfaced, glass mat/glass grid reinforced membrane with a release film on the bottom and a plastic burn-off film on the top.
Colphene 1500	39" x 33' (1 sq.) 39" x 132' (4 sq.) 39" x 66' (2.1 sq.)	ASTM D 1970	Self adhered, non-reinforced membranes used as a vapor retarder.
Colphene FR GR, Colphene GR	39" x 33' (1 sq.)	ASTM D 6163	Self adhered, granule surfaced, fiberglass reinforced membranes.
Colphene HR FR GR	39" x 33' (1 sq.)	ASTM D 6163	Self adhered, granule surfaced, fiberglass scrim reinforced membranes.
Lastobond S	39" x 49' (1.5 sq.)	ASTM D 1970	Self-adhered underlayment membrane.
Lastobond Shield	various	ASTM D 1970	Self-adhering underlayment membrane.
Lastobond Shield HT	various	ASTM D 1970	Self-adhering underlayment membrane.
Lastobond Shield- R	various	ASTM D 1970	Self-adhering underlayment membrane.
Lastobond Shield- HT RW	various	ASTM D 1970	Self-adhering underlayment membrane.
Sopratape 606	5" wide	Proprietary	Bituminous tape for sealing of side and head laps.
Sopramastic 200	17 oz. pouch or 10.4 oz cartridge	Proprietary	Caulking compound.
Elastocol 400, 500 and 600c	various	ASTM D 41	Asphalt primers.
Sopracolle "E"	keg	Proprietary	Cold-applied adhesive used to bond membrane to prepared substrates or to other membranes.
ALSAN Flashing™	1.25 gallon pail or 3.75 gallon pail	Proprietary	One part polyurethane/bitumen resin, moisture cure compound.



ALSAN Polyfleece	4", 8" or 39" wide by 50' long	Proprietary	Non-woven polyester reinforcement used in the ALSAN Flashing system.
SBS Mastic	10.4 oz tube	Proprietary	Plasticized rubber/bitumen mastic compound.
SBS Elastic Cement	5 gallon pail	Proprietary	Elastomeric bitumen based mastic compound.
Soprawalk	39" x 26' (3/4 sq)	Proprietary	Non-woven polyester reinforced modified bitumen membrane with a sanded bottom and mineral granules on the top. Applied by hot asphalt, cold adhesive or ribbon stripping.
High Velocity® Insulation Adhesive II (HVIA-II)	3 gal pail	Proprietary	One part elastomeric urethane foam adhesive.
High Velocity® Insulation Adhesive III (HVIA-III)	4 dual cartridges per carton	Proprietary	Two part elastomeric urethane foam adhesive.
FM Adhesive	5 gallon pail, 55 gallon drum or 350 gallon tote	Proprietary	Plastomeric bitumen based cold adhesive.
FM Adhesive Trowel Grade	5 gallon pail	Proprietary	Plastomeric bitumen based cold adhesive.
FM Adhesive (VOC)	5 gallon pail, 55 gallon drum or 350 gallon tote	Proprietary	Elastomeric bitumen based cold adhesive.
FM Adhesive (VOC) Trowel Grade	5 gallon pail	Proprietary	Elastomeric bitumen based cold adhesive.
High Velocity® Membrane Adhesive (HVMA)	5 gallon pail or 55 gallon drum	Proprietary	Polyurethane bitumen adhesive.
Sopraboard	various	Proprietary	Mineral fortified asphaltic cored coverboard between two layers of asphalt saturated fiberglass mat.
Granules	5 gallon pail or Supersac		Semi-ceramic coated colored granules.



**APPROVED INSULATIONS:**

**TABLE 2**

<b>Product Name</b>	<b>Product Description</b>	<b>Manufacturer (With Current NOA)</b>
Apache Pyrox, Apache White Line, Apache Pyrox PSI-25, Apache White Line PSI-25	Polyisocyanurate foam insulation	Apache Products Company
Apache Millox, Apache Millox-P ACFoam II, ACFoam III	Composite polyisocyanurate insulation Polyisocyanurate foam insulation	Apache Products Company Atlas Energy Products
ACFoam Composite	Composite polyisocyanurate insulation board	Atlas Energy Products
FlintBoard ISO, FlintBoard ISO Cold FlintBoard ISO Plus	Polyisocyanurate foam insulation Composite polyisocyanurate insulation board	CertainTeed Corp. CertainTeed Corp.
Hytherm AP	Polyisocyanurate foam insulation	Dow
Hytherm Composite	Composite polyisocyanurate insulation	Dow
ISO 95+, ISO 95+ (25psi)	Polyisocyanurate foam insulation	Firestone
ISO 95+ Composite	Composite polyisocyanurate insulation board	Firestone
EnergyGuard ISO, EnergyGuard Ultra	Polyisocyanurate foam insulation	GAF
EnergyGuard Composite	Composite polyisocyanurate insulation board	GAF
Extruded or Expanded Polystyrene Gypsum	Polystyrene Insulation Gypsum board	generic generic
High Density Wood Fiberboard	Wood fiber insulation board	generic
Perlite Insulation	Perlite insulation board	generic
DensDeck, DensDeck Prime, DensDeck Fireguard, DensDeck Prime Fireguard, DensDeck DuraGuard	Water resistant gypsum board	G-P Gypsum Corp.
H-Shield	Polyisocyanurate foam insulation	Hunter Panels, Inc.
H-Shield CG	Polyisocyanurate foam insulation	Hunter Panels, Inc.
H-Shield-P, H-Shield-WF	Composite Insulation board	Hunter Panels, Inc.
ENRGY-2	Polyisocyanurate foam insulation	Johns Manville
ENRGY-2 Plus, Composite, Fesco Foam	Composite Insulation board	Johns Manville
ENRGY-3	Polyisocyanurate foam insulation	Johns Manville
ENRGY-3 Plus	Composite Insulation board	Johns Manville
Multi-Max FA	Polyisocyanurate foam insulation	RMax
Thermarroof Composite	Composite Insulation board	RMax
UltraMax	Polyisocyanurate foam insulation	RMax
Multi-Max FA-3	Polyisocyanurate foam insulation	RMax
Thermarroof Composite-3	Composite insulation board	RMax



**APPROVED FASTENERS:**

**TABLE 3**

<b>Fastener Number</b>	<b>Product Name</b>	<b>Product Description</b>	<b>Dimensions</b>	<b>Manufacturer (With Current NOA)</b>
1.	Tri-Fix Fastening System	Fastening system for base sheet attachment to lightweight concrete, gypsum or cementitious wood fiber decks.	3" diameter plate with various length fasteners	Soprema, Inc.
2.	#12, #14 & #15 Soprema Fasteners	Fasteners for membrane or insulation attachment to wood, steel or concrete decks.		Soprema, Inc.
3.	Soprafix [X]-EL #15	Fasteners for membrane attachment to steel or concrete decks.		Soprema, Inc.
4.	Soprafix Plates	AZ-55 Galvalume steel plate for use with the Soprafix system.	2" diameter	Soprema, Inc.
5.	Soprema Plates	Metal or plastic stress plates for use with Soprema Fasteners.	3" diameter	Soprema, Inc.
6.	Sopradisc	Galvanized metal bearing plate used for side lap attachment of Soprafix system.	2" diameter	Soprema, Inc.
7.	Soprema Isofast IF/IFT	AZ-50 Galvalume steel plate for use with the Soprafast System.	2 3/4" diameter	Soprema, Inc.
8.	Soprafix/Soprafast	Stress plates for membrane securement.	3" diameter	Soprema, Inc.
9.	UNILAY Plate	Stress plates for Unilay membrane securement.	2-3/8" diameter	Soprema, Inc.
10.	#12, #14 & #15 Dekfast Fastener	Insulation fastener		SFS Intec
11.	Omega Fastener	Stainless steel insulation fastener		SFS Intec
12.	Dekfast Hex Plate	Galvalume AZ50 steel plate	2 7/8" x 3 1/4"	SFS Intec
13.	Dekfast Lock Plate	Polypropylene locking plate.	3" x 3 1/4"	SFS Intec
14.	Twin Loc-Nails	Base ply fastening systems for lightweight concrete, gypsum or cementitious wood fiber decks		ES Products, Inc.
15.	FM-30, FM-45, FM-60, FM-90 Fasteners	Base ply fastening systems for lightweight concrete decks		ES Products, Inc.
16.	OMG AccuTrac Hextra Fastener	Insulation fastener for wood and steel.		OMG, Inc.
17.	OMG AccuTrac Plate	Galvalume square stress plate	3" square	OMG, Inc.
18.	OMG 3" Standard Steel Plate	Galvalume stress plate.	3" round 3" square	OMG, Inc.
19.	Olympic CR Base Ply Fasteners	Base ply fastening assembly		OMG, Inc.



**APPROVED FASTENERS:**

**TABLE 3**

<b>Fastener Number</b>	<b>Product Name</b>	<b>Product Description</b>	<b>Dimensions</b>	<b>Manufacturer (With Current NOA)</b>
20.	NTB Magnum	Glass reinforced Nylon insulation fastener for gypsum & CWF decks with barbs.		OMG, Inc.
21.	NTB Plate	Galvalume stress plate	3" round	OMG, Inc.
22.	Lite-Deck	Insulation fastener for CWF and Gypsum decks.		OMG, Inc.
23.	Lite-Deck Plate	Galvalume stress plate	3" round	OMG, Inc.
24.	Olympic Fastener #12, #14 & #15	Insulation fastener.		OMG, Inc.
25.	Olympic CD-10	Insulation fastener.		OMG, Inc.
26.	Olympic Fluted Nail	Insulation fastener.		OMG, Inc.
27.	Olympic Standard	Galvalume AZ50 steel plate	3" round	OMG, Inc.
28.	Olympic Plastic	Polypropylene stress plate	3.25" round	OMG, Inc.
29.	Powerlite	Insulation fastener.		Powers Fasteners, Inc.
30.	Powerlite	Galvalume stress plate.	3" round	Powers Fasteners, Inc.
31.	Base-Lok Fasteners	Base sheet fastener for lightweight concrete, cwf and gypsum decks	1.75" long with 3" dia. head	Simplex Nails
32.	Turbo Tube-Lok Fasteners	Base sheet fastener for lightweight concrete, cwf and gypsum decks	1.75" long with 2" dia. head	Simplex Nails
33.	SFS Base-Lok Fasteners	Base sheet fastener for lightweight concrete, cwf and gypsum decks	1.75" long with 3" dia. head	SFS Intec, Inc.
34.	Insul-Fixx Fastener	Insulation fastener for wood, steel and concrete.		SFS Intec, Inc.
35.	Isofast Fasteners	Insulation fastener for wood, steel and concrete.		SFS Intec, Inc.
36.	Extra Load Fasteners #15	Fasteners for membrane attachment to steel or concrete decks.		SFS Intec, Inc.
37.	Insul-Fixx S Plate	Galvalume AZ50 steel plate	3" round	SFS Intec, Inc.
38.	Insul-Fixx P Plate	Polyethylene stress plate	3" round	SFS Intec, Inc.
39.	Isofast Plate	Square or oblong galvalume steel plates for use with Isofast fasteners		SFS Intec, Inc.



**APPROVED FASTENERS:**

**TABLE 3**

<b>Fastener Number</b>	<b>Product Name</b>	<b>Product Description</b>	<b>Dimensions</b>	<b>Manufacturer (With Current NOA)</b>
40.	ES-I Fastening Systems	Insulation fastening assembly with plate.	3" round	SFS Intec, Inc.
41.	#12, #14 & #15 Dekfast Fastener	Insulation fastener		SFS Intec, Inc.
42.	Omega Fastener	Stainless steel insulation fastener		SFS Intec, Inc.
43.	Dekfast Hex Plate	Galvalume AZ50 steel plate	2 7/8" x 3 1/4"	SFS Intec, Inc.
44.	DekFlat Lock Plate	Polypropylene locking plate.	3" x 3 1/4"	SFS Intec, Inc.
45.	Tru-Fast TL Fastener	Insulation fastener for lightweight concrete, CWF and gypsum decks		The Tru-Fast Corp.
46.	Tru-Fast Fastener	Insulation fastener for wood, steel and concrete.		The Tru-Fast Corp.
47.	Tru-Fast HD or EHD	Insulation fastener for wood, steel and concrete.		The Tru-Fast Corp.
48.	Tru-Fast MP-3	Galvalume AZ50 steel plate	3" round	The Tru-Fast Corp.
49.	Tru-Fast Metal	Galvalume AZ55 steel plate	3" round	The Tru-Fast Corp.
50.	Tru-Fast Plastic	Polypropylene plate	3" round	The Tru-Fast Corp.
51.	ES Products Batten Bar-TL	Batten bar		ES Products, Inc.
52.	OMG #12	Insulation fastener		OMG, Inc.
53.	OMG Polymer Batten Strip	Modified polymer batten bar		OMG, Inc.
54.	OMG MAXLoad	Insulation fastener		OMG, Inc.
55.	Olympic Heavy Duty	Insulation fastener		OMG, Inc.
56.	Olympic ASAP 3P	Pre-assembled insulation fastener and plastic plate	3" round	OMG, Inc.
57.	Olympic ASAP 3S	Pre-assembled insulation fastener and steel plate	3" round	OMG, Inc.
58.	Isofast IF2	Insulation fastener		SFS Intec, Inc.
59.	Isofast IF/IG	Galvalume AZ50 steel plate	82 x 40 mm	SFS Intec, Inc.
60.	Isofast IFC/IW	Galvalume AZ50 steel plate	70 x70 mm	SFS Intec, Inc.
61.	#15 Dekfast HS	Insulation fastener		SFS Intec, Inc.
62.	Galvalume Steel 3" Round Insulation Plate	Galvalume AZ50 steel plate	3" round	SFS Intec, Inc.
63.	K-Fast Fastener	Insulation Fastener		SFS Intec, Inc.



**APPROVED FASTENERS:**

**TABLE 3**

<b>Fastener Number</b>	<b>Product Name</b>	<b>Product Description</b>	<b>Dimensions</b>	<b>Manufacturer (With Current NOA)</b>
64.	Dekfast Steel Batten Bar	Galvalume AZ50 steel		SFS Intec, Inc.
65.	Dekfast Coiled Batten Strip	Batten bar		SFS Intec, Inc.
66.	Soprafix #14 PAS-2" SB Stress Plate	Pre-assembled plate and fastener	2" diameter	Soprema, Inc.
67.	Soprema 3" Insulation Plate	Stress plate	3" diameter	Soprema, Inc.
68.	Soprafix 2" – SB Stress Plate	Stress plate	2" diameter	Soprema, Inc.
69.	Soprafix 2-3/8" – SB Stress Plate	Stress plate	2-3/8" diameter	Soprema, Inc.
70.	Soprafix (X) 2-3/4" Stress Plate	Stress plate	2-3/4" diameter	Soprema, Inc.
71.	Soprafix MBB-R	Metal Batten Bar		Soprema, Inc.
72.	Soprema #12, #14, #15 Fastener	Insulation and membrane fasteners		Soprema, Inc.
73.	Soprema PAS #12-3" Insulation Plate	Pre-assembled plate and fastener	3" diameter	Soprema, Inc.
74.	Soprafix #21-K Fastener	Insulation and membrane fastener		Soprema, Inc.
75.	Tru-Fast DP	Insulation fastener for wood, steel and concrete		The Tru-Fast Corp.
76.	Tru-Fast SHD	Insulation fastener for wood, steel and concrete		The Tru-Fast Corp.
77.	Tru-Fast MPH-3	Galvalume AZ50 steel plate	3" round	The Tru-Fast Corp.
78.	Tru-Fast MP-2000			The Tru-Fast Corp.
79.	Tru-Fast MPB-2000			The Tru-Fast Corp.
80.	Tru-Fast MPB-2400			The Tru-Fast Corp.
81.	Tru-Fast BB-18 Batten Bar	Galvalume AZ55 steel batten bar		The Tru-Fast Corp.
82.	Tru-Fast BB-18-R Batten Bar	Galvalume AZ55 steel batten bar with recessed holes		The Tru-Fast Corp.
83.	Tru-Fast Twin-Loc Batten Bar	Batten bar		The Tru-Fast Corp.



**APPROVED SURFACING/COATING OPTIONS:**

**TABLE 4**

<b>System Number</b>	<b>Manufacturer</b>	<b>Application</b>
1.	Generic	Gravel applied at 400 lbs/sq., adhered with flood coat of asphalt at 60 lbs/sq.
2.	Generic	Slag applied at 300 lbs/sq., adhered with flood coat of asphalt at 60 lbs/sq.
3.	Soprema	Gravel applied at 400 lbs/sq., adhered with FM Adhesive or FM Adhesive (VOC) at 4 gal/sq.
4.	Karnak Corporation	Karnak #97 Fibrated Aluminum Roof Coating applied at an application rate of 1.5 gal/sq.
5.	Soprema	Cural Aluminizer applied at an application rate of 2 gal/sq.
6.	Thermo Manufacturing Systems, LLC	Super Prep Roof Coating applied in two coats at an application rate of 1.5 gal/sq/coat.
7.	United Coatings Manufacturing Company	Roof Mate Coating, applied in one base coat at a rate of 1.5 gal/sq, and one finish coat at a rate of 1.5 gal/sq.
8.	Insulating Coatings Corporation	Astec 2000 Finish Coat applied in two base coats at a rate of 0.75 gal/sq/coat and two finish coats at a rate of 0.75 gal/sq/coat.
9.	Henry Company	HE280DC White Elastomeric Roof Coating applied in two coats at an application rate of 1 gal/sq/coat.
10.	National Coating	Acryshield® A500 applied in two coats at an application rate of 1 gal/sq/coat.



**EVIDENCE SUBMITTED:**

<u>Test Agency/Identifier</u>	<u>Report</u>	<u>Name</u>	<u>Date</u>	
Dynatech Engineering Corp.	2491-04.95	TAS 114	01.04.95	
Factory Mutual Research Corp.	J.I. 1Z3A6.AM	FM 4470	04.27.95	
	J.I. 2D0A0.AM	FM 4470	08.15.97	
	J.I. 1D4A3.AM	FM 4470	04.24.98	
	J.I. 308441	FM 4470	10.17.00	
	J.I. 3002351	FM 4470	02.28.03	
	J.I. 3017614	FM 4470	11.06.03	
	3017614	FM 4470	02.27.06	
	3025860	FM 4470	04.17.06	
	3026028	FM 4470	05.25.06	
	3023749	FM 4470	09.28.06	
	3029098	FM 4470	10.25.07	
	3032109	FM 4470	07.21.08	
	Exterior Research & Design, LLC	2003.02.97-1	TAS 114	02.15.97
		2003-2.04.97-1	TAS 114	04.15.97
2002.07.97-1		TAS 114	08.15.97	
2716.05.98-1		TAS 114	05.27.98	
2738-10.00-1		TAS 114	10.20.00	
2752.02LAB.05.02-1		TAS 114	05.24.02	
2109.09.02		TAS 114	09.19.02	
2761.09.03		TAS 114	09.02.03	
2764.09.03		TAS 114	09.16.03	
02843.02.05-02		TAS 114	02.10.05	
2774.04.05-R1		TAS 114	04.18.07	
2779.11.05-R1		TAS 114	04.18.07	
S6740.11.07		ASTM D 6163	11.02.07	
S12370.03.09-1		ASTM D 6164	03.06.09	
S12370.03.09-2		ASTM D 6164	03.06.09	
S12370.03.09-3		ASTM D 6162	03.06.09	
IRT of S. Florida		990028	TAS 114	09.30.99



**APPROVED ASSEMBLIES:**

**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18-22 ga. steel

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

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

**Base Insulation Layer**

	<b><u>Insulation Fasteners</u></b> <b>(Table 3)</b>	<b><u>Fastener</u></b> <b><u>Density/ft<sup>2</sup></u></b>
<b>Toprox</b>		
Minimum 1" thick	2 & 27	1:2.4 ft <sup>2</sup>
<b>AC Foam II, AC Foam III, H-Shield (flat or tapered)</b>		
Minimum 1.5" thick	2, 10, 11, 16, 17, 27, 34, 35, 45 or 46	1:2 ft <sup>2</sup>
<b>AC Foam Composite, ENRGY-2 Composite, ENRGY-2 Plus, ENRGY-3 Plus (flat or tapered)</b>		
Minimum 1.5" thick	2, 10, 11, 16, 24, 33, 34, 39 or 45	1:4 ft <sup>2</sup>
<b>ENRGY-2, ENRGY-3 PSI-25 (flat or tapered)</b>		
Minimum 1.4" thick	2, 10, 11, 16, 24, 33, 34, 39 or 45	1:2.67 ft <sup>2</sup>
<b>AC Foam II, AC Foam III, ENRGY-2, ENRGY-3 PSI-25, H-Shield (flat or tapered)</b>		
Minimum 2" thick	2, 10, 11, 16, 24, 33, 34, 39 or 45	1:4 ft <sup>2</sup>
<b>DensDeck</b>		
Minimum ¼" thick	2, 10, 16 or 33	1:4 ft <sup>2</sup>
<b>Fireguard</b>		
Minimum 5/8" thick	2, 10, 16 or 33	1:4 ft <sup>2</sup>
<b>GAFTEMP Permalite, Fesco Board</b>		
Minimum ¾" thick	10 or 11	1:2 ft <sup>2</sup>

**Note:** Base layer shall be mechanically attached with fasteners and density described above.

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.

**(Optional) Middle Insulation Layer**

	<b><u>Insulation Fasteners</u></b> <b>(Table 3)</b>	<b><u>Fastener</u></b> <b><u>Density/ft<sup>2</sup></u></b>
<b>EPS Board - For use between DensDeck or Fireguard base layer and Approved wood fiber top layer only.</b>		
Minimum 1" thick	N/A	N/A

**Top Insulation Layer**

	<b><u>Insulation Fasteners</u></b> <b>(Table 3)</b>	<b><u>Fastener</u></b> <b><u>Density/ft<sup>2</sup></u></b>
<b>BP High Strength, FM-90 Traffic Top/High Density, GAFTEMP High Density, Roof Insulation Board, High Density Fiberboard, Fiber Base HD1, HD6, Structodek</b>		
Minimum ½" thick	N/A	N/A
<b>GAFTEMP Permalite, Fesco Board</b>		
Minimum ¾" thick	N/A	N/A
<b>DensDeck</b>		
Minimum ¼" thick	N/A	N/A
<b>Fireguard, Type X gypsum</b>		



Minimum 5/8" thick

N/A

N/A

**Toprox**

Minimum 1" thick

N/A

N/A

**Note: Apply optional top layer of insulation shall be adhered with approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft<sup>2</sup>. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulations listed as the base layer shall only be used as the base layer with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.**

**Base Sheet:**

**(Optional)** One or more plies of Sopra-G, Modified Sopra-G, Sopraglass 40, Sopraglass 100, Sopra-IV, Sopra-VI, Soprabase, GAFGLAS #75, Perma Ply 28, JM GlasPly IV or JM GlasPly Premier adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

**Ply Sheet:**

**(Optional, required if no base sheet used)**

One or more plies of Elastophene Flam\*, Elastophene Flam 2.2\*, Sopralene (180, 250 or 350) Flam\*, or Sopralene (180, 250 or 350) SP, heat welded  
Or

One or more plies of Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, Elastophene PS\*, Elastophene PS 3.0\*, Elastophene 180 PS\*, Sopralene (180, 250 or 350) PS\*, or Sopralene (180, 250 or 350) Sanded or one or more plies of Type IV or Type VI ply sheets adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

\*Requires heat welded cap membrane.

**Membrane:**

Elastophene SP 2.2mm\*, Elastophene SP 3.0mm\*, Elastophene Flam GR, Elastophene Flam FR GR or FR+ GR, Elastophene Flam LS FR GR, Soprastar Flam, Soprastar Flam 180, Sopralene (180, 250, 350) Flam GR, Sopralene (180, 250, 350) Flam FR GR or FR+ GR or Sopralast heat welded  
Or

Elastophene Sanded\*, Elastophene Sanded FR\*, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded\*, Sopralene (180, 250, 350) Sanded\*, Soprastar 180 Sanded, Elastophene FR GR or FR+ GR, Elastophene LS FR GR, Elastophene GR, Sopralene (180, 250, 350) GR, or Sopralene (180, 250, 350) FR GR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. to sand surfaced base or ply membrane.

\*Requires approved Surfacing.

**Surfacing:**

Surfacing is Optional on granular surfaced field cap membranes.  
Surfacing is Required for smooth or sanded surfaced field cap membranes.  
Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications  
Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.

**Maximum Design Pressure:**

-52.5 psf (See General Limitation #9)



**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18-22 ga. steel Grade 80 steel fastened 6" o.c. with Traxx/5 fasteners to steel supports spaced maximum 6 ft. o.c. Deck side laps fastened with Traxx/1 fasteners spaced at 30" o.c.

**System Type B(2):** Base layer of insulation mechanically fastened, optional top layer adhered with approved asphalt.

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners</u> <u>(Table 3)</u>	<u>Fastener</u> <u>Density/ft<sup>2</sup></u>
AC Foam II, AC Foam III, ENRGY-2, ENRGY-3, PSI-25, H-Shield (flat or tapered) Minimum 1.5" thick	2, 10, 11, 16, 24, 33, 34, 39 or 45	1:1.33 ft <sup>2</sup>

**Note:** Base layer shall be mechanically attached with fasteners and density described above. 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>Top Insulation Layer</u>	<u>Insulation Fasteners</u> <u>(Table 3)</u>	<u>Fastener</u> <u>Density/ft<sup>2</sup></u>
BP High Strength, FM-90 Traffic Top/High Density, GAFTEMP High Density, Roof Insulation Board, High Density Fiberboard, Fiber Base HD1, HD6, Structodek Minimum 1/2" thick	N/A	N/A
GAFTEMP Permalite, Fesco Board Minimum 3/4" thick	N/A	N/A

**Note:** Apply optional top layer of insulation shall be adhered with approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft<sup>2</sup>. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulations listed as the base layer shall only be used as the base layer with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

**Base Sheet:** (Optional) One or more plies of Sopra-G, Modified Sopra-G, Sopraglass 40, Sopraglass 100, Sopra-IV, Sopra-VI, Soprabase, GAFGLAS #75, Perma Ply 28, JM GlasPly IV or JM GlasPly Premier adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

**Ply Sheet:** (Optional, required if no base sheet used)  
One or more plies of Elastophene Flam\*, Elastophene Flam 2.2\*, Sopralene (180, 250 or 350) Flam\*, or Sopralene (180, 250 or 350) SP, heat welded  
Or  
One or more plies of Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, Elastophene PS\*, Elastophene PS 3.0\*, Elastophene 180 PS\*, Sopralene (180, 250 or 350) PS\*, or Sopralene (180, 250 or 350) Sanded or one or more plies of Type IV or Type VI ply sheets, adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

\*Requires heat welded cap membrane.



- Membrane:** Elastophene SP 2.2mm\*, Elastophene SP 3.0mm\*, Elastophene Flam GR, Elastophene Flam FR GR or FR+ GR, Elastophene Flam LS FR GR, Soprastar Flam, Soprastar Flam 180, Sopralene (180, 250, 350) Flam GR, Sopralene (180, 250, 350) Flam FR GR or FR+ GR or Sopralast, heat welded  
Or  
Elastophene Sanded\*, Elastophene Sanded FR\*, Elastophene HR\*, Elastophene HR FR\*, Elastophene 180 Sanded\*, Sopralene (180, 250, 350) Sanded\*, Soprastar 180 Sanded, Elastophene FR GR or FR+ GR, Elastophene LS FR GR, Elastophene GR, Sopralene (180, 250, 350) GR, or Sopralene (180, 250, 350) FR GR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. to sand surfaced base or ply membrane.  
\*Requires approved Surfacing.
- Surfacing:** Surfacing is Optional on granular surfaced field cap membranes.  
Surfacing is Required for smooth or sanded surfaced field cap membranes.  
Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications  
Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.
- Maximum Design Pressure:** -67.5 psf (For perlite) (See General Limitation #7)  
-75 psf (For High Density Wood Fiberboard) (See General Limitation #7)



**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18-22 ga., 1.5 in. (38mm) deep, ASTM A653 or A1008 Grade 80 steel deck with maximum deck spans of 6 ft. o.c. Deck side laps are attached with Traxx/I fasteners spaced max. 30" o.c.

**System Type B(3):** Base layer of insulation mechanically attached, top layer adhered with approved asphalt

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

**Base Insulation Layer**

**Insulation Fasteners**  
**(Table 3)**

**Fastener**  
**Density/ft<sup>2</sup>**

**ACFoam II, ACFoam III, H-Shield (flat or tapered)**  
Minimum 2.0" thick

47 (min #14)

1:1.6

**Note: Base layer shall be mechanically attached with fasteners and density described above. 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**  
**(Table 3)**

**Fastener**  
**Density/ft<sup>2</sup>**

**High Density Fiberboard**  
Minimum ½" thick

N/A

N/A

**Note: Apply optional top layer of insulation shall be adhered with approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft<sup>2</sup>. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulations listed as the base layer shall only be used as the base layer with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.**

**Primer:** Elastocol 400, 500, Elastocol 600c or AquaTac applied at a rate of 1 gal/sq, to top surface of any insulation, base or ply sheet prior to application of next layer.  
**(Optional)**

**Base Sheet:** One or more plies of Sopra-G, Modified Sopra-G, Sopraglass 40, Sopraglass 100, Sopra-IV, Sopra-VI, Soprabase, GAFGLAS #75, Perma Ply 28, JM GlasPly IV or JM GlasPly Premier or Elastophene Sanded FR, Elastophene Sanded 3.0 mm, Elastophene HS FR, Elastophene HR, Elastophene HR 3.0 mm, Elastophene HD, Elastophene HP, Elastophene PS\*, Elastophene PS 3.0\*, Elastophene 180 Sanded, Elastophene 180 P\*S, Sopralene 180 Sanded, Sopralene 180 Sanded 3.5 mm, Sopralene 180 PS\*, Sopralene 250 Sanded, Sopralene 250 Sanded 3.5 mm, Sopralene 250 PS\*, Sopralene 250 PS 2.7 mm, Sopralene 350 Sanded, Sopralene 350 PS\*, adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

\*Requires heat welded ply or cap membrane.



**Ply Sheet:  
(Optional)**

One or more layers of Elastophene Flam\*, Elastophene Flam FR\*, Elastophene Flam 2.2 mm\*, Elastophene Flam HS FR\*, Elastophene Flam HR 3.0 mm\*, Elastophene Flam HP\*, Elastophene SP 2.2mm, Elastophene 3.0mm, Sopralene Flam 180\*, Sopralene Flam 180 2.7 mm\*, Sopralene 180 SP 3.5 mm, Soprafix, Sopralene Flam 250\*, Sopralene 250 SP, Sopralene Flam 350\*, Sopralene 350 SP, heat welded

Or

Elastophene Sanded, Elastophene Sanded FR, Elastophene Sanded 3.0 mm, Elastophene HS FR, Elastophene HR, Elastophene HR 3.0 mm, Elastophene HD, Elastophene HP, Elastophene PS\*, Elastophene PS 3.0\*, Elastophene 180 Sanded, Elastophene 180 PS\*, Sopralene 180 Sanded, Sopralene 180 Sanded 3.5 mm, Sopralene 180 PS\*, Sopralene 250 Sanded, Sopralene 250 Sanded 3.5 mm, Sopralene 250 PS\*, Sopralene 250 PS 2.7 mm, Sopralene 350 Sanded, Sopralene 350 PS\*, adhered in hot asphalt at 25 lbs/sq. to sand surfaced base membrane.

\*Requires heat welded cap membrane.

**Membrane:**

Elastophene Flam GR, Elastophene Flam UW GR, Elastophene Flam FR GR, Elastophene Flam LS FR GR, Elastophene Flam FR UW GR, Elastophene Flam FR+ GR, Elastophene Flam FR+ UW GR, Elastophene Flam HR FR GR, Elastophene Flam HS FR GR, Elastophene Flam HS FR UW GR, Elastophene Flam HP FR GR, Sopralene 180 SP 3.5mm\*, Soprafix\*, SopraStar Flam, SopraStar Flam 180, Sopralene Flam 180 GR, Sopralene Flam 180 FR GR, Sopralene Flam 180 FR UW GR, Sopralene Flam 180 FR+ GR, Sopralene 250 SP\*, Sopralene Flam 250 GR, Sopralene Flam 250 FR GR, Sopralene Flam 250 FR UW GR, Sopralene Flam 250 FR+ GR, Sopralene Flam 250 FR+ UW GR, Sopralene 350 SP\*, Sopralene Flam 350 GR, Sopralene Flam 350 FR GR, Sopralene Flam Jardin, Sopralene Mammoth GR, Sopralast 50 TV Alu, Sopralast 50 TV Alu White, Sopralast Alu, Sopralast TV Copper, Sopralast Copper, Sopralast TV Inox or Sopralast Stainless Steel, heat welded

Or

Elastophene Sanded\*, Elastophene FR\*, Elastophene 180 Sanded\*, Elastophene GR, Elastophene UW GR, Elastophene FR GR, Elastophene LS FR GR, Elastophene FR UW GR, Elastophene FR+ GR, Elastophene HD FR GR, Elastophene HR FR GR, Elastophene HS FR GR, Elastophene HS FR UW GR, Elastophene HP FR GR, Sopralene 180 Sanded\*, SopraStar 180 Sanded, Sopralene 180 GR, Sopralene 180 FR GR, Sopralene 180 FR UW GR, Sopralene 250 Sanded\*, Sopralene 250 GR, Sopralene 250 FR GR, Sopralene 250 FR UW GR, Sopralene 350 Sanded\*, Sopralene 350 GR or Sopralene 350 FR GR, adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. to sand surfaced base or ply membrane.

\*Requires approved Surfacing.

**Surfacing:**

Surfacing is Optional on granular surfaced field cap membranes.

Surfacing is Required for smooth or sanded surfaced field cap membranes.

Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications

Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.

**Maximum Design**

**Pressure:**

-75 psf (See General Limitation #7.)



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Expiration Date: 03/01/11

Approval Date: 06/10/09

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**Deck Type 2I:** Steel, Insulated  
**Deck Description:** 18-22 ga. steel  
**System Type C(1):** All layers of insulation simultaneously attached.

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

<b><u>Base Insulation Layer</u></b>	<b><u>Insulation Fasteners</u></b> <b><u>(Table 3)</u></b>	<b><u>Fastener</u></b> <b><u>Density/ft<sup>2</sup></u></b>
<b>AC Foam II, AC Foam III, ENRGY-2, ENRGY-3, PSI-25, Multi-Max FA, Multi-Max FA-3, H-Shield (flat or tapered)</b> Minimum 1" thick	N/A	N/A
<b>DensDeck</b> Minimum ¼" thick	N/A	N/A
<b>Fireguard, Type X gypsum</b> Minimum 5/8" thick	N/A	N/A
<b>Toprox</b> Minimum 1" thick	N/A	N/A

**Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density.**

<b><u>Top Insulation Layer</u></b>	<b><u>Insulation Fasteners</u></b> <b><u>(Table 3)</u></b>	<b><u>Fastener</u></b> <b><u>Density/ft<sup>2</sup></u></b>
<b>Toprox</b> Minimum 1" thick	2 & 27	1:2.4 ft <sup>2</sup>
<b>ACFoam Composite, ENRGY 2 Composite, ENRGY 2 Plus</b> Minimum 1.5" thick	2, 10, 11, 16, 24, 33, 34, 39 or 45	1:4 ft <sup>2</sup>
<b>DensDeck</b> Minimum ¼" thick	2, 11, 27 or 34	1:4 ft <sup>2</sup>
<b>Fireguard</b> Minimum 5/8" thick	2, 10, 24 or 33	1:4 ft <sup>2</sup>
<b>GAFTEMP Permalite, Fesco Board</b> Minimum ¾" thick	2, 10, 11, 16, 24, 33, 34, 39 or 45	1:2 ft <sup>2</sup>
<b>Esgard, High Density Fiberboard, GAFTEMP Fiberboard, Huebert Fiberboard</b> Minimum 1" thick	2, 10, 11, 16, 24, 33, 34, 39 or 45	1:4 ft <sup>2</sup>

**Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.**



**Base Sheet:** (Optional) One or more plies of Sopra-G, Modified Sopra-G, Sopraglass 40, Sopraglass 100, Sopra-IV, Sopra-VI, Soprabase, GAFGLAS #75, Perma Ply 28, JM GlasPly IV or JM GlasPly Premier adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

**Ply Sheet:** (Optional, required if no base sheet used)  
One or more plies of Elastophene Flam\*, Elastophene Flam 2.2\*, Sopralene (180, 250 or 350) Flam\*, or Sopralene (180, 250 or 350) SP, heat welded

Or

One or more plies of Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, Elastophene PS\*, Elastophene PS 3.0\*, Elastophene 180 PS\*, Sopralene (180, 250 or 350) PS\*, or Sopralene (180, 250 or 350) Sanded or one or more plies of Type IV or Type VI ply sheets, adhered in full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

\*Requires heat welded cap membrane.

**Membrane:** Elastophene SP 2.2mm\*, Elastophene SP 3.0mm\*, Elastophene Flam GR, Elastophene Flam FR GR or FR+ GR, Elastophene Flam LS FR GR, Soprastar Flam, Soprastar Flam 180, Sopralene (180, 250, 350) Flam GR, Sopralene (180, 250, 350) Flam FR GR or FR+ GR or Sopralast, heat welded

Or

Elastophene Sanded\*, Elastophene Sanded FR\*, Elastophene HR\*, Elastophene HR FR\*, Elastophene 180 Sanded\*, Sopralene (180, 250, 350) Sanded\*, Soprastar 180 Sanded, Elastophene FR GR or FR+ GR, Elastophene LS FR GR, Elastophene GR, Sopralene (180, 250, 350) GR, or Sopralene (180, 250, 350) FR GR, adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. to sand surfaced base or ply membrane.

\*Requires approved Surfacing.

**Surfacing:** Surfacing is Optional on granular surfaced field cap membranes. Surfacing is Required for smooth or sanded surfaced field cap membranes. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications. Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.

**Maximum Design Pressure:** -52.5 psf (See General Limitation #9)



**Deck Type 2I:** Steel, Insulated  
**Deck Description:** 18-22 ga. Steel  
**System Type C(2):** All layers of insulation simultaneously attached.

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners</u> <u>(Table 3)</u>	<u>Fastener</u> <u>Density/ft<sup>2</sup></u>
AC Foam II, AC Foam III, ENRGY-2, ENRGY-3, PSI-25, Multi-Max FA, Multi-Max FA-3, H-Shield (flat or tapered) Minimum 1.5" thick	N/A	N/A

**Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density.**

<u>Top Insulation Layer</u>	<u>Insulation Fasteners</u> <u>(Table 3)</u>	<u>Fastener</u> <u>Density/ft<sup>2</sup></u>
<b>DensDeck</b> Minimum ¼" thick	2, 10, 11, 16, 24, 33, 34, 39 or 45	1:2 ft <sup>2</sup>
<b>Esgard, High Density Fiberboard, GAFTEMP Fiberboard, Huebert Fiberboard</b> Minimum ½" thick	2, 10, 11, 16, 24, 33, 34, 39 or 45	1:2 ft <sup>2</sup>

**Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.**

**Base Sheet:** (Optional) One or more plies of Sopra-G, Modified Sopra-G, Sopraglass 40, Sopraglass 100, Sopra-IV, Sopra-VI, Soprabase, GAFGLAS #75, Perma Ply 28, JM GlasPly IV or JM GlasPly Premier adhered in CIM 162 Adhesive applied at a rate of 1.5 gal./sq.

**Ply Sheet:** (Optional, required if no base sheet used)  
 One or more plies of Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, or Sopralene (180, 250 or 350) Sanded or one or more plies of Type IV or Type VI ply sheets adhered in CIM 162 Adhesive applied at a rate of 1.5 gal./sq.

**Membrane:** Elastophene Sanded\*, Elastophene Sanded FR\*, Elastophene HR\*, Elastophene HR FR\*, Elastophene 180 Sanded\*, Sopralene (180, 250, 350) Sanded\*, Soprastar 180 Sanded, Elastophene FR GR or FR+ GR, Elastophene LS FR GR, Elastophene GR, Sopralene (180, 250, 350) GR or Sopralene (180, 250, 350) FR GR adhered in CIM 162 Adhesive applied at a rate of 1.5 gal./sq.

**Surfacing:** Surfacing is Optional on granular surfaced field cap membranes.  
 Surfacing is Required for smooth or sanded surfaced field cap membranes.  
 Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications  
 Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.

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



**Deck Type 2I:** Steel, Insulated  
**Deck Description:** 18-22 ga. Steel, Grade 80 steel decking over ¼” thick steel supports spaced at maximum 6 ft. o.c. attached with Traxx/5 fasteners at a spacing of 6” o.c. Deck side laps are attached 30” o.c. using Traxx/1 fasteners.  
**System Type C(3):** All layers of insulation simultaneously attached.

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners</u> <u>(Table 3)</u>	<u>Fastener</u> <u>Density/ft<sup>2</sup></u>
AC Foam II, AC Foam III, ENRGY-2, ENRGY-3, PSI-25, Multi-Max FA, Multi-Max FA-3, H-Shield (flat or tapered) Minimum 1.5” thick	N/A	N/A

**Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density.**

<u>Top Insulation Layer</u>	<u>Insulation Fasteners</u> <u>(Table 3)</u>	<u>Fastener</u> <u>Density/ft<sup>2</sup></u>
DensDeck Minimum ¼” thick	24	1:1.78 ft <sup>2</sup>

**Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.**

**Base Sheet:** (Optional) One or more plies of Sopra-G, Modified Sopra-G, Sopraglass 40, Sopraglass 100, Sopra-IV, Sopra-VI, Soprabase, GAFGLAS #75, Perma Ply 28, JM GlasPly IV or JM GlasPly Premier adhered in full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.  
 Or  
 Prime DensDeck with ASTM D 41 prime followed by one ply of Sopralene Flam Stick\*, Sopralene Stick or EPS Flam Stick\*, self adhered.  
 \*Requires heat welded ply or cap membrane.

**Ply Sheet:** (Optional, required if no base sheet used)  
 One or more plies of Elastophene Flam\*, Elastophene Flam 2.2\*, Sopralene (180, 250 or 350) Flam\*, or Sopralene (180, 250 or 350) SP, heat welded  
 Or  
 One or more plies of Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, Elastophene PS\*, Elastophene PS 3.0\*, Elastophene 180 PS\*, Sopralene (180, 250 or 350) PS\*, or Sopralene (180, 250 or 350) Sanded or one or more plies of Type IV or Type VI ply sheets, adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.  
 Or  
 One ply of Sopralene Flam Stick\* or Sopralene Stick self adhered. (Note: Prime sanded surfaced base Sheet.)  
 \*Requires heat welded cap membrane.



**Membrane:**

Elastophene SP 2.2mm\*, Elastophene SP 3.0mm\*, Elastophene Flam GR, Elastophene Flam FR GR or FR+ GR, Elastophene Flam LS FR GR, Soprastar Flam, Soprastar Flam 180, Sopralene (180, 250, 350) Flam GR, Sopralene (180, 250, 350) Flam FR GR or FR+ GR, or Sopralast, heat welded

Or

Elastophene Sanded\*, Elastophene Sanded FR\*, Elastophene HR\*, Elastophene HR FR\*, Elastophene 180 Sanded\*, Sopralene (180, 250, 350) Sanded\*, Soprastar 180 Sanded, Elastophene FR GR, Elastophene LS FR GR, Elastophene GR or FR+ GR, Sopralene (180, 250, 350) GR, or Sopralene (180, 250, 350) FR GR, adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. to sand surfaced base or ply membrane.

Or

Colphene FR GR, Colphene GR or Colphene HR FR GR self adhered. (Note: Prime sanded surfaced Base or Ply Sheet.)

Or

Soprastar Stick, self-adhered to Elastocol 600c primed sand surfaced base or ply membrane.

\*Requires approved Surfacing.

**Surfacing:**

Surfacing is Optional on granular surfaced field cap membranes.

Surfacing is Required for smooth or sanded surfaced field cap membranes.

Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications

Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.

**Maximum Design**

**Pressure:**

-52.5 psf (See General Limitation #7)



**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18-22 ga., 1.5 in. (38mm) deep, ASTM A653 or A1008 Grade 80 steel deck with maximum deck spans of 6 ft. o.c. Deck side laps are attached with Traxx/1 fasteners spaced max. 30" o.c.

**System Type C(4):** All layers of insulation simultaneously attached.

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

**Base Insulation Layer**

**Insulation Fasteners**  
**(Table 3)**

**Fastener**  
**Density/ft<sup>2</sup>**

**ACFoam II, ACFoam III, Hy-Therm AP, E'NRG'Y-2 ENRGY-3, H-Shield, Multi-Max FA, Multi-Max FA-3 (flat or tapered)**

Minimum 1.4" thick

N/A

N/A

**Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density.**

**Top Insulation Layer**

**Insulation Fasteners**  
**(Table 3)**

**Fastener**  
**Density/ft<sup>2</sup>**

**DensDeck**

Minimum ¼" thick

2(min. #14 screws only)

1:1.78

**Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Refer to Roofing Application Standard RAS 117 for insulation attachment.**

**Primer:** Elastocol 400, 500, Elastocol 600c or AquaTac applied at a rate of 1 gal/sq, to top surface of any insulation, base or ply sheet prior to application of next layer  
**(Optional)**

**Base Sheet:** **(Optional if Ply Sheet used)**  
One or two plies of Sopra-G, Modified Sopra-G, Sopraglass 100, Sopra IV, Sopra VI, Soprabase, GAFGLAS #75, Johns Manville GlasBase or Johns Manville Glas Ply IV, GlasPly Premier adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq or in FM Adhesive or FM Adhesive (VOC) at 1.5 – 2.0 gallons/square.

**Ply Sheet:** **(Optional if Base Sheet used)**  
One ply of Elastophene Flam\*, Elastophene Flam FR\*, Elastophene Flam 2.2 mm\*, Elastophene Flam HS FR\*, Elastophene Flam HR 3.0 mm\*, Elastophene Flam HP\*, Elastophene SP 2.2mm, Elastophene SP 3.0mm, Sopralene Flam 180\*, Sopralene Flam 180 2.7 mm\*, Sopralene 180 SP 3.5 mm, Soprafix, Sopralene Flam 250\*, Sopralene 250 SP, Sopralene Flam 350\*, Sopralene 350 SP, heat welded  
Or  
One ply of Elastophene Sanded, Elastophene Sanded FR, Elastophene Sanded 3.0 mm, Elastophene HS FR, Elastophene HR, Elastophene HR 3.0 mm, Elastophene HD, Elastophene HP, Elastophene PS\*, Elastophene PS 3.0\*, Elastophene 180 Sanded, Elastophene 180 PS\*, Sopralene 180 Sanded, Sopralene 180 Sanded 3.5 mm, Sopralene 180 PS\*, Sopralene 250 Sanded, Sopralene 250 Sanded 3.5 mm, Sopralene 250 PS\*, Sopralene 250 PS 2.7 mm\*, Sopralene 350 Sanded, Sopralene 350 PS\* or one to three plies of ASTM D2178 Type IV or VI ply sheet, adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq or in FM Adhesive or FM Adhesive (VOC) at 1.5 – 2.0 gallons/square.  
\*Requires heat welded cap membrane.



**Membrane:**

Elastophene Flam GR, Elastophene Flam UW GR, Elastophene Flam FR GR, Elastophene Flam LS FR GR, Elastophene Flam FR UW GR, Elastophene Flam FR+ GR, Elastophene Flam FR+ UW GR, Elastophene Flam HR FR GR, Elastophene Flam HS FR GR, Elastophene Flam HS FR UW GR, Elastophene Flam HP FR GR, Sopralene 180 SP 3.5mm\*, Sopraflix\*, Soprapstar Flam, Soprapstar Flam 180, Sopralene Flam 180 GR, Sopralene Flam 180 FR GR, Sopralene Flam 180 FR UW GR, Sopralene Flam 180 FR+ GR, Sopralene 250 SP\*, Sopralene Flam 250 GR, Sopralene Flam 250 FR GR, Sopralene Flam 250 FR UW GR, Sopralene Flam 250 FR+ GR, Sopralene Flam 250 FR+ UW GR, Sopralene 350 SP\*, Sopralene Flam 350 GR, Sopralene Flam 350 FR GR, Sopralene Flam Jardin, Sopralene Mammoth GR, Sopralast 50 TV Alu, Sopralast 50 TV Alu White, Sopralast Alu, Sopralast TV Copper, Sopralast Copper, Sopralast TV Inox or Sopralast Stainless Steel, heat welded

Or

Elastophene Sanded\*, Elastophene FR\*, Elastophene 180 Sanded\*, Elastophene GR, Elastophene UW GR, Elastophene FR GR, Elastophene LS FR GR, Elastophene FR UW GR, Elastophene FR+ GR, Elastophene HD FR GR, Elastophene HR FR GR, Elastophene HS FR GR, Elastophene HS FR UW GR, Elastophene HP FR GR, Sopralene 180 Sanded\*, Soprapstar 180 Sanded, Sopralene 180 GR, Sopralene 180 FR GR, Sopralene 180 FR UW GR, Sopralene 250 Sanded\*, Sopralene 250 GR, Sopralene 250 FR GR, Sopralene 250 FR UW GR, Sopralene 350 Sanded\*, Sopralene 350 GR or Sopralene 350 FR GR, adhered in hot asphalt at 25 lbs/sq. or in FM Adhesive or FM Adhesive (VOC) at 1.5 – 2.0 gallons/square to sand surfaced base or ply membrane.

\*Requires approved Surfacing.

**Surfacing:**

Surfacing is Optional on granular surfaced field cap membranes.

Surfacing is Required for smooth or sanded surfaced field cap membranes.

Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications

Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.

**Maximum Design**

**Pressure:**

-60 psf (See General Limitation #7.)



**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18-22 ga., 1.5 in. (38mm) deep, ASTM A653 or A1008 Grade 80 steel deck with maximum deck spans of 6 ft. o.c. Deck side laps are attached with Traxx/1 fasteners spaced max. 30" o.c.

**System Type C(5):** All layers of insulation simultaneously attached.

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

**Base Insulation Layer**

**Insulation Fasteners**  
**(Table 3)**

**Fastener**  
**Density/ft<sup>2</sup>**

ACFoam II, ACFoam III, Hy-Therm AP, E'NRG'Y-2, ENRGY-3, H-Shield, Multi-Max FA, Multi-Max FA-3 (flat or tapered)

Minimum 1.4" thick

N/A

N/A

**Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density.**

**Top Insulation Layer**

**Insulation Fasteners**  
**(Table 3)**

**Fastener**  
**Density/ft<sup>2</sup>**

**DensDeck**

Minimum 1/4" thick

2 (min. #14 screws only)

1: 1.78

**Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Refer to Roofing Application Standard RAS 117 for insulation attachment.**

**Primer:** ASTM D41 or Elastocol 600c applied to DensDeck at 1 gal/square.

**Base Sheet:** Sopralene Flam Stick\*, Sopralene Stick or EPS Flam Stick\*, self-adhered.

\*Requires heat welded ply or cap membrane.

**Ply Sheet:** One ply of Elastophene Flam\*, Elastophene Flam FR\*, Elastophene Flam 2.2 mm\*, Elastophene Flam HS FR\*, Elastophene Flam HR 3.0 mm\*, Elastophene Flam HP\*, Elastophene SP 2.2 mm, Elastophene SP 3.0 mm, Sopralene Flam 180\*, Sopralene Flam 180 2.7 mm\*, Sopralene 180 SP 3.5 mm, Soprafix, Sopralene Flam 250\*, Sopralene 250 SP, Sopralene Flam 350\*, Sopralene 350 SP, heat welded

Or

One ply of Sopralene Stick self-adhered to sand surfaced base membrane.

\*Requires heat welded cap membrane.



**Membrane:**

Elastophene Flam GR, Elastophene Flam UW GR, Elastophene Flam FR GR, Elastophene Flam LS FR GR, Elastophene Flam FR UW GR, Elastophene Flam FR+ GR, Elastophene Flam FR+ UW GR, Elastophene Flam HR FR GR, Elastophene Flam HS FR GR, Elastophene Flam HS FR UW GR, Elastophene Flam HP FR GR, Sopralene 180 SP 3.5mm\*, Soprafix\*, Soprastar Flam, Soprastar Flam 180, Sopralene Flam 180 GR, Sopralene Flam 180 FR GR, Sopralene Flam 180 FR UW GR, Sopralene Flam 180 FR+ GR, Sopralene 250 SP\*, Sopralene Flam 250 GR, Sopralene Flam 250 FR GR, Sopralene Flam 250 FR UW GR, Sopralene Flam 250 FR+ GR, Sopralene Flam 250 FR+ UW GR, Sopralene 350 SP\*, Sopralene Flam 350 GR, Sopralene Flam 350 FR GR, Sopralene Flam Jardin, Sopralene Mammoth GR, Sopralast 50 TV Alu, Sopralast 50 TV Alu White, Sopralast Alu, Sopralast TV Copper, Sopralast Copper, Sopralast TV Inox or Sopralast Stainless Steel, heat welded.

Or

Elastophene Sanded\*, Elastophene FR\*, Elastophene 180 Sanded\*, Elastophene GR, Elastophene UW GR, Elastophene FR GR, Elastophene LS FR GR, Elastophene FR UW GR, Elastophene FR+ GR, Elastophene HD FR GR, Elastophene HR FR GR, Elastophene HS FR GR, Elastophene HS FR UW GR, Elastophene HP FR GR, Sopralene 180 Sanded\*, Soprastar 180 Sanded, Sopralene 180 GR, Sopralene 180 FR GR, Sopralene 180 FR UW GR, Sopralene 250 Sanded\*, Sopralene 250 GR, Sopralene 250 FR GR, Sopralene 250 FR UW GR, Sopralene 350 Sanded\*, Sopralene 350 GR or Sopralene 350 FR GR, adhered in hot asphalt at 25 lbs/sq. or in FM Adhesive or FM Adhesive (VOC) at 1.5 – 2.0 gallons/square to sand surfaced base or ply membrane.

or

Colphene FR GR, Colphene GR or Colphene HR FR GR self-adhered to sand surface base or ply membrane.

Or

Soprastar Stick, self-adhered to Elastocol 600c primed sand surfaced base or ply membrane

\*Requires approved Surfacing.

**Surfacing:**

Surfacing is Optional on granular surfaced field cap membranes.  
Surfacing is Required for smooth or sanded surfaced field cap membranes.  
Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications  
Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.

**Maximum Design Pressure:**

-60 psf (See General Limitation #7.)



**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18-22 ga., 1.5 in. (38mm) deep, ASTM A653 or A1008 Grade 80 steel deck with maximum deck spans of 6 ft. o.c. Deck side laps are attached with Traxx/5 screws.

**System Type C(6):** All layers of insulation simultaneously attached.

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

**Base Insulation Layer**

**Insulation Fasteners**  
**(Table 3)**

**Fastener**  
**Density/ft<sup>2</sup>**

**Any Approved insulation (flat or tapered) loose laid.**

**Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density.**

**Top Insulation Layer**

**Insulation Fasteners**  
**(Table 3)**

**Fastener**  
**Density/ft<sup>2</sup>**

**SECUROCK®**

Minimum ½" thick

24 (min #14)

1: 1.78

**Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Refer to Roofing Application Standard RAS 117 for insulation attachment.**

**Primer:** Elastocol 400, 500, Elastocol 600c or AquaTac applied at a rate of 1 gal/sq, to top surface of any insulation, base or ply sheet prior to application of next layer  
**(Optional)**

**Base Sheet:** One or more plies of Sopra-G, Modified Sopra-G, Sopraglass 40, Sopraglass 100, Sopra-IV, Sopra-VI, Soprabase, GAFGLAS #75, Perma Ply 28, JM GlasPly IV or JM GlasPly Premier Elastophene Sanded, Elastophene Sanded FR, Elastophene Sanded 3.0 mm, Elastophene HS FR, Elastophene HR, Elastophene HR 3.0 mm, Elastophene HD, Elastophene HP, Elastophene PS\*, Elastophene PS 3.0\*, Elastophene 180 Sanded, Elastophene 180 PS\*, Sopralene 180 Sanded, Sopralene 180 Sanded 3.5 mm, Sopralene 180 PS\*, Sopralene 250 Sanded, Sopralene 250 Sanded 3.5 mm, Sopralene 250 PS\*, Sopralene 250 PS 2.7 mm, Sopralene 350 Sanded, Sopralene 350 PS\*, adhered in a full mopping of approved asphalt, applied within the EVT range and at a rate of 20-40 lbs./sq.

Or

Elastophene Flam\*, Elastophene Flam FR\*, Elastophene Flam 2.2 mm\*, Elastophene Flam HS FR\*, Elastophene Flam HR 3.0 mm\*, Elastophene Flam HP\*, Elastophene SP 2.2mm, Elastophene SP 3.0mm, Sopralene Flam 180\*, Sopralene Flam 180 2.7 mm\*, Sopralene 180 SP 3.5 mm, Soprafix, Sopralene Flam 250\*, Sopralene 250 SP, Sopralene Flam 350\*, Sopralene 350 SP, Colvent TG, Colvent 180 TG, heat welded.

\*Requires heat welded ply or cap membrane.



**Ply Sheet:  
(Optional)**

One or more layers of Elastophene Flam\*, Elastophene Flam FR\*, Elastophene Flam 2.2 mm\*, Elastophene Flam HS FR\*, Elastophene Flam HR 3.0 mm\*, Elastophene Flam HP\*, Elastophene SP 2.2mm, Elastophene SP 3.0mm, Sopralene Flam 180\*, Sopralene Flam 180 2.7 mm\*, Sopralene 180 SP 3.5 mm, Soprafix, Sopralene Flam 250\*, Sopralene 250 SP, Sopralene Flam 350\*, Sopralene 350 SP, heat welded.

Or

Elastophene Sanded, Elastophene Sanded FR, Elastophene Sanded 3.0 mm, Elastophene HS FR, Elastophene HR, Elastophene HR 3.0 mm, Elastophene HD, Elastophene HP, Elastophene PS\*, Elastophene PS 3.0\*, Elastophene 180 Sanded, Elastophene 180 PS\*, Sopralene 180 Sanded, Sopralene 180 Sanded 3.5 mm, Sopralene 180 PS\*, Sopralene 250 Sanded, Sopralene 250 Sanded 3.5 mm, Sopralene 250 PS\*, Sopralene 250 PS 2.7 mm\*, Sopralene 350 Sanded, Sopralene 350 PS\*, adhered in a full mopping of approved asphalt, applied within the EVT range and at a rate of 20-40 lbs./sq. to sand surfaced base membrane

\*Requires heat welded cap membrane.

**Membrane:**

Elastophene Flam GR, Elastophene Flam UW GR, Elastophene Flam FR GR, Elastophene Flam LS FR GR, Elastophene Flam FR UW GR, Elastophene Flam FR+ GR, Elastophene Flam FR+ UW GR, Elastophene Flam HR FR GR, Elastophene Flam HS FR GR, Elastophene Flam HS FR UW GR, Elastophene Flam HP FR GR, Sopralene 180 SP 3.5mm\*, Soprafix\*, Soprastar Flam, Soprastar Flam 180, Sopralene Flam 180 GR, Sopralene Flam 180 FR GR, Sopralene Flam 180 FR UW GR, Sopralene Flam 180 FR+ GR, Sopralene 250 SP\*, Sopralene Flam 250 GR, Sopralene Flam 250 FR GR, Sopralene Flam 250 FR UW GR, Sopralene Flam 250 FR+ GR, Sopralene Flam 250 FR+ UW GR, Sopralene 350 SP\*, Sopralene Flam 350 GR, Sopralene Flam 350 FR GR, Sopralene Flam Jardin, Sopralene Mammoth GR, Sopralast 50 TV Alu, Sopralast 50 TV Alu White, Sopralast Alu, Sopralast TV Copper, Sopralast Copper, Sopralast TV Inox or Sopralast Stainless Steel, heat welded.

Or

Elastophene Sanded\*, Elastophene FR\*, Elastophene 180 Sanded\*, Elastophene GR, Elastophene UW GR, Elastophene FR GR, Elastophene LS FR GR, Elastophene FR UW GR, Elastophene FR+ GR, Elastophene HD FR GR, Elastophene HR FR GR, Elastophene HS FR GR, Elastophene HS FR UW GR, Elastophene HP FR GR, Sopralene 180 Sanded\*, Soprastar 180 Sanded, Sopralene 180 GR, Sopralene 180 FR GR, Sopralene 180 FR UW GR, Sopralene 250 Sanded\*, Sopralene 250 GR, Sopralene 250 FR GR, Sopralene 250 FR UW GR, Sopralene 350 Sanded\*, Sopralene 350 GR or Sopralene 350 FR GR, adhered in hot asphalt at 25 lbs/sq. or in FM Adhesive or FM Adhesive (VOC) at 1.5 – 2.0 gallons/square to sand surfaced base or ply membrane.

\*Requires approved Surfacing.

**Surfacing:**

Surfacing is Optional on granular surfaced field cap membranes.

Surfacing is Required for smooth or sanded surfaced field cap membranes.

Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications

Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.

**Maximum Design**

**Pressure:**

-75.0 psf (See General Limitation #7.)



**Deck Type 2I:** Steel, Insulated

**Deck Description:** Min. 22 ga. Type B, ASTM A653-01a or ASTM A1008-01 SS Grade 80 steel, secured with Traxx/5 screws spaced max. 6" o.c. to structural supports spaced at max 5' o.c.

**System Type C(7):** All layers of insulation simultaneously attached.

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

**Base Insulation Layer**

**Insulation Fasteners**  
**(Table 3)**

**Fastener**  
**Density/ft<sup>2</sup>**

Any Approved insulation (flat or tapered) loose laid.

**Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density.**

**Top Insulation Layer**

**Insulation Fasteners**  
**(Table 3)**

**Fastener**  
**Density/ft<sup>2</sup>**

**Sopraboard**

Minimum 0.125" thick

10, 24, 37, 47 (min #15)

1: 1.25

**Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Refer to Roofing Application Standard RAS 117 for insulation attachment.**

**Primer:** Elastocol 400, 500, Elastocol 600c or AquaTac applied at a rate of 1 gal/sq, to top surface of any insulation, base or ply sheet prior to application of next layer  
**(Optional)**

**Base Sheet:** One or more plies of Sopra-G, Modified Sopra-G, Sopraglass 40, Sopraglass 100, Sopra-IV, Sopra-VI, Soprabase, GAFGLAS #75, Perma Ply 28, JM GlasPly IV or JM GlasPly Premier Elastophene Sanded, Elastophene Sanded FR, Elastophene Sanded 3.0 mm, Elastophene HS FR, Elastophene HR, Elastophene HR 3.0 mm, Elastophene HD, Elastophene HP, Elastophene PS\*, Elastophene PS 3.0\*, Elastophene 180 Sanded, Elastophene 180 PS\*, Sopralene 180 Sanded, Sopralene 180 Sanded 3.5 mm, Sopralene 180 PS\*, Sopralene 250 Sanded, Sopralene 250 Sanded 3.5 mm, Sopralene 250 PS\*, Sopralene 250 PS 2.7 mm\*, Sopralene 350 Sanded, Sopralene 350 PS\*, adhered in a full mopping of approved asphalt, applied within the EVT range and at a rate of 20-40 lbs./sq.

Or

Elastophene Flam\*, Elastophene Flam FR\*, Elastophene Flam 2.2 mm\*, Elastophene Flam HS FR\*, Elastophene Flam HR 3.0 mm\*, Elastophene Flam HP\*, Elastophene SP 2.2mm, Elastophene SP 3.0mm, Sopralene Flam 180\*, Sopralene Flam 180 2.7 mm\*, Sopralene 180 SP 3.5 mm, Soprafix, Sopralene Flam 250\*, Sopralene 250 SP, Sopralene Flam 350\*, Sopralene 350 SP, Colvent TG, Colvent 180 TG, heat welded.

\*Requires heat welded ply or cap membrane.



**Ply Sheet:** One or more layers of Elastophene Flam\*, Elastophene Flam FR\*, Elastophene Flam 2.2 mm\*, Elastophene Flam HS FR\*, Elastophene Flam HR 3.0 mm\*, Elastophene Flam HP\*, Elastophene SP 2.2mm, Elastophene SP 3.0mm, Sopralene Flam 180\*, Sopralene Flam 180 2.7 mm\*, Sopralene 180 SP 3.5 mm, Soprafix, Sopralene Flam 250\*, Sopralene 250 SP, Sopralene Flam 350\*, Sopralene 350 SP, heat welded.

Or

Elastophene Sanded, Elastophene Sanded FR, Elastophene Sanded 3.0 mm, Elastophene HS FR, Elastophene HR, Elastophene HR 3.0 mm, Elastophene HD, Elastophene HP, Elastophene PS\*, Elastophene PS 3.0\*, Elastophene 180 Sanded, Elastophene 180 PS\*, Sopralene 180 Sanded, Sopralene 180 Sanded 3.5 mm, Sopralene 180 PS\*, Sopralene 250 Sanded, Sopralene 250 Sanded 3.5 mm, Sopralene 250 PS\*, Sopralene 250 PS 2.7 mm\*, Sopralene 350 Sanded, Sopralene 350 PS\*, or one to three plies of Sopra-IV or Sopra-VI, adhered in a full mopping of approved asphalt, applied within the EVT range and at a rate of 20-40 lbs./sq. to sand surfaced base membrane.

\*Requires heat welded cap membrane.

**Membrane:** Elastophene Flam GR, Elastophene Flam UW GR, Elastophene Flam FR GR, Elastophene Flam LS FR GR, Elastophene Flam FR UW GR, Elastophene Flam FR+ GR, Elastophene Flam FR+ UW GR, Elastophene Flam HR FR GR, Elastophene Flam HS FR GR, Elastophene Flam HS FR UW GR, Elastophene Flam HP FR GR, Sopralene 180 SP 3.5mm\*, Soprafix\*, SopraStar Flam, SopraStar Flam 180, Sopralene Flam 180 GR, Sopralene Flam 180 FR GR, Sopralene Flam 180 FR UW GR, Sopralene Flam 180 FR+ GR, Sopralene 250 SP\*, Sopralene Flam 250 GR, Sopralene Flam 250 FR GR, Sopralene Flam 250 FR UW GR, Sopralene Flam 250 FR+ GR, Sopralene Flam 250 FR+ UW GR, Sopralene 350 SP\*, Sopralene Flam 350 GR, Sopralene Flam 350 FR GR, Sopralene Flam Jardin, Sopralene Mammoth GR, Sopralast 50 TV Alu, Sopralast 50 TV Alu White, Sopralast Alu, Sopralast TV Copper, Sopralast Copper, Sopralast TV Inox or Sopralast Stainless Steel, heat welded.

Or

Elastophene Sanded\*, Elastophene FR\*, Elastophene 180 Sanded\*, Elastophene GR, Elastophene UW GR, Elastophene FR GR, Elastophene LS FR GR, Elastophene FR UW GR, Elastophene FR+ GR, Elastophene HD FR GR, Elastophene HR FR GR, Elastophene HS FR GR, Elastophene HS FR UW GR, Elastophene HP FR GR, Sopralene 180 Sanded\*, SopraStar 180 Sanded, Sopralene 180 GR, Sopralene 180 FR GR, Sopralene 180 FR UW GR, Sopralene 250 Sanded\*, Sopralene 250 GR, Sopralene 250 FR GR, Sopralene 250 FR UW GR, Sopralene 350 Sanded\*, Sopralene 350 GR or Sopralene 350 FR GR, adhered in hot asphalt at 25 lbs/sq. or in FM Adhesive or FM Adhesive (VOC) at 1.5 – 2.0 gallons/square to sand surfaced base or ply membrane.

\*Requires approved Surfacing.

**Surfacing:** Surfacing is Optional on granular surfaced field cap membranes.  
Surfacing is Required for smooth or sanded surfaced field cap membranes.  
Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications  
Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.

**Maximum Design Pressure:**

-90.0 psf (See General Limitation #7.)



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**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18-22 ga., steel deck with maximum deck spans of 6 ft. o.c. Deck side laps are attached with Traxx/5 screws spaced 6" o.c.

**System Type C(8):** All layers of insulation simultaneously attached.

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

<b><u>Base Insulation Layer</u></b>	<b><u>Insulation Fasteners</u></b> <b><u>(Table 3)</u></b>	<b><u>Fastener</u></b> <b><u>Density/ft<sup>2</sup></u></b>
ACFoam II, H-Shield, ISO 95+GL, ENRGY-3 Minimum 2" thick	N/A	N/A

**Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density.**

<b><u>Top Insulation Layer</u></b>	<b><u>Insulation Fasteners</u></b> <b><u>(Table 3)</u></b>	<b><u>Fastener</u></b> <b><u>Density/ft<sup>2</sup></u></b>
SECUROCK® Minimum ½" thick (4'x8')	10, 24, 47	1: 1.78

**Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Refer to Roofing Application Standard RAS 117 for insulation attachment.**

**Primer:** (Optional) Elastocol 400, 500, Elastocol 600c or AquaTac applied at a rate of 1 gal/sq, to top surface of any insulation, base or ply sheet prior to application of next layer

**Base Sheet:** One or more plies of Elastophene Sanded, Elastophene Sanded FR, Elastophene Sanded 3.0 mm, Elastophene HS FR, Elastophene HR, Elastophene HR 3.0 mm, Elastophene HD, Elastophene HP, Elastophene PS\*, Elastophene PS 3.0\*, Elastophene 180 Sanded, Elastophene 180 PS\*, Sopralene 180 Sanded, Sopralene 180 Sanded 3.5 mm, Sopralene 180 PS\*, Sopralene 250 Sanded, Sopralene 250 Sanded 3.5 mm, Sopralene 250 PS\*, Sopralene 250 PS 2.7 mm\*, Sopralene 350 Sanded, Sopralene 350 PS\*; adhered in hot asphalt at 25 lbs/sq.

\*Requires heat welded ply or cap membrane.



**Ply Sheet:**

**(Optional)**

One or more layers of Elastophene Flam\*, Elastophene Flam FR\*, Elastophene Flam 2.2 mm\*, Elastophene Flam HS FR\*, Elastophene Flam HR 3.0 mm\*, Elastophene Flam HP\*, Elastophene SP 2.2mm, Elastophene SP 3.0mm, Sopralene Flam 180\*, Sopralene Flam 180 2.7 mm\*, Sopralene 180 SP 3.5 mm, Soprafix, Sopralene Flam 250\*, Sopralene 250 SP, Sopralene Flam 350\*, Sopralene 350 SP, heat welded.

Or

Elastophene Sanded, Elastophene Sanded FR, Elastophene Sanded 3.0 mm, Elastophene HS FR, Elastophene HR, Elastophene HR 3.0 mm, Elastophene HD, Elastophene HP, Elastophene PS\*, Elastophene PS 3.0\*, Elastophene 180 Sanded, Elastophene 180 PS\*, Sopralene 180 Sanded, Sopralene 180 Sanded 3.5 mm, Sopralene 180 PS\*, Sopralene 250 Sanded, Sopralene 250 Sanded 3.5 mm, Sopralene 250 PS\*, Sopralene 250 PS 2.7 mm\*, Sopralene 350 Sanded, Sopralene 350 PS\*, adhered in hot asphalt at 25 lbs/sq. to sand surfaced base membrane.

\*Requires heat welded cap membrane.

**Membrane:**

One layer of Elastophene Flam GR, Elastophene Flam UW GR, Elastophene Flam FR GR, Elastophene Flam LS FR GR, Elastophene Flam FR UW GR, Elastophene Flam FR+ GR, Elastophene Flam FR+ UW GR, Elastophene Flam HR FR GR, Elastophene Flam HS FR GR, Elastophene Flam HS FR UW GR, Elastophene Flam HP FR GR, SopraStar Flam, SopraStar Flam 180, Sopralene 180 SP 3.5mm\*, Soprafix\*, Sopralene Flam 180 GR, Sopralene Flam 180 FR GR, Sopralene Flam 180 FR UW GR, Sopralene Flam 180 FR+ GR, Sopralene 250 SP\*, Sopralene Flam 250 GR, Sopralene Flam 250 FR GR, Sopralene Flam 250 FR UW GR, Sopralene Flam 250 FR+ GR, Sopralene Flam 250 FR+ UW GR, Sopralene 350 SP\*, Sopralene Flam 350 GR, Sopralene Flam 350 FR GR, Sopralene Flam Jardin, Sopralene Mammoth GR, Sopralast 50 TV Alu, Sopralast 50 TV Alu White, Sopralast Alu, Sopralast TV Copper, Sopralast Copper, Sopralast TV Inox or Sopralast Stainless Steel, heat welded.

Or

One layer of Elastophene GR, Elastophene UW GR, Elastophene FR GR, Elastophene LS FR GR, Elastophene FR UW GR, Elastophene FR+ GR, Elastophene HD FR GR, Elastophene HR FR GR, Elastophene HS FR GR, Elastophene HS FR UW GR, Elastophene HP FR GR, Sopralene 180 Sanded\*, SopraStar 180 Sanded, Sopralene 180 GR, Sopralene 180 FR GR, Sopralene 180 FR UW GR, Sopralene 250 Sanded\*, Sopralene 250 GR, Sopralene 250 FR GR, Sopralene 250 FR UW GR, Sopralene 350 Sanded\*, Sopralene 350 GR or Sopralene 350 FR GR, adhered in hot asphalt at 25 lbs/sq. to sand surfaced base or ply membrane.

\*Requires approved Surfacing.

**Surfacing:**

Surfacing is Optional on granular surfaced field cap membranes.

Surfacing is Required for smooth or sanded surfaced field cap membranes.

Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications

Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.

**Maximum Design**

**Pressure:**

-60.0 psf (See General Limitation #7.)



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**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18-22 ga., steel deck with maximum deck spans of 6 ft. o.c. Deck side laps are attached with Traxx/5 screws spaced 6" o.c.

**System Type C(9):** All layers of insulation simultaneously attached.

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

**Base Insulation Layer**

**Insulation Fasteners  
(Table 3)**

**Fastener  
Density/ft<sup>2</sup>**

**Any approved polyisocyanurate or polystyrene**

Minimum 1" thick

N/A

N/A

**Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density.**

**Top Insulation Layer**

**Insulation Fasteners  
(Table 3)**

**Fastener  
Density/ft<sup>2</sup>**

**Sopraboard**

Minimum 1/8" thick

2, 3 (min #14), 10, 24, 47

1:2

**Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Refer to Roofing Application Standard RAS 117 for insulation attachment.**

**Primer:**

(Optional) Elastocol 400, 500, Elastocol 600c or AquaTac applied at a rate of 1 gal/sq, to top surface of any insulation, base or ply sheet prior to application of next layer

**Base Sheet:**

One or more plies of Sopra-G, Modified Sopra-G or any approved ASDTM D4601 Type II base sheet, Elastophene Sanded, Elastophene Sanded 3.0, Elastophene Sanded FR, Elastophene HS FR, Elastophene PS 2.2\*, Elastophene PS 3.0\*, Elastophene HD, Elastophene 180 Sanded, Elastophene 180 PS\*, Elastophene 180 PS 2.2\*, Sopralene 180 Sanded, Sopralene 180 Sanded 2.2, Sopralene 180 Sanded 3.5, Sopralene 180 PS 3.5\*, Sopralene 250 Sanded, Sopralene 250 PS\*, Sopralene 250 Sanded 4.0, Sopralene 350 Sanded, Sopralene 350 PS\*, Elastophene HP, adhered in hot asphalt at 25 lbs/sq.

Or

Elastophene Flam\*, Elastophene Flam FR\*, Elastophene Flam 2.2 mm\*, Elastophene Flam HS FR\*, Elastophene Flam HP\*, Elastophene SP 2.2mm, Elastophene SP 3.0mm, Sopralene Flam 180\*, Sopralene Flam 180 2.7 mm\*, Sopralene 180 SP 3.5 mm, Sopralene Flam 250\*, Sopralene 250 SP, Sopralene Flam 350\*, Sopralene 350 SP, heat welded.

\*Requires heat welded ply or cap membrane.



**Ply Sheet:**

**(Optional)**

EPS Flam Stick\*, EPS Flam Stick FR\*, Sopralene Stick or Sopralene Flam Stick\*, self-adhered to primed sand surfaced base membrane.

One or more plies of Sopra-IV, Sopra-VI or any approved ASTM D2178 Type IV or VI ply sheet, Elastophene Sanded, Elastophene Sanded 3.0, Elastophene Sanded FR, Elastophene HS FR, Elastophene PS 2.2\*, Elastophene PS 3.0\*, Elastophene HD, Elastophene 180 Sanded, Elastophene 180 PS\*, Elastophene 180 PS 2.2\*, Sopralene 180 Sanded, Sopralene 180 Sanded 2.2, Sopralene 180 Sanded 3.5, Sopralene 180 PS 3.5\*, Sopralene 250 Sanded, Sopralene 250 PS\*, Sopralene 250 Sanded 4.0, Sopralene 350 Sanded, Sopralene 350 PS\*, Elastophene HP, adhered in hot asphalt at 25 lbs/sq. to sand surfaced base membrane.

Or

Elastophene Flam\*, Elastophene Flam FR\*, Elastophene Flam 2.2 mm\*, Elastophene Flam HS FR\*, Elastophene Flam HP\*, Elastophene SP 2.2mm, Elastophene SP 3.0mm, Sopralene Flam 180\*, Sopralene Flam 180 2.7 mm\*, Sopralene 180 SP 3.5 mm, Sopralene Flam 250\*, Sopralene 250 SP, Sopralene Flam 350\*, Sopralene 350 SP, heat welded.

\*Requires heat welded cap membrane.

**Membrane:**

Colphene GR, Colphene FR GR, Colphene HR FR GR, self-adhered to primed sand surfaced base or ply membrane

Or

Soprastar Stick, self-adhered to Elastocol 600c primed sand surfaced base or ply membrane

or

Elastophene Flam GR, Elastophene Flam FR GR, Elastophene Flam LS FR GR, Elastophene Flam FR+ GR, Elastophene Flam HS FR GR, Elastophene Flam HP FR GR, Soprastar Flam, Soprastar Flam 180, Sopralene Flam 180 GR, Sopralene Flam 180 FR GR, Sopralene Flam 180 FR+ GR, Sopralene Flam 250 GR, Sopralene Flam 250 FR GR, Sopralene Flam 250 FR+ GR, Sopralene Flam 350 GR, Sopralene Flam 350 FR GR, Sopralast 50 TV Alu, Sopralast 50 TV Alu White, Sopralast Alu, Sopralast TV Copper, Sopralast Copper, Sopralast TV Inox or Sopralast Stainless Steel, heat welded.

Or

Elastophene GR, Elastophene FR GR, Elastophene LS FR GR, Elastophene FR+ GR, Elastophene HD FR GR, Elastophene HR FR GR, Elastophene HS FR GR, Elastophene HP FR GR, Sopralene 180 GR, Sopralene 180 FR GR, Soprastar 180 Sanded, Sopralene 250 GR, Sopralene 250 FR GR, Sopralene 350 GR or Sopralene 350 FR GR, adhered in hot asphalt at 25 lbs/sq. to sand surfaced base or ply membrane.

**Surfacing:**

Surfacing is Optional on granular surfaced field cap membranes.

Surfacing is Required for smooth or sanded surfaced field cap membranes.

Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications

Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.

**Maximum Design**

**Pressure:**

-60.0 psf (See General Limitation #7.)



**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18-22 ga., steel deck with maximum deck spans of 6 ft. o.c. Deck side laps are attached with Traxx/5 screws spaced 6" o.c.

**System Type C(10):** All layers of insulation simultaneously attached.

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

**Base Insulation Layer**

**Insulation Fasteners**  
**(Table 3)**

**Fastener**  
**Density/ft<sup>2</sup>**

Any approved polyisocyanurate or polystyrene  
Minimum 1" thick

N/A

N/A

**Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density.**

**Top Insulation Layer**

**Insulation Fasteners**  
**(Table 3)**

**Fastener**  
**Density/ft<sup>2</sup>**

Sopraboard  
Minimum 1/8" thick

2, 3 (min #14), 10, 24, 47

1:2

**Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Refer to Roofing Application Standard RAS 117 for insulation attachment.**

**Primer:** (Optional) Elastocol 400, 500, Elastocol 600c or AquaTac applied at a rate of 1 gal/sq, to top surface of any insulation, base or ply sheet prior to application of next layer

**Base Sheet:** One or more plies of Sopralene 180 Sanded, Sopralene 180 Sanded 2.2, Sopralene 180 Sanded 3.5, Sopralene 180 PS 3.5\*, Sopralene 250 Sanded, Sopralene 250 PS\*, Sopralene 250 Sanded 4.0, Sopralene 350 Sanded, Sopralene 350 PS\*, adhered in hot asphalt at 25 lbs/sq.

Or

Sopralene Flam 180\*, Sopralene Flam 180 2.7 mm\*, Sopralene 180 SP 3.5 mm, Sopralene Flam 250\*, Sopralene 250 SP, Sopralene Flam 350\*, Sopralene 350 SP, heat welded.

\*Requires heat welded ply or cap membrane.



**Ply Sheet: (Optional)**

Sopralene Stick or Sopralene Flam Stick\*, self-adhered to primed sand surfaced base membrane.

Sopralene 180 Sanded, Sopralene 180 Sanded 2.2, Sopralene 180 Sanded 3.5, Sopralene 180 PS 3.5\*, Sopralene 250 Sanded, Sopralene 250 PS\*, Sopralene 250 Sanded 4.0, Sopralene 350 Sanded, Sopralene 350 PS\*, adhered in hot asphalt at 25 lbs/sq. to sand surfaced base membrane.

Or

Sopralene Flam 180\*, Sopralene Flam 180 2.7 mm\*, Sopralene 180 SP 3.5 mm, Sopralene Flam 250\*, Sopralene 250 SP, Sopralene Flam 350\*, Sopralene 350 SP, heat welded.

\*Requires heat welded cap membrane.

**Membrane:**

Soprastar Flam 180, Sopralene Flam 180 GR, Sopralene Flam 180 FR GR, Sopralene Flam 180 FR+ GR, Sopralene Flam 250 GR, Sopralene Flam 250 FR GR, Sopralene Flam 250 FR+ GR, Sopralene Flam 350 GR, Sopralene Flam 350 FR GR, heat welded.

Or

Soprastar 180 Sanded, Sopralene 180 GR, Sopralene 180 FR GR, Sopralene 250 GR, Sopralene 250 FR GR, Sopralene 350 GR or Sopralene 350 FR GR, adhered in hot asphalt at 25 lbs/sq. to sand surfaced base or ply membrane.

**Surfacing:**

Surfacing is Optional on granular surfaced field cap membranes.

Surfacing is Required for smooth or sanded surfaced field cap membranes.

Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications

Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.

**Maximum Design Pressure:**

-67.5 psf (See General Limitation #7.)



**Deck Type 2I:** Steel, Insulated  
**Deck Description:** 18-22 ga. steel  
**System Type D(1):** All layers of insulation and base sheet simultaneously attached.

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft<sup>2</sup></u>
AC Foam II, AC Foam III, ENRGY-2, ENRGY-3, Multi-Max FA, Multi-Max FA-3, H-Shield (flat or tapered) Minimum 1.5" thick	N/A	N/A
<u>Base or Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft<sup>2</sup></u>
Toprox Minimum 1" thick	N/A	N/A
<u>(Optional) Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft<sup>2</sup></u>
BP High Strength, FM-90 Traffic Top/High Density, GAFTEMP High Density, Roof Insulation Board, High Density Fiberboard, Fiber Base HD1, HD6, Structodek Minimum 1/2" thick	N/A	N/A
GAFTEMP Permalite, Fesco Board Minimum 3/4" thick	N/A	N/A
DensDeck, Securock Minimum 1/4" thick	N/A	N/A
Sopraboard Minimum 1/8" thick	N/A	N/A
Fireguard, Type X gypsum Minimum 5/8" thick	N/A	N/A

**Note:** Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, 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. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

**Base Sheet:** One ply of Sopra-G, Modified Sopra-G, Soprabase, Sopraglass 100, GAFGLAS #75 or JM PermaPly 28 fastened to the deck as described below:

**Fastening:** Attach base sheet using CF #14 Dekfast with Hex Plates or SFS Insulfixx S or HD Insulfixx S spaced 9" o.c. in a 4" lap and 12" o.c. in two staggered rows in the center of the sheet.



**Ply Sheet:**

**(Optional)**

One or more plies of Elastophene Flam\*, Elastophene Flam 2.2\*, Sopralene (180, 250 or 350) Flam\*, or Sopralene (180, 250 or 350) SP, heat welded

Or

One or more plies of Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, Elastophene PS\*, Elastophene PS 3.0\*, Elastophene 180 PS\*, Sopralene (180, 250 or 350) PS\* or Sopralene (180, 250 or 350) Sanded or one or more plies of Type IV or Type VI ply sheets adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. to sand surfaced base membrane.

\*Requires heat welded cap membrane.

**Membrane:**

Elastophene SP 2.2mm\*, Elastophene SP 3.0mm\*, Elastophene Flam GR, Elastophene Flam FR GR or FR+ GR, Elastophene Flam LS FR GR, Soprapstar Flam, Soprapstar Flam 180, Sopralene (180, 250, 350) Flam GR, Sopralene (180, 250, 350) Flam FR GR or FR+ GR or Sopralast, heat welded

Or

Elastophene Sanded\*, Elastophene Sanded FR\*, Elastophene HR\*, Elastophene HR FR\*, Elastophene 180 Sanded\*, Sopralene (180, 250, 350) Sanded\*, Elastophene FR GR or FR+ GR, Elastophene LS FR GR, Elastophene GR, Soprapstar 180 Sanded, Sopralene (180, 250, 350) GR, or Sopralene (180, 250, 350) FR GR, adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. to sand surfaced base or ply membrane.

\*Requires approved Surfacing.

**Surfacing:**

Surfacing is Optional on granular surfaced field cap membranes.

Surfacing is Required for smooth or sanded surfaced field cap membranes.

Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications

Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.

**Maximum Design Pressure:**

-60 psf (See General Limitation #7)



**Deck Type 2I:** Steel, Insulated  
**Deck Description:** 18-22 ga. steel  
**System Type D(2):** All layers of insulation and base sheet simultaneously attached.

**All General and System Limitations apply.**  
 One or more layers of any of the following insulations.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft<sup>2</sup></u>
AC Foam II, AC Foam III, ENRGY-2, ENRGY-3, Multi-Max FA, Multi-Max FA-3, H-Shield (flat or tapered) Minimum 1.4" thick	N/A	N/A
Toprox Minimum 2" thick	N/A	N/A
<u>(Optional) Top Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft<sup>2</sup></u>
BP High Strength, FM-90 Traffic Top/High Density, GAFTEMP High Density, Roof Insulation Board, High Density Fiberboard, Fiber Base HD1, HD6, Structodek Minimum 1/2" thick	N/A	N/A
GAFTEMP Permalite, Fesco Board Minimum 3/4" thick	N/A	N/A
DensDeck Minimum 1/4" thick	N/A	N/A
Fireguard, Type X gypsum Minimum 5/8" thick	N/A	N/A

**Note:** Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, 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. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

**Base Sheet:** One ply of Soprafix, Soprafix [S]\*, Soprafix [X]\*, Soprafix [H], Sopralene Flam 180\* or Elastophene 180 Flam 2.5 mm\*, Sopralene Flam 250\* fastened to the deck as described below:

\*Requires heat welded ply or cap membrane.

**Fastening #1:** Attach base sheet using HD Insulfixx or SOPREMA #14 fasteners with Soprafix 2" Round Barbed Plates spaced 18" o.c. in a 4" wide heat welded or bituminous taped seam.  
*(Meets Maximum Design Pressure of -45 psf; See General Limitation #9.)*

**Fastening #2:** Attach base sheet using HD Insulfixx or SOPREMA #14 fasteners with Soprafix 2" Round Barbed Plates spaced 12" o.c. in a 4" wide heat welded or bituminous taped seam.  
*(Meets Maximum Design Pressure of -77.5 psf; See General Limitation #7.)*



- Fastening #3:** Attach base sheet using HD Insulfixx S fasteners spaced 24" o.c. in the center of the sheet. Laps are heat welded. Fastener rows are stripped in with a 7" wide section of heat welded base sheet membrane.  
*(Meets Maximum Design Pressure of -45 psf; See General Limitation #9.)*
- Fastening #4:** (Excludes use of Elastophene 180 Flam 2.5 mm as base sheet.) Attach base sheet using SFS Extra Load Fasteners HD or Soprafix [X]-EL fasteners and 70 mm Round Plates or Soprafix 2" Round Barbed Plates spaced 12" o.c. in a 5" wide heat welded lap.  
*(Meets Maximum Design Pressure of -75 psf; See General Limitation #7.)*
- Fastening #5:** (Limited to use of Soprafix[X] and Sopralene Flam 250 Membranes only.) Attach base sheet using SFS Extra Load Fasteners HD or Soprafix [X]-EL fasteners and 70 mm Round Plates spaced 12" o.c. in a 6" wide heat welded lap.  
*(Meets Maximum Design Pressure of -97.5 psf; See General Limitation #7.)*
- Fastening #6:** (Excludes the use of Elastophene 180 Flam 2.5 mm as base sheet.) Attach base sheet using #14 Soprafix Fasteners and Soprafix 2" Round Barbed Plates spaced 12" o.c. in a 5" wide heat welded lap.  
*(Meets Maximum Design Pressure of -60 psf; See General Limitation #7.)*
- Ply Sheet:** (Optional) One or more plies of Elastophene Flam\*, Elastophene Flam 2.2\*, Sopralene (180, 250 or 350) Flam\*, or Sopralene (180, 250 or 350) SP, heat welded  
Or  
One ply of Sopralene Flam Stick\*, Sopralene Stick or EPS Flam Stick\*, self adhered. (Note: Prime sanded surfaced Base Sheet, not allowed on film surfaced membranes.)  
\*Requires heat welded cap membrane.
- Membrane:** Elastophene Flam GR, Elastophene Flam FR GR or FR+ GR, Elastophene Flam LS FR GR, Soprastar Flam, Soprastar Flam 180, Sopralene (180, 250, 350) Flam GR, Sopralene (180, 250, 350) Flam FR GR or FR+ GR or Sopralast, heat welded  
Or  
Colphene FR GR, Colphene GR or Colphene HR FR GR self adhered. (Note: Prime sanded surfaced Base or Ply Sheet, not permitted on film surfaced membranes.)  
Or  
Soprastar Stick, self-adhered to Elastocol 600c primed sand surfaced base or ply membrane
- Surfacing:** Surfacing is Optional on granular surfaced field cap membranes.  
Surfacing is Required for smooth or sanded surfaced field cap membranes.  
Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications  
Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.
- Maximum Design Pressure:** See Fastening Requirements above.

**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18 ga. Steel type 3N steel decking attached to minimum ½” thick, W14 x 43 purlins with an 8” wide top flange spaced maximum 9 ft. o.c. using ¾” puddle welds spaced 8” o.c. (every bottom flute). Two welds per attachment point, spaced 4” apart. Steel deck side laps are attached 24” o.c.

**System Type D(3):** Membrane attached over preliminary fastened insulation.

**All General and System Limitations apply**

One or more layers of any of the following insulations.

<u>Insulation Layer</u>	<u>Insulation Fasteners</u> <u>(Table 3)</u>	<u>Fastener</u> <u>Density/ft<sup>2</sup></u>
Any insulation listed in Table 2, flat or tapered.	N/A	N/A

**Note:** Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, 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. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

**Base Sheet:** One ply of Soprafix [X]\* or Sopralene 250 Flam\* fastened through the insulation to the structural deck using SFS #15 Extra Load Fasteners HD or Soprafix [X]-EL fasteners and 70-mm round plates spaced 16” o.c. in a 5” wide lap and 16” o.c. in one center row. The side lap fastener row is encapsulated in the heat welded lap and the center row is stripped-in with an 8” wide strip of heat welded membrane.

\*Requires heat welded ply or cap membrane.

**Ply Sheet:** (Optional) One or more plies of Elastophene Flam\*, Elastophene Flam 2.2\*, Sopralene (180, 250 or 350) Flam\*, or Sopralene (180, 250 or 350) SP, heat welded

\*Requires heat welded cap membrane.

**Membrane:** Elastophene Flam GR, Elastophene Flam FR GR or FR+ GR, Elastophene Flam LS FR GR, SopraStar Flam, SopraStar Flam 180, Sopralene (180, 250, 350) Flam GR, Sopralene (180, 250, 350) Flam FR GR or FR+ GR, or Sopralast, heat welded

**Surfacing:** Surfacing is Optional on granular surfaced field cap membranes. Surfacing is Required for smooth or sanded surfaced field cap membranes. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications. Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.

**Maximum Design Pressure:**

-112.5 psf (See General Limitation #7.)



**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18 ga. Steel Grade 80 steel fastened 6" o.c. with Buildex Tek 4 fasteners to steel supports spaced maximum 5 ft. o.c. Deck side laps fastened with Traxx/1 fasteners spaced at 30" o.c.

**System Type D(4):** Membrane attached over preliminary fastened insulation.

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft<sup>2</sup></u>
Any insulation listed in Table 2, flat or tapered.	N/A	N/A

**Note:** Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, 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. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

**Base Sheet:** None

**Ply Sheet:** None

**Membrane:** One ply of UNILAY membrane fastened through the insulation to the deck using Soprafix [X]-EL fastener and UNILAY plates spaced 12" o.c. in a 6" wide lap. The side lap fastener row is encapsulated in the heat welded lap.

**Surfacing:** Surfacing is Optional on granular surfaced field cap membranes. Surfacing is Required for smooth or sanded surfaced field cap membranes. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications. Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.

**Maximum Design**

**Pressure:** -82.5 psf (See General Limitation #7.)



**Deck Type 2I:** Steel, Insulated  
**Deck Description:** 18-22 ga. steel  
**System Type D(5):** Membrane fastened over preliminarily fastened insulation  
**All General and System Limitations apply.**

One or more layers of any of the following insulations.

<u>Insulation Layer</u>	<u>Insulation Fasteners</u> <u>(Table 3)</u>	<u>Fastener</u> <u>Density/ft<sup>2</sup></u>
Any insulation listed in Table 2, flat or tapered.	N/A	N/A

**Note:** Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, 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. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

**Base Sheet:** Soprafix or Soprafix (X) mechanically attached with OMG Polymer Batten Strip and OMG Large Head #15 Roofgrip fasteners, Tru-Fast BB-18 Batten Bar and Tru-Fast EHD fasteners, Soprema MBB-R batten bar and Soprema #15 fastener or SFS Intec Dekfast Batten Bar and #15 Dekfast fasteners, spaced 12" o.c. in the min. 4" heat welded lap.

\*Requires heat welded ply or cap membrane.

**Ply Sheet:** One or more layers of Sopralene Flam 180\*, Sopralene Flam 180 2.7 mm\*, Sopralene 180 SP 3.5 mm, Soprafix, Sopralene Flam 250\*, Sopralene 250 SP, Sopralene Flam 350\*, Sopralene 350 SP, heat welded

**(Optional)**

\*Requires heat welded cap membrane.

**Membrane:** SopraStar Flam, SopraStar Flam 180, Sopralene Flam 180 GR, Sopralene Flam 180 FR GR, Sopralene Flam 180 FR UW GR, Sopralene Flam 180 FR+ GR, Sopralene Flam 250 GR, Sopralene Flam 250 FR GR, Sopralene Flam 250 FR UW GR, Sopralene Flam 250 FR+ GR, Sopralene Flam 250 FR+ UW GR, Sopralene Flam 350 GR, Sopralene Flam 350 FR GR, heat welded

Or

SopraStar Stick, self-adhered to Elastocol 600c primed sand surfaced base or ply membrane.

**Surfacing:** Surfacing is Optional on granular surfaced field cap membranes. Surfacing is Required for smooth or sanded surfaced field cap membranes. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications. Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.

**Maximum Design Pressure:** -52.5 psf (with SopraStar Stick as cap membrane) (See General Limitation #7)  
-105 psf (with all other cap membranes) (See General Limitation #7.)



**Deck Type 2I:** Steel, Insulated  
**Deck Description:** 18-22 ga. steel  
**System Type D(6):** Membrane fastened over preliminarily secured insulation

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

<u>Insulation Layer</u>	<u>Insulation Fasteners</u> <u>(Table 3)</u>	<u>Fastener</u> <u>Density/ft<sup>2</sup></u>
Any insulation listed in Table 2, flat or tapered.	N/A	N/A

**Note: Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, 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. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.**

**Base Sheet:** Soprafix or Soprafix (X) mechanically attached with OMG Polymer Batten Strip and OMG Large Head #15 Roofgrip fasteners, Tru-Fast BB-18 Batten Bar and Tru-Fast EHD fasteners, Soprema MBB-R batten bar and Soprema #15 fastener or SFS Intec Dekfast Batten Bar and #15 Dekfast fasteners, spaced 6" o.c. in every other minimum 4" heat welded lap. Intermediate, non-fastened laps are 3" wide and heat welded.

\*Requires heat welded ply or cap membrane.

**Ply Sheet:** One or more layers of Sopralene Flam 180\*, Sopralene Flam 180 2.7 mm\*, Sopralene 180 SP 3.5 mm, Soprafix, Sopralene Flam 250\*, Sopralene 250 SP, Sopralene Flam 350\*, Sopralene 350 SP, heat welded.

**(Optional)**

\*Requires heat welded cap membrane.

**Membrane:** SopraStar Flam, SopraStar Flam 180, Sopralene Flam 180 GR, Sopralene Flam 180 FR GR, Sopralene Flam 180 FR UW GR, Sopralene Flam 180 FR+ GR, , Sopralene Flam 250 GR, Sopralene Flam 250 FR GR, Sopralene Flam 250 FR UW GR, Sopralene Flam 250 FR+ GR, Sopralene Flam 250 FR+ UW GR, Sopralene Flam 350 GR, Sopralene Flam 350 FR GR, heat welded

Or

SopraStar Stick, self-adhered to Elastocol 600c primed sand surfaced base or ply membrane.

**Surfacing:** Surfacing is Optional on granular surfaced field cap membranes. Surfacing is Required for smooth or sanded surfaced field cap membranes. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications. Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.

**Maximum Design Pressure:** -52.5 psf (with SopraStar Stick as cap membrane) (See General Limitation #7)  
-120 psf (with all other cap membranes) (See General Limitation #7.)



**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18-22 ga. steel

**System Type D(7):** Membrane fastened over preliminarily secured insulation.

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

**Insulation Layer**

**Insulation Fasteners**  
**(Table 3)**

**Fastener**  
**Density/ft<sup>2</sup>**

Any insulation listed in Table 2, flat or tapered.

N/A

N/A

**Note: Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, 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. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.**

**Base Sheet:** Soprafix, Soprafix (X)\* or Soprafix-e, mechanically attached with OMG Polymer Batten Strip and OMG Large Head #15 Roofgrip fasteners, Tru-Fast BB-18 Batten Bar and Tru-Fast EHD fasteners, Soprafix MBB-R and Soprema #15 fasteners or SFS Intec Dekfast Batten Bar and #15 Dekfast fasteners, spaced 12" o.c. in the min. 5" lap.

\*Requires heat welded ply or cap membrane.

**Ply Sheet:** One or more layers of Sopralene Flam 180\*, Sopralene Flam 180 2.7 mm\*, Sopralene 180 SP 3.5 mm, Soprafix, Sopralene Flam 250\*, Sopralene 250 SP, Sopralene Flam 350\*, Sopralene 350 SP, heat welded  
**(Optional)**

**Membrane:** Soprapstar Flam, Soprapstar Flam 180, Sopralene Flam 180 GR, Sopralene Flam 180 FR GR, Sopralene Flam 180 FR UW GR, Sopralene Flam 180 FR+ GR, Sopralene Flam 250 GR, Sopralene Flam 250 FR GR, Sopralene Flam 250 FR UW GR, Sopralene Flam 250 FR+ GR, Sopralene Flam 250 FR+ UW GR, Sopralene 350 SP, Sopralene Flam 350 GR, Sopralene Flam 350 FR GR, heat welded

Or

Soprapstar Stick, self-adhered to Elastocol 600c primed sand surfaced base or ply membrane.

**Surfacing:** Surfacing is Optional on granular surfaced field cap membranes.  
Surfacing is Required for smooth or sanded surfaced field cap membranes.  
Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications  
Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.

**Maximum Design Pressure:**

-52.5 psf (with Soprapstar Stick as cap membrane) (See General Limitation #7)  
-97.5 psf (with all other cap membranes) (See General Limitation #7.)



**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18-22 ga. steel

**System Type D(8):** All layers of insulation and base sheet simultaneously attached

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

<u>Insulation Layer</u>	<u>Insulation Fasteners</u> <u>(Table 3)</u>	<u>Fastener</u> <u>Density/ft<sup>2</sup></u>
AC Foam II, H-Shield (flat or tapered) Minimum 1.5" thick	N/A	N/A

**Note: Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, 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. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.**

**Base Sheet:** Soprafix, Soprafix (X)\* or Soprafix-e, mechanically attached with OMG Polymer Batten Strip and OMG Large Head #15 Roofgrip fasteners, Tru-Fast BB-18 or Tru-Fast BB-18-R and Tru-Fast EHD fasteners, spaced 12" o.c. in the min. 5" lap.  
\*Requires heat welded ply or cap membrane.

**Ply Sheet:**  
**(Optional)** One or more layers of Sopralene Flam 180\*, Sopralene Flam 180 2.7 mm\*, Sopralene 180 SP 3.5 mm, Soprafix, Sopralene Flam 250\*, Sopralene 250 SP, Sopralene Flam 350\*, Sopralene 350 SP, heat welded.  
\*Requires heat welded cap membrane.

**Membrane:** Soprastar Flam, Soprastar Flam 180, Sopralene Flam 180 GR, Sopralene Flam 180 FR GR, Sopralene Flam 180 FR UW GR, Sopralene Flam 180 FR+ GR, Sopralene Flam 250 GR, Sopralene Flam 250 FR GR, Sopralene Flam 250 FR UW GR, Sopralene Flam 250 FR+ GR, Sopralene Flam 250 FR+ UW GR, Sopralene Flam 350 GR, Sopralene Flam 350 FR GR, heat welded  
Or  
Soprastar Stick, self-adhered to Elastocol 600c primed sand surfaced base or ply membrane.

**Surfacing:** Surfacing is Optional on granular surfaced field cap membranes.  
Surfacing is Required for smooth or sanded surfaced field cap membranes.  
Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications  
Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.

**Maximum Design Pressure:** -52.5 psf (with Soprastar Stick as cap membrane) (See General Limitation #7)  
-75 psf (with all other cap membranes) (See General Limitation #7.)



**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18-22 ga. Grade 80 Steel decking fastened 6" o.c. with Traxx/5 fasteners to supports spaced maximum 6' o.c. Deck side laps are fastened 24" o.c. with Traxx/1 fasteners.

**System Type D(9):** All layers of insulation and base sheet simultaneously attached.

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

<u>Insulation Layer</u>	<u>Insulation Fasteners</u> (Table 3)	<u>Fastener</u> <u>Density/ft<sup>2</sup></u>
AC Foam II, H-Shield, M-Shield, Hy-Therm AP (flat or tapered) Minimum 1.5" thick	N/A	N/A
ConPearl, GAFTEMP Permalite, EnergyGuard Perlite Roof Insulation, Fesco Board, Perlite Minimum 0.75" thick	N/A	N/A

**Note:** Insulation layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, 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. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

**Base Sheet:** One ply of Soprafix, Soprafix-e, fastened to the deck as described below:  
\*Requires heat welded ply or cap membrane.

**Fastening:** Attach base sheet using Tru-Fast BB-18-R Batten Bar with Tru-Fast HD Fasteners spaced 12" o.c. in the minimum 5" wide lap.

**Ply Sheet:** (Optional)  
One or more plies of Elastophene Flam\*, Elastophene Flam 2.2\*, Sopralene (180, 250 or 350) Flam\*, or Sopralene (180, 250 or 350) SP, heat welded  
\*Requires heat welded cap membrane.

**Membrane:** Elastophene SP 2.2mm\*, Elastophene SP 3.0mm\*, Elastophene Flam GR, Elastophene Flam FR GR or FR+ GR, Elastophene Flam LS FR GR, Soprastar Flam, Soprastar Flam 180, Sopralene (180, 250, 350) Flam GR, Sopralene (180, 250, 350) Flam FR GR or FR+ GR or Sopralast, heat welded  
\*Requires approved Surfacing.

**Surfacing:** Surfacing is Optional on granular surfaced field cap membranes.  
Surfacing is Required for smooth or sanded surfaced field cap membranes.  
Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications  
Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.

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



**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18-22 ga. Grade 80 Steel decking fastened 6" o.c. with Traxx/5 fasteners to supports spaced maximum 6' o.c. Deck side laps are fastened 24" o.c. with Traxx/1 fasteners.

**System Type D(10):** All layers of insulation and base sheet simultaneously attached.

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

<u>Insulation Layer</u>	<u>Insulation Fasteners (Table 3)</u>	<u>Fastener Density/ft<sup>2</sup></u>
AC Foam II, H-Shield (flat or tapered) Minimum 1.5" thick	N/A	N/A
ConPearl, GAFTEMP Permalite, EnergyGuard Perlite Roof Insulation, Fesco Board, Perlite Minimum 0.75" thick	N/A	N/A

**Note:** Insulation layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, 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. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

**Base Sheet:** One ply of Soprafix, Soprafix-e, fastened to the deck as described below:

**Fastening:** Attach base sheet using OMG Polymer Batten Strip with OMG Large Head #15 Roofgrip fasteners or Tru-Fast BB-18-R Batten Bar and Tru-Fast HD fasteners, spaced 12" o.c. in the minimum 5" wide lap.

**Ply Sheet:** (Optional)  
One or more plies of Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded or Sopralene (180, 250 or 350) Sanded or one or more plies of Type IV or Type VI ply sheets adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. to sand surfaced base membrane.

**Membrane:** Elastophene Sanded\*, Elastophene Sanded FR\*, Elastophene HR\*, Elastophene HR FR\*, Elastophene 180 Sanded\*, Sopralene (180, 250, 350) Sanded\*, Sopralast 180 Sanded, Elastophene FR GR or FR+ GR, Elastophene LS FR GR, Elastophene GR, Sopralene (180, 250, 350) GR, or Sopralene (180, 250, 350) FR GR, adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. to sand surfaced base or ply membrane.  
\*Requires approved Surfacing.

**Surfacing:** Surfacing is Optional on granular surfaced field cap membranes.  
Surfacing is Required for smooth or sanded surfaced field cap membranes.  
Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications  
Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.

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



**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18-22 ga. Grade 33 Steel decking fastened 6" o.c. with two Traxx/5 fasteners and 0.75" diameter washers to supports spaced maximum 6' o.c. Deck side laps are fastened maximum 13" o.c. with Traxx/1 fasteners.

**System Type D(11):** All layers of insulation and base sheet simultaneously attached.

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

**Base Insulation Layer**

**AC Foam II, H-Shield, M-Shield, Hy-Therm AP, ENRGY 3, ISO 95+GL, Multi-Max 3 (flat or tapered)**

Minimum 1.5" thick

**Insulation Fasteners**  
**(Table 3)**

**Fastener**  
**Density/ft<sup>2</sup>**

N/A

N/A

**Middle Insulation Layer**

**DensDeck (staggered from base layer)**

Minimum 0.5" thick

**Insulation Fasteners**  
**(Table 3)**

**Fastener**  
**Density/ft<sup>2</sup>**

N/A

N/A

**Top Insulation Layer**

**Sopraboard**

Minimum 0.25" thick

**Insulation Fasteners**  
**(Table 3)**

**Fastener**  
**Density/ft<sup>2</sup>**

1 (min #14)

1:4

**Note:** Insulation layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, 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. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

**Base Sheet:** One ply of Soprafix [X]\* or Sopralene Flam 250\*, heat welded to insulation with a minimum 6" wide lap, then fastened to the deck as described below:

\*Requires heat welded ply or cap membrane.

**Fastening #1:** Attach base sheet using Soprafix 2-3/8" SB Stress Plates and Soprema #15 Fasteners in rows spaced maximum 18" o.c., with fasteners spaced maximum 6" o.c. within each row. *(Meets Maximum Design Pressure of -157.5 psf, See General Limitation #7)*

**Fastening #2:** Attach base sheet using Soprafix 2-3/8" SB Stress Plates and Soprema #15 Fasteners in rows spaced maximum 18" o.c., with fasteners spaced maximum 12" o.c. within each row. *(Meets Maximum Design Pressure of -60.0 psf, See General Limitation #7)*

**Fastening #3:** Attach base sheet using Soprafix 2-3/8" SB Stress Plates and Soprema #15 Fasteners in rows spaced maximum 12" o.c., with fasteners spaced maximum 12" o.c. within each row. *(Meets Maximum Design Pressure of -157.5 psf, See General Limitation #7)*

**Ply Sheet:** Sopralene Flam 180\*, Sopralene Flam 250\*, Sopralene Flam 350\* heat welded with minimum 3" wide lap.

**Membrane:** Sopraplar Flam 180, Sopralene Flam 180 GR, Sopralene Flam 180 FR GR, Sopralene Flam 250 GR, Sopralene Flam 250 FR GR, Sopralene Flam 350 GR, Sopralene Flam 350 FR GR, heat welded with minimum 3" wide lap.

**Surfacing:** Surfacing is Optional on granular surfaced field cap membranes.  
Surfacing is Required for smooth or sanded surfaced field cap membranes.  
Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications

Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system

**Maximum Design Pressure:**

See Fastening Requirements Above.



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**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18-22 ga. Grade 33 Steel decking fastened 6" o.c. with two Traxx/5 fasteners and 0.75" diameter washers to supports spaced maximum 6' o.c. Deck side laps are fastened maximum 13" o.c. with Traxx/1 fasteners.

**System Type D(12):** All layers of insulation and base sheet simultaneously attached.

All General and System Limitations apply.

**Base Insulation Layer**

(Minimum two layers of the following) AC Foam II, H-Shield, M-Shield, Hy-Therm AP, ISO 95+GL, Multi-Max 3

Minimum 1.5" thick

**Insulation Fasteners**  
**(Table 3)**

**Fastener**  
**Density/ft<sup>2</sup>**

N/A

N/A

**Top Insulation Layer**

**Sopraboard**

Minimum 0.25" thick

**Insulation Fasteners**  
**(Table 3)**

**Fastener**  
**Density/ft<sup>2</sup>**

1 (min #14)

1:4

**Note:** Insulation layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, 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. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

**Base Sheet:** One ply of Soprafix [X]\* or Sopralene Flam 250\*, heat welded to insulation with a minimum 6" wide lap, then fastened to the deck as described below:  
\*Requires heat welded ply or cap membrane.

**Fastening:** Attach base sheet using Soprafix 2-3/8" SB Stress Plates and Soprema #15 Fasteners in rows spaced maximum 12" o.c., with fasteners spaced maximum 12" o.c. within each row.

**Ply Sheet:** Sopralene Flam 180\*, Sopralene Flam 250\*, Sopralene Flam 350\* heat welded with minimum 3" wide lap.

**Membrane:** Soprapstar Flam 180, Sopralene Flam 180 GR, Sopralene Flam 180 FR GR, Sopralene Flam 250 GR, Sopralene Flam 250 FR GR, Sopralene Flam 350 GR, Sopralene Flam 350 FR GR, heat welded with minimum 3" wide lap.

**Surfacing:** Surfacing is Optional on granular surfaced field cap membranes. Surfacing is Required for smooth or sanded surfaced field cap membranes. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications. Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.

**Maximum Design**

**Pressure:** -112.5 psf, (See General Limitation #7)



**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18-22 ga. Grade 33 Steel decking fastened maximum 6" o.c. with two Traxx/5 fasteners and 0.75" diameter washers to supports spaced maximum 6' o.c. Deck side laps are fastened maximum 12" o.c. with Traxx/1 fasteners.

**System Type D(13):** All layers of insulation and base sheet simultaneously attached.

**All General and System Limitations apply.**

**Thermal Barrier:** (Optional) Minimum 5/8" thick Securock, DensDeck, DensDeck Prime or DensDeck DuraGuard, pre-secured with a maximum contributory area of 1:4 ft<sup>2</sup>

**Vapor Barrier:** (Optional) One or more layers of Elastophene Sanded, Elastophene Sanded 3.0, Elastophene HD, Elastophene HS, Elastophene HS FR, Elastophene Sanded FR, Elastophene HR 2.2 mm, Elastophene HR 3.0 mm, Elastophene HR FR, Elastophene HP, Elastophene 180 Sanded, Sopralene 180 Sanded, Sopralene 250 Sanded, Sopralene 350 Sanded, Elastophene PS, Elastophene 180 PS, Elastophene 250 PS, Elastophene 350 PS, adhered in hot asphalt at 25 lbs/sq. or applied in FM Adhesive or FM Adhesive (VOC) at a rate of 1.5 gal/sq.

Or

One or two plies of Sopra IV or Sopra VI adhered in hot asphalt at 25 lbs/sq

Or

Elastophene Flam, Elastophene Flam 2.2, Elastophene SP 2.2 mm, Elastophene SP 3.0 mm, Elastophene Flam HS, Elastophene Flam HS FR, Elastophene Flam HR, Elastophene Flam HR FR, Elastophene Flam HP, Sopralene 180 SP, Sopralene 180 SP 3.5 mm, Sopralene 250 SP, Sopralene 350 SP, Sopralene Flam 180, Sopralene Flam 250, Sopralene Flam 350, heat welded

Or

EPS Flam Stick, Sopralene Stick of Sopralene Flam Stick, self-adhered.

One or more layers of any of the following insulations.

**Base Insulation Layer**

**Insulation Fasteners**  
**(Table 3)**

**Fastener**  
**Density/ft<sup>2</sup>**

AC Foam II, Hy-Therm AP, ISO 95+ GL, H-Shield, ENRGY 3, Multi-Max 3, M-Shield  
Minimum 1.5" thick

N/A

N/A

**Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density.**

**Top Insulation Layer**

**Insulation Fasteners**  
**(Table 3)**

**Fastener**  
**Density/ft<sup>2</sup>**

Securock, DensDeck, DensDeck Prime, DensDeck DuraGuard  
Minimum 0.5" thick

2, 3, 72, 10, 41, 46, 47

1:4 ft<sup>2</sup>

**Note: Insulation layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, 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. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.**

**Primer:** (Optional) Coverboard is primed with an approved ASTM D41 asphalt primer at a rate of 100-150 ft<sup>2</sup>/gal.



- Base Sheet:** Sopralene Flam 180, Sopralene Flam 250, Sopralene Flam 350, Soprafix, Soprafix [F], Soprafix [H], Soprafix [S], Soprafix [X] or Soprafix-e fastened as specified below:
- Fastening #1:** Heat weld base membrane to the coverboard with minimum 3" laps. Mechanically attach heat welded base sheet with Soprema #14 or Soprema #15-EL fasteners and Soprema Soprafix 2" SB Stress plates, Dekfast #14 of Dekfast #15 HS fasteners with Dekfast IF-2-SB, Dekfast Galvalume Steel Round 2-3/8" 20 ga. Barbed plates, Tru-Fast EHD fasteners with Tru-Fast 2" Barbed Metal Stress Plates or Tru-Fast 2.4" Barbed Seam Plates, spaced maximum 12" o.c. through the side laps and two equally spaced staggered rows in the field of the membrane.  
*(Maximum Design Pressures -165 psf; See General Limitation #7.)*
- Fastening #2:** Mechanically attach base sheet with Soprema #14 or Soprema #15-EL fasteners and Soprema Soprafix 2" SB Stress plates, Dekfast #14 of Dekfast #15 HS fasteners with Dekfast IF-2-SB, Dekfast Galvalume Steel Round 2-3/8" 20 ga. Barbed plates, Tru-Fast EHD fasteners with Tru-Fast 2" Barbed Metal Stress Plates or Tru-Fast 2.4" Barbed Seam Plates, spaced maximum 12" o.c. through the minimum 3" wide side lap and two equally spaced staggered rows in the field of the membrane.  
*(Maximum Design Pressures -150 psf; See General Limitation #7.)*
- Ply Sheet:** Elastophene Flam, Elastophene Flam 2.2, Elastophene Flam HP, Elastophene Flam HP FR, Elastophene Flam HR 2.2 mm, Elastophene Flam HR 3.0 mm, Elastophene Flam HR FR, Elastophene Flam HS, Elastophene Flam HS FR, Sopralene Flam 180, Sopralene Flam 250, Sopralene Flam 350, heat welded
- Membrane:** Elastophene Flam FR GR, Elastophene Flam GR, Elastophene Flam HP FR GR, Elastophene Flam HP GR, Elastophene Flam HS GR, Elastophene Flam HR GR, Elastophene Flam HS FR GR, Elastophene Flam HS GR, Elastophene Flam LS FR GR, Sopralast 50 TV Alu, Sopralast 50 TV Copper, Sopralast 50 TV Inox, SopraStar Flam, SopraStar Flam 180, Sopralene Flam, 180 FR GR, Sopralene Flam 180 GR, Sopralene Flam 250 FR GR, Sopralene Flam 250 GR, Sopralene Flam 350 FR GR, Sopralene Flam 350 GR, Sopralene Flam Jardin, Sopralene Mammoth GR, heat welded
- Surfacing:** Surfacing is Optional on granular surfaced field cap membranes.  
Surfacing is Required for smooth or sanded surfaced field cap membranes.  
Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications  
Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.
- Maximum Design Pressure:** See Fastening Options Above



**Deck Type 2I:** Steel Insulated

**Deck Description:** 18-22 ga. Grade 33 Steel decking fastened maximum 6" o.c. with two Traxx/5 fasteners and 0.75" diameter washers to supports spaced maximum 6' o.c. Deck side laps are fastened maximum 12" o.c. with Traxx/1 fasteners.

**System Type D(14):** All layers of insulation and base sheet simultaneously attached.

**All General and System Limitations apply.**

**Thermal Barrier:** (Optional) Minimum 5/8" thick Securock, DensDeck, DensDeck Prime or DensDeck DuraGuard, pre-secured with a maximum contributory area of 1:4 ft<sup>2</sup>

**Vapor Barrier:** (Optional) One or more layers of Elastophene Sanded, Elastophene Sanded 3.0, Elastophene HD, Elastophene HS, Elastophene HS FR, Elastophene Sanded FR, Elastophene HR 2.2 mm, Elastophene HR 3.0 mm, Elastophene HR FR, Elastophene HP, Elastophene 180 Sanded, Sopralene 180 Sanded, Sopralene 250 Sanded, Sopralene 350 Sanded, Elastophene PS, Elastophene 180 PS, Elastophene 250 PS, Elastophene 350 PS, adhered in hot asphalt at 25 lbs/sq. or applied in FM Adhesive or FM Adhesive (VOC) at a rate of 1.5 gal/sq.

Or

One or two plies of Sopra IV or Sopra VI adhered in hot asphalt at 25 lbs/sq

Or

Elastophene Flam, Elastophene Flam 2.2, Elastophene SP 2.2 mm, Elastophene SP 3.0 mm, Elastophene Flam HS, Elastophene Flam HS FR, Elastophene Flam HR, Elastophene Flam HR FR, Elastophene Flam HP, Sopralene 180 SP, Sopralene 180 SP 3.5 mm, Sopralene 250 SP, Sopralene 350 SP, Sopralene Flam 180, Sopralene Flam.250, Sopralene Flam 350, heat welded

Or

EPS Flam Stick, Sopralene Stick of Sopralene Flam Stick, self-adhered.

One or more layers of any of the following insulations.

**Base Insulation Layer**

	<b><u>Insulation Fasteners</u></b> <b><u>(Table 3)</u></b>	<b><u>Fastener</u></b> <b><u>Density/ft<sup>2</sup></u></b>
AC Foam II, Hy-Therm AP, ISO 95+ GL, H-Shield, ENRGY 3, Multi-Max 3, M-Shield Minimum 1.5" thick	N/A	N/A

**Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density.**

**Top Insulation Layer**

	<b><u>Insulation Fasteners</u></b> <b><u>(Table 3)</u></b>	<b><u>Fastener</u></b> <b><u>Density/ft<sup>2</sup></u></b>
Securock, DensDeck, DensDeck Prime, DensDeck DuraGuard Minimum 0.5" thick	2, 3, 72, 10, 41, 46, 47	1:4 ft <sup>2</sup>

**Note: Insulation layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, 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. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.**

**Primer:** (Optional) Coverboard is primed with an approved ASTM D41 asphalt primer at a rate of 100-150 ft<sup>2</sup>/gal.



- Base Sheet:** Sopralene 180 SP, Sopralene 3.5 mm, Sopralene 250 SP, Sopralene 350 SP fastened as specified below:
- Fastening #1:** Heat weld base sheet to coverboard with minimum 3" wide side lap. Mechanically attach heat welded base sheet with Soprema #14 or Soprema #15-EL fasteners and Soprema Soprafix 2" SB Stress plates, Dekfast #14 of Dekfast #15 HS fasteners with Dekfast IF-2-SB, Dekfast Galvalume Steel Round 2-3/8" 20 ga. Barbed plates, Tru-Fast EHD fasteners with Tru-Fast 2" Barbed Metal Stress Plates or Tru-Fast 2.4" Barbed Seam Plates, spaced maximum 12" o.c. through the side laps and two equally spaced staggered rows in the field of the membrane.  
*(Maximum Design Pressures –165 psf; See General Limitation #7.)*
- Fastening #2** Mechanically attach heat welded base sheet with Soprema #14 or Soprema #15-EL fasteners and Soprema Soprafix 2" SB Stress plates, Dekfast #14 of Dekfast #15 HS fasteners with Dekfast IF-2-SB, Dekfast Galvalume Steel Round 2-3/8" 20 ga. Barbed plates, Tru-Fast EHD fasteners with Tru-Fast 2" Barbed Metal Stress Plates or Tru-Fast 2.4" Barbed Seam Plates, spaced maximum 12" o.c. through the minimum 3" wide side lap and two equally spaced staggered rows in the field of the membrane.  
*(Maximum Design Pressures –150 psf; See General Limitation #7.)*
- Ply Sheet:** Elastophene 180 PS, Elastophene PS, adhered in full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
- Membrane:** Elastophene Flam FR GR, Elastophene Flam GR, Elastophene Flam HP FR GR, Elastophene Flam HP GR, Elastophene Flam HS GR, Elastophene Flam HR GR, Elastophene Flam HS FR GR, Elastophene Flam HS GR, Elastophene Flam LS FR GR, Sopralast 50 TV Alu, Sopralast 50 TV Copper, Sopralast 50 TV Inox, Soprastar Flam, Soprastar Flam 180, Sopralene Flam, 180 FR GR, Sopralene Flam 180 GR, Sopralene Flam 250 FR GR, Sopralene Flam 250 GR, Sopralene Flam 350 FR GR, Sopralene Flam 350 GR, Sopralene Flam Jardin, Sopralene Mammoth GR, heat welded with minimum 3" wide side lap
- Surfacing:** Surfacing is Optional on granular surfaced field cap membranes.  
Surfacing is Required for smooth or sanded surfaced field cap membranes. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications  
Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.
- Maximum Design Pressure:** See Fastening Options Above



**Deck Type 2I:** Steel, Insulated

**Deck Description:** 18-22 ga. Grade 33 Steel decking fastened maximum 6" o.c. with two Traxx/5 fasteners and 0.75" diameter washers to supports spaced maximum 6' o.c. Deck side laps are fastened maximum 12" o.c. with Traxx/1 fasteners.

**System Type D(15):** All layers of insulation and base sheet simultaneously attached.

**All General and System Limitations apply.**

One or more layers of any of the following insulations.

<u>Base Insulation Layer</u>	<u>Insulation Fasteners</u> <u>(Table 3)</u>	<u>Fastener</u> <u>Density/ft<sup>2</sup></u>
AC Foam II, Hy-Therm AP, ISO 95+ GL, H-Shield, ENRGY 3, Multi-Max 3, M-Shield Minimum 1.5" thick	N/A	N/A

**Note:** All layers shall be simultaneously fastened; see top layer below for fasteners and density.

<u>Top Insulation Layer</u>	<u>Insulation Fasteners</u> <u>(Table 3)</u>	<u>Fastener</u> <u>Density/ft<sup>2</sup></u>
Securock, DensDeck, DensDeck Prime, DensDeck DuraGuard Minimum 0.5" thick	2, 3, 72, 10, 41, 46, 47	1:4 ft <sup>2</sup>

**Note:** Insulation layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, 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. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

**Primer:** (Optional) Coverboard is primed with an approved ASTM D41 asphalt primer at a rate of 100-150 ft<sup>2</sup>/gal.

**Base Sheet:** Sopralene 180 SP, Sopralene 3.5 mm, Sopralene 250 SP, Sopralene 350 SP, Soprafix [F]\*, Soprafix [H]\*, Soprafix [S]\*, Soprafix [X]\* or Soprafix\*, heat welded to coverboard.

\*Requires heat welded cap membrane.

**Fastening #1:** Heat weld base sheet to coverboard with minimum 3" wide side lap. Mechanically attach heat welded base sheet with Soprema #14 or Soprema #15-EL fasteners and Soprema Soprafix 2" SB Stress plates, Dekfast #14 of Dekfast #15 HS fasteners with Dekfast IF-2-SB, Dekfast Galvalume Steel Round 2-3/8" 20 ga. Barbed plates, Tru-Fast EHD fasteners with Tru-Fast 2" Barbed Metal Stress Plates or Tru-Fast 2.4" Barbed Seam Plates, spaced maximum 12" o.c. through the side laps and two equally spaced staggered rows in the field of the membrane.  
(Maximum Design Pressures -165 psf; See General Limitation #7.)

**Fastening #2** Mechanically attach base sheet with Soprema #14 or Soprema #15-EL fasteners and Soprema Soprafix 2" SB Stress plates, Dekfast #14 of Dekfast #15 HS fasteners with Dekfast IF-2-SB, Dekfast Galvalume Steel Round 2-3/8" 20 ga. Barbed plates, Tru-Fast EHD fasteners with Tru-Fast 2" Barbed Metal Stress Plates or Tru-Fast 2.4" Barbed Seam Plates, spaced maximum 12" o.c. through the minimum 3" wide side lap and two equally spaced staggered rows in the field of the membrane.  
(Maximum Design Pressures -150 psf; See General Limitation #7.)



**Ply Sheet:** Elastophene SP, Elastophene SP 3.0 mm, Sopralene 180 SP, Sopralene 180 SP 3.5 mm, Sopralene 250 SP, Sopralene 350 SP, heat welded

Or

Elastophene 180 Sanded, Elastophene HP, Elastophene HR 2.2, Elastophene HR 3.0, Elastophene HR FR, Elastophene HS, Elastophene HS FR, Elastophene Sanded, Elastophene Sanded FR, Sopralene 180, Sopralene 180 Sanded, Sopralene 250 Sanded, Sopralene 350 Sanded, or 1-2 plies of Sopra IV or Sopra VI, adhered in full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

**Membrane:** Elastophene FR GR, Elastophene GR, Elastophene HP FR GR, Elastophene HP GR, Elastophene HR FR GR, Elastophene HS FR GR, Elastophene HS GR, Elastophene LS FR GR, Soprastar 180 Sanded, Sopralene 180 FR GR, Sopralene 180 GR, Sopralene 250 FR GR, Sopralene 250 GR, Sopralene 350 FR GR, Sopralene 350 GR, Soprastar Sanded, adhered in full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

**Surfacing:** Surfacing is Optional on granular surfaced field cap membranes.  
Surfacing is Required for smooth or sanded surfaced field cap membranes.  
Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications  
Apply any coating listed in Table 4 above, or any Miami-Dade approved coating system.

**Maximum Design Pressure:** See Fastening Options Above



## 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 Professional Engineer, Registered Architect, or Registered Roof Consultant.
2. For steel deck application where specific deck construction is not referenced: The deck shall be a minimum 22 gage attached with 5/8" puddle welds with weld washers at every flute with maximum deck spans of 5 ft. o.c.

## 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 side lap and one down the center of the sheet allowing a continuous area of ventilation. Encircling of the strips is not acceptable. A 6" break shall be placed every 12' in each ribbon to allow cross ventilation. Asphalt application of either system shall be at a minimum rate of 12 lbs./sq.  
**Note: Spot attached systems shall be limited to a maximum design pressure of -45 psf.**
5. Fastener spacing for insulation attachment is based on a Minimum Characteristic Force (F') value of 275 lbf., as tested in compliance with Testing Application Standard TAS 105. If the fastener value, as field-tested, are below 275 lbf. Insulation attachment shall not be acceptable.
6. Fastener spacing for mechanical attachment of anchor/base sheet or membrane attachment is based on a minimum fastener resistance value in conjunction with the maximum design value listed within a specific system. Should the fastener resistance be less than that required, as determined by the Building Official, a revised fastener spacing, prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant may be submitted. Said revised fastener spacing shall utilize the withdrawal resistance value taken from Testing Application Standards TAS 105 and calculations in compliance with Roofing Application Standard RAS 117.
7. Perimeter and corner areas shall comply with the enhanced uplift pressure requirements of these areas. Fastener densities shall be increased for both insulation and base sheet as calculated in compliance with Roofing Application Standard RAS 117. Calculations prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant **(When this limitation is specifically referred within this NOA, General Limitation #9 will not be applicable.)**
8. All attachment and sizing of perimeter nailers, metal profile, and/or flashing termination designs shall conform to Roofing Application Standard RAS 111 and applicable wind load requirements.
9. The maximum designed pressure limitation listed shall be applicable to all roof pressure zones (i.e. field, perimeters, and corners). Neither rational analysis, nor extrapolation shall be permitted for enhanced fastening at enhanced pressure zones (i.e. perimeters, extended corners and corners). **(When this limitation is specifically referred within this NOA, General Limitation #7 will not be applicable.)**
10. All products listed herein shall have a quality assurance audit in accordance with the Florida Building Code and Rule 9B-72 of the Florida Administrative Code.

**END OF THIS ACCEPTANCE**



NOA No.: 09-0402.16  
Expiration Date: 03/01/11  
Approval Date: 06/10/09  
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