



**BUILDING CODE COMPLIANCE OFFICE (BCCO)
PRODUCT CONTROL DIVISION**

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

NOTICE OF ACCEPTANCE (NOA)

**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 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 renews and revises NOA # 01-0116.10 and consists of pages 1 through 51.
The submitted documentation was reviewed by Jorge L. Acebo.



**NOA No.: 04-0927.05
Expiration Date: 03/01/11
Approval Date: 02/09/06
Page 1 of 51**

ROOFING SYSTEM APPROVAL

<u>Category:</u>	Roofing
<u>Sub-Category:</u>	Modified Bitumen
<u>Material:</u>	SBS
<u>Deck Type:</u>	Steel
<u>Maximum Design Pressure</u>	-120 psf
<u>Fire Classification:</u>	See General Limitation #1

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	Fiberglass reinforced modified bitumen base sheet. Applied in hot asphalt, cold adhesive or ribbon stripping.
Sopraglass M GR	39" x 33' (1 sq.)	ASTM D5147	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 plysheet. Sopra IV or VI are used in multi-ply systems and complies with ASTM and UL Standards. Applied in hot asphalt or cold adhesive.



<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
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.
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 43' (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 43' (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 43' (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 43' (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.
Sopra G-Vent	39" x 99' (3 sq.)	ASTM D 4601 Type II	Fiberglass reinforced, modified bitumen membrane with perforated holes.
Elastophene Sanded	39" x 49' (1½ 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' (1½ 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' (1½ sq.)	ASTM D 6163	Fiberglass scrim reinforced modified bitumen membrane sanded on both sides. Applied in hot asphalt, cold adhesive or ribbon stripping.



<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
Elastophene HR FR	39" x 49' (1½ 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	Fiberglass/non-woven polyester reinforced modified bitumen membrane sanded on both sides. Applied in hot asphalt, cold adhesive or ribbon stripping.
Elastophene PS	39" x 49' (1½ 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' (1½ 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' (1½ 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	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' (1½ 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 48' (1½ 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.



<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
Elastophene 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	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	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	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).



NOA No.: 04-0927.05
Expiration Date: 03/01/11
Approval Date: 02/09/06
Page 5 of 51

<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
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 or 250	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).



<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
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).
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 1000 or 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	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 or P	39" x 49' (1½ 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		Bituminous tape for sealing of side and head laps.
Sopramastic 200	17 oz. pouch or 10.4 oz cartridge		Caulking compound.



<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
Elastocol 500 and 600c Sopracolle		ASTM D 41	Asphalt primers. 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		One part polyurethane/bitumen resin, moisture cure compound.
SBS Mastic	10.4 oz tube		Plastized rubber/bitumen mastic compound.
SBS Elastic Cement	5 gallon pail		Elastomeric bitumen based mastic compound.
Soprawalk	39" x 26' (3/4 sq)		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)		Proprietary	One part elastomeric urethane foam adhesive.
High Velocity® Insulation Adhesive III (HVIA-III)		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	5 gallon pail or 55 gallon drum	Proprietary	Polyurethane bitumen adhesive.
Sopraboard	various		Mineral fortified asphaltic cored coverboard between two layers of asphalt saturated fiberglass mat.



APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
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	Polystyrene Insulation	generic
Gypsum	Gypsum board	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

Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
Tri-Fix Fastening System	Fastening system for base sheet attachmen to lightweight concrete, gypsum or cementitious wood fiber decks.	3" diameter plate with various length fasteners	Soprema, Inc.
#12, #14 & #15 Soprema Fasteners	Fasteners for membrane or insulation attachment to wood, steel or concrete decks.		Soprema, Inc.
Soprafix [X]-EL #15	Fasteners for membrane attachment to steel or concrete decks.		Soprema, Inc.
Soprafix Plates	AZ-55 Galvalume steel plate for use with the Soprafix system.	2" diameter	Soprema, Inc.
Soprema Plates	Metal or plastic stress plates for use with Soprema Fasteners.	3" diameter	Soprema, Inc.
Sopradisc	Galvanized metal bearing plate used for side lap attachment of Soprafix system.	2" diameter	Soprema, Inc.
Soprema Isofast IF/IFT	AZ-50 Galvalume steel plate for use with the Soprafast System.	2¾" diameter	Soprema, Inc.
Soprafix/Soprafast	Stress plates for membrane securement.	3" diameter	Soprema, Inc.
UNILAY Plate	Stress plates for Unilay membrane securement.	2-3/8" diameter	Soprema, Inc.
#12, #14 & #15 Dekfast Fastener	Insulation fastener		Construction Fasteners, Inc.
Omega Fastener	Stainless steel insulation fastener		Construction Fasteners, Inc.
Dekfast Hex Plate	Galvalume AZ50 steel plate	2 7/8" x 3 1/4"	Construction Fasteners, Inc.
Dekfast Lock Plate	Polypropylene locking plate.	3" x 3 1/4"	Construction Fasteners, Inc.
Twin Loc-Nails	Base ply fastening systems for lightweight concrete, gypsum or cementitious wood fiber decks		ES Products, Inc.
FM-30, FM-45, FM-60, FM-90 Fasteners	Base ply fastening systems for lightweight concrete decks		ES Products, Inc.
#12, #14 & #15 Roofgrip Fasteners	Insulation fastener for wood, steel and concrete.		ITW Buildex Corp.



APPROVED FASTENERS:

TABLE 3

Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
AccuTrac Hextra Fasteners	Insulation fastener for wood, steel and concrete.		ITW Buildex Corp.
Polymer Gyptec	Glass reinforced Nylon insulation fastener for gypsum & CWF decks.		ITW Buildex Corp.
Polymer Gyptec Metal Plate	Galvalume stress plate	3" round	ITW Buildex Corp.
Accutracs Plate	Galvalume square stress plate	3" square	ITW Buildex Corp.
Metal Plate	Galvalume stress plate.	3" round 3" square	ITW Buildex Corp.
Gearlok Plastic Plate	Polyolefin round stress plate	3.2" round	ITW Buildex Corp.
Olympic CR Base Ply Fasteners	Base ply fastening assembly		OMG, Inc.
NTB Magnum	Glass reinforced Nylon insulation fastener for gypsum & CWF decks with barbs.		OMG, Inc.
NTB Plate Lite-Deck	Galvalume stress plate Insulation fastener for CWF and Gypsum decks.	3" round	OMG, Inc. OMG, Inc.
Lite-Deck Plate	Galvalume stress plate	3" round	OMG, Inc.
Olympic Fastener #12, #14 & #15	Insulation fastener.		OMG, Inc.
Olympic CD-10	Insulation fastener.		OMG, Inc.
Olympic Fluted Nail	Insulation fastener.		OMG, Inc.
Olympic Standard	Galvalume AZ50 steel plate	3" round	OMG, Inc.
Olympic Plastic	Polypropylene stress plate	3.25" round	OMG, Inc.
Powerlite	Insulation fastener.		Powers Fasteners, Inc.
Powerlite	Galvalume stress plate.	3" round	Powers Fasteners, Inc.
Base-Lok Fasteners	Base sheet fastener for lightweight concrete, cwf and gypsum decks	1.75" long with 3" dia. head	Simplex Nails
Turbo Tube-Lok Fasteners	Base sheet fastener for lightweight concrete, cwf and gypsum decks	1.75" long with 2" dia. head	Simplex Nails
SFS Base-Lok Fasteners	Base sheet fastener for lightweight concrete, cwf and gypsum decks	1.75" long with 3" dia. head	SFS Intec, Inc.



APPROVED FASTENERS:

TABLE 3

Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
Insul-Fixx Fastener	Insulation fastener for wood, steel and concrete.		SFS Intec, Inc.
Isofast Fasteners	Insulation fastener for wood, steel and concrete.		SFS Intec, Inc.
Extra Load Fasteners #15	Fasteners for membrane attachment to steel or concrete decks.		SFS Intec, Inc.
Insul-Fixx S Plate	Galvalume AZ50 steel plate	3" round	SFS Intec, Inc.
Insul-Fixx P Plate	Polyethylene stress plate	3" round	SFS Intec, Inc.
Isofast Plate	Square or oblong galvalume steel plates for use with Isofast fasteners		SFS Intec, Inc.
ES-I Fastening Systems	Insulation fastening assembly with plate.	3" round	SFS Intec, Inc.
#12, #14 & #15 Dekfast Fastener	Insulation fastener		SFS Intec
Omega Fastener	Stainless steel insulation fastener		SFS Intec
Dekfast Hex Plate	Galvalume AZ50 steel plate	2 7/8" x 3 1/4"	SFS Intec
DekFlat Lock Plate	Polypropylene locking plate.	3" x 3 1/4"	SFS Intec
Tru-Fast TL Fastener	Insulation fastener for lightweight concrete, CWF and gypsum decks		The Tru-Fast Corp.
Tru-Fast Fastener	Insulation fastener for wood, steel and concrete.		The Tru-Fast Corp.
Tru-Fast HD or EHD	Insulation fastener for wood, steel and concrete.		The Tru-Fast Corp.
Tru-Fast MP-3	Galvalume AZ50 steel plate	3" round	The Tru-Fast Corp.
Tru-Fast Metal	Galvalume AZ55 steel plate	3" round	The Tru-Fast Corp.
Tru-Fast Plastic	Polypropylene plate	3" round	The Tru-Fast Corp.
ES Products Batten Bar-TL	Batten bar		ES Products, Inc.
#12 Hextra	Insulation fastener		ITW Buildex Corp.
Polymer Batten Strip	Modified polymer batten bar		ITW Buildex Corp.
MAXLoad	Insulation fastener		ITW Buildex Corp.
Olympic Heavy Duty	Insulation fastener		OMG, Inc.
Olympic ASAP 3P	Pre-assembled insulation fastener and plastic plate	3" round	OMG, Inc.
Olympic ASAP 3S	Pre-assembled insulation fastener and steel plate	3" round	OMG, Inc.



APPROVED FASTENERS:

TABLE 3

Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
Isofast IF2	Insulation fastener		SFS Intec
Isofast IF/IG	Galvalume AZ50 steel plate	82 x 40 mm	SFS Intec
Isofast IFC/IW	Galvalume AZ50 steel plate	70 x70 mm	SFS Intec
#15 Dekfast HS	Insulation fastener		SFS Intec
Galvalume Steel 3"	Galvalume AZ50 steel plate	3" round	SFS Intec
Round Insulation Plate			
K-Fast Fastener	Insulation Fastener		SFS Intec
Dekfast Steel Batten Bar	Galvalume AZ50 steel		SFS Intec
Dekfast Coiled Batten Strip	Batten bar		SFS Intec
Soprafix #14 PAS-2" SB Stress Plate	Pre-assembled plate and fastener	2" diameter	Soprema, Inc.
Soprema 3" Insulation Plate	Stress plate	3" diameter	Soprema, Inc.
Soprafix 2" – SB Stress Plate	Stress plate	2" diameter	Soprema, Inc.
Soprafix 2-3/8" – SB Stress Plate	Stress plate	2-3/8" diameter	Soprema, Inc.
Soprafix (X) 2-3/4" Stress Plate	Stress plate	2-3/4" diameter	Soprema, Inc.
Soprafix MBB-R	Metal Batten Bar		Soprema, Inc.
Soprema #12, #14, #15 Fastener	Insulation and membrane fasteners		Soprema, Inc.
Soprema PAS #12-3" Insulation Plate	Pre-assembled plate and fastener	3" diameter	Soprema, Inc.
Soprafix #21-K Fastener	Insulation and membrane fastener		Soprema, Inc.
Tru-Fast DP	Insulation fastener for wood, steel and concrete		The Tru-Fast Corp.
Tru-Fast SHD	Insulation fastener for wood, steel and concrete		The Tru-Fast Corp.
Tru-Fast MPH-3	Galvalume AZ50 steel plate	3" round	The Tru-Fast Corp.
Tru-Fast MP-2000			The Tru-Fast Corp.
Tru-Fast MPB-2000			The Tru-Fast Corp.
Tru-Fast MPB-2400			The Tru-Fast Corp.
Tru-Fast BB-18 Batten Bar	Galvalume AZ55 steel batten bar		The Tru-Fast Corp.
Tru-Fast BB-18-R Batten Bar	Galvalume AZ55 steel batten bar with recessed holes		The Tru-Fast Corp.
Tru-Fast Twin-Loc Batten Bar	Batten bar		The Tru-Fast Corp.



EVIDENCE SUBMITTED:

<u>Test Agency/Identifier</u>	<u>Name</u>	<u>Report</u>	<u>Date</u>
Dynatech Engineering Corp.	2491-04.95	Wind Uplift	01.04.95
Factory Mutual Research Corp.	J.I. 1Z3A6.AM	Wind Uplift Classification	04.27.95
	J.I. 2D0A0.AM	Wind Uplift Classification	08.15.97
	J.I. 1D4A3.AM	Wind Uplift Classification	04.24.98
	J.I. 308441	Class 4470	10.17.2000
	FM Approval Guide	Uplift Classifications	Annually
Underwriters Laboratories, Inc.	J.I. 3002351	Class 4470	02.28.03
	J.I. 3017614	Wind Uplift Classification	11.06.03
	UL Roofing Materials and Systems Directory	File No. R11436 Fire Classification	Published Annually
Exterior Research & Design, LLC	2003.02.97-1	Wind Uplift	02.15.97
	2003-2.04.97-1	Wind Uplift	04.15.97
	2002.07.97-1	Wind Uplift	08.15.97
	2716.05.98-1	Wind Uplift	05.27.98
	2738-10.00-1	Wind Uplift	10.20.2000
	2752.02LAB.05.02-1	Wind Uplift	05.24.02
	2109.09.02	Wind Uplift	09.19.02
	2761.09.03	Wind Uplift	09.02.03
	2764.09.03	Wind Uplift	09.16.03
	02843.02.05-02	Wind Uplift	02.10.05
IRT of S. Florida	990028	Wind Uplift	9/30/99



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	Insulation Fasteners (Table 3)	Fastener Density/ft²
Toprox Minimum 1" thick	1 or 19	1:2.4 ft ²
AC Foam II, AC Foam III Minimum 1.5" thick	1, 10, 11, 14, 15, 19, 22, 23, 28 or 29	1:2 ft ²
AC Foam Composite, ENRGY-2 Composite, ENRGY-2 Plus, ENRGY-3 Plus Minimum 1.5" thick	1, 9, 10, 13, 14, 18, 21, 22, 27 or 28	1:4 ft ²
ENRGY-2, ENRGY-3 PSI-25 Minimum 1.4" thick	1, 9, 10, 13, 14, 18, 21, 22, 27 or 28	1:2.67 ft ²
AC Foam II, AC Foam III, ENRGY-2, ENRGY-3 PSI-25 Minimum 2" thick	1, 9, 10, 13, 14, 18, 21, 22, 27 or 28	1:4 ft ²
DensDeck Minimum ¼" thick	1, 9, 14 or 21	1:4 ft ²
Fireguard Minimum 5/8" thick	1, 9, 14 or 21	1:4 ft ²
GAFTEMP Permalite, Fesco Board Minimum ¾" thick	9 or 10	1:2 ft ²

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	Insulation Fasteners (Table 3)	Fastener Density/ft²
EPS Board - For use between DensDeck or Fireguard base layer and Approved wood fiber top layer only. Minimum 1" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
BP High Strength, FM-90 Traffic Top/High Density, GAFTEMP High Density, Roof Insulation Board, High Density Fiberboard, Fiber Base HD1, HD6, Structodek Minimum ½" thick	N/A	N/A
GAFTEMP Permalite, Fesco Board Minimum ¾" thick	N/A	N/A



DensDeck		
Minimum ¼" thick	N/A	N/A
Fireguard, Type X gypsum		
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 ft². 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 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.

Membrane: Elastophene Flam, Elastophene SP 2.2mm, Elastophene SP 3.0mm, Elastophene Flam GR, Elastophene Flam FR GR or FR+ GR, 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 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.



**Surfacing:
(Optional)**

Install one of the following to an approved field cap membrane ply. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications.

1. Gravel or slag at 400 lbs. or 300 lbs./sq., respectively, adhered with approved asphalt at an application rate of 60 lbs./sq.
2. Gravel at 400 lbs/sq. adhered with FM Adhesive or FM Adhesive (VOC) at an application rate of 4 gal/sq.
3. Karnak Corporation - Karnak #97 Fibrated Aluminum Roof Coating applied at an application rate of 1½ gal./sq.
4. Soprema - Cural Aluminizer at 2 gal/sq.
5. Thermo Manufacturing Systems, LLC - Super Prep roof coating applied in two coats at an application rate of 1½ gal/sq. per coat.
6. United Coatings Manufacturing Company - Roof Mate Coating, applied in one base coat at an application rate of 1 ½ gal/sq and one finish coat at an application rate of 1½ gal/sq.
7. Insulating Coatings Corporation - Astec 2000 Finish Coat applied in two coats of base at an application rate of ¾ gal/sq. per coat and two coats of finish at an application rate of ¾ gal/sq. per coat.
8. Henry Company – HE280DC – White Elastomeric Roof Coating applied in two coats at an application rate of 1 gal/sq per coat.
9. National Coating – Acryshield® A500 applied in two coats at an application rate of 1 gal/sq. per coat.

**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.

Base Insulation Layer

	Insulation Fasteners (Table 3)	Fastener Density/ft ²
AC Foam II, AC Foam III, ENRGY-2, ENRGY-3, PSI-25 Minimum 1.5" thick	1, 9, 10, 13, 14, 18, 21, 22, 27 or 28	1:1.33 ft ²

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 ²
BP High Strength, FM-90 Traffic Top/High Density, GAFTEMP High Density, Roof Insulation Board, High Density Fiberboard, Fiber Base HD1, HD6, Structodek Minimum ½" thick	N/A	N/A
GAFTEMP Permalite, Fesco Board Minimum ¼" 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 ft². 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 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.



Membrane:

Elastophene Flam, Elastophene SP 2.2mm, Elastophene SP 3.0mm, Elastophene Flam GR, Elastophene Flam FR GR or FR+ GR, 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 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.

**Surfacing:
(Optional)**

Install one of the following to an approved field cap membrane ply. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications.

1. Gravel or slag at 400 lbs. or 300 lbs./sq., respectively, adhered with approved asphalt at an application rate of 60 lbs./sq.
2. Gravel at 400 lbs/sq. adhered with FM Adhesive or FM Adhesive (VOC) at an application rate of 4 gal/sq.
3. Karnak Corporation - Karnak #97 Fibrated Aluminum Roof Coating applied at an application rate of 1½ gal./sq.
4. Soprema - Cural Aluminizer at 2 gal/sq.
5. Thermo Manufacturing Systems, LLC - Super Prep roof coating applied in two coats at an application rate of 1½ gal/sq. per coat.
6. United Coatings Manufacturing Company - Roof Mate Coating, applied in one base coat at an application rate of 1 ½ gal/sq and one finish coat at an application rate of 1½ gal/sq.
7. Insulating Coatings Corporation - Astec 2000 Finish Coat applied in two coats of base at an application rate of ¾ gal/sq. per coat and two coats of finish at an application rate of ¾ gal/sq. per coat.
8. Henry Company - HE280DC – White Elastomeric Roof Coating applied in two coats at an application rate of 1 gal/sq per coat.
9. National Coating – Acryshield® A500 applied in two coats at an application rate of 1 gal/sq. per coat.

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

All General and System Limitations apply.

Deck: 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.

Insulation Base Layer, One or more Layers of the following:

Insulation Bottom Layer

ACFoam II, ACFoam III

Minimum 2.0" thick

**Insulation Fasteners
(Table 3)**

**Fastener
Density/ft²**

1 per 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.

Insulation Top Layer

High Density Fiberboard

Minimum 1/2" thick

**Insulation Fasteners
(Table 3)**

**Fastener
Density/ft²**

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 ft². 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 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 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.



**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 or Colvent TG, Colvent 180 TG, 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 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.

Membrane:

Elastophene Flam GR, Elastophene Flam UW GR, Elastophene Flam 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, 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, UNILAY, UNILAY UW, Sopralene Flam Jardin, Sopralene Mammouth 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 180 Sanded, Elastophene GR, Elastophene UW GR, Elastophene 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, 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.



**Surfacing:
(Optional)**

Install one of the following to an approved field cap membrane ply. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications.

1. Gravel or slag at 400 lbs. or 300 lbs./sq., respectively, adhered with approved asphalt at an application rate of 60 lbs./sq.
2. Gravel at 400 lbs/sq. adhered with FM Adhesive or FM Adhesive (VOC) at an application rate of 4 gal/sq.
3. Karnak Corporation - Karnak #97 Fibrated Aluminum Roof Coating applied at an application rate of 1½ gal./sq.
4. Soprema - Cural Aluminizer at 2 gal/sq.
5. Thermo Manufacturing Systems, LLC - Super Prep roof coating applied in two coats at an application rate of 1½ gal/sq. per coat.
6. United Coatings Manufacturing Company - Roof Mate Coating, applied in one base coat at an application rate of 1 ½ gal/sq and one finish coat at an application rate of 1½ gal/sq.
7. Insulating Coatings Corporation - Astec 2000 Finish Coat applied in two coats of base at an application rate of ¾ gal/sq. per coat and two coats of finish at an application rate of ¾ gal/sq. per coat.
8. Henry Company - HE280DC – White Elastomeric Roof Coating applied in two coats at an application rate of 1 gal/sq per coat.
9. National Coating – Acryshield® A500 applied in two coats at an application rate of 1 gal/sq. per coat.

**Maximum Design
Pressure:**

-75 psf (See General Limitation #7.)



NOA No.: 04-0927.05
Expiration Date: 03/01/11
Approval Date: 02/09/06
Page 22 of 51

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.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
AC Foam II, AC Foam III, ENRGY-2, ENRGY-3, PSI-25, Multi-Max FA, Multi-Max FA-3 Minimum 1" thick	N/A	N/A
DensDeck Minimum ¼" thick	N/A	N/A
Fireguard, Type X gypsum Minimum 5/8" thick	N/A	N/A
Toprox 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/ft²
Toprox Minimum 1" thick	1 or 19	1:2.4 ft ²
ACFoam Composite, ENRGY 2 Composite, ENRGY 2 Plus Minimum 1.5" thick	1, 9, 10, 13, 14, 18, 21, 22, 27 or 28	1:4 ft ²
DensDeck Minimum ¼" thick	1, 10, 19 or 22	1:4 ft ²
Fireguard Minimum 5/8" thick	1, 9, 18 or 21	1:4 ft ²
GAFTEMP Permalite, Fesco Board Minimum ¾" thick	1, 9, 10, 13, 14, 18, 21, 22, 27 or 28	1:2 ft ²
Esgard, High Density Fiberboard, GAFTEMP Fiberboard, Huebert Fiberboard Minimum 1" thick	1, 9, 10, 13, 14, 18, 21, 22, 27 or 28	1:4 ft 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. 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 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.

Membrane:

Elastophene Flam, Elastophene SP 2.2mm, Elastophene SP 3.0mm, Elastophene Flam GR, Elastophene Flam FR GR or FR+ GR, 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 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.

**Surfacing:
(Optional)**

Install one of the following to an approved field cap membrane ply. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications.

1. Gravel or slag at 400 lbs. or 300 lbs./sq., respectively, adhered with approved asphalt at an application rate of 60 lbs./sq.
2. Gravel at 400 lbs/sq. adhered with FM Adhesive or FM Adhesive (VOC) at an application rate of 4 gal/sq.
3. Karnak Corporation - Karnak #97 Fibrated Aluminum Roof Coating applied at an application rate of 1½ gal./sq.
4. Soprema - Cural Aluminizer at 2 gal/sq.
5. Thermo Manufacturing Systems, LLC - Super Prep roof coating applied in two coats at an application rate of 1½ gal/sq. per coat.
6. United Coatings Manufacturing Company - Roof Mate Coating, applied in one base coat at an application rate of 1 ½ gal/sq and one finish coat at an application rate of 1½ gal/sq.
7. Insulating Coatings Corporation - Astec 2000 Finish Coat applied in two coats of base at an application rate of ¾ gal/sq. per coat and two coats of finish at an application rate of ¾ gal/sq. per coat.
8. Henry Company - HE280DC – White Elastomeric Roof Coating applied in two coats at an application rate of 1 gal/sq per coat.
9. National Coating – Acryshield® A500 applied in two coats at an application rate of 1 gal/sq. per coat.

**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.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
AC Foam II, AC Foam III, ENRGY-2, ENRGY-3, PSI-25, Multi-Max FA, Multi-Max FA-3 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/ft²
DensDeck Minimum ¼" thick	1, 9, 10, 13, 14, 18, 21, 22, 27 or 28	1:2 ft ²
Esgard, High Density Fiberboard, GAFTEMP Fiberboard, Huebert Fiberboard Minimum ½" thick	1, 9, 10, 13, 14, 18, 21, 22, 27 or 28	1:2 ft 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. 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, Elastophene PS, 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 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, Elastophene FR GR or 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:
(Optional)**

Install one of the following to an approved field cap membrane ply. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications.

1. Gravel or slag at 400 lbs. or 300 lbs./sq., respectively, adhered with approved asphalt at an application rate of 60 lbs./sq.
2. Gravel at 400 lbs/sq. adhered with FM Adhesive or FM Adhesive (VOC) at an application rate of 4 gal/sq.
3. Karnak Corporation - Karnak #97 Fibrated Aluminum Roof Coating applied at an application rate of 1½ gal./sq.
4. Soprema - Cural Aluminizer at 2 gal/sq.
5. Thermo Manufacturing Systems, LLC - Super Prep roof coating applied in two coats at an application rate of 1½ gal/sq. per coat.
6. United Coatings Manufacturing Company - Roof Mate Coating, applied in one base coat at an application rate of 1 ½ gal/sq and one finish coat at an application rate of 1½ gal/sq.
7. Insulating Coatings Corporation - Astec 2000 Finish Coat applied in two coats of base at an application rate of ¾ gal/sq. per coat and two coats of finish at an application rate of ¾ gal/sq. per coat.
8. Henry Company - HE280DC – White Elastomeric Roof Coating applied in two coats at an application rate of 1 gal/sq per coat.
9. National Coating – Acryshield® A500 applied in two coats at an application rate of 1 gal/sq. per coat.

**Maximum Design
Pressure:**

-52.5 psf (See General Limitation #7)



NOA No.: 04-0927.05
Expiration Date: 03/01/11
Approval Date: 02/09/06
Page 26 of 51

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.

Base Insulation Layer

	Insulation Fasteners (Table 3)	Fastener Density/ft²
AC Foam II, AC Foam III, ENRGY-2, ENRGY-3, PSI-25, Multi-Max FA, Multi-Max FA-3 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/ft²
DensDeck Minimum ¼" thick	13	1:1.78 ft 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. 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.

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 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.)



Membrane:

Elastophene Flam, Elastophene SP 2.2mm, Elastophene SP 3.0mm, Elastophene Flam GR, Elastophene Flam FR GR or FR+ GR, 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, 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.

Or

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

**Surfacing:
(Optional)**

Install one of the following to an approved field cap membrane ply. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications.

1. Gravel or slag at 400 lbs. or 300 lbs./sq., respectively, adhered with approved asphalt at an application rate of 60 lbs./sq.
2. Gravel at 400 lbs/sq. adhered with FM Adhesive or FM Adhesive (VOC) at an application rate of 4 gal/sq.
3. Karnak Corporation - Karnak #97 Fibrated Aluminum Roof Coating applied at an application rate of 1½ gal./sq.
4. Soprema - Cural Aluminizer at 2 gal/sq.
5. Thermo Manufacturing Systems, LLC - Super Prep roof coating applied in two coats at an application rate of 1½ gal/sq. per coat.
6. United Coatings Manufacturing Company - Roof Mate Coating, applied in one base coat at an application rate of 1 ½ gal/sq and one finish coat at an application rate of 1½ gal/sq.
7. Insulating Coatings Corporation - Astec 2000 Finish Coat applied in two coats of base at an application rate of ¾ gal/sq. per coat and two coats of finish at an application rate of ¾ gal/sq. per coat.
8. Henry Company - HE280DC – White Elastomeric Roof Coating applied in two coats at an application rate of 1 gal/sq per coat.
9. National Coating – Acryshield® A500 applied in two coats at an application rate of 1 gal/sq. per coat.

**Maximum Design
Pressure:**

-52.5 psf (See General Limitation #7)



Deck Type 2I: Steel, Insulated
Deck Description: 18-22 ga. steel
System Type C(4): All layers of insulation simultaneously attached.

All General and System Limitations apply.

Deck: 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.

Insulation Base Layer, One or more Layers of the following:

Minimum 1.4" thick: AC Foam II, AC Foam III, Hy-Therm AP, E'NRG'Y-2 ENRGY-3, H-Shield, Multi-Max FA, Multi-Max FA-3

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

Insulation Top Layer

	Insulation Fasteners (Table 3)	Fastener Density/ft²
DensDeck		
Minimum ¼" thick	1 (min. #14 screws only)	1 per 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 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, Colvent 180 TG or Colvent TG, 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 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.

Membrane:

Elastophene Flam GR, Elastophene Flam UW GR, Elastophene Flam 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, 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, UNILAY, UNILAY UW, 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 180 Sanded, Elastophene GR, Elastophene UW GR, Elastophene 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, 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.



**Surfacing:
(Optional)**

Install one of the following to an approved field cap membrane ply. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications.

1. Gravel or slag at 400 lbs. or 300 lbs./sq., respectively, adhered with approved asphalt at an application rate of 60 lbs./sq.
2. Gravel at 400 lbs/sq. adhered with FM Adhesive or FM Adhesive (VOC) at an application rate of 4 gal/sq.
3. Karnak Corporation - Karnak #97 Fibrated Aluminum Roof Coating applied at an application rate of 1½ gal./sq.
4. Soprema - Cural Aluminizer at 2 gal/sq.
5. Thermo Manufacturing Systems, LLC - Super Prep roof coating applied in two coats at an application rate of 1½ gal/sq. per coat.
6. United Coatings Manufacturing Company - Roof Mate Coating, applied in one base coat at an application rate of 1 ½ gal/sq and one finish coat at an application rate of 1½ gal/sq.
7. Insulating Coatings Corporation - Astec 2000 Finish Coat applied in two coats of base at an application rate of ¾ gal/sq. per coat and two coats of finish at an application rate of ¾ gal/sq. per coat.
8. Henry Company - HE280DC – White Elastomeric Roof Coating applied in two coats at an application rate of 1 gal/sq per coat.
9. National Coating – Acryshield® A500 applied in two coats at an application rate of 1 gal/sq. per coat.

**Maximum Design
Pressure:**

-60 psf (See General Limitation #7.)



NOA No.: 04-0927.05
Expiration Date: 03/01/11
Approval Date: 02/09/06
Page 31 of 51

Deck Type 2I: Steel, Insulated
Deck Description: 18-22 ga. steel
System Type C(5): All layers of insulation simultaneously attached.

All General and System Limitations apply.

Deck: 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.

Insulation Base Layer, One or more Layers of the following:

Minimum 1.4" thick: ACFoam II, ACFoam III, Hy-Therm AP, E'NRG'Y-2, ENRGY-3. H-Shield, Multi-Max FA, Multi-Max FA-3

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

Insulation Top Layer

DensDeck

Minimum ¼" thick

Insulation Fasteners (Table 3)	Fastener Density/ft²
1 (min. #14 screws only)	1 per 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.

**Ply Sheet:
(Optional)** 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 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, Colvent 180 TG or Colvent TG, heat welded
 Or
 One ply of Sopralene Stick, self-adhered.



Membrane:

Elastophene Flam GR, Elastophene Flam UW GR, Elastophene Flam 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, 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, UNILAY, UNILAY UW, Sopralene Flam Jardin, Sopralene Mammouth 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 180 Sanded, Elastophene GR, Elastophene UW GR, Elastophene 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, 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 or

Colphene FR GR or Colphene HR FR GR self-adhered.

**Surfacing:
(Optional)**

Install one of the following to an approved field cap membrane ply. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications.

1. Gravel or slag at 400 lbs. or 300 lbs./sq., respectively, adhered with approved asphalt at an application rate of 60 lbs./sq.
2. Gravel at 400 lbs/sq. adhered with FM Adhesive or FM Adhesive (VOC) at an application rate of 4 gal/sq.
3. Karnak Corporation - Karnak #97 Fibrated Aluminum Roof Coating applied at an application rate of 1½ gal./sq.
4. Soprema - Cural Aluminizer at 2 gal/sq.
5. Thermo Manufacturing Systems, LLC - Super Prep roof coating applied in two coats at an application rate of 1½ gal/sq. per coat.
6. United Coatings Manufacturing Company - Roof Mate Coating, applied in one base coat at an application rate of 1 ½ gal/sq and one finish coat at an application rate of 1½ gal/sq.
7. Insulating Coatings Corporation - Astec 2000 Finish Coat applied in two coats of base at an application rate of ¾ gal/sq. per coat and two coats of finish at an application rate of ¾ gal/sq. per coat.
8. Henry Company - HE280DC – White Elastomeric Roof Coating applied in two coats at an application rate of 1 gal/sq per coat.
9. National Coating – Acryshield® A500 applied in two coats at an application rate of 1 gal/sq. per coat.

**Maximum Design
Pressure:**

-60 psf (See General Limitation #7.)



Deck Type 2I: Steel, Insulated
Deck Description: 18-22 ga. steel
System Type C(6): All layers of insulation simultaneously attached.

All General and System Limitations apply.

Deck: 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.

Insulation Base Layer, One or more layers of the following:

One or more layers of Approved insulation for use with Roof Cover, loose laid.

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

Insulation Top Layer

	Insulation Fasteners (Table 3)	Fastener Density/ft²
SECUROCK®		
Minimum ½" thick	OMG HD with OMG Std. Metal Plate	1 per 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 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 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 or Colvent 180 TG, heat welded.



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, Colvent TG or Colvent 180 TG, 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 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.

Membrane:

Elastophene Flam GR, Elastophene Flam UW GR, Elastophene Flam 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, 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, UNILAY, UNILAY UW, Sopralene Flam Jardin, Sopralene Mammouth 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 180 Sanded, Elastophene GR, Elastophene UW GR, Elastophene 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, 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.



**Surfacing:
(Optional)**

Install one of the following to an approved field cap membrane ply. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications.

1. Gravel or slag at 400 lbs. or 300 lbs./sq., respectively, adhered with approved asphalt at an application rate of 60 lbs./sq.
 2. Gravel at 400 lbs/sq. adhered with FM Adhesive or FM Adhesive (VOC) at an application rate of 4 gal/sq.
 3. Karnak Corporation - Karnak #97 Fibrated Aluminum Roof Coating applied at an application rate of 1½ gal./sq.
 4. Soprema - Cural Aluminizer at 2 gal/sq.
 5. Thermo Manufacturing Systems, LLC - Super Prep roof coating applied in two coats at an application rate of 1½ gal/sq. per coat.
 6. United Coatings Manufacturing Company - Roof Mate Coating, applied in one base coat at an application rate of 1 ½ gal/sq and one finish coat at an application rate of 1½ gal/sq.
 7. Insulating Coatings Corporation - Astec 2000 Finish Coat applied in two coats of base at an application rate of ¾ gal/sq. per coat and two coats of finish at an application rate of ¾ gal/sq. per coat.
 8. Henry Company - HE280DC – White Elastomeric Roof Coating applied in two coats at an application rate of 1 gal/sq per coat.
 9. National Coating – Acryshield® A500 applied in two coats at an application rate of 1 gal/sq. per coat.
- 75.0 psf (See General Limitation #7.)

**Maximum Design
Pressure:**



NOA No.: 04-0927.05
Expiration Date: 03/01/11
Approval Date: 02/09/06
Page 36 of 51

Deck Type 2I: Steel, Insulated
Deck Description: 18-22 ga. steel
System Type C(7): All layers of insulation simultaneously attached.

All General and System Limitations apply.

Deck: 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.

Insulation Base Layer, One or more layers of the following:

One or more layers of Approved insulation for use with Roof Cover, loose laid.

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

Insulation Top Layer

Sopraboard

Minimum 0.125" thick

Insulation Fasteners
(Table 3)

Fastener
Density/ft²

Dekfast #15, Roofgrip #15, OMG #15 XHD, SFS Extra load fastener or Tru- Fast #15	1 per 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 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 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 or Colvent 180 TG, heat welded.



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, Colvent TG or Colvent 180 TG, 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 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.

Membrane:

Elastophene Flam GR, Elastophene Flam UW GR, Elastophene Flam 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, 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, UNILAY, UNILAY UW, Sopralene Flam Jardin, Sopralene Mammouth 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 180 Sanded, Elastophene GR, Elastophene UW GR, Elastophene 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, 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.



**Surfacing:
(Optional)**

Install one of the following to an approved field cap membrane ply. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications.

1. Gravel or slag at 400 lbs. or 300 lbs./sq., respectively, adhered with approved asphalt at an application rate of 60 lbs./sq.
 2. Gravel at 400 lbs/sq. adhered with FM Adhesive or FM Adhesive (VOC) at an application rate of 4 gal/sq.
 3. Karnak Corporation - Karnak #97 Fibrated Aluminum Roof Coating applied at an application rate of 1½ gal./sq.
 4. Soprema - Cural Aluminizer at 2 gal/sq.
 5. Thermo Manufacturing Systems, LLC - Super Prep roof coating applied in two coats at an application rate of 1½ gal/sq. per coat.
 6. United Coatings Manufacturing Company - Roof Mate Coating, applied in one base coat at an application rate of 1 ½ gal/sq and one finish coat at an application rate of 1½ gal/sq.
 7. Insulating Coatings Corporation - Astec 2000 Finish Coat applied in two coats of base at an application rate of ¾ gal/sq. per coat and two coats of finish at an application rate of ¾ gal/sq. per coat.
 8. Henry Company - HE280DC – White Elastomeric Roof Coating applied in two coats at an application rate of 1 gal/sq per coat.
 9. National Coating – Acryshield® A500 applied in two coats at an application rate of 1 gal/sq. per coat.
- 90.0 psf (See General Limitation #7.)

**Maximum Design
Pressure:**



NOA No.: 04-0927.05
Expiration Date: 03/01/11
Approval Date: 02/09/06
Page 39 of 51

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.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
AC Foam II, AC Foam III, ENRGY-2, ENRGY-3, Multi-Max FA, Multi-Max FA-3 Minimum 1.5" thick	N/A	N/A
Base or Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Toprox Minimum 1" thick	N/A	N/A
(Optional) Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
BP High Strength, FM-90 Traffic Top/High Density, GAFTEMP High Density, Roof Insulation Board, High Density Fiberboard, Fiber Base HD1, HD6, Structodek Minimum ½" thick	N/A	N/A
GAFTEMP Permalite, Fesco Board Minimum ¾" thick	N/A	N/A
DensDeck Minimum ¼" thick	N/A	N/A
Fireguard, Type X gypsum Minimum ⅝" 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 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.

Membrane:

Elastophene Flam, Elastophene SP 2.2mm, Elastophene SP 3.0mm, Elastophene Flam GR, Elastophene Flam FR GR or FR+ GR, 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 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.

**Surfacing:
(Optional)**

Install one of the following to an approved field cap membrane ply. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications.

1. Gravel or slag at 400 lbs. or 300 lbs./sq., respectively, adhered with approved asphalt at an application rate of 60 lbs./sq.
2. Gravel at 400 lbs/sq. adhered with FM Adhesive or FM Adhesive (VOC) at an application rate of 4 gal/sq.
3. Karnak Corporation - Karnak #97 Fibrated Aluminum Roof Coating applied at an application rate of 1½ gal./sq.
4. Soprema - Cural Aluminizer at 2 gal/sq.
5. Thermo Manufacturing Systems, LLC - Super Prep roof coating applied in two coats at an application rate of 1½ gal/sq. per coat.
6. United Coatings Manufacturing Company - Roof Mate Coating, applied in one base coat at an application rate of 1 ½ gal/sq and one finish coat at an application rate of 1½ gal/sq.
7. Insulating Coatings Corporation - Astec 2000 Finish Coat applied in two coats of base at an application rate of ¾ gal/sq. per coat and two coats of finish at an application rate of ¾ gal/sq. per coat.
8. Henry Company - HE280DC – White Elastomeric Roof Coating applied in two coats at an application rate of 1 gal/sq per coat.
9. National Coating – Acryshield® A500 applied in two coats at an application rate of 1 gal/sq. per coat.

**Maximum Design
Pressure:**

-60 psf (See General Limitation #7)



NOA No.: 04-0927.05
Expiration Date: 03/01/11
Approval Date: 02/09/06
Page 41 of 51

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.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
AC Foam II, AC Foam III, ENRGY-2, ENRGY-3, Multi-Max FA, Multi-Max FA-3 Minimum 1.4" thick	N/A	N/A
Toprox Minimum 2" thick	N/A	N/A
(Optional) Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
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 180 Flam or Elastophene 180 Flam 2.5 mm fastened to the deck as described below:
- 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 -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 -77.5 psf - See General Limitation #9.)*
- 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 -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 -75 psf - See General Limitation #7.)*
- Fastening #5:** (Limited to use of Soprafix[X] Membrane 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 -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 -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.)
- Membrane:** Elastophene Flam, Elastophene SP 2.2mm, Elastophene 3.0mm, Elastophene Flam GR, Elastophene Flam FR GR or FR+ GR, Sopralene (180, 250, 350) Flam GR, Sopralene (180, 250, 350) Flam FR GR or FR+ GR, UNILAY or Sopralast heat welded Or Colphene FR GR or Colphene HR FR GR self adhered. (Note: Prime sanded surfaced Base or Ply Sheet.)



**Surfacing:
(Optional)**

Install one of the following to an approved field cap membrane ply. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications.

1. Gravel or slag at 400 lbs. or 300 lbs./sq., respectively, adhered with approved asphalt at an application rate of 60 lbs./sq.
2. Gravel at 400 lbs/sq. adhered with FM Adhesive or FM Adhesive (VOC) at an application rate of 4 gal/sq.
3. Karnak Corporation - Karnak #97 Fibrated Aluminum Roof Coating applied at an application rate of 1½ gal./sq.
4. Soprema - Cural Aluminizer at 2 gal/sq.
5. Thermo Manufacturing Systems, LLC - Super Prep roof coating applied in two coats at an application rate of 1½ gal/sq. per coat.
6. United Coatings Manufacturing Company - Roof Mate Coating, applied in one base coat at an application rate of 1 ½ gal/sq and one finish coat at an application rate of 1½ gal/sq.
7. Insulating Coatings Corporation - Astec 2000 Finish Coat applied in two coats of base at an application rate of ¾ gal/sq. per coat and two coats of finish at an application rate of ¾ gal/sq. per coat.
8. Henry Company - HE280DC – White Elastomeric Roof Coating applied in two coats at an application rate of 1 gal/sq per coat.
9. National Coating – Acryshield® A500 applied in two coats at an application rate of 1 gal/sq. per coat.

**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

Any listed insulation listed herein.

Base Sheet: One ply of Soprafix [X] Membrane 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.

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

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

Surfacing:
(Optional) Install one of the following to an approved field cap membrane ply. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications.

1. Gravel or slag at 400 lbs. or 300 lbs./sq., respectively, adhered with approved asphalt at an application rate of 60 lbs./sq.
2. Gravel at 400 lbs/sq. adhered with FM Adhesive or FM Adhesive (VOC) at an application rate of 4 gal/sq.
3. Karnak Corporation - Karnak #97 Fibrated Aluminum Roof Coating applied at an application rate of 1½ gal./sq.
4. Soprema - Cural Aluminizer at 2 gal/sq.
5. Thermo Manufacturing Systems, LLC - Super Prep roof coating applied in two coats at an application rate of 1½ gal/sq. per coat.
6. United Coatings Manufacturing Company - Roof Mate Coating, applied in one base coat at an application rate of 1 ½ gal/sq and one finish coat at an application rate of 1½ gal/sq.
7. Insulating Coatings Corporation - Astec 2000 Finish Coat applied in two coats of base at an application rate of ¾ gal/sq. per coat and two coats of finish at an application rate of ¾ gal/sq. per coat.
8. Henry Company - HE280DC – White Elastomeric Roof Coating applied in two coats at an application rate of 1 gal/sq per coat.
9. National Coating – Acryshield® A500 applied in two coats at an application rate of 1 gal/sq. per coat.

Maximum Design Pressure:

-112.5 psf (See General Limitation #7.)



NOA No.: 04-0927.05
Expiration Date: 03/01/11
Approval Date: 02/09/06
Page 45 of 51

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.

Insulation Layer

**Insulation Fasteners
(Table 3)**

**Fastener
Density/ft²**

Any listed insulation listed herein.

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:
(Optional)** Install one of the following to an approved field cap membrane ply. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications.

1. Gravel or slag at 400 lbs. or 300 lbs./sq., respectively, adhered with approved asphalt at an application rate of 60 lbs./sq.
2. Gravel at 400 lbs/sq. adhered with FM Adhesive or FM Adhesive (VOC) at an application rate of 4 gal/sq.
3. Karnak Corporation - Karnak #97 Fibrated Aluminum Roof Coating applied at an application rate of 1½ gal./sq.
4. Soprema - Cural Aluminizer at 2 gal/sq.
5. Thermo Manufacturing Systems, LLC - Super Prep roof coating applied in two coats at an application rate of 1½ gal/sq. per coat.
6. United Coatings Manufacturing Company - Roof Mate Coating, applied in one base coat at an application rate of 1 ½ gal/sq and one finish coat at an application rate of 1½ gal/sq.
7. Insulating Coatings Corporation - Astec 2000 Finish Coat applied in two coats of base at an application rate of ¾ gal/sq. per coat and two coats of finish at an application rate of ¾ gal/sq. per coat.
8. Henry Company - HE280DC – White Elastomeric Roof Coating applied in two coats at an application rate of 1 gal/sq per coat.
9. National Coating – Acryshield® A500 applied in two coats at an application rate of 1 gal/sq. per coat.

**Maximum Design
Pressure:**

-82.5 psf (See General Limitation #7.)



NOA No.: 04-0927.05
Expiration Date: 03/01/11
Approval Date: 02/09/06
Page 46 of 51

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.

Insulation: One or more layers of any approved insulation and/or coverboard material, with top layer preliminarily secured with approved plates and fasteners.

Base Sheet: Soprafix or Soprafix (X) mechanically attached with ITW Buildex Polymer Batten Strip and 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

**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

Membrane: 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, UNILAY, UNILAY UW, heat welded

**Surfacing:
(Optional)** Install one of the following to an approved field cap membrane ply. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications.

1. Gravel or slag at 400 lbs. or 300 lbs./sq., respectively, adhered with approved asphalt at an application rate of 60 lbs./sq.
2. Gravel at 400 lbs/sq. adhered with FM Adhesive or FM Adhesive (VOC) at an application rate of 4 gal/sq.
3. Karnak Corporation - Karnak #97 Fibrated Aluminum Roof Coating applied at an application rate of 1½ gal./sq.
4. Soprema - Cural Aluminizer at 2 gal/sq.
5. Thermo Manufacturing Systems, LLC - Super Prep roof coating applied in two coats at an application rate of 1½ gal/sq. per coat.
6. United Coatings Manufacturing Company - Roof Mate Coating, applied in one base coat at an application rate of 1 ½ gal/sq and one finish coat at an application rate of 1½ gal/sq.
7. Insulating Coatings Corporation - Astec 2000 Finish Coat applied in two coats of base at an application rate of ¾ gal/sq. per coat and two coats of finish at an application rate of ¾ gal/sq. per coat.
8. Henry Company - HE280DC – White Elastomeric Roof Coating applied in two coats at an application rate of 1 gal/sq per coat.
9. National Coating – Acryshield® A500 applied in two coats at an application rate of 1 gal/sq. per coat.

Maximum Design Pressure: -105 psf (See General Limitation #7.)



NOA No.: 04-0927.05
Expiration Date: 03/01/11
Approval Date: 02/09/06
Page 47 of 51

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.

Insulation: One or more layers of any approved insulation and/or coverboard material, with top layer preliminarily secured with approved plates and fasteners.

Base Sheet: Soprafix or Soprafix (X) mechanically attached with ITW Buildex Polymer Batten Strip and 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.

**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.

Membrane: 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, UNILAY, UNILAY UW, heat welded

**Surfacing:
(Optional)** Install one of the following to an approved field cap membrane ply. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications.

1. Gravel or slag at 400 lbs. or 300 lbs./sq., respectively, adhered with approved asphalt at an application rate of 60 lbs./sq.
2. Gravel at 400 lbs/sq. adhered with FM Adhesive or FM Adhesive (VOC) at an application rate of 4 gal/sq.
3. Karnak Corporation - Karnak #97 Fibrated Aluminum Roof Coating applied at an application rate of 1½ gal./sq.
4. Soprema - Cural Aluminizer at 2 gal/sq.
5. Thermo Manufacturing Systems, LLC - Super Prep roof coating applied in two coats at an application rate of 1½ gal/sq. per coat.
6. United Coatings Manufacturing Company - Roof Mate Coating, applied in one base coat at an application rate of 1 ½ gal/sq and one finish coat at an application rate of 1½ gal/sq.
7. Insulating Coatings Corporation - Astec 2000 Finish Coat applied in two coats of base at an application rate of ¾ gal/sq. per coat and two coats of finish at an application rate of ¾ gal/sq. per coat.
8. Henry Company - HE280DC – White Elastomeric Roof Coating applied in two coats at an application rate of 1 gal/sq per coat.
9. National Coating – Acryshield® A500 applied in two coats at an application rate of 1 gal/sq. per coat.

Maximum Design Pressure: -120 psf (See General Limitation #7.)



NOA No.: 04-0927.05
Expiration Date: 03/01/11
Approval Date: 02/09/06
Page 48 of 51

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.

Insulation: One or more layers of any approved insulation and/or coverboard material, with top layer preliminarily secured with approved plates and fasteners.

Base Sheet: Soprafix, Soprafix (X) or Soprafix-e mechanically attached with ITW Buildex Polymer Batten Strip and 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.

**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

Membrane: 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, UNILAY, UNILAY UW, heat welded

**Surfacing:
(Optional)** Install one of the following to an approved field cap membrane ply. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications.

1. Gravel or slag at 400 lbs. or 300 lbs./sq., respectively, adhered with approved asphalt at an application rate of 60 lbs./sq.
2. Gravel at 400 lbs/sq. adhered with FM Adhesive or FM Adhesive (VOC) at an application rate of 4 gal/sq.
3. Karnak Corporation - Karnak #97 Fibrated Aluminum Roof Coating applied at an application rate of 1½ gal./sq.
4. Soprema - Cural Aluminizer at 2 gal/sq.
5. Thermo Manufacturing Systems, LLC - Super Prep roof coating applied in two coats at an application rate of 1½ gal/sq. per coat.
6. United Coatings Manufacturing Company - Roof Mate Coating, applied in one base coat at an application rate of 1 ½ gal/sq and one finish coat at an application rate of 1½ gal/sq.
7. Insulating Coatings Corporation - Astec 2000 Finish Coat applied in two coats of base at an application rate of ¾ gal/sq. per coat and two coats of finish at an application rate of ¾ gal/sq. per coat.
8. Henry Company - HE280DC – White Elastomeric Roof Coating applied in two coats at an application rate of 1 gal/sq per coat.
9. National Coating – Acryshield® A500 applied in two coats at an application rate of 1 gal/sq. per coat.

Maximum Design Pressure: -97.5 psf (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.

Insulation: One or more layers of minimum 1.5" thick AC Foam II or any approved polyisocyanurate insulation, loose laid.

Base Sheet: Soprafix, Soprafix (X) or Soprafix-e mechanically attached with ITW Buildex Polymer Batten Strip and 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.

**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

Membrane: 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, UNILAY, UNILAY UW, heat welded

**Surfacing:
(Optional)** Install one of the following to an approved field cap membrane ply. Refer to Underwriters Laboratories or Intertek Testing Services listings for applicable fire classifications.

1. Gravel or slag at 400 lbs. or 300 lbs./sq., respectively, adhered with approved asphalt at an application rate of 60 lbs./sq.
2. Gravel at 400 lbs/sq. adhered with FM Adhesive or FM Adhesive (VOC) at an application rate of 4 gal/sq.
3. Karnak Corporation - Karnak #97 Fibrated Aluminum Roof Coating applied at an application rate of 1½ gal./sq.
4. Soprema - Cural Aluminizer at 2 gal/sq.
5. Thermo Manufacturing Systems, LLC - Super Prep roof coating applied in two coats at an application rate of 1½ gal/sq. per coat.
6. United Coatings Manufacturing Company - Roof Mate Coating, applied in one base coat at an application rate of 1 ½ gal/sq and one finish coat at an application rate of 1½ gal/sq.
7. Insulating Coatings Corporation - Astec 2000 Finish Coat applied in two coats of base at an application rate of ¾ gal/sq. per coat and two coats of finish at an application rate of ¾ gal/sq. per coat.
8. Henry Company - HE280DC – White Elastomeric Roof Coating applied in two coats at an application rate of 1 gal/sq per coat.
9. National Coating – Acryshield® A500 applied in two coats at an application rate of 1 gal/sq. per coat.

Maximum Design Pressure: -75 psf (See General Limitation #7.)



NOA No.: 04-0927.05
Expiration Date: 03/01/11
Approval Date: 02/09/06
Page 50 of 51

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 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 sidelap and one down the center of the sheet allowing a continuous area of ventilation. Encircling of the strips is not acceptable. A 6" break shall be placed every 12' in each ribbon to allow cross ventilation. Asphalt application of either system shall be at a minimum rate of 12 lbs./sq. **Note: Spot attached systems shall be limited to a maximum design pressure of -45 psf.**
5. Fastener spacing for insulation attachment is based on a Minimum Characteristic Force (F') value of 275 lbf., as tested in compliance with Testing Application Standard TAS 105. If the fastener value, as field-tested, are below 275 lbf. Insulation attachment shall not be acceptable.
6. Fastener spacing for mechanical attachment of anchor/base sheet or membrane attachment is based on a minimum fastener resistance value in conjunction with the maximum design value listed within a specific system. Should the fastener resistance be less than that required, as determined by the Building Official, a revised fastener spacing, prepared, signed and sealed by a Florida registered 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 with Roofing Application Standard RAS 111 and applicable wind load requirements.
9. The maximum designed pressure limitation listed shall be applicable to all roof pressure zones (i.e. field, perimeters, and corners). Neither rational analysis, nor extrapolation shall be permitted for enhanced fastening at enhanced pressure zones (i.e. perimeters, extended corners and corners). **(When this limitation is specifically referred within this NOA, General Limitation #7 will not be applicable.)**
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.: 04-0927.05
Expiration Date: 03/01/11
Approval Date: 02/09/06
Page 51 of 51