MIAMI-DADE

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 Lightweight Insulating Concrete 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 # 01-0116.12 and consists of pages 1 through 47.
The submitted documentation was reviewed by Jorge L. Acebo.

PRODUCT CONTROL ACCEPTED

ROOFING SYSTEM APPROVAL

Category:	Roofing
Sub-Category:	Modified Bitumen
Material:	SBS
Deck Type:	Lightweight Insulating Concrete
Maximum Design Pressure	-410 psf
Fire Classification:	See General Limitation #1

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

Product	Dimensions	Test Specification	Product Description
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 ply sheet. Sopra IV or VI are used in multi-ply systems and complies with ASTM and UL Standards. Applied in hot asphalt or cold adhesive.

Product	Dimensions	Test Specification	Product Description
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.

Product	Dimensions	Test Specification	Product Description
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.

Product	Dimensions	Test Specification	Product Description
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).

Product	Dimensions	Test Specification	Product Description
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).

Product	Dimensions	Test Specification	Product Description
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.

Product	Dimensions	Test Specification	Product Description
Elastocol 500 and 600c		ASTM D 41	Asphalt primers.
Sopracolle			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		Plasticized 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	Composite polyisocyanurate insulation	Apache Products Company
ACFoam II, ACFoam III	Polyisocyanurate foam insulation	Atlas Energy Products
ACFoam Composite	Composite polyisocyanurate insulation board	Atlas Energy Products
FlintBoard ISO, FlintBoard ISO Cold	Polyisocyanurate foam insulation	CertainTeed Corp.
FlintBoard ISO Plus	Composite polyisocyanurate insulation board	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
Thermaroof Composite	Composite Insulation board	RMax
UltraMax	Polyisocyanurate foam insulation	RMax
Multi-Max FA-3	Polyisocyanurate foam insulation	RMax
Thermaroof 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 attachment 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 ¼"	Construction Fasteners, Inc.
Dekfast Lock Plate	Polypropylene locking plate.	3" x 3 ¼"	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.
Accutrac 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	Galvalume stress plate	3" round	OMG, Inc.
Lite-Deck	Insulation fastener for CWF and Gypsum decks.		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 ¼"	SFS Intec
DekFlat Lock Plate	Polypropylene locking plate.	3" x 3 ¼"	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" Round Insulation Plate	Galvalume AZ50 steel plate	3" round	SFS Intec
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:

Test Agency/Identifier	Name	Report	Date
Atlantic & Caribbean Roof Consulting, LLC	ACRC03008	Wind Uplift	07.11.03
Factory Mutual Research Corporation	J.I. 0PA2.AM	Wind Uplift Classification	11.29.89
	J.I. 2P2A7.AM	Wind Uplift Classification	11.29.89
	J.I. 1W8A1.AM	Wind Uplift Classification	07.15.93
	J.I. 1Z3A6.AM	Wind Uplift Classification	04.27.95
	J.I. 152A1.AM	Wind Uplift Classification	11.28.84
	J.I. 2D0A0.AM	Wind Uplift Classification	08.15.97
	J.I. 3001334	Wind Uplift Classification	01.25.00
	J.I. 3009814	Class 4470	09.06.02
	J.I. 3002351	Wind Uplift Classification	
Dynatech Engineering Corp.	10.94.27	Wind Uplift	10.27.94
	2491-04.95	Wind Uplift	01.04.95
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	05.11.98
	2738.10.00-1	Wind Uplift	10.20.02
	2109.08.02	Wind Uplift	08.06.02
	2766.12.03	Wind Uplift	12.01.03
	2760.12.04-R1	Wind Uplift	12.23.04
ITS / Warnock Hersey		ASTM D 5147 Physical Property Testing	05.27.93
IRT of S. Florida, Inc.	990028	TAS 114	09.30.99
	02-031	Wind Uplift	09.06.02

APPROVED ASSEMBLIES:

Deck Type 4I: Lightweight Concrete, Insulated

Deck Description: Cellular or Aggregate Lightweight Concrete, 300 psi. min

System Type A: Anchor sheet mechanically fastened; one or more layers of insulation 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, ACFoam III, ENRGY-2, ENRGY-3, PSI-25 **Minimum 1.4" thick**	**N/A**	**N/A**

Base or Top Insulation Layer	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Toprox **Minimum 1" thick**	**N/A**	**N/A**

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 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**

Note: Apply optional top layer of insulation shall be adhered with approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft^2. 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.

Anchor Sheet: One ply of Sopra-G, Modified Sopra-G, Sopraglass 100, Sopravent, Sopra 4897, Soprabase, GAFGLAS #75 or GAFGLAS Stratavent fastened to the deck as described below:

Fastening #1:	Attach anchor sheet using Olympic CR Base Ply Fasteners or ES FM-90 spaced 7" o.c. in a 4" lap and 7" o.c. in two staggered rows in the center of the sheet. ***(meets –52.5 psf – See General Limitation #7.)***
Fastening #2:	Attach anchor sheet using Simplex or SFS Stadler Base-Lok fasteners spaced 9" o.c. in a 4" lap and 12" o.c. in two staggered rows in the center of the sheet. ***(meets –52.5 psf – See General Limitation #7.)***
Fastening #3:	Attach anchor sheet using Simplex Turbo Tube-Lok fasteners spaced 9" o.c. in a 4" lap and 12" o.c. in two staggered rows in the center of the sheet. ***(meets –45 psf – See General Limitation #9.)***
Base Sheet:	**(Optional)** One or more plies of Sopra-G, Modified Sopra-G, Sopraglass 100, Sopra-IV, Sopra-VI, Soprabase, GAFGLAS #75 JM Glasbase, JM Glasply IV or 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 ply 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 Elastophene Sanded, 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 ASTM D 2178 Type IV or 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 3.0mm, Elastophene Flam GR, Elastophene Flam FR GR, FR+GR, Sopralene (180, 250, 350) Flam GR, Sopralene (180, 250, 350) Flam FR GR, FR+GR or Sopralast 50 TV Alu heat welded Or Elastophene Sanded, Elastophene 180 Sanded, Sopralene (180, 250, 350) Sanded, Elastophene 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:

See Fastening Requirements above

Deck Type 4:	Lightweight Concrete
Deck Description:	Celcore Cellular Lightweight Insulating Concrete, Min. 200 psi
System Type C(1):	All layers of insulation simultaneously attached.

All General and System Limitations apply.

Deck:	Minimum 22 ga. type BW36-22 slotted steel decking attached to supports spaced 5' o.c. maximum using 5/8" puddle welds (every bottom flute). Steel deck side laps are attached with three Traxx 1 #10 evenly spaced between supports. Or structural concrete deck.
Insulation:	Min. 1/8" thick Sopraboard, mechanically attached with Soprema #15 HL Fasteners at a rate of one fastener per 1.33 ft^2.
Primer: (Optional)	Elastocol 500, Elastocol 600c or AquaTac applied at a rate of 1 gal/sq, to top surface of any base or ply sheet prior to application of next layer
Base Sheet:	One layer 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 One layer 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, applied in hot asphalt
Ply Sheet: (Optional)	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 hot asphalt at 25 lbs/sq
Membrane:	One layer of 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

One layer of 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

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.)

Deck Type 4: Lightweight Concrete

Deck Description: Cellular or Aggregate Lightweight Concrete, 250 psi. min.

System Type E(1): Base sheet mechanically fastened.

All General and System Limitations apply.

Base Sheet: One ply of Sopra-G, Modified Sopra-G, Sopraglass 100, Sopravent, Sopra 4897, Soprabase, GAFGLAS #75 or GAFGLAS Stratavent fastened to the deck as described below:

Fastening #1: Attach anchor sheet using Olympic CR Base Ply Fasteners or ES FM-90 spaced 7" o.c. in a 4" lap and 7" o.c. in two staggered rows in the center of the sheet. ***(meets –52.5 psf – See General Limitation #7.)***

Fastening #2: Attach anchor sheet using Simplex or SFS Stadler Base-Lok fasteners spaced 9" o.c. in a 4" lap and 12" o.c. in two staggered rows in the center of the sheet. ***(meets –52.5 psf – See General Limitation #7.)***

Fastening #3: Attach anchor sheet using Simplex Turbo Tube-Lok fasteners spaced 9" o.c. in a 4" lap and 12" o.c. in two staggered rows in the center of the sheet. ***(meets –45 psf – See General Limitation #9.)***

Ply Sheet: One ply of Elastophene Sanded, Elastophene 180 Sanded, Elastophene PS, Elastophene 180 PS, Sopralene (180, 250 or 350) PS, or Sopralene (180, 250 or 350) Sanded one or more plies of ASTM D 2178 Type IV or 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, FR+GR, Sopralene (180, 250, 350) Flam GR, Sopralene (180, 250, 350) Flam FR GR, FR+GR, or Sopralast 50 TV Alu heat welded

Or

Elastophene Sanded, Elastophene 180 Sanded, Sopralene (180, 250, 350) Sanded, Elastophene 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:

See Fastening Requirements above

Deck Type 4:	Lightweight Concrete
Deck Description:	Cellular Concrete, LLC. Lightweight Insulating Concrete, 300 psi. min
System Type E(2):	Base sheet mechanically fastened.

All General and System Limitations apply.

Deck:	Minimum 22 ga., type BV steel decking attached to support spaced at 5' o.c. maximum using 3/8" puddle welds with washer (every bottom flute). Steel deck side laps are attached three Traxx 1 #10 evenly spaced between supports or structural concrete deck.
Base Sheet:	One ply of Soprafix, Soprafix-e, Soprafix [S], Soprafix [F], Soprafix [X] or Soprafix [H] fastened to the deck as described below: *Note: Soprafix [H] is for use with a self-adhered cap membrane.*
Fastening #1:	Attach base sheet using Tri-Fixx Fasteners spaced 9" o.c. in a 5" lap. The side lap fastener row is encapsulated in the heat welded lap. ***(meets –45 psf – See General Limitation #7.)***
Fastening #2:	Attach base sheet using Tri-Fixx Fasteners spaced 8" o.c. in a 5" lap and 8" o.c. in one center rows. The side lap fastener row is encapsulated in the heat welded lap and the center row is stripped-in with a 8" wide strip of torch applied membrane. ***(meets –75 psf – See General Limitation #7.)***
Ply Sheet:	**(Optional)** One ply 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, FR+GR, Sopralene (180, 250, 350) Flam GR, Sopralene (180, 250, 350) Flam FR GR, FR+GR, or Sopralast 50 TV Alu heat welded 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:

See Fastening Requirements above

Deck Type 4: Lightweight Concrete

Deck Description: Cellular Concrete, LLC. Lightweight Insulating Concrete, 300 psi. min

System Type E(3): Base sheet mechanically fastened.

All General and System Limitations apply.

Deck: Lightweight Concrete shall be cast over the following substrate:
Minimum 18 ga., 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 or Buildex Traxx 5 fasteners spaced 8" o.c. (every bottom flute). Two welds or screws per attachment point, spaced 4" apart. Steel deck side laps are attached 24" o.c. or Structural Concrete deck.

Base Sheet: One ply of Soprafix [X] membrane or Sopralene 250 Flam fastened through the lightweight concrete to the deck using SFS Stadler #15 Extra Load Fasteners HD 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 torched/heat fused lap and the center row is stripped-in with and 8" wide strip of heat welded membrane.

Ply Sheet: **(Optional)** One ply 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, FR+GR, Sopralene (180, 250, 350) Flam GR, Sopralene (180, 250, 350) Flam FR GR, FR+GR, or Sopralast 50 TV Alu 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)

Deck Type 4: Lightweight Concrete

Deck Description: Elastizel Range II lightweight Insulating Concrete, 300 psi. min

System Type E(4): Base sheet mechanically fastened.

All General and System Limitations apply.

Deck: Structural Concrete deck or Min. 22 ga., Type B steel decking over ¼" thick steel supports spaced max. 5 ft o.c. attached 6" o.c. using min. 5/8" diameter puddle welds with washers or Traxx/5 fasteners. Deck side laps are attached 15" o.c. using Traxx/1 fasteners. Deck is covered with a Elastizel Range II lightweight concrete pour consisting of a 1/8" slurry coat, minimum 2" thick Holey Board and a minimum 3" thick top coat.

Base Sheet: One ply of Soprafix [S], Soprafix [F], Soprafix [X] or Soprafix [H] fastened to the deck as described. Attach base sheet using Tri-Fixx Fasteners spaced 8" o.c. in a 5" lap and 8" 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 a 6" wide strip of heat welded membrane.
Note: Soprafix [H] is for use with a self-adhered cap membrane.

Ply Sheet: **(Optional)** One ply 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, FR+GR, Sopralene (180, 250, 350) Flam GR, Sopralene (180, 250, 350) Flam FR GR, FR+GR or Sopralast 50 TV Alu torch applied 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: -112.5 psf (See General Limitation #7)

Deck Type 4: Lightweight Concrete

Deck Description: Cellular or Aggregate Lightweight Concrete, 300 psi. min.

System Type E(5): Base sheet mechanically fastened.

All General and System Limitations apply.

Base Sheet: One ply of Soprafix [S], Soprafix [F], Soprafix [X] or Soprafix [H] fastened to the deck as described. Attach base sheet using Tri-Fixx Fasteners spaced 10" o.c. in a 5" lap. The side lap fastener row is encapsulated in the heat welded lap.
Note: Soprafix [H] is for use with a self-adhered cap membrane.

Ply Sheet: **(Optional)** One ply 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, FR+GR, Sopralene (180, 250, 350) Flam GR, Sopralene (180, 250, 350) Flam FR GR, FR+GR, or Sopralast 50 TV Alu torch applied 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: -45 psf (See General Limitation #7)

Deck Type 4:	Lightweight Concrete
Deck Description:	Cellular or Aggregate Lightweight Concrete, 300 psi. min.
System Type E(6):	Base sheet mechanically fastened.

All General and System Limitations apply.

Base Sheet:	One ply of Sopra-G, Soprabase, GAFGLAS #75 or GAFGLAS Stratavent, Flex-I-Glas Base, All Weather/Empire, Parabase Plus or Vapor Chan fastened to the deck as described. Attach base sheet using ES Products Twin Loc-Nails spaced 9" o.c. in a 4" lap and 9" o.c. in two staggered rows in the center of the sheet.
Ply Sheet:	**(Optional)** One ply 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 Elastophene Sanded, Elastophene 180 Sanded, Elastophene PS, Elastophene 180 PS, Sopralene (180, 250 or 350) PS, or Sopralene (180, 250 or 350) Sanded one or more plies of ASTM D 2178 Type IV or 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 Granule, Elastophene Flam FR GR, FR+GR, Sopralene (180, 250, 350) Flam GR, Sopralene (180, 250, 350) Flam FR GR, FR+GR, or Sopralast 50 TV Alu heat welded Or Elastophene Sanded, Elastophene 180 Sanded, Sopralene (180, 250, 350) Sanded, Elastophene 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)

Deck Type 4: Lightweight Concrete

Deck Description: Cellular or Aggregate Lightweight Concrete, 300 psi. min.

System Type E(7): Base sheet mechanically fastened.

All General and System Limitations apply.

Base Sheet: One ply of Soprabase or Vapor Chan fastened to the deck as described. Attach base sheet using ES Products Twin Loc-nails spaced 9" o.c. in a 4" lap and 9" o.c. in two staggered rows in the center of the sheet.

Ply Sheet: One ply of Elastophene Sanded, Elastophene 180 Sanded, Elastophene PS, Elastophene 180 PS, Sopralene (180, 250 or 350) PS, or Sopralene (180, 250 or 350) Sanded one or more plies of ASTM D 2178 Type IV or 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 Sanded, Elastophene 180 Sanded, Sopralene (180, 250, 350) Sanded, Elastophene 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: -75 psf (See General Limitation #7)

Deck Type 4:	Lightweight Concrete
Deck Description:	Elastizell Range II Cellular/Hybrid Lightweight Insulating Concrete Min. 200 psi, min. 2½" thick top coat
System Type E(8):	Base sheet mechanically fastened.

All General and System Limitations apply.

Deck:	Minimum 22 ga. type BW36-22 slotted steel decking attached to supports spaced 5' o.c. maximum using 5/8" puddle welds (every bottom flute). Steel deck side laps are attached with three Traxx 1 #10 evenly spaced between supports. Or structural concrete deck.
Primer: (Optional)	Elastocol 500, Elastocol 600c or AquaTac applied at a rate of 1 gal/sq, to top surface of any base or ply sheet prior to application of next layer.
Base Sheet:	One ply GAFGLAS #75, Sopra-G or Modified Sopra-G fastened to the deck as described. Attach base sheet using ES Products FM-90 Assembled Base Ply Fasteners or BSF 1.7 Fasteners spaced 9" o.c. in a 4" lap and 9" o.c. in two staggered rows in the center of the sheet.
Ply Sheet:	One ply of Elastophene Flam, Elastophene Flam FR, Elastophene Flam 2.2 mm, Elastophene Flam HS FR, Elastophene Flam HR 3.0 mm, Elastophene Flam HP, Elastophene SP 2.2mm, 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 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:	One layer of 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

One layer of 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 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:

-52.5 psf (See General Limitation #7.)

Deck Type 4:	Lightweight Concrete
Deck Description:	Elastizell Range II Cellular Lightweight Insulating Concrete, Min. 200 psi, min. 2½" thick top coat or Cellular Concrete, LLC. (Mearlcrete) Lightweight Insulting Concrete, Min. 250 psi, min. 2" thick top coat
System Type E(9):	Base sheet mechanically fastened.

All General and System Limitations apply.

Deck:	Minimum 22 ga. type BW36-22 slotted steel decking attached to supports spaced 5' o.c. maximum using 5/8" puddle welds (every bottom flute). Steel deck side laps are attached with three Traxx 1 #10 evenly spaced between supports. Or structural concrete deck.
Primer: (Optional)	Elastocol 500, Elastocol 600c or AquaTac applied at a rate of 1 gal/sq, to top surface of any base or ply sheet prior to application of next layer.
Base Sheet:	One ply GAFGLAS #75, Sopra-G or Modified Sopra-G fastened to the deck as described. Attach base sheet using ES Products FM-90 Assembled Base Ply Fasteners or BSF 1.7 Fasteners spaced 7" o.c. in a 4" lap and 7" o.c. in two staggered rows in the center of the sheet.
Ply Sheet:	One ply of Elastophene Flam, Elastophene Flam FR, Elastophene Flam 2.2 mm, Elastophene Flam HS FR, Elastophene Flam HR 3.0 mm, Elastophene Flam HP, Elastophene SP 2.2mm, 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 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:	One layer of 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, One layer of 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 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:

-45 psf (See General Limitation #7.)

Deck Type 4:	Lightweight Concrete
Deck Description:	Elastizell Range II Cellular Lightweight Insulating Concrete, Min. 200 psi, min. 2½" thick top coat or Cellular Concrete, LLC. (Mearlcrete) Lightweight Insulting Concrete, Min. 250 psi, min. 2" thick top coat
System Type E(10):	Base sheet mechanically fastened.

All General and System Limitations apply.

Deck:	Minimum 22 ga. type BW36-22 slotted steel decking attached to supports spaced 5' o.c. maximum using 5/8" puddle welds (every bottom flute). Steel deck side laps are attached with three Traxx 1 #10 evenly spaced between supports. Or structural concrete deck.
Primer: (Optional)	Elastocol 500, Elastocol 600c or AquaTac applied at a rate of 1 gal/sq, to top surface of any base or ply sheet prior to application of next layer
Base Sheet:	One ply of Soprafix [S], Soprafix [F] or Soprafix [X], Soprafix, Soprafix (X) or Soprafix-e fastened to the deck as described below.
Fastening #1:	Attach base sheet using Tri-Fix Fastening System spaced 9" o.c. in a 5" lap. The side lap fastener row is encapsulated in the heat welded lap. ***(meets –45 psf – See General Limitation #7.)***
Fastening #2:	Attach base sheet using Tri-Fix Fastening System spaced 8" o.c. in a 5" lap and 8" 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 a min. 6" wide strip of heat welded membrane. ***(meets –67.5 psf – See General Limitation #7.)***
Ply Sheet:	One ply 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 Elastophene Sanded, Elastophene 180 Sanded, Elastophene PS, Elastophene 180 PS, Sopralene (180, 250 or 350) PS, or Sopralene (180, 250 or 350) Sanded or one to three plies of ASTM D2178 Type IV or VI ply sheet adhered in FM Adhesive or FM Adhesive (VOC) at 1.5 – 2.0 gallons/square.
Membrane:	One layer of Elastophene Flam, Elastophene SP 2.2mm, Elastophene SP 3.0mm, 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

One layer of 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 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:

See Fastening Requirements above.

Deck Type 4:	Lightweight Concrete
Deck Description:	Elastizell Range II Cellular Lightweight Insulating Concrete, Min. 200 psi, min. 2½" thick top coat or Cellular Concrete, LLC. (Mearlcrete) Lightweight Insulting Concrete, Min. 250 psi, min. 2" thick top coat Celcore Cellular Lightweight Insulating Concrete, Min. 200 psi
System Type E(11):	Base sheet mechanically fastened

All General and System Limitations apply.

Primer: (Optional)	Elastocol 500, Elastocol 600c or AquaTac applied at a rate of 1 gal/sq, to top surface of any base or ply sheet prior to application of next layer
Base Layer:	One layer Soprafix or Soprfix-e, mechanically attached with Twin-Loc Nails spaced 6" o.c. through ITW Buildex Polymer Batten Strip-TL, ES Products Batten Bar-TL, Tru-Fast Twin Loc Batten Bar or Dekfast Coiled Batten Strip, placed in the lap and in one row centered in the field. Center fastener row is covered with an 8" wide strip of Sopralene Flam Stick, EPS Flam Stick, Sopralene Stick, Colvent SA or Colvent 180 SA self-adhered. 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: (Optional)	One or more layers of Elastophene Flam HP, Sopralene Flam 180, Sopralene Flam 180 2.7mm, Sopralene Flam 250 or Sopralene Flam heat welded
Membrane:	One layer of 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.

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.)

Deck Type 4:	Lightweight Concrete
Deck Description:	Elastizell Range II Cellular Lightweight Insulating Concrete, Min. 200 psi, min. 2½" thick top coat or Cellular Concrete, LLC. (Mearlcrete) Lightweight Insulting Concrete, Min. 250 psi, min. 2" thick top coat Celcore Cellular Lightweight Insulating Concrete, Min. 200 psi
System Type E(12):	Base sheet mechanically fastened

All General and System Limitations apply.

Primer: (Optional)	Elastocol 500, Elastocol 600c or AquaTac applied at a rate of 1 gal/sq, to top surface of any base or ply sheet prior to application of next layer
Base Layer:	One layer Soprafix, Soprafix (X) or Soprfix-e, mechanically attached with Twin-Loc Nails spaced 6" o.c. through ITW Buildex Polymer Batten Strip-TL, ES Products Batten Bar-TL, Tru-Fast Twin Loc Batten Bar or Dekfast Coiled Batten Strip, placed in the lap and in one row centered in the field. Center fastener row is covered with an 8" wide strip of Sopralene Flam Stick, EPS Flam Stick, Sopralene Stick, Colvent SA or Colvent 180 SA self-adhered. 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: (Optional)	One or more layers of Sopralene Flam Stick, EPS Flam Stick, Sopralene Stick, Colvent SA or Colvent 180 SA, self-adhered 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 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. or applied in FM Adhesive or FM Adhesive (VOC) at a rate of 1.5 gal/sq.

Membrane: One layer of Colphene HR FR GR or Colphene FR GR, self-adhered

Or

One layer of 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

One layer of 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 applied in FM Adhesive or FM Adhesive (VOC) 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: -45 psf (See General Limitation #7.)

Deck Type 4:	Lightweight Concrete
Deck Description:	Elastizell Range II Cellular Lightweight Insulating Concrete, Min. 200 psi, min. 2½" thick top coat or Cellular Concrete, LLC. (Mearlcrete) Lightweight Insulting Concrete, Min. 250 psi, min. 2" thick top coat Celcore Cellular Lightweight Insulating Concrete, Min. 200 psi
System Type E(13):	Base sheet mechanically fastened

All General and System Limitations apply.

Primer: (Optional)	Elastocol 500, Elastocol 600c or AquaTac applied at a rate of 1 gal/sq, to top surface of any base or ply sheet prior to application of next layer
Base Layer:	Elastophene Flam HP, Sopralene Flam 180, Sopralene Flam 180 2.7mm, Sopralene 180 SP 3.5mm, Soprafix, Sopralene Flam 250, Sopralene 250 SP, Sopralene Flam 350, Sopralene 350 SP, Elastophene HP, Elastophene 180 Sanded, Elastophene 180 PS, Sopralene 180 Sanded, Sopralene 180 Sanded 2.2mm, Sopralene 180 Sanded 3.5mm, Sopralene 180 PS, Sopralene 250 Sanded Sopralene 250 Sanded 3.5mm, Sopralene 250 PS, Sopralene 250 PS 2.7mm, Sopralene 350 Sanded or Sopralene 350 PS, mechanically attached with 1.8" long Twin Loc-Nails spaced 6" o.c. in a min. 4" lap and 6" o.c. in two evenly spaced staggered rows in the field.
Ply Sheet: (Optional)	One or more layers of Sopralene Flam Stick, EPS Flam Stick, Sopralene Stick, Colvent SA or Colvent 180 SA, self-adhered. 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 180TG, 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. or applied in FM Adhesive or FM Adhesive (VOC) at a rate of 1.5 gal/sq.

Membrane:

One layer of Colphene HR FR GR or Colphene FR GR, self-adhered

Or

One layer of 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

One layer of 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 applied in FM Adhesive or FM Adhesive (VOC) 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:

-60 psf (See General Limitation #7.)

Deck Type 4:	Lightweight Concrete
Deck Description:	Concrecel Lightweight Insulating Concrete, Min. 200 psi Celcore Cellular Lightweight Insulating Concrete, Min. 200 psi
System Type F(1):	Base sheet adhered to substrate
	All General and System Limitations apply.
Primer: (Optional)	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
Base Layer:	One layer Colvent SA or Colvent 180 SA self-adhered. Or Colvent TG or Colvent 180 TG, heat welded.
Ply Sheet:	None
Membrane:	One layer of 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 One layer of 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.

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 4:	Lightweight Concrete
Deck Description:	Celcore Cellular Lightweight Insulating Concrete, Min. 200 psi
System Type F(2):	Base sheet adhered to substrate
	All General and System Limitations apply.
Primer: (Optional)	Elastocol 500, Elastocol 600c or AquaTac applied at a rate of 1 gal/sq, to top surface of any base or ply sheet prior to application of next layer
Vapor Retarder: (Optional)	One layer of Elastophene Flam, Elastophene Flam FR, Elastophene Flam 2.2mm, Elastophene Flam HS FR, Elastophene Flam HR 3.0mm, Elastophene Flam HP, Elastophene SP 2.2mm, Elastophene SP 3.0mm, Sopralene Flam 180, Sopralene Flam 180 2.7mm, Sopralene 180 SP 3.5mm, Soprafix, Sopralene Flam 250, Sopralene 250 SP, Sopralene Flam 350 or Sopralene 350 SP, heat welded Or Elastophene Sanded, Elastophene Sanded FR, Elastophene Sanded 3.0mm, Elastophene HS FR, Elastophene HR, Elastophene HR 3.0mm, Elastophene HD, Elastophene HP, Elastophene PS, Elastophene 180 Sanded, Elastophene 180 PS, Sopralene 180 Sanded, Sopralene 180 Sanded 3.5mm, Sopralene 180 PS, Sopralene 250 Sanded, Sopralene 250 Sanded 3.5mm, Sopralene 250 PS, Sopralene 250 PS 2.7mm, Sopralene 350 Sanded or Sopralene 350 PS, adhered in hot asphalt at 25 lbs/sq
Base Layer:	One layer 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, 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

Ply Sheet: (Optional)

One or more layers of Elastophene Flam, Elastophene Flam FR, Elastophene Flam 2.2 mm, Elastophene Flam HS FR, Elastophene Flam HR 3.0 mm, Elastophene Flam HP, Elastophene SP 2.2mm, Elastophene SP 3.0mm, Sopralene Flam 180, Sopralene Flam 180 2.7 mm, Sopralene 180 SP 3.5 mm, Soprafix, Sopralene Flam 250, Sopralene 250 SP, Sopralene Flam 350, Sopralene 350 SP, 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 hot asphalt at 25 lbs/sq

Membrane:

One layer of 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

One layer of 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.

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:

-410 psf (See General Limitation #9.)

LIGHTWEIGHT INSULATING CONCRETE 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 Engineer, 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.
3. For systems where specific lightweight insulating concrete is not referenced, the minimum design mix shall be a minimum of 300 psi.

GENERAL LIMITATIONS:

1. Fire classification is not part of this acceptance; refer to a current Approved Roofing Materials Directory for fire ratings of this product.
2. Insulation may be installed in multiple layers. The first layer shall be attached in compliance with Product Control Approval guidelines. All other layers shall be adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq., or mechanically attached using the fastening pattern of the top layer
3. All standard panel sizes are acceptable for mechanical attachment. When applied in approved asphalt, panel size shall be 4' x 4' maximum.
4. An overlay and/or recovery board insulation panel is required on all applications over closed cell foam insulations when the base sheet is fully mopped. If no recovery board is used the base sheet shall be applied using spot mopping with approved asphalt, 12" diameter circles, 24" o.c.; or strip mopped 8" ribbons in three rows, one at each side lap and one down the center of the sheet allowing a continuous area of ventilation. Encircling of the strips is not acceptable. A 6" break shall be placed every 12' in each ribbon to allow cross ventilation. Asphalt application of either system shall be at a minimum rate of 12 lbs./sq. **Note: Spot attached systems shall be limited to a maximum design pressure of -45 psf.**
5. Fastener spacing for insulation attachment is based on a Minimum Characteristic Force (F') value of 275 lbf., as tested in compliance with Testing Application Standard TAS 105. If the fastener value, as field-tested, are below 275 lbf. Insulation attachment shall not be acceptable.
6. Fastener spacing for mechanical attachment of anchor/base sheet or membrane attachment is based on a minimum fastener resistance value in conjunction with the maximum design value listed within a specific system. Should the fastener resistance be less than that required, as determined by the Building Official, a revised fastener spacing, prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant may be submitted. Said revised fastener spacing shall utilize the withdrawal resistance value taken from Testing Application Standards TAS 105 and calculations in compliance with Roofing Application Standard RAS 117.
7. Perimeter and corner areas shall comply with the enhanced uplift pressure requirements of these areas. Fastener densities shall be increased for both insulation and base sheet as calculated in compliance with Roofing Application Standard RAS 117. Calculations prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant **(When this limitation is specifically referred within this NOA, General Limitation #9 will not be applicable.)**
8. All attachment and sizing of perimeter nailers, metal profile, and/or flashing termination designs shall conform to Roofing Application Standard RAS 111 and applicable wind load requirements.
9. The maximum designed pressure limitation listed shall be applicable to all roof pressure zones (i.e. field, perimeters, and corners). Neither rational analysis, nor extrapolation shall be permitted for enhanced fastening at enhanced pressure zones (i.e. perimeters, extended corners and corners). **(When this limitation is specifically referred within this NOA, General Limitation #7 will not be applicable.)**
10. All products listed herein shall have a quality assurance audit in accordance with the Florida Building Code and Rule 9B-72 of the Florida Administrative Code.

END OF THIS ACCEPTANCE