



**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 Recover Decks

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, city, state and following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA revises NOA #01-0116.06 and consists of pages 1 through 45.
The submitted documentation was reviewed by Frank Zuloaga, RRC



**NOA No.: 01-0206.25
Expiration Date: 03/01/06
Approval Date: 11/13/03
Page 1 of 45**

ROOFING SYSTEM APPROVAL

Category: Roofing
Sub-Category: Modified Bitumen
Material: SBS
Deck Type: Recover
Maximum Design Pressure See specific deck type
Fire Classification: See General Limitation #1

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
Sopra-G	39" x 99' (3 sq.)	ASTM D 4601	Fiberglass reinforced oxidized asphalt base sheet for bonding or mechanically attaching to substrate.
Modified Sopra-G	39" x 99' (3 sq.)	ASTM D 4601	Fiberglass reinforced oxidized asphalt base sheet for bonding or mechanically attaching 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 or cold adhesive.
Sopra IV or VI	36" x 180' (5 sq.)	ASTM D 2178 type IV or VI	Type IV or VI, fiberglass reinforced, smooth surfaced plysheet. Sopra IV or VI are used in multi-ply systems and complies with ASTM and UL standards. Applied in hot asphalt or cold adhesive.
Colvent	39" x 49' (1.5 sq.)	ASTM D 6163	Fiberglass reinforced, modified bitumen membrane with 1" wide factory applied strips on back side.
Sopra G-Vent	39" x 99' (3 sq.)	ASTM D 6163	Fiberglass reinforced, modified bitumen membrane with perforated holes.
Elastophene Sanded or Sanded 3.0	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 or cold adhesive.
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 or cold adhesive.



NOA No.: 01-0206.25
 Expiration Date: 03/01/06
 Approval Date: 11/13/03
 Page 2 of 45

<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
Elastophene HR	39" x 49' (1½ sq.)	ASTM D 6163	Fiberglass scrim reinforced modified bitumen membrane sanded on both sides. Applied in hot asphalt or cold adhesive.
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 or cold adhesive.
Elastophene PS	39" x 49' (1½ sq.)	ASTM D 6163	Glass reinforced modified bitumen membrane with thermofusible plastic film for heat weld bonding to the top side; applied in hot asphalt or cold adhesive.
Elastophene Flam or Flam 2.2	39" x 33' (1 sq.)	ASTM D 6163	Fiberglass reinforced modified bitumen membrane covered on both sides with a thermofusible plastic film. Applied by heat weld.
Elastophene 180	39" x 49' (1½ sq.)	ASTM D 6164	Non-woven polyester reinforced modified bitumen membrane sanded on both sides. Applied in hot asphalt or cold adhesive.
Elastophene 180 PS	39" x 48' (1½ sq.)	ASTM D 6164	Non-woven polyester reinforced modified bitumen membrane with thermofusible plastic film for heat welding to the topside, used as a base sheet. Applied in hot asphalt or cold adhesive.
Elastophene GR	39" x 33' (1 sq.)	ASTM D 6163	Fiberglass reinforced modified bitumen membrane surfaced with colored granules. Applied in hot asphalt or cold adhesive.
Elastophene FR GR or FR+ GR	39" x 33' (1 sq.)	ASTM D 6163	Fiberglass reinforced modified bitumen membrane surfaced with colored granules. Applied in hot asphalt or cold adhesive.
Elastophene Flam FR GR or FR+ GR	39" x 33' (1 sq.)	ASTM D 6163	Fiberglass reinforced modified bitumen membrane surfaced with colored granules. Applied by heat weld.
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 primarily as a base ply. Applied in hot asphalt or cold adhesive.
Soprafix, 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.
Sopralene Flam 180 or 250	39" x 32' (1 sq.) 39" x 26' (¾ sq.)	ASTM D 6164	Non-woven polyester reinforced SBS modified bitumen membrane, both sides covered with thermofusible plastic film, primarily used as a base ply. Applied by torch.
Sopralene 180, 250 or 350 GR or FR GR	39" x 26' (¾ sq.)	ASTM D 6164	Non-woven polyester reinforced modified bitumen membrane with fire retardants and surfaced with colored granules. Applied in hot asphalt or cold applied adhesive.



<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
Sopralene Flam 180, 250 or 350 GR	39" x 26' (¾ sq.)	ASTM D 6164	Non-woven polyester reinforced modified bitumen membrane surfaced with colored granules. Applied by heat weld.
Sopralene Flam 180, 250 or 350 FR GR or FR+ GR	39" x 26' (¾ sq.)	ASTM D 6164	Non-woven polyester reinforced modified bitumen membrane surfaced with colored granules. Applied by heat weld.
Sopralast	various	ASTM D 6298	Fiberglass reinforced modified bitumen waterproof sheeting faced with aluminum, copper or stainless steel foil.
UNILAY	39" x 33' (1 sq.)	ASTM D 6164	Non-woven polyester reinforced modified bitumen membrane fire retardants and surfaced with colored granules. Applied by mechanical attachment.
Sopralene Stick or Flam Stick	39" x 33' (1 sq.)	ASTM D 6164	Self adhered, film surfaced, polyester reinforced waterproofing membrane.
EPS Flam Stick	39" x 33' (1 sq.)	ASTM D 6163	Self adhered, film surfaced, glassmat/glass grid reinforced waterproofing membrane.
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 waterproofing membranes ('Peel and Stick') used as a vapor barrier.
Colphene FR GR	39" x 33' (1 sq.)	ASTM D 6163	Self adhered, granule surfaced, fiberglass reinforced waterproofing membranes ('Peel and Stick').
Colphene HR FR GR	39" x 33' (1 sq.)	ASTM D 6163	Self adhered, granule surfaced, fiberglass scrim reinforced waterproofing membranes ('Peel and Stick').
Lastobond S or P Sopratape 606	39" x 49' (1½ sq.) 5" wide	ASTM D 5147	Self adhered underlayment membrane. Bituminous tape for sealing of side and head laps.
Sopramastic 200	17 oz. pouch or 10.4 oz cartridge		Caulking compound.
Elastocol 500 and 600c Sopracolle		ASTM D 41	Asphalt primers. Cold-applied adhesive used to bond membrane to prepared substrates or to other membranes.
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.



APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
ACFoam II	Polyisocyanurate foam insulation	Atlas Energy Products
ACFoam Composite	Composite polyisocyanurate insulation board	Atlas Energy Products
Gypsum	Gypsum board	generic
High Density Wood Fiberboard	Wood fiber insulation board	generic
Perlite Insulation	Perlite insulation board	generic
Dens Deck	Water resistant gypsum board	G-P Gypsum Corp.
ENRGY-2	Polyisocyanurate foam insulation	Johns Manville
ENRGY-2 Plus, Composite, Fesco Foam	Composite Insulation board	Johns Manville
Multi-Max FA	Polyisocyanurate foam insulation	RMax
Thermarroof Composite	Composite Insulation board	RMax

APPROVED FASTENERS:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
1.	Tri-Fix Fastening System	Fastening system for base sheet attachemen to lightweight concrete, gypsum or cementitious wood fiber decks.	3" diameter plate with various length fasteners	Soprema, Inc.
2.	#12, #14 & #15 Soprema Fasteners	Fasteners for membrane or insulation attachment to wood, steel or concrete decks.		Soprema, Inc.
3.	Soprafix [X]-EL #15	Fasteners for membrane attachment to steel or concrete decks.		Soprema, Inc.
4.	Soprafix Plates	AZ-55 Galvalume steel plate for use with the Soprafix system.	2" diameter	Soprema, Inc.
5.	Soprema Plates	Metal or plastic stress plates for use with Soprema Fasteners.	3" diameter	Soprema, Inc.
6.	Sopradisc	Galvanized metal bearing plate used for side lap attachment of Soprafix system.	2" diameter	Soprema, Inc.
7.	Soprema Isofast IF/IFT	AZ-50 Galvalume steel plate for use with the Soprafast System.	2 3/4" diameter	Soprema, Inc.



APPROVED FASTENERS:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
8.	Soprafix/Soprafast	Stress plates for membrane securement.	3" diameter	Soprema, Inc.
9.	UNILAY Plate	Stress plates for Unilay membrane securement.	2-3/8" diameter	Soprema, Inc.
10.	#12, #14 & #15 Dekfast Fastener	Insulation fastener		Construction Fasteners, Inc.
11.	Omega Fastener	Stainless steel insulation fastener		Construction Fasteners, Inc.
12.	Dekfast Hex Plate	Galvalume AZ50 steel plate	2 7/8" x 3 1/4"	Construction Fasteners, Inc.
13.	Dekfast Lock Plate	Polypropylene locking plate.	3" x 3 1/4"	Construction Fasteners, Inc.
14.	Twin Loc-Nails	Base ply fastening systems for lightweight concrete decks		ES Products, Inc.
15.	FM-30, FM-45, FM-60, FM-90 Fasteners	Base ply fastening systems for lightweight concrete decks		ES Products, Inc.
16.	#12, #14 & #15 Roofgrip Fasteners	Insulation fastener for wood, steel and concrete.		ITW Buildex Corp.
17.	AccuTrac Hextra Fasteners	Insulation fastener for wood, steel and concrete.		ITW Buildex Corp.
18.	Polymer Gyptec	Glass reinforced Nylon insulation fastener for gypsum & CWF decks.		ITW Buildex Corp.
19.	Polymer Gyptec Metal Plate	Galvalume stress plate	3" round	ITW Buildex Corp.
20.	Accutrac Plate	Galvalume square stress plate	3" square	ITW Buildex Corp.
21.	Metal Plate	Galvalume stress plate.	3" round 3" square	ITW Buildex Corp.
22.	Gearlok Plastic Plate	Polyolefin round stress plate	3.2" round	ITW Buildex Corp.
23.	Olympic CR Base Ply Fasteners	Base ply fastening assembly		Olympic Mfg. Group, Inc.
24.	NTB Magnum	Glass reinforced Nylon insulation fastener for gypsum & CWF decks with barbs.		Olympic Mfg. Group, Inc.



NOA No.: 01-0206.25
 Expiration Date: 03/01/06
 Approval Date: 11/13/03
 Page 6 of 45

APPROVED FASTENERS:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
25.	NTB Plate	Galvalume stress plate	3" round	Olympic Mfg. Group, Inc.
26.	Lite-Deck	Insulation fastener for CWF and Gypsum decks.		Olympic Mfg. Group, Inc.
27.	Lite-Deck Plate	Galvalume stress plate	3" round	Olympic Mfg. Group, Inc.
28.	Olympic Fastener #12, #14 & #15	Insulation fastener.		Olympic Mfg. Group, Inc.
29.	Olympic CD-10	Insulation fastener.		Olympic Mfg. Group, Inc.
30.	Olympic Fluted Nail	Insulation fastener.		Olympic Mfg. Group, Inc.
31.	Olympic Standard	Galvalume AZ50 steel plate	3" round	Olympic Mfg. Group, Inc.
32.	Olympic Plastic	Polypropylene stress plate	3.25" round	Olympic Mfg. Group, Inc.
33.	Powerlite	Insulation fastener.		Powers Fasteners, Inc.
34.	Powerlite	Galvalume stress plate.	3" round	Powers Fasteners, Inc.
35.	Base-Lok Fasteners	Base sheet fastener for lightweight concrete, cwf and gypsum decks	1.75" long with 3" dia. head	Simplex Nails
36.	Turbo Tube-Lok Fasteners	Base sheet fastener for lightweight concrete, cwf and gypsum decks	1.75" long with 2" dia. head	Simplex Nails
37.	SFS Base-Lok Fasteners	Base sheet fastener for lightweight concrete, cwf and gypsum decks	1.75" long with 3" dia. head	SFS Intec, Inc.
38.	Insul-Fixx Fastener	Insulation fastener for wood, steel and concrete.		SFS Intec, Inc.
39.	Isofast Fasteners	Insulation fastener for wood, steel and concrete.		SFS Intec, Inc.
40.	Extra Load Fasteners #15	Fasteners for membrane attachment to steel or concrete decks.		SFS Intec, Inc.
41.	Insul-Fixx S Plate	Galvalume AZ50 steel plate	3" round	SFS Intec, Inc.
42.	Insul-Fixx P Plate	Polyethylene stress plate	3" round	SFS Intec, Inc.



APPROVED FASTENERS:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
43.	Isofast Plate	Square or oblong galvalume steel plates for use with Isofast fasteners		SFS Intec, Inc.
44.	ES-I Fastening Systems	Insulation fastening assembly with plate.	3" round	SFS Intec, Inc.
45.	Tru-Fast TL Fastener	Insulation fastener fastener for lightweight concrete, CWF and gypsum decks		The Tru-Fast Corp.
46.	Tru-Fast Fastener	Insulation fastener for wood, steel and concrete.		The Tru-Fast Corp.
47.	Tru-Fast HD or EHD	Insulation fastener for wood, steel and concrete.		The Tru-Fast Corp.
48.	Tru-Fast MP-3	Galvalume AZ50 steel plate	3" round	The Tru-Fast Corp.
49.	Tru-Fast Metal	Galvalume AZ55 steel plate	3" round	The Tru-Fast Corp.
50.	Tru-Fast Plastic	Polypropylene plate	3" round	The Tru-Fast Corp.

EVIDENCE SUBMITTED:

<u>Test Agency/Identifier</u>	<u>Name</u>	<u>Report</u>	<u>Date</u>
Factory Mutual Research Corporation	J.I. 1Z3A6.AM	Wind Uplift Classification	04.27.95
	J.I. 2D0A0.AM	Wind Uplift Classification	08.15.97
	FM Approval Guide	Uplift Classifications	Published Annually
	J.I. 3009814 3002351	Class 4470 Class 4470	09.06.02 02.28.03
Underwriters Laboratories, Inc.	UL Roofing Materials and Systems Directory	File No. R11436 Fire Classification	Published Annually
Dynatech Engineering Corp. Exterior Research & Design, LLC	2491-04.95	Wind Uplift	01.04.95
	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
	2738.10.00-1	Wind Uplift	10.20.02
	2109.08.02	Wind Uplift	08.06.02
IRT of S. Florida, Inc.	990028	TAS 114	09.30.99
IRT of S. Florida, Inc.	02-017	TAS 114	04.16.02
IRT of S. Florida, Inc.	02-022	TAS 114	07.07.02



NOA No.: 01-0206.25
 Expiration Date: 03/01/06
 Approval Date: 11/13/03
 Page 8 of 45

APPROVED ASSEMBLIES:

Deck Type 7I: Recover
Deck Description: wood/steel/concrete/lightweight concrete/cementitious wood fiber/gypsum
System Type A(1): Anchor sheet mechanically fastened; all 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/ft²
AC Foam II, ENRGY-2, PSI-25, Multi-Max FA Minimum 1.5" thick	N/A	N/A
Base or Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Toprox Minimum 1" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
BP High Strength, FM-90 Traffic Top/High Density, GAFTEMP High Density, Roof Insulation Board, High Density Fiberboard, Fiber Base HD1, HD6, Structodek Minimum 1/2" thick	N/A	N/A
GAFTEMP Permalite, Fesco Board Minimum 3/4" thick	N/A	N/A
Dens Deck Minimum 1/4" thick	N/A	N/A
Fireguard, type X gypsum Minimum 5/8" thick	N/A	N/A

Note: All insulation shall be adhered to the anchor sheet in full mopping of approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels may be used as a top layer placed with the polyisocyanurate side facing down.

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



- Fastening #1: (*wood, steel, concrete*) Attach anchor sheet using CF #14 Dekfast with Hex Plates or SFS Insulfixx S or HD Insulfixx S spaced 9" o.c. in a 4" lap and 12" o.c. in two staggered rows in the center of the sheet.
- Fastening #2: (*gypsum*) Attach anchor sheet using 1.8" long Twin Loc-Nails spaced 9" o.c. in a 2" lap and 18" o.c. in two staggered rows in the center of the sheet.
- Fastening #3: (*lightweight concrete, cementitious wood fiber, gypsum*) 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.

Note: Anchor sheet fasteners shall be tested for withdrawal resistance in compliance with Testing Application Standard TAS 105 to confirm compliance with the wind load requirements set forth in applicable Building Code.

- Base Sheet: (Optional) One or more plies of Sopra-G, Modified Sopra-G, Sopraglass 40, Sopraglass 100, Sopra-IV, Sopra-VI, Soprabase, GAFGLAS #75, JM Perma Ply 28, 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 or more plies of Elastophene Flam, Elastophene Flam 2.2, Sopralene (180, 250 or 350) Flam or Sopralene (180, 250 or 350) SP heat welded
or
One or more plies of Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, Elastophene PS, Elastophene 180 PS, Sopralene (180, 250 or 350) PS, Sopralene (180, 250 or 350) Sanded or ASTM D 2178 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.
- Membrane: Elastophene Flam, Elastophene SP, Elastophene Flam GR, Elastophene Flam FR GR or FR+ GR, Sopralene (180, 250, 350) Flam GR, Sopralene (180, 250, 350) Flam FR GR or FR+ GR, or Sopralast heat welded
or
Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, Sopralene (180, 250, 350) Sanded, Elastophene FR GR or FR+ GR, Elastophene GR, Sopralene (180, 250, 350) GR, or Sopralene (180, 250, 350) FR GR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
- Surfacing: (Optional) Install one of the following:
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. Karnak 97 aluminum roof coating applied at an application rate of 1½ gal./sq.
- Maximum Design Pressure: -45 psf (See General Limitation #9)



Deck Type 7I: Recover

Deck Description: wood/steel/concrete/lightweight concrete/cementitious wood fiber/gypsum

System Type A(2): 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/ft²
AC Foam II, ENRGY-2, PSI-25 Minimum 1.5" thick	N/A	N/A
Base or Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Toprox Minimum 1" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
BP High Strength, FM-90 Traffic Top/High Density, GAFTEMP High Density, Roof Insulation Board, High Density Fiberboard, Fiber Base HD1, HD6, Structodek Minimum 1/2" thick	N/A	N/A
GAFTEMP Permalite, Fesco Board Minimum 3/4" thick	N/A	N/A
Dens Deck Minimum 1/4" thick	N/A	N/A
Fireguard, type X gypsum Minimum 5/8" thick	N/A	N/A

Note: Existing roof surface shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of vapor barrier or insulation. All insulation shall be adhered to the deck in full mopping of approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft² or in Henry III Insulbond at 2.0-2.5 gallons/sq. Please refer to Roofing Application Standard PA 117 for insulation attachment. Insulations listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels used as a top layer shall be placed with the polyisocyanurate side facing down.

Base Sheet: (Optional) One or more plies of Sopra-G, Modified Sopra-G, Sopraglass 40, Sopraglass 100, Sopra-IV, Sopra-VI, Soprabase, GAFGLAS #75, JM Perma Ply 28, 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 or more plies of Elastophene Flam, Elastophene Flam 2.2, Sopralene (180, 250 or 350) Flam or Sopralene (180, 250 or 350) SP heat welded
or
One or more plies of Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, Elastophene PS, Elastophene 180 PS, Sopralene (180, 250 or 350) PS, Sopralene (180, 250 or 350) Sanded or ASTM D 2178 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.
- Membrane: Elastophene Flam, Elastophene SP, Elastophene Flam GR, Elastophene Flam FR GR or FR+ GR, Sopralene (180, 250, 350) Flam GR, Sopralene (180, 250, 350) Flam FR GR or FR+ GR or Sopralast heat welded
or
Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, Sopralene (180, 250, 350) Sanded, Elastophene FR GR or FR+ GR, Elastophene GR, Sopralene (180, 250, 350) GR, or Sopralene (180, 250, 350) FR GR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
- Surfacing: (Optional) Install one of the following:
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. Karnak 97 aluminum roof coating applied at an application rate of 1½ gal./sq.
- Maximum Design Pressure:
- | | |
|-----------|--|
| -420 psf; | (for min. 1.5" thick Approved polyisocyanurate in asphalt followed by min. ¾" thick Fesco Board in asphalt <u>over concrete deck.</u>)
(See General Limitation #9.) |
| -345 psf; | (for min. 1.5" thick Approved polyisocyanurate in asphalt followed by min. ½" thick High Density Fiberboard or ¾" thick GAFTEMP Permalite in asphalt <u>over concrete deck.</u>)
(See General Limitation #9.) |
| -177 psf; | (for min. 1.5" thick Approved polyisocyanurate in asphalt followed by min. ¼" thick Georgia Pacific Dens Deck in asphalt <u>over concrete deck.</u>) (See General Limitation #9.) |
| -237 psf; | (for min. ¼" thick Georgia Pacific Dens Deck in asphalt only <u>over concrete deck.</u>) (See General Limitation #9.) |
| -60 psf; | (for all other applications and deck types)
(See General Limitation #9.) |



Deck Type 7I: Recover

Deck Description: wood/steel/concrete/lightweight concrete/cementitious wood fiber/gypsum

System Type A(3): 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/ft²**

AC Foam II, ENRGY 2

Minimum 1.5" thick

N/A

N/A

Note: Existing roof surface shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of vapor barrier or insulation. Base insulation layer shall be adhered to the vapor barrier or primed deck in full moppings of approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft² or OlyBond Insulation Adhesive applied at a rate of 1 gal./100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Top Insulation Layer

**Insulation Fasteners
(Table 3)**

**Fastener
Density/ft²**

Dens Deck

Minimum 1/4" thick

N/A

N/A

BP High Strength, FM-90 Traffic Top/High Density, GAFTEMP High Density, Roof Insulation Board, High Density Fiberboard, Fiber Base HD1, HD6, Structodek

Minimum 1/2" thick

N/A

N/A

Note: Apply top layer of insulation in a full mopping of any approved mopping hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft² or OlyBond Insulation Adhesive applied at a rate of 1 gal./100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as Base Layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels may be used as a top layer placed with the polyisocyanurate side facing down.

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

Ply Sheet: (Optional, required if no base sheet used) One or more plies of Elastophene Flam, Elastophene Flam 2.2, Sopralene (180, 250 or 350) Flam or Sopralene (180, 250 or 350) SP heat welded
or
One or more plies of Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, Elastophene PS, Elastophene 180 PS, Sopralene (180, 250 or 350) PS, Sopralene (180, 250 or 350) Sanded or ASTM D 2178 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.



Membrane: Elastophene Flam, Elastophene SP, Elastophene Flam GR, Elastophene Flam FR GR or FR+ GR, Sopralene (180, 250, 350) Flam GR, Sopralene (180, 250, 350) Flam FR GR or FR+ GR, or Sopralast heat welded
or
Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, Sopralene (180, 250, 350) Sanded, Elastophene FR GR or FR+ GR, Elastophene GR, Sopralene (180, 250, 350) GR, or Sopralene (180, 250, 350) FR GR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Surfacing: (Optional) Install one of the following:
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. Karnak 97 aluminum roof coating applied at an application rate of 1½ gal./sq.

Maximum Design Pressure: -127.5 psf; (See General Limitation #9.)



Deck Type 7I: Recover

Deck Description: wood/steel/concrete/lightweight concrete/cementitious wood fiber/gypsum

System Type A(4): Anchor sheet mechanically fastened; all 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/ft²
ENRGY-2, AC Foam II		
Minimum 1.5" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Dens Deck		
Minimum ¼" thick	N/A	N/A

Note: Existing roof surface shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of vapor barrier or insulation. All insulation shall be adhered to the vapor barrier or primed deck in full moppings of approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft² or High Velocity Insulation Adhesive II or III applied in continuous ¾" to 1" wide ribbons at a maximum spacing of 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulations listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels may be used as a top layer placed with the polyisocyanurate side facing down.

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

Ply Sheet: One or more plies of Elastophene Flam, Elastophene Flam 2.2, Sopralene (180, 250 or 350) Flam, or Sopralene (180, 250 or 350) SP heat welded
or
One or more plies of of Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, Elastophene PS, Elastophene 180 PS, Sopralene (180, 250 or 350) PS, or Sopralene (180, 250 or 350) Sanded or one or more plies of Type IV or Type VI ply sheets adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.



- Membrane: Elastophene Flam, Elastophene SP, Elastophene Flam GR, Elastophene Flam FR GR or FR+ GR, Sopralene (180, 250, 350) Flam GR, Sopralene (180, 250, 350) Flam FR GR or FR+ GR, or Sopralast heat welded
or
Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, Sopralene (180, 250, 350) Sanded, Elastophene FR GR or FR+ GR, Elastophene GR, Sopralene (180, 250, 350) GR, or Sopralene (180, 250, 350) FR GR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
- Surfacing: (Optional) Install one of the following:
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. Karnak 97 aluminum roof coating applied at an application rate of 1½ gal./sq.
- Maximum Design Pressure: -60 psf; (See General Limitation #9.)



Deck Type 7I: Recover

Deck Description: wood/steel/concrete/lightweight concrete/cementitious wood fiber/gypsum

System Type A(5): One or more layers of insulation adhered with approved adhesive or asphalt.

All General and System Limitations apply.

One or more layers of any of the following insulations.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
AC Foam II		
Minimum 1.5" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Dens Deck		
Minimum ¼" thick	N/A	N/A

Note: Existing roof surface shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of vapor barrier or insulation. All insulation shall be adhered to the vapor barrier or primed deck in full moppings of approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft² or Insta-Stik Adhesive applied in continuous ¾" to 1" wide ribbons at a maximum spacing of 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulations listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels may be used as a top layer placed with the polyisocyanurate side facing down.

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

Ply Sheet: One or more plies of Elastophene Flam, Elastophene Flam 2.2, Sopralene (180, 250 or 350) Flam, or Sopralene (180, 250 or 350) SP heat welded
or
One or more plies of of Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, Elastophene PS, Elastophene 180 PS, Sopralene (180, 250 or 350) PS, or Sopralene (180, 250 or 350) Sanded or one or more plies of Type IV or Type VI ply sheets adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Membrane: Elastophene Flam, Elastophene SP, Elastophene Flam GR, Elastophene Flam FR GR or FR+ GR, Sopralene (180, 250, 350) Flam GR, Sopralene (180, 250, 350) Flam FR GR or FR+ GR, or Sopralast heat welded
or
Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, Sopralene (180, 250, 350) Sanded, Elastophene FR GR or FR+ GR, Elastophene GR, Sopralene (180, 250, 350) GR, or Sopralene (180, 250, 350) FR GR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.



Surfacing:

(Optional) Install one of the following:

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. Karnak 97 aluminum roof coating applied at an application rate of 1½ gal./sq.

Maximum Design

Pressure:

-90 psf; (See General Limitation #9.)



Deck Type 7I: Recover

Deck Description: wood/steel/concrete/lightweight concrete/cementitious wood fiber/gypsum

System Type A(6): One or more layers of insulation adhered with approved adhesive or asphalt.

All General and System Limitations apply.

One or more layers of any of the following insulations.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
AC Foam II, ENRGY 2 Minimum 1.5" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Dens Deck Minimum ¼" thick	N/A	N/A
High Density Wood Fiberboard Minimum ½" thick	N/A	N/A

Note: Existing roof surface shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of vapor barrier or insulation. All insulation shall be adhered to the vapor barrier or primed deck in full moppings of approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft² or High Velocity Insulation Adhesive II or III applied in continuous ¾" to 1" wide ribbons at a maximum spacing of 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulations listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels may be used as a top layer placed with the polyisocyanurate side facing down.

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

Ply Sheet: One or more plies of Elastophene Flam, Elastophene Flam 2.2, Sopralene (180, 250 or 350) Flam, or Sopralene (180, 250 or 350) SP heat welded
or
One or more plies of of Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, Elastophene PS, Elastophene 180 PS, Sopralene (180, 250 or 350) PS, or Sopralene (180, 250 or 350) Sanded or one or more plies of Type IV or Type VI ply sheets adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.



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

or

Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, Sopralene (180, 250, 350) Sanded, Elastophene FR GR or FR+ GR, Elastophene GR, Sopralene (180, 250, 350) GR, or Sopralene (180, 250, 350) FR GR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Surfacing: (Optional) Install one of the following:

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. Karnak 97 aluminum roof coating applied at an application rate of 1½ gal./sq.

Maximum Design Pressure:

-105 psf; (for ½" thick High Density Wood Fiberboard)

(See General Limitation #9.)

-127.5 psf; (for ¼" thick Dens Deck) (See General Limitation #9.)



Deck Type 7I: Recover

Deck Description: wood/steel/concrete/lightweight concrete/cementitious wood fiber/gypsum

System Type A(7): One or more layers of insulation adhered with approved adhesive or asphalt.

All General and System Limitations apply.

One or more layers of any of the following insulations.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
AC Foam II, ENRGY 2 Minimum 1.5" thick	N/A	N/A

Note: Existing roof surface shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of vapor barrier or insulation. All insulation shall be adhered to the vapor barrier or primed deck in full moppings of approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft² or High Velocity Insulation Adhesive II or III applied in continuous ¾" to 1" wide ribbons at a maximum spacing of 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One ply of Sopralene Flam Stick, self adhered.

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

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

Surfacing: (Optional) Install one of the following:
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. Karnak 97 aluminum roof coating applied at an application rate of 1½ gal./sq.

Maximum Design Pressure: -225 psf; (See General Limitation #9.)



Deck Type 7I: Recover

Deck Description: wood/steel/concrete/lightweight concrete/cementitious wood fiber/gypsum

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

All General and System Limitations apply.

One or more layers of any of the following insulations.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
AC Foam II, Multi-Max FA Minimum 1.5" thick	2, 10, 11, 16, 17, 28, 29, 30, 38, 39, 44 or 46	1:2 ft ²
ENRGY-2, PSI-25 Minimum 1.4" thick	2, 10, 11, 16, 17, 18, 24, 26, 28, 29, 30, 33, 38, 39, 44, 45 or 46	1:2.67 ft ²
ACFoam II, ENRGY 2, PSI-25, Multi-Max FA Minimum 2" thick	2, 10, 11, 16, 17, 18, 24, 26, 28, 29, 30, 33, 38, 39, 44, 45 or 46	1:4 ft ²
ACFoam Composite, ENRGY-2 Composite, ENRGY-2 Plus, Thermarroof Composite Minimum 1.5" thick	2, 10, 11, 16, 17, 18, 24, 26, 28, 29, 30, 33, 38, 39, 44, 45 or 46	1:4 ft ²
Toprox Minimum 1" thick	2 or 28	1:2.4 ft ²
Dens Deck Minimum ¼" thick	2, 11, 28, 26, 29, 30 or 38	1:4 ft ²
Fireguard Minimum 5/8" thick	2, 11, 28, 26, 29, 30 or 38	1:4 ft ²
GAFTEMP Permalite, Fesco Board Minimum ¾" thick	10 or 11	1:2 ft ²

Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density. Insulation fasteners shall be tested for withdrawal resistance in compliance with Testing Application Standard TAS 105 to confirm compliance with the wind load requirements set forth in applicable Building Code. (See Roofing Application Standard RAS 117 for fastening details).

(Optional) Middle Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
EPS Board - For use between Dens Deck or Fireguard base layer and Approved wood fiber top layer only. Minimum 1" thick	N/A	N/A



Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/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
Dens Deck Minimum ¼" thick	N/A	N/A
Fireguard, type X gypsum Minimum 5/8" thick	N/A	N/A
Toprox Minimum 1" thick	N/A	N/A

Note: Apply optional top layer of insulation shall be adhered with approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulations listed as the base layer shall only be used as the base layer with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

- Base Sheet: (Optional) One or more plies of Sopra-G, Modified Sopra-G, Sopraglass 40, Sopraglass 100, Sopra-IV, Sopra-VI, Soprabase, GAFGLAS #75, JM Perma Ply 28, 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 or more plies of Elastophene Flam, Elastophene Flam 2.2, Sopralene (180, 250 or 350) Flam or Sopralene (180, 250 or 350) SP heat welded
or
One or more plies of Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, Elastophene PS, Elastophene 180 PS, Sopralene (180, 250 or 350) PS, Sopralene (180, 250 or 350) Sanded or ASTM D 2178 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.
- Membrane: Elastophene Flam, Elastophene SP, Elastophene Flam GR, Elastophene Flam FR GR or FR+ GR, Sopralene (180, 250, 350) Flam GR, Sopralene (180, 250, 350) Flam FR GR or FR+ GR or Sopralast heat welded
or
Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, Sopralene (180, 250, 350) Sanded, Elastophene FR GR or FR+ GR, Elastophene GR, Sopralene (180, 250, 350) GR, or Sopralene (180, 250, 350) FR GR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.



Surfacing:

(Optional) Install one of the following:

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. Karnak 97 aluminum roof coating applied at an application rate of 1½ gal./sq.

Maximum Design

Pressure:

-52.5 psf; (See General Limitation #9.)



Deck Type 7I: Recover

Deck Description: Steel/Concrete.

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

All General and System Limitations apply.

One or more layers of any of the following insulations.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
AC Foam II, ENRGY-2, PSI-25 Minimum 1.5" thick	2, 10, 11, 16, 17, 28, 29, 30, 38, 39, 44 or 46	1:1.33 ft²

Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density. Insulation fasteners shall be tested for withdrawal resistance in compliance with Testing Application Standard TAS 105 to confirm compliance with the wind load requirements set forth in applicable Building Code. (See Roofing Application Standard RAS 117 for fastening details).

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
BP High Strength, FM-90 Traffic Top/High Density, GAFTEMP High Density, Roof Insulation Board, High Density Fiberboard, Fiber Base HD1, HD6, Structodek Minimum 1/2" thick	N/A	N/A
GAFTEMP Permalite, Fesco Board Minimum 3/4" thick	N/A	N/A

Note: Apply optional top layer of insulation shall be adhered with approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulations listed as the base layer shall only be used as the base layer with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

Base Sheet: (Optional) One or more plies of Sopra-G, Modified Sopra-G, Sopraglass 40, Sopraglass 100, Sopra-IV, Sopra-VI, Soprabase, GAFGLAS #75, JM Perma Ply 28, 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: One or more plies of Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, Elastophene PS, Elastophene 180 PS, Sopralene (180, 250 or 350) PS, Sopralene (180, 250 or 350) Sanded or ASTM D 2178 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.



Membrane: Elastophene Flam, Elastophene SP, Elastophene Flam GR, Elastophene Flam FR GR or FR+ GR, Sopralene (180, 250, 350) Flam GR, Sopralene (180, 250, 350) Flam FR GR or FR+ GR, or Sopralast heat welded
or
Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, Sopralene (180, 250, 350) Sanded, Elastophene FR GR or FR+ GR, Elastophene GR, Sopralene (180, 250, 350) GR, or Sopralene (180, 250, 350) FR GR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Surfacing: (Optional) Install one of the following:
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. Karnak 97 aluminum roof coating applied at an application rate of 1½ gal./sq.

Maximum Design Pressure: -67.5 psf (For perlite) (See General Limitation #7)
-75 psf (For High Density Wood Fiberboard) (See General Limitation #7)



Deck Type 7I: Recover

Deck Description: wood/steel/concrete

System Type C(1): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
AC Foam II, ENRGY 2, PSI-25, Multi-Max FA Minimum 1.4" thick	N/A	N/A
Dens Deck Minimum ¼" thick	N/A	N/A
Fireguard, type X gypsum Minimum 5/8" thick	N/A	N/A
Toprox Minimum 1" thick	N/A	N/A
GAFTEMP Permalite, Fesco Board Minimum ¾" thick	N/A	N/A

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

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ACFoam Composite, ENRGY-2 Composite, ENRGY-2 Plus, Thermarof Composite Minimum 1.5" thick	2, 10, 11, 16, 17, 28, 29, 30, 38, 39, 44 or 46	1:4 ft ²
Toprox Minimum 1" thick	2 or 28	1:2.4 ft ²
GAFTEMP Permalite, Fesco Board Minimum ¾" thick	2, 10, 11, 16, 17, 28, 29, 30, 38, 39, 44 or 46	1:2 ft ²
Esgard, High Density Fiberboard, GAFTEMP Fiberboard, Huebert Fiberboard Minimum 1" thick	2, 10, 11, 16, 17, 28, 29, 30, 38, 39, 44 or 46	1:4 ft ²
Dens Deck Minimum ¼" thick	2, 12, 28, 29, 30 or 38	1:4 ft ²
Fireguard Minimum 5/8" thick	2, 12, 28, 29, 30 or 38	1:4 ft ²



Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Insulation fasteners shall be tested for withdrawal resistance in compliance with Testing Application Standard TAS 105 to confirm compliance with the wind load requirements. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

- Base Sheet: (Optional) One or more plies of Sopra-G, Modified Sopra-G, Sopraglass 40, Sopraglass 100, Sopra-IV, Sopra-VI, Soprabase, GAFGLAS #75, JM Perma Ply 28, 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 or more plies of Elastophene Flam, Elastophene Flam 2.2, Sopralene (180, 250 or 350) Flam or Sopralene (180, 250 or 350) SP heat welded
or
One or more plies of Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, Elastophene PS, Elastophene 180 PS, Sopralene (180, 250 or 350) PS, Sopralene (180, 250 or 350) Sanded or ASTM D 2178 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.
- Membrane: Elastophene Flam, Elastophene SP, Elastophene Flam GR, Elastophene Flam FR GR or FR+ GR, Sopralene (180, 250, 350) Flam GR, Sopralene (180, 250, 350) Flam FR GR or FR+ GR or Sopralast heat welded
or
Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, Sopralene (180, 250, 350) Sanded, Elastophene FR GR or FR+ GR, Elastophene GR, Sopralene (180, 250, 350) GR, or Sopralene (180, 250, 350) FR GR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
- Surfacing: (Optional) Install one of the following:
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. Karnak 97 aluminum roof coating applied at an application rate of 1½ gal./sq.
- Maximum Design Pressure: -52.5 psf (See General Limitation #9)



Deck Type 7I: Recover
Deck Description: wood/steel/concrete
System Type C(2): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
AC Foam II, ENRGY 2, PSI-25, Multi-Max FA Minimum 1.5" thick	N/A	N/A

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

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
High Density Wood Fiberboard Minimum 1/2" thick	2, 10, 11, 16, 17, 28, 29, 30, 38, 39, 44 or 46	1:2 ft²

Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Insulation fasteners shall be tested for withdrawal resistance in compliance with Testing Application Standard TAS 105 to confirm compliance with the wind load requirements. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

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

Ply Sheet: (Optional, required if no base sheet used) One or more plies of Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, Elastophene PS, Elastophene 180 PS, Sopralene (180, 250 or 350) PS, Sopralene (180, 250 or 350) Sanded or ASTM D 2178 type IV or VI ply sheet adhered in CIM 162 Adhesive applied at a rate of 1.5 gal./sq.

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

Surfacing: (Optional) Install one of the following:
 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. Karnak 97 aluminum roof coating applied at an application rate of 1 1/2 gal./sq.

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



Deck Type 7I: Recover

Deck Description: cementitious wood fiber/gypsum

System Type C(3): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations.

Base Insulation Layer

**Insulation Fasteners
(Table 3)**

**Fastener
Density/ft²**

AC Foam II, ENRGY 2, PSI-25, Multi-Max FA

Minimum 1.5" thick

N/A

N/A

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

Top Insulation Layer

**Insulation Fasteners
(Table 3)**

**Fastener
Density/ft²**

High Density Wood Fiber

Minimum 1/2" thick

18

1:1.3 ft²

Dens-Deck

Minimum 1/4" thick

18

1:2 ft²

Note: All layers of insulation shall be mechanically attached using the fastener density listed above. The insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Insulation fasteners shall be tested for withdrawal resistance in compliance with Testing Application Standard TAS 105 to confirm compliance with the wind load requirements. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet:

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

Or

Prime Dens-Deck (only) with ASTM D 41 prime followed by one ply of Sopralene Flam Stick, Sopralene Stick or EPS Flam Stick, self adhered.

Ply Sheet:

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

or

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

or

One ply of Sopralene Flam Stick or Sopralene Stick self adhered. (Note: Prime sanded surfaced Base Sheet.)



Membrane: Elastophene Flam, Elastophene SP, Elastophene Flam GR, Elastophene Flam FR GR or FR+ GR, Sopralene (180, 250, 350) Flam GR, Sopralene (180, 250, 350) Flam FR GR or FR+ GR or Sopralast heat welded
or
Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, Sopralene (180, 250, 350) Sanded, Elastophene FR GR or FR+ GR,, Elastophene GRSopralene (180, 250, 350) GR, or Sopralene (180, 250, 350) FR GR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
or
Colphene FR GR or Colphene HR FR GR self adhered. (Note: Prime sanded surfaced Base or Ply Sheet.)

Surfacing: (Optional) Install one of the following:
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. Karnak 97 aluminum roof coating applied at an application rate of 1½ gal./sq.

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



Deck Type 7I: Recover
Deck Description: wood/steel/concrete/lightweight concrete/cementitious wood fiber/gypsum
System Type D(1): All layers of insulation and base sheet simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
AC Foam II, ENRGY-2, PSI-25, Multi-Max FA Minimum 1.4" thick	N/A	N/A
Base or Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Toprox Minimum 1" thick	N/A	N/A
(Optional) Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
BP High Strength, FM-90 Traffic Top/High Density, GAFTEMP High Density, Roof Insulation Board, High Density Fiberboard, Fiber Base HD1, HD6, Structodek Minimum 1/2" thick	N/A	N/A
GAFTEMP Permalite, Fesco Board Minimum 3/4" thick	N/A	N/A
Dens Deck Minimum 1/4" thick	N/A	N/A
Fireguard, type X gypsum Minimum 5/8" thick	N/A	N/A

Note: Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

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

Fastening #1: (*wood, steel, concrete*) Attach base sheet using CF #14 Dekfast with Hex Plates or SFS Insulfixx S or HD Insulfixx S spaced 9" o.c. in a 4" lap and 12" o.c. in two staggered rows in the center of the sheet.

Fastening #2: (*lightweight concrete, cementitious wood fiber, gypsum*) Attach base sheet using TPR fasteners with SFS Insulfixx S Plates spaced 9" o.c. in a 4" lap and 12" o.c. in two staggered rows in the center of the sheet.

Note: Base sheet fasteners shall be tested for withdrawal resistance in compliance with TAS 105 to confirm compliance with the wind load requirements of applicable Building Code.



Ply Sheet: One or more plies of Elastophene Flam, Elastophene Flam 2.2, Sopralene (180, 250 or 350) Flam or Sopralene (180, 250 or 350) SP heat welded
or
One or more plies of Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, Elastophene PS, Elastophene 180 PS, Sopralene (180, 250 or 350) PS, Sopralene (180, 250 or 350) Sanded or ASTM D 2178 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.

Membrane: Elastophene Flam, Elastophene SP, Elastophene Flam GR, Elastophene Flam FR GR or FR+ GR, Sopralene (180, 250, 350) Flam GR, Sopralene (180, 250, 350) Flam FR GR or FR+ GR, or Sopralast heat welded
or
Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, Sopralene (180, 250, 350) Sanded, Elastophene FR GR or FR+ GR, Elastophene GR, Sopralene (180, 250, 350) GR, or Sopralene (180, 250, 350) FR GR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Surfacing: (Optional) Install one of the following:
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. Karnak 97 aluminum roof coating applied at an application rate of 1½ gal./sq.

Maximum Design Pressure: -60 psf (See General Limitation #9)



Deck Type 7I: Recover

Deck Description: wood/steel/concrete/lightweight concrete/cementitious wood fiber/gypsum

System Type D(2): All layers of insulation and base sheet simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
AC Foam II, ENRGY-2, Multi-Max FA Minimum 1.4" thick	N/A	N/A
Toprox Minimum 2" thick	N/A	N/A
(Optional) Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
BP High Strength, FM-90 Traffic Top/High Density, GAFTEMP High Density, Roof Insulation Board, High Density Fiberboard, Fiber Base HD1, HD6, Structodek Minimum 1/2" thick	N/A	N/A
GAFTEMP Permalite, Fesco Board Minimum 3/4" thick	N/A	N/A
Dens Deck Minimum 1/4" thick	N/A	N/A
Fireguard, type X gypsum Minimum 5/8" thick	N/A	N/A

Note: Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

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

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

Fastening #2: (*wood, steel, concrete*) Attach base sheet using HD Insulfixx S fasteners spaced 24" o.c. in the center of the sheet. Laps are heat welded. Fastener rows are stripped in with a 7" wide section of heat welded base sheet membrane. (*meets -45 psf See General Limitation #9*)

Fastening #3: (*steel*) (Excludes use of Elastophene 180 Flam 2.5 mm as base sheet.) Attach base sheet using SFS #15 High Load Fasteners or Soprafix[X]-EL fasteners and 70 mm Round Plates or Soprafix 2" Round Barbed Plates spaced 12" o.c. in a 5" wide heat welded lap. (*meets -75 psf See General Limitation #9*)



- Fastening #4: *(lightweight concrete, cementitious wood fiber, gypsum)* Attach base sheet using TPR fasteners with Soprafix 2" Round Barbed Plates spaced 18" o.c. in a 4" wide heat welded or bituminous taped seam. *(meets -45 psf See General Limitation #9)*
- Fastening #5: *(lightweight concrete, cementitious wood fiber, gypsum)* Attach base sheet using TPR fasteners with Soprafix 2" Round Barbed Plates spaced 24" o.c. in the center of the sheet. Laps are heat welded. Fastener rows are stripped in with a 7" wide section of heat welded base sheet membrane. *(meets -45 psf) See General Limitation #9)*
- Fastening #6: *(gypsum)* (Excludes the use of Elastophene Flam 2.5 mm as base sheet) Attach base sheet using ES Twin Loc-Nails spaced 9' o.c. in a 5" lap and 9" o.c. in one row in the center of the sheet. Laps are heat welded. Fastener rows are stripped in with a 8" wide section of heat welded base sheet membrane. *(meets -60 psf) See General Limitation #7)*
- Fastening #7: *(steel, concrete)* (Excludes the use of Elastophene 180 Flam 2.5 mm as base sheet.) Attach base sheet using #14 Soprafix Fasteners and Soprafix 2" Round Barbed Plates spaced 12" o.c. in a 5" wide heat welded lap. *(meets -60 psf - See General Limitation #7.)*

Note: Base sheet fasteners shall be tested for withdrawal resistance in compliance with TAS 105 to confirm compliance with the wind load requirements with applicable Building Code.

- 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 Sopralene Flam Stick or Sopralene Stick self adhered. (Note: Prime sanded surfaced Base Sheet.)
- Membrane: Elastophene Flam, Elastophene SP, Elastophene Flam GR, Elastophene Flam FR GR or FR+ GR, Sopralene (180, 250, 350) Flam GR, Sopralene (180, 250, 350) Flam FR GR or FR+ GR, UNILAY or Sopralast heat welded
or
Colphene FR GR or Colphene HR FR GR self adhered. (Note: Prime sanded surfaced Base or Ply Sheet.)
- Surfacing: (Optional) Install one of the following:
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. Karnak 97 aluminum roof coating applied at an application rate of 1½ gal./sq.
- Maximum Design Pressure: See Fastening Requirements above.



Deck Type 7I: Recover

Deck Description: Steel/Concrete

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

All General and System Limitations apply.

Insulation Layer

**Insulation Fasteners
(Table 3)**

**Fastener
Density/ft²**

Any listed insulation listed herein.

Note: Membrane fasteners shall be tested for withdrawal resistance in compliance with Testing Application Standard TAS 105 to confirm compliance with the wind load requirements.

Base Sheet: None

Ply Sheet: None

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

Surfacing: None

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



Deck Type 7: Recover
Deck Description: wood/steel/concrete/lightweight concrete/cementitious wood fiber/gypsum
System Type E(1): Base sheet mechanically fastened.

All General and System Limitations apply.

Barrier: (Optional) Tritex Rocroof, loose laid

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

Fastening #1: (*wood, steel, concrete*) Attach base sheet using CF #14 Dekfast with Hex Plates or SFS Insulfixx S or HD Insulfixx S spaced 9" o.c. in a 4" lap and 12" o.c. in two staggered rows in the center of the sheet.

Fastening #2: (*lightweight concrete, cementitious wood fiber, gypsum*) Attach base sheet using TPR fasteners with SFS Insulfixx S Plates spaced 9" o.c. in a 4" lap and 12" o.c. in two staggered rows in the center of the sheet.

Fastening #3: (*lightweight concrete, cementitious wood fiber, gypsum*) Attach base sheet using Twin Loc-Nails spaced 9" o.c. in a 2" lap and 18" o.c. in two staggered rows in the center of the sheet.

Fastening #4: (*lightweight concrete, cementitious wood fiber, gypsum*) Attach base 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.

Note: Base sheet fasteners shall be tested for withdrawal resistance in compliance with Testing Application Standard TAS 105 to confirm compliance with the wind load requirements.

Ply Sheet: One or more plies of Elastophene Flam, Elastophene Flam 2.2, Sopralene (180, 250 or 350) Flam or Sopralene (180, 250 or 350) SP heat welded
or
One or more plies of Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, Elastophene PS, Elastophene 180 PS, Sopralene (180, 250 or 350) PS, Sopralene (180, 250 or 350) Sanded or ASTM D 2178 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.

Membrane: Elastophene Flam, Elastophene SP, Elastophene Flam GR, Elastophene Flam FR GR or FR+ GR, Sopralene (180, 250, 350) Flam GR, Sopralene (180, 250, 350) Flam FR GR or FR+ GR or Sopralast heat welded
or
Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, Sopralene (180, 250, 350) Sanded, Elastophene FR GR or FR+ GR, Elastophene GR, Sopralene (180, 250, 350) GR, or Sopralene (180, 250, 350) FR GR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.



Surfacing:

(Optional) Install one of the following:

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. Karnak 97 aluminum roof coating applied at an application rate of 1½ gal./sq.

Maximum Design

Pressure:

-45 psf (See General Limitation #9)



Deck Type 7: Recover

Deck Description: wood/steel/concrete/lightweight concrete/cementitious wood fiber/gypsum

System Type E(2): Base sheet mechanically fastened.

All General and System Limitations apply.

Barrier: (Optional) Tritex Rocroof, loose laid

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

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

Fastening #2: (*wood, steel, concrete*) Attach base sheet using HD Insulfixx S fasteners spaced 24" o.c. in the center of the sheet. Laps are heat welded. Fastener rows are stripped in with a 7" wide section of heat welded base sheet membrane. (*meets -45 psf See General Limitation #9*)

Fastening #3: (*steel*) (Excludes use of Elastophene 180 Flam 2.5 mm as base sheet.) Attach base sheet using SFS #15 High Load Fasteners or Soprafix [X]-EL fasteners and 70 mm Round Plates or Soprafix 2" Round Barbed Plates spaced 12" o.c. in a 5" wide heat welded lap. (*meets -75 psf See General Limitation #9*)

Fastening #4: (*lightweight concrete, cementitious wood fiber, gypsum*) Attach base sheet using TPR fasteners with Soprafix 2" Round Barbed Plates spaced 18" o.c. in a 4" wide heat welded or bituminous taped seam. (*meets -45 psf See General Limitation #9*)

Fastening #5: (*lightweight concrete, cementitious wood fiber, gypsum*) Attach base sheet using TPR fasteners with Soprafix 2" Round Barbed Plates spaced 24" o.c. in the center of the sheet. Laps are heat welded. Fastener rows are stripped in with a 7" wide section of heat welded base sheet membrane. (*meets -45 psf See General Limitation #9*)

Fastening #6: (*lightweight concrete, gypsum*) (Excludes the use of Elastophene Flam 2.5 mm as base sheet) Attach base sheet using Tri-Fix Fasteners spaced 10" 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 #7: (*gypsum*) (Excludes the use of Elastophene Flam 2.5 mm as base sheet) Attach base sheet using ES Twin Loc-Nails spaced 9' o.c. in a 5" lap and 9" o.c. in one row in the center of the sheet. Laps are heat welded. Fastener rows are stripped in with a 8" wide section of heat welded base sheet membrane. (*meets -60 psf See General Limitation #7*)

Fastening #8: (*lightweight concrete, gypsum*) (Excludes the use of Elastophene Flam 2.5 mm as base sheet) Attach base sheet using Tri-Fix 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 8" wide strip of heat welded membrane. (*meets -112.5 psf See General Limitation #7*)



Fastening #9: (steel, concrete) (Excludes the use of Elastophene 180 Flam 2.5 mm as base sheet.)
Attach base sheet using #14 Soprafix Fasteners and Soprafix 2" Round Barbed
Plates spaced 12" o.c. in a 5" wide heat welded lap.

Note: Base sheet fasteners shall be tested for withdrawal resistance in compliance with Testing Application Standard TAS 105 to confirm compliance with the wind load requirements.

Ply Sheet: (Optional) One or more plies of Elastophene Flam, Elastophene Flam 2.2, Sopralene (180, 250 or 350) Flam, or Sopralene (180, 250 or 350) SP heat welded.
Or
One ply of Sopralene Flam Stick, Sopralene Stick or EPS Flam Stick, self adhered.
(Note: Prime sanded surfaced Base Sheet.)

Membrane: Elastophene Flam, Elastophene SP, Elastophene Flam GR, Elastophene Flam FR GR or FR+ GR, Sopralene (180, 250, 350) Flam GR, Sopralene (180, 250, 350) Flam FR GR or FR+ GR, UNILAY or Sopralast heat welded
or
Colphene FR GR or Colphene HR FR GR self adhered. (Note: Prime sanded surfaced Base or Ply Sheet.)

Surfacing: (Optional) Install one of the following:
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. Karnak 97 aluminum roof coating applied at an application rate of 1½ gal./sq.

Maximum Design Pressure: See Fastening Requirements above.



Deck Type 7: Recover

Deck Description: lightweight concrete/gypsum

System Type E(3): 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 below:

Fastening: 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 or more plies of Elastophene Flam, Elastophene Flam 2.2, Sopralene (180, 250 or 350) Flam or Sopralene (180, 250 or 350) SP heat welded or
One or more plies of Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, Elastophene PS, Elastophene 180 PS, Sopralene (180, 250 or 350) PS, Sopralene (180, 250 or 350) Sanded or ASTM D 2178 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.

Membrane: Elastophene Flam, Elastophene SP, Elastophene Flam GR, Elastophene Flam FR GR or FR+ GR, Sopralene (180, 250, 350) Flam GR, Sopralene (180, 250, 350) Flam FR GR or FR+ GR or Sopralast heat welded
or
Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, Sopralene (180, 250, 350) Sanded, Elastophene FR GR or FR+ GR, Elastophene GR, Sopralene (180, 250, 350) GR, or Sopralene (180, 250, 350) FR GR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Surfacing: (Optional) Install one of the following:
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. Karnak 97 aluminum roof coating applied at an application rate of 1½ gal./sq.

Maximum Design Pressure: -60 psf (See General Limitation #7)



Deck Type 7: Recover

Deck Description: lightweight concrete/gypsum

System Type E(4): 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 below:

Fastening: 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 or more plies of Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, Elastophene PS, Elastophene 180 PS, Sopralene (180, 250 or 350) PS, Sopralene (180, 250 or 350) Sanded or ASTM D 2178 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.

Membrane: Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, Sopralene (180, 250, 350) Sanded, Elastophene FR GR or FR+ GR, Elastophene GR, Sopralene (180, 250, 350) GR, or Sopralene (180, 250, 350) FR GR adhered in 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:
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. Karnak 97 aluminum roof coating applied at an application rate of 1½ gal./sq.

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



Deck Type 7: Recover

Deck Description: steel/concrete

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

All General and System Limitations apply.

Note: Membrane fasteners shall be tested for withdrawal resistance in compliance with Testing Application Standard TAS 105 to confirm compliance with the wind load requirements.

Base Sheet: None

Ply Sheet: None

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

Surfacing: None

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



Deck Type 7: Recover

Deck Description: wood/steel/concrete/lightweight concrete/cementitious wood fiber/gypsum

System Type F(1): Base sheet adhered to a primed substrate.

All General and System Limitations apply.

Base Sheet: (Optional) One or more plies of Sopra-G, Modified Sopra-G, Sopraglass 40, Sopraglass 100, Sopra-IV, Sopra-VI, Soprabase, GAFGLAS #75, JM Perma Ply 28, 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 or more plies of Elastophene Flam, Elastophene Flam 2.2, Sopralene (180, 250 or 350) Flam or Sopralene (180, 250 or 350) SP heat welded
or
One or more plies of Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, Elastophene PS, Elastophene 180 PS, Sopralene (180, 250 or 350) PS, Sopralene (180, 250 or 350) Sanded or ASTM D 2178 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.

Membrane: Elastophene Flam, Elastophene SP, Elastophene Flam GR, Elastophene Flam FR GR or FR+ GR, Sopralene (180, 250, 350) Flam GR, Sopralene (180, 250, 350) Flam FR GR or FR+ GR or Sopralast heat welded
or
Elastophene Sanded, Elastophene Sanded FR, Elastophene HR, Elastophene HR FR, Elastophene 180 Sanded, Sopralene (180, 250, 350) Sanded, Elastophene FR GR or FR+ GR, Elastophene GR, Sopralene (180, 250, 350) GR, or Sopralene (180, 250, 350) FR GR adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Surfacing: (Optional) Install one of the following:
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. Karnak 97 aluminum roof coating applied at an application rate of 1½ gal./sq.

Maximum Design Pressure:
-620 psf (for concrete decks only) (See General Limitation #9)
-60 psf (for all other deck types) (See General Limitation #9)



RECOVER SYSTEM LIMITATIONS:

1. All System Limitations and General Limitations shall apply. See specific deck type Notice of Acceptance for deck type System Limitations.

GENERAL LIMITATIONS:

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

END OF THIS ACCEPTANCE



NOA No.: 01-0206.25
Expiration Date: 03/01/06
Approval Date: 11/13/03
Page 45 of 45