



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)

GAF Material Corporation
1361 Alps Road
Wayne, NJ 07470

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 Miami-Dade County Product Control Division (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. BORA reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Division that this product or material fails to meet the requirements of the applicable building code.

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

DESCRIPTION: GAF Liberty™ SBS Self-Adhering Modified Bitumen Roofing Systems Over 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 revises NOA No. 08-0303.09 and consists of pages 1 through 32.
The submitted documentation was reviewed by Jorge L. Acebo.



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ROOFING ASSEMBLY APPROVAL

Category: Roofing
Sub-Category: Modified Bitumen
Deck Type: Concrete
Material: SBS
Maximum Design Pressure -285 psf

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
Liberty™ SBS Self-Adhering Base/Ply Sheet	39.375" x 66'	ASTM D-6163 ASTM D 5147	Self-adhering, SBS modified, fiberglass reinforced membrane for base or ply sheet applications.
Liberty™ Mechanically Attached MA Base Sheet	39.375" x 66'	ASTM D 4601, type II	Mechanically attached, SBS modified, fiberglass reinforced base sheet.
Liberty™ SBS Self-Adhering Cap Sheet	39.375" x 34'	ASTM D-6162 ASTM D 5147	Self-adhering, SBS modified, polyester / fiberglass composite reinforced cap sheet.
Liberty™ FR SBS Self-Adhering Cap Sheet	39.375" x 34'	ASTM D-6162 ASTM D 5147	Self-adhering, SBS modified, polyester / fiberglass composite reinforced cap sheet with fire retardants.
GAFGLAS® #75 Base Sheet	39.37" (1 meter) wide	ASTM D 4601	Asphalt impregnated and coated glass mat base sheet.
GAFGLAS® #80 Ultima™ Base Sheet	39.37" (1 meter) wide	ASTM D 4601	High performance, asphalt coated, glass-reinforced base sheet.
GAFGLAS® FlexPly™ 6	39.37" (1 meter) wide	ASTM D 2178	Type VI asphalt impregnated glass felt with asphalt coating.
GAFGLAS® Ply 4	39.37" (1 meter) wide	ASTM D 2178	Type IV asphalt impregnated glass felt with asphalt coating.
RUBEROID® SBS Heat-Weld™ Granule	39.37" (1 meter) wide	ASTM D-6164	Non-Woven Polyester mat coated with polymer modified asphalt and surfaced with mineral granules.
RUBEROID® SBS Heat-Weld™ Smooth	39.37" (1 meter) wide	ASTM D-6164	Non-Woven Polyester mat coated with polymer modified asphalt and smooth surfaced.



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<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
RUBEROID® SBS Heat-Weld™ 170 FR	39.37" (1 meter) wide	ASTM D-6164	Non-Woven Polyester mat coated with fire retardant polymer modified asphalt and surfaced with mineral granules.
RUBEROID® EnergyCap SBS Heat Weld Plus FR	(39.37") 1 meter wide	ASTM D-6164	A fiberglass mat reinforced, SBS modified bitumen cap membrane.
RUBEROID® SBS Heat-Weld™ Plus	39.37" (1 meter) wide	ASTM D-6164	Non-Woven Polyester mat coated with polymer modified asphalt and surfaced with mineral granules.
RUBEROID® SBS Heat-Weld Plus FR	39.37" (1 meter) wide	ASTM D-6164	Non-Woven Polyester mat coated with fire retardant polymer modified asphalt and surfaced with mineral granules.
RUBEROID® SBS Heat-Weld™ 25	39.37" (1 meter) wide	ASTM D-6164	Non-Woven Polyester mat coated with polymer modified asphalt and smooth surfaced.
GAFGLAS® Mineral Surfaced Cap Sheet	39.37" (1 meter) Wide	ASTM D 3909	Asphalt coated, glass fiber mat cap sheet surfaced with mineral granules.
GAFGLAS® EnergyCap™ BUR Mineral Surfaced Cap Sheet	39.37" (1 meter) Wide	ASTM D 3909	Asphalt coated, glass fiber mat cap sheet surfaced with mineral granules and reflective EnergyCote™ coating.
Topcoat® MB Plus	5, 55 gallons	ASTM D-412, ASTM D-21-96, ASTM D-1475, ASTM E-1644	Water-based, low VOC, sprayable polymeric liquid, which cures to form a seamless rubber membrane.
Topcoat® Surface Seal SB	5, 55 gallons	ASTM D-412, ASTM B-117, ASTM C-794, ASTM G-21, FTMS141.6271, ASTM D-21-96, ASTM D-1475, ASTM E-1644	Solvent-based, sprayable thermoplastic rubber liquid, which cures to form a seamless rubber membrane.
Leak Buster™ Matrix™ 307 Asphalt Primer	3, 5, 55 gallons	ASTM D 41	Asphalt concrete primer used to promote adhesion of asphalt in built-up roofing.
LeakBuster™ MATRIX™ 322 Elastomeric Roof Coating	5, 55 gallons	ASTM D-1653, ASTM D-12, ASTM E-470 ASTM D-6038	Styrene acrylic-based roof coating that forms a seamless and flexible layer of protection for your roof.



<u>Product</u>	<u>Dimensions</u>	<u>Test Specification</u>	<u>Product Description</u>
LeakBuster™ MATRIX™ 602 MB Xtra Elastomeric Roofing Membrane	5, 55 gallons	ASTM D-412, ASTM B-117, ASTM C-794, ASTM G-21, FTMS 141.6271, ASTM D-21-96, ASTM D-1475 ASTM E-1644.	Surface coating for smooth surfaced and mineral surfaced roofs.
Leak Buster™ Matrix™ 715 MB Elastomeric Roofing Membrane	5, 55 gallons	ASTM D-412, ASTM D-21-96, ASTM D-1475, ASTM E-1644	Surface coating for smooth surfaced and mineral surfaced roofs.
SeamCote™	2, 5 gallons	Proprietary	Elastomeric protective coating
TOPCOAT® MB Plus		ASTM D-3412 ASTM D-21-96 ASTM D-1475 ASTM E-1644 ASTM D-6083	Surface coating for smooth surfaced and mineral surfaced roofs.
TOPCOAT® Fireshield MB Elastomeric Roofing Membrane		ASTM D-3412 ASTM D-21-96 ASTM D-1475 ASTM E-1644 ASTM D-6083	Surface coating for smooth surfaced and mineral surfaced roofs with fire prevention additives.
TOPCOAT® Fireshield SB Solvent Base Elastomeric Roofing Membrane		ASTM D-412 ASTM B-117 ASTM C-794 ASTM G-21 FTMS 141.6271 ASTM D-21-96 ASTM D-1475 ASTM E-1644	Surface coating for smooth surfaced and mineral surfaced roofs.
EnergyCote® Elastomeric Coating		Proprietary	Surface coating for smooth surfaced and mineral surfaced roofs.
TOPCOAT® Surface Seal		ASTM D-412 ASTM B-117 ASTM C-794 ASTM G-21 FTMS 141.6271 ASTM D-21-96 ASTM D-1475 ASTM E-1644	Surface coating for smooth surfaced and mineral surfaced roofs.
FireOut™	5, 55 gallons		Low VOC, fire barrier coating
VersaShield®	350 sq. ft roll	ASTM-D 226 4869 Type I, II	Non-Asphaltic Fiberglass-Based Underlayment



APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
EnergyGuard™ PolyIso	Polyisocyanurate foam insulation	GAF Materials Corp.
Dens Deck®, Dens Deck Prime®	Water resistant gypsum board	G-P Gypsum Corp.
SECUROCK®	Fiber reinforced roof board	USG Corporation
EnergyGuard™ RA, RN or Ultra	Polyisocyanurate foam insulation	GAF Materials Corp.
DensDeck® DuraGuard™	Modified Gypsum Roof Board	Georgia-Pacific
EnergyGuard™ High Density Fiberboard	High density wood fiberboard insulation.	GAF Materials Corp.
EnergyGuard™ Perlite	Perlite insulation board.	GAF Materials Corp.
EnergyGuard™ Perlite Recover Board	Perlite recover board	GAF Materials Corp.
EnergyGuard™ Perlite Tapered Edge Strip	Tapered perlite board	GAF Materials Corp.
EnergyGuard™ Perlite Tapered	Tapered perlite board	GAF Materials Corp.
EnergyGuard™ Perlite Cant Strip	Cut perlite board	GAF Materials Corp.
EnergyGuard™ Composite, RA,	Polyisocyanurate foam insulation with high density fiberboard or perlite insulation.	GAF Materials Corp.
EnergyGuard™ High Density Fiberboard	High density wood fiberboard insulation.	GAF Materials Corp.
EnergyGuard™ Fiberboard	Fiberboard insulation.	GAF Materials Corp.
Structodek® TD	Flame Resistant High Density Wood Fiber board.	Knight-Celotex
Structodek®	Insulation board	Knight-Celotex



APPROVED FASTENERS:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
1.	OlyBond™ 500 & OlyBond Adhesive Fastener	Dual component adhesive fastener	<u>N/A</u>	Olympic Mfg. Group, Inc.
2.	Drill-Tec™ #12 Standard, #14 and #15 extra Heavy Duty Fastener , Heavy Duty Roofing Fastener	Insulation fastener and Base Ply fastener for steel, wood & concrete decks.	Various	GAF Materials Corp.
3.	Drill-Tec™ Extra Heavy Duty # 15 Roofing Fastener (XHD)	Self tapping coated screw w/#3 Phillips head.	Various	GAF Materials Corp.
4.	Drill-Tec™ Super Extra Heavy Duty # 21 Roofing Fastener (SXHD)	Self tapping coated carbon steel screw w/#3 Phillips head.	Various	GAF Materials Corp.
5.	Drill-Tec™ Spikes	Insulation fastener for concrete decks.	Various	GAF Materials Corp.
6.	Drill-Tec™ Extra Heavy Duty ASAP	AZ55 Galvalume coated barber steel plate used with fastener.	Diameter: 2- ³ / ₈ "	GAF Materials Corp.
7.	Drill-Tec™ HD Plate	AZ55 Galvalume coated barber steel plate used with fastener.	Diameter: 2"	GAF Materials Corp.
8.	Drill-Tec™ Plastic Plates	Round plastic plate.	Diameter: 3"	GAF Materials Corp.
9.	Drill-Tec™ Metal Plates	Round galvalume plate.	Diameter: 3"	GAF Materials Corp.
10.	Drill-Tec™ Membrane Plates	Round nylon reinforced seam plate.	Diameter: 2"	GAF Materials Corp.
11.	Drill-Tec™ AccuTrac Plate Steel Plates	Square Galvalume® coated steel stress plates	Diameter: 3" and 3 ½"	GAF Materials Corp.



EVIDENCE SUBMITTED:

<u>Test Agency/Identifier</u>	<u>Report</u>	<u>Name</u>	<u>Date</u>
Underwriters Laboratories, Inc.		UL 790	12/04/01
Exterior Research & Design, LLC	18035.12.02-2	TAS 114	12/24/02
	18034.03.03-2	ASTM D5147	04/23/03
	01501.04.03	TAS 114	04/03/03
	01881.11.03-2-RI	TAS 114	08/21/07
	G4280LAB.10.06	TAS 114	10/20/06
	G4280LAB.10.06-RI	TAS 114	12/06/06
	G6850.08.08	ASTM D6164	08/29/08
	G6850.10.08	ASTM D6222	10/06/08
	G6850.11.08	ASTM D6222	11/05/08
Trinity ERD	Physical Properties	G121110.12.08	12/02/08
Factory Mutual Research Corp.	3024805	4470	11/20/06
	3029832	4470	05/11/07
Atlantic & Caribbean Roof Consulting	07-047	TAS 114	09/07/07
	07-032	TAS 114	05/10/07



APPROVED ASSEMBLIES:

- Membrane Type:** SBS, Self-Adhered
Deck Type 3I: Concrete Decks, Insulated
Deck Description: 2500 psi structural concrete or concrete plank
System Type A(1): All layers of insulation is adhered to the deck with approved adhesive. Membrane is subsequently fully adhered.

All General and System Limitations shall apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Structodek Minimum 1/2" thick	N/A	N/A

Note: All insulation shall be adhered to the deck with OlyBond500™ adhesive applied in continuous 3/4" to 1" wide beads at a maximum spacing of 6" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

- Base Sheet:** One layer of Liberty™ Base/Ply Sheet self-adhered to the insulation applied according to manufacturer's application instructions with a minimum 4" lap.
- Membrane:** One layer of Liberty™ SBS Self-Adhering Cap Sheet or Liberty™ FR SBS Self-Adhering Cap Sheet, self-adhered. Applied according to manufacturer's application instructions to the base sheet.
- Surfacing:** (Optional) Install one of the following:

1. Gravel or slag applied at 400 lbs./sq. and 300 lbs./sq. respectively in a flood coat of approved asphalt at 60 lbs./sq. or applied in a flood coat of Leak Buster™ Matrix™ 103 Cold Process Adhesive applied at a rate of 3 gal./sq.
2. GAFGLAS® Mineral Surfaced Cap Sheet, GAFGLAS® EnergyCap™ Mineral Surfaced Capsheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
3. Leak Buster™ Matrix™ 303 Premium Fibered Aluminum Roof Coating, at 1.5 gal./sq.
4. Leak Buster™ Matrix™ 715, Leak Buster™ Matrix™ 322, TOPCOAT® MB Plus, TOPCOAT® Fireshield Elastomeric Roofing Membrane, applied at 1 to 1.5 gal./sq.
5. Leak Buster™ Matrix™ 602 MB Xtra Elastomeric Roofing Membrane, EnergyCote™ roof coating applied at 1 to 1.5 gal./sq.
6. TOPCOAT® Surface Seal, TOPCOAT® Fireshield® SB Solvent based Elastomeric Roofing Membrane applied at 1 to 1.5 gal./sq.
7. Advance Green Technologies Photovoltaic Laminate solar energy collector auxiliary roof equipment installed in compliance with manufacturer's specifications and applicable Building Codes.

Maximum Design Pressure: -110 psf (See General Limitation #9)



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- Membrane Type:** SBS, Self-Adhered
- Deck Type 3I:** Concrete Decks, Insulated
- Deck Description:** 2500 psi structural concrete or concrete plank
- System Type A(2):** All layers of insulation is adhered to the deck with approved adhesive. Membrane is subsequently fully adhered.

All General and System Limitations shall apply.

One or more layers of any of the following insulations:

Base Insulation Layer (Table 2) (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
EnergyGuard™ PolyIso Minimum 1.5" thick	N/A	N/A
Top Insulation Layer (Table 2)	Insulation Fasteners (Table 3)	Fastener Density/ft²
Dens Deck® Minimum 1/4" thick	N/A	N/A

Note: All layers of insulation shall be adhered to the deck with OlyBond500™ adhesive applied in continuous 3/4" to 1" wide beads at a maximum spacing of 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

- Base Sheet:** One layer of Liberty™ Base/Ply Sheet self-adhered to the insulation applied according to manufacturer's application instructions with a minimum 4" lap.
- Ply Sheet:** (Optional) One or more layers of Ruberoid® SBS Heat-Weld™ 25 or Ruberoid® SBS Heat-Weld™ Smooth, applied according to manufacturer's application instructions.
- Membrane:** One or more layers of RUBEROID® SBS Heat-Weld™ Granule, RUBEROID® SBS Heat-Weld™ Smooth, RUBEROID® SBS Heat-Weld™ 25, RUBEROID® SBS Heat-Weld™ Plus, RUBEROID® SBS Heat-Weld™ 170 FR or RUBEROID® SBS Heat-Weld™ Plus FR, RUBEROID® EnergyCap SBS Heat Weld Plus FR applied according to manufacturer's application instructions.



Surfacing:

(Optional, required over RUBEROID® SBS Heat-Weld™ 25 or RUBEROID® SBS Heat-Weld™ Smooth) Install one of the following:

1. Gravel or slag applied at 400 lbs./sq. and 300 lbs./sq. respectively in a flood coat of approved asphalt at 60 lbs./sq. or applied in a flood coat of Leak Buster™ Matrix™ 103 Cold Process Adhesive applied at a rate of 3 gal./sq.
2. GAFGLAS® Mineral Surfaced Cap Sheet, GAFGLAS® EnergyCap™ Mineral Surfaced Capsheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
3. Leak Buster™ Matrix™ 303 Premium Fibered Aluminum Roof Coating, at 1.5 gal./sq.
4. Leak Buster™ Matrix™ 715, Leak Buster™ Matrix™ 322, TOPCOAT® MB Plus, TOPCOAT® Fireshield Elastomeric Roofing Membrane, applied at 1 to 1.5 gal./sq.
5. Leak Buster™ Matrix™ 602 MB Xtra Elastomeric Roofing Membrane, EnergyCote™ roof coating applied at 1 to 1.5 gal./sq.
6. TOPCOAT® Surface Seal, TOPCOAT® Fireshield® SB Solvent based Elastomeric Roofing Membrane applied at 1 to 1.5 gal./sq.
7. Advance Green Technologies Photovoltaic Laminate solar energy collector auxiliary roof equipment installed in compliance with manufacturer's specifications and applicable Building Codes.

Maximum Design

Pressure: -122.5 psf (See General Limitation #9)



- Membrane Type:** SBS, Self-Adhered
- Deck Type 3I:** Concrete Decks, Insulated
- Deck Description:** 2500 psi structural concrete or concrete plank
- System Type A(3):** All layers of insulation adhered to deck with approved adhesive. Membrane is subsequently fully adhered.

All General and System Limitations shall apply.

One or more layers of any of the following insulations.

Base Insulation Layer (Table 2) (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
EnergyGuard™ PolyIso Minimum 1.5" thick	N/A	N/A
Top Insulation Layer (Table 2)	Insulation Fasteners (Table 3)	Fastener Density/ft²
Securock™ Minimum 1/4" thick	N/A	N/A

Note: All layers of insulation shall be adhered to the deck with OlyBond500™ adhesive applied in continuous 3/4" to 1" wide beads at a maximum spacing of 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

- Base Sheet:** One layer of Liberty™ Base/Ply Sheet self-adhered to the insulation applied according to manufacturer's application instructions with a minimum 4" lap.
- Ply Sheet:** (Optional) One or more layers of Ruberoid® SBS Heat-Weld™ 25 or Ruberoid® SBS Heat-Weld™ Smooth, applied according to manufacturer's application instructions.
- Membrane:** One or more layers of RUBEROID® SBS Heat-Weld™ Granule, RUBEROID® SBS Heat-Weld™ Smooth, RUBEROID® SBS Heat-Weld™ 25, RUBEROID® SBS Heat-Weld™ Plus, RUBEROID® SBS Heat-Weld™ 170 FR RUBEROID® SBS Heat-Weld™ Plus FR, or RUBEROID® EnergyCap SBS Heat Weld Plus FR applied according to manufacturer's application instructions.



Surfacing:

(Optional, required over RUBEROID® SBS Heat-Weld™ 25 or RUBEROID® SBS Heat-Weld™ Smooth) Install one of the following:

1. Gravel or slag applied at 400 lbs./sq. and 300 lbs./sq. respectively in a flood coat of approved asphalt at 60 lbs./sq. or applied in a flood coat of Leak Buster™ Matrix™ 103 Cold Process Adhesive applied at a rate of 3 gal./sq.
2. GAFGLAS® Mineral Surfaced Cap Sheet, GAFGLAS® EnergyCap™ Mineral Surfaced Capsheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
3. Leak Buster™ Matrix™ 303 Premium Fibered Aluminum Roof Coating, at 1.5 gal./sq.
4. Leak Buster™ Matrix™ 715, Leak Buster™ Matrix™ 322, TOPCOAT® MB Plus, TOPCOAT® Fireshield Elastomeric Roofing Membrane, applied at 1 to 1.5 gal./sq.
5. Leak Buster™ Matrix™ 602 MB Xtra Elastomeric Roofing Membrane, EnergyCote™ roof coating applied at 1 to 1.5 gal./sq.
6. TOPCOAT® Surface Seal, TOPCOAT® Fireshield® SB Solvent based Elastomeric Roofing Membrane applied at 1 to 1.5 gal./sq.
7. Advance Green Technologies Photovoltaic Laminate solar energy collector auxiliary roof equipment installed in compliance with manufacturer's specifications and applicable Building Codes.

Maximum Design

Pressure:

-270 psf (See General Limitation #9)



- Membrane Type:** SBS, Self-Adhered
- Deck Type 3I:** Concrete Decks, Insulated
- Deck Description:** 2500 psi structural concrete or concrete plank
- System Type A(4):** All layers of insulation adhered to deck with approved adhesive. Membrane is subsequently fully adhered.

All General and System Limitations shall apply.

One or more layers of any of the following insulations.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
EnergyGuard™ PolyIso Minimum 1.5" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
Dens Deck® Minimum 1/4" thick	N/A	N/A

Note: All layers of insulation shall be adhered to the deck with OlyBond500™ adhesive applied in continuous 3/4" to 1" wide beads at a maximum spacing of 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation shall be primed with ASTM D-41 Asphalt Primer and allowed to dry prior to application of base sheet.

- Base Sheet:** One layer of Liberty™ Base/Ply Sheet self-adhered to the insulation applied according to manufacturer's application instructions with a minimum 4" lap.
- Ply Sheet:** (Optional) One or more layers of RUBEROID® SBS Heat-Weld™ 25 or RUBEROID® SBS Heat-Weld™ Smooth, applied according to manufacturer's application instructions.
- Membrane:** One or more layers of RUBEROID® SBS Heat-Weld™ Granule, RUBEROID® SBS Heat-Weld™ Smooth, RUBEROID® SBS Heat-Weld™ 25, RUBEROID® SBS Heat-Weld™ Plus, RUBEROID® SBS Heat-Weld™ 170 FR, RUBEROID® SBS Heat-Weld™ Plus FR or RUBEROID® EnergyCap SBS Heat Weld Plus FR applied according to manufacturer's application instructions.



Surfacing:

(Optional, required over RUBEROID® SBS Heat-Weld™ 25 or RUBEROID® SBS Heat-Weld™ Smooth) Install one of the following:

1. Gravel or slag applied at 400 lbs./sq. and 300 lbs./sq. respectively in a flood coat of approved asphalt at 60 lbs./sq. or applied in a flood coat of Leak Buster™ Matrix™ 103 Cold Process Adhesive applied at a rate of 3 gal./sq.
2. GAFGLAS® Mineral Surfaced Cap Sheet, GAFGLAS® EnergyCap™ Mineral Surfaced Capsheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
3. Leak Buster™ Matrix™ 303 Premium Fibered Aluminum Roof Coating, at 1.5 gal./sq.
4. Leak Buster™ Matrix™ 715, Leak Buster™ Matrix™ 322, TOPCOAT® MB Plus, TOPCOAT® Fireshield Elastomeric Roofing Membrane, applied at 1 to 1.5 gal./sq.
5. Leak Buster™ Matrix™ 602 MB Xtra Elastomeric Roofing Membrane, EnergyCote™ roof coating applied at 1 to 1.5 gal./sq.
6. TOPCOAT® Surface Seal, TOPCOAT® Fireshield® SB Solvent based Elastomeric Roofing Membrane applied at 1 to 1.5 gal./sq.
7. Advance Green Technologies Photovoltaic Laminate solar energy collector auxiliary roof equipment installed in compliance with manufacturer's specifications and applicable Building Codes.

Maximum Design

Pressure: -167.5 psf (See General Limitation #9)



- Membrane Type:** SBS, Self-Adhered
- Deck Type 3I:** Concrete Decks, Insulated
- Deck Description:** 2500 psi structural concrete or concrete plank
- System Type A(5):** All layers of insulation adhered to deck with approved adhesive. Membrane is subsequently fully adhered.

All General and System Limitations shall apply.

One or more layers of any of the following insulations.

Base Insulation Layer (Table 2) (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
EnergyGuard™ PolyIso Minimum 1.5" thick	N/A	N/A
Top Insulation Layer (Table 2)	Insulation Fasteners (Table 3)	Fastener Density/ft²
Securock™ Minimum 1/4" thick	N/A	N/A

Note: All layers of insulation shall be adhered to the deck with OlyBond500™ adhesive applied in continuous 3/4" to 1" wide beads at a maximum spacing of 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation shall be primed with ASTM D-41 Asphalt Primer and allowed to dry prior to application of base sheet.

- Base Sheet:** One layer of Liberty™ Base/Ply Sheet self-adhered to the insulation applied according to manufacturer's application instructions with a minimum 4" lap.
- Ply Sheet:** (Optional) One or more layers of RUBEROID® SBS Heat-Weld™ 25 or RUBEROID® SBS Heat-Weld™ Smooth, applied according to manufacturer's application instructions.
- Membrane:** One or more layers of RUBEROID® SBS Heat-Weld™ Granule, RUBEROID® SBS Heat-Weld™ Smooth, RUBEROID® SBS Heat-Weld™ 25, RUBEROID® SBS Heat-Weld™ Plus, RUBEROID® SBS Heat-Weld™ 170 FR, RUBEROID® SBS Heat-Weld™ Plus FR or RUBEROID® EnergyCap SBS Heat Weld Plus FR applied according to manufacturer's application instructions.



- Surfacing:** (Optional, required over RUBEROID® SBS Heat-Weld™ 25 or RUBEROID® SBS Heat-Weld™ Smooth) Install one of the following:
1. Gravel or slag applied at 400 lbs./sq. and 300 lbs./sq. respectively in a flood coat of approved asphalt at 60 lbs./sq. or applied in a flood coat of Leak Buster™ Matrix™ 103 Cold Process Adhesive applied at a rate of 3 gal./sq.
 2. GAFGLAS® Mineral Surfaced Cap Sheet, GAFGLAS® EnergyCap™ Mineral Surfaced Capsheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
 3. Leak Buster™ Matrix™ 303 Premium Fibered Aluminum Roof Coating, at 1.5 gal./sq.
 4. Leak Buster™ Matrix™ 715, Leak Buster™ Matrix™ 322, TOPCOAT® MB Plus, TOPCOAT® Fireshield Elastomeric Roofing Membrane, applied at 1 to 1.5 gal./sq.
 5. Leak Buster™ Matrix™ 602 MB Xtra Elastomeric Roofing Membrane, EnergyCote™ roof coating applied at 1 to 1.5 gal./sq.
 6. TOPCOAT® Surface Seal, TOPCOAT® Fireshield® SB Solvent based Elastomeric Roofing Membrane applied at 1 to 1.5 gal./sq.
 7. Advance Green Technologies Photovoltaic Laminate solar energy collector auxiliary roof equipment installed in compliance with manufacturer's specifications and applicable Building Codes.

Maximum Design

Pressure: -285 psf (See General Limitation #9)



- Membrane Type:** SBS, Self-Adhered
- Deck Type 3I:** Concrete Decks, Insulated
- Deck Description:** 2500 psi structural concrete or concrete plank
- System Type A(6):** Optional Vapor Retarder is torch adhered to the deck. All layers of insulation adhered to deck or Vapor Retarder with hot asphalt. Membrane is subsequently fully adhered.
- Vapor Retarder:** (Optional) One ply of Ruberoid® Torch Smooth or Ruberoid® SBS Heat-Weld™ Smooth, torch adhered to the new deck.

All General and System Limitations shall apply.

One or more layers of any of the following insulations.

Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
EnergyGuard™ PolyIso, EnergyGuard™ RA, EnergyGuard™ RN, EnergyGuard™ Ultra or Hunter H-Shield Minimum 1.5" thick	N/A	N/A

Note: Insulation shall be adhered to the deck or optional vapor retarder with OlyBond500™ insulation adhesive in ¾" to 1" beads wide ribbons spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

- Base Sheet:** One layer of Liberty™ Base/Ply Sheet self-adhered to the insulation applied according to manufacturer's application instructions with a minimum 4" lap.
- Ply Sheet:** (Optional) One or more layers of Liberty™ SBS Self-Adhering Base/Ply Sheet, self-adhered
- Membrane:** One layer of Liberty™ SBS Self-Adhering Cap Sheet or Liberty™ FR SBS Self-Adhering Cap Sheet, self-adhered
- Surfacing:** (Optional) Install one of the following:
1. Gravel or slag applied at 400 lbs./sq. and 300 lbs./sq. respectively in a flood coat of approved asphalt at 60 lbs./sq. or applied in a flood coat of Leak Buster™ Matrix™ 103 Cold Process Adhesive applied at a rate of 3 gal./sq.
 2. GAFGLAS® Mineral Surfaced Cap Sheet, GAFGLAS® EnergyCap™ Mineral Surfaced Capsheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
 3. Leak Buster™ Matrix™ 303 Premium Fibered Aluminum Roof Coating, at 1.5 gal./sq.
 4. Leak Buster™ Matrix™ 715, Leak Buster™ Matrix™ 322, TOPCOAT® MB Plus, TOPCOAT® Fireshield Elastomeric Roofing Membrane, applied at 1 to 1.5 gal./sq.
 5. Leak Buster™ Matrix™ 602 MB Xtra Elastomeric Roofing Membrane, EnergyCote™ roof coating applied at 1 to 1.5 gal./sq.
 6. TOPCOAT® Surface Seal, TOPCOAT® Fireshield® SB Solvent based Elastomeric Roofing Membrane applied at 1 to 1.5 gal./sq.
 7. Advance Green Technologies Photovoltaic Laminate solar energy collector auxiliary roof equipment installed in compliance with manufacturer's specifications and applicable Building Codes.

Maximum Design

Pressure: -120 psf (See General Limitation #9)



- Membrane Type:** SBS, Self-Adhered
- Deck Type 3I:** Primed Concrete Decks, Insulated
- Deck Description:** 2500 psi structural concrete or concrete plank
- System Type A(7):** (Optional) Vapor Retarder is fully adhered to the deck. All layers of insulation adhered to deck or Vapor Retarder with hot asphalt. Membrane is subsequently fully adhered.
- Vapor Retarder:** (Optional) One or two plies of GAFGLAS® Ply 4 or GAFGLAS® FlexPly™ 6 adhered to the primed deck with hot asphalt applied at 20-25 lbs./sq.

All General and System Limitations shall apply.

One or more layers of any of the following insulations.

Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
DensDeck® DuraGuard™ Minimum 1/4" thick	N/A	N/A

Note: Insulation shall be adhered to the primed deck or optional vapor retarder with approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

- Base Sheet:** One layer of Liberty™ Base/Ply Sheet self-adhered to the insulation applied according to manufacturer's application instructions with a minimum 4" lap.
- Ply Sheet:** (Optional) One or more layers of Liberty™ SBS Self-Adhering Base/Ply Sheet, self-adhered
- Membrane:** One layer of Liberty™ SBS Self-Adhering Cap Sheet or Liberty™ FR SBS Self-Adhering Cap Sheet, self-adhered
- Surfacing:** (Optional) Install one of the following:
1. Gravel or slag applied at 400 lbs./sq. and 300 lbs./sq. respectively in a flood coat of approved asphalt at 60 lbs./sq. or applied in a flood coat of Leak Buster™ Matrix™ 103 Cold Process Adhesive applied at a rate of 3 gal./sq.
 2. GAFGLAS® Mineral Surfaced Cap Sheet, GAFGLAS® EnergyCap™ Mineral Surfaced Capsheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
 3. Leak Buster™ Matrix™ 303 Premium Fibered Aluminum Roof Coating, at 1.5 gal./sq.
 4. Leak Buster™ Matrix™ 715, Leak Buster™ Matrix™ 322, TOPCOAT® MB Plus, TOPCOAT® Fireshield Elastomeric Roofing Membrane, applied at 1 to 1.5 gal./sq.
 5. Leak Buster™ Matrix™ 602 MB Xtra Elastomeric Roofing Membrane, EnergyCote™ roof coating applied at 1 to 1.5 gal./sq.
 6. TOPCOAT® Surface Seal, TOPCOAT® Fireshield® SB Solvent based Elastomeric Roofing Membrane applied at 1 to 1.5 gal./sq.
 7. Advance Green Technologies Photovoltaic Laminate solar energy collector auxiliary roof equipment installed in compliance with manufacturer's specifications and applicable Building Codes.

Maximum Design

Pressure: -127.5 psf (See General Limitation #9)



Membrane Type: SBS, Self-Adhered
Deck Type 3I: Concrete Decks, Insulated
Deck Description: 2500 psi structural concrete or concrete plank
System Type A(8): Optional Vapor Retarder is torch adhered to the deck. All layers of insulation adhered to deck or Vapor Retarder with hot asphalt. Membrane is subsequently fully adhered.
Vapor Retarder: (Optional) One ply of RUBEROID® Torch Smooth or RUBEROID® SBS Heat-Weld™ Smooth, torch adhered to the new deck.

All General and System Limitations shall apply.

One or more layers of any of the following insulations.

Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
Dens Deck® DuraGuard™ Minimum 1/4" thick	N/A	N/A

Note: Insulation shall be adhered to the deck or optional vapor retarder with OlyBond500™ insulation adhesive in 3/4" to 1" beads wide ribbons spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One layer of Liberty™ Base/Ply Sheet self-adhered to the insulation applied according to manufacturer's application instructions with a minimum 4" lap.

Ply Sheet: (Optional) One or more layers of Liberty™ SBS Self-Adhering Base/Ply Sheet, self-adhered

Membrane: One layer of Liberty™ SBS Self-Adhering Cap Sheet or Liberty™ FR SBS Self-Adhering Cap Sheet, self-adhered

Surfacing: (Optional) Install one of the following:

1. Gravel or slag applied at 400 lbs./sq. and 300 lbs./sq. respectively in a flood coat of approved asphalt at 60 lbs./sq. or applied in a flood coat of Leak Buster™ Matrix™ 103 Cold Process Adhesive applied at a rate of 3 gal./sq.
2. GAFGLAS® Mineral Surfaced Cap Sheet, GAFGLAS® EnergyCap™ Mineral Surfaced Capsheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
3. Leak Buster™ Matrix™ 303 Premium Fibered Aluminum Roof Coating, at 1.5 gal./sq.
4. Leak Buster™ Matrix™ 715, Leak Buster™ Matrix™ 322, TOPCOAT® MB Plus, TOPCOAT® Fireshield Elastomeric Roofing Membrane, applied at 1 to 1.5 gal./sq.
5. Leak Buster™ Matrix™ 602 MB Xtra Elastomeric Roofing Membrane, EnergyCote™ roof coating applied at 1 to 1.5 gal./sq.
6. TOPCOAT® Surface Seal, TOPCOAT® Fireshield® SB Solvent based Elastomeric Roofing Membrane applied at 1 to 1.5 gal./sq.
7. Advance Green Technologies Photovoltaic Laminate solar energy collector auxiliary roof equipment installed in compliance with manufacturer's specifications and applicable Building Codes.

Maximum Design

Pressure: -120 psf (See General Limitation #9)



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- Membrane Type:** SBS, Self-Adhered
- Deck Type 3I:** Primed Concrete Decks, Insulated
- Deck Description:** 2500 psi structural concrete or concrete plank
- System Type A(9):** Optional Vapor Retarder is fully adhered to the deck. All layers of insulation adhered to deck or Vapor Retarder with hot asphalt. Membrane is subsequently fully adhered.
- Vapor Retarder:** (Optional) One or two plies of GAFGLAS® Ply 4 or GAFGLAS® FlexPly™ 6 adhered to the primed deck with hot asphalt applied at 20-25 lbs./sq.
- Insulations:** See **Insulation Maximum Design Pressure Table A** below. **Design Pressure is dependent on Item No. used in this system.**
- Base Sheet:** One layer of Liberty™ Base/Ply Sheet self-adhered to the insulation applied according to manufacturer's application instructions with a minimum 4" lap.
- Ply Sheet:** (Optional) One or more layers of Liberty™ SBS Self-Adhering Base/Ply Sheet, self-adhered
- Membrane:** One or more layers of RUBEROID® SBS Heat-Weld™ 25, RUBEROID® SBS Heat-Weld™ Smooth, RUBEROID® SBS Heat-Weld™ Granule, RUBEROID® SBS Heat-Weld™ 170 FR, RUBEROID® SBS Heat-Weld™ Plus FR, RUBEROID® EnergyCap SBS Heat Weld Plus FR, RUBEROID® SBS Heat-Weld™ Plus, RUBEROID® Torch Smooth, RUBEROID® Torch Granule, RUBEROID® EnergyCap™ Torch Granule FR, RUBEROID® Torch 170 FR, RUBEROID® Torch FR, RUBEROID® Torch Plus RUBEROID® EnergyCap™ Torch Plus FR or RUBEROID® EnergyCap™ APP 250 FR applied according to manufacturer's application instructions.



Surfacing: (Optional, required over RUBEROID® Torch Smooth, RUBEROID® SBS Heat-Weld™ 25 or RUBEROID® SBS Heat-Weld™ Smooth) Install one of the following:

1. Gravel or slag applied at 400 lbs./sq. and 300 lbs./sq. respectively in a flood coat of approved asphalt at 60 lbs./sq. or applied in a flood coat of Leak Buster™ Matrix™ 103 Cold Process Adhesive applied at a rate of 3 gal./sq.
2. GAFGLAS® Mineral Surfaced Cap Sheet, GAFGLAS® EnergyCap™ Mineral Surfaced Capsheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
3. Leak Buster™ Matrix™ 303 Premium Fibered Aluminum Roof Coating, at 1.5 gal./sq.
4. Leak Buster™ Matrix™ 715, Leak Buster™ Matrix™ 322, TOPCOAT® MB Plus, TOPCOAT® Fireshield Elastomeric Roofing Membrane, applied at 1 to 1.5 gal./sq.
5. Leak Buster™ Matrix™ 602 MB Xtra Elastomeric Roofing Membrane, EnergyCote™ roof coating applied at 1 to 1.5 gal./sq.
6. TOPCOAT® Surface Seal, TOPCOAT® Fireshield® SB Solvent based Elastomeric Roofing Membrane applied at 1 to 1.5 gal./sq.
7. Advance Green Technologies Photovoltaic Laminate solar energy collector auxiliary roof equipment installed in compliance with manufacturer's specifications and applicable Building Codes.

Insulation Maximum Design Pressure Table A	
Insulation	
1.	Min. 1.5" Hunter H-Shield mopped in asphalt at the rate of 20-25 lbs./sq. Maximum Design Pressure –240 psf (See General Limitation #9)
2.	Min. 1.5" EnergyGuard™ RA mopped in asphalt at the rate of 20-25 lbs./sq. Maximum Design Pressure –217.5 psf (See General Limitation #9)
3.	Min. 1.5" EnergyGuard™ RN mopped in asphalt at the rate of 20-25 lbs./sq. Maximum Design Pressure –210 psf (See General Limitation #9)
4.	Min. 1.5" EnergyGuard™ PolyIso mopped in asphalt at the rate of 20-25 lbs./sq. Maximum Design Pressure –172.5 psf (See General Limitation #9)
5.	Min. 1.5" EnergyGuard™ Ultra mopped in asphalt at the rate of 20-25 lbs./sq. Maximum Design Pressure –90 psf (See General Limitation #9)



Membrane Type: SBS, Self-Adhered

Deck Type 3I: Primed Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(10): Optional Vapor Retarder is fully adhered to the deck. All layers of insulation adhered to deck or Vapor Retarder with hot asphalt. Membrane is subsequently fully adhered.

Vapor Retarder: (Optional) One or two plies of GAFGLAS® Ply 4 or GAFGLAS® FlexPly™ 6 adhered to the primed deck with hot asphalt applied at 20-25 lbs./sq.

Insulations: See Insulation Maximum Design Pressure Table B below. Design Pressure is dependent on Item No. used in this system.

Base Sheet: One layer of Liberty™ Base/Ply Sheet self-adhered to the insulation applied according to manufacturer's application instructions with a minimum 4" lap.

Ply Sheet: (Optional) One or more layers of Liberty™ SBS Self-Adhering Base/Ply Sheet, self-adhered

Membrane: One or more layers of RUBEROID® SBS Heat-Weld™ 25, RUBEROID® SBS Heat-Weld™ Smooth, RUBEROID® SBS Heat-Weld™ Granule, RUBEROID® SBS Heat-Weld™ 170 FR, RUBEROID® SBS Heat-Weld™ Plus FR, RUBEROID® EnergyCap SBS Heat Weld Plus FR, RUBEROID® SBS Heat-Weld™ Plus, RUBEROID® Torch Smooth, RUBEROID® Torch Granule, RUBEROID® EnergyCap™ Torch Granule FR, RUBEROID® Torch 170 FR, RUBEROID® Torch FR, RUBEROID® EnergyCap™ Torch Plus FR RUBEROID® Torch Plus or RUBEROID® EnergyCap™ APP 250 FR applied according to manufacturer's application instructions.



Surfacing:

(Optional, required over RUBEROID® Torch Smooth, RUBEROID® SBS Heat-Weld™ 25 or RUBEROID® SBS Heat-Weld™ Smooth) Install one of the following:

1. Gravel or slag applied at 400 lbs./sq. and 300 lbs./sq. respectively in a flood coat of approved asphalt at 60 lbs./sq. or applied in a flood coat of Leak Buster™ Matrix™ 103 Cold Process Adhesive applied at a rate of 3 gal./sq.
2. GAFGLAS® Mineral Surfaced Cap Sheet, GAFGLAS® EnergyCap™ Mineral Surfaced Capsheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
3. Leak Buster™ Matrix™ 303 Premium Fibered Aluminum Roof Coating, at 1.5 gal./sq.
4. Leak Buster™ Matrix™ 715, Leak Buster™ Matrix™ 322, TOPCOAT® MB Plus, TOPCOAT® Fireshield Elastomeric Roofing Membrane, applied at 1 to 1.5 gal./sq.
5. Leak Buster™ Matrix™ 602 MB Xtra Elastomeric Roofing Membrane, EnergyCote™ roof coating applied at 1 to 1.5 gal./sq.
6. TOPCOAT® Surface Seal, TOPCOAT® Fireshield® SB Solvent based Elastomeric Roofing Membrane applied at 1 to 1.5 gal./sq.
7. Advance Green Technologies Photovoltaic Laminate solar energy collector auxiliary roof equipment installed in compliance with manufacturer's specifications and applicable Building Codes.

Insulation Maximum Design Pressure Table B	
Insulation	
1.	Base Layer: Min. 1.5" EnergyGuard™ PolyIso, EnergyGuard™ RA, EnergyGuard™ RN or Hunter H-Shield mopped in asphalt at the rate of 20-25 lbs./sq.
	Top Layer: Min. ¼" DensDeck® DuraGuard™ mopped in asphalt at the rate of 20-25 lbs./sq..
	Maximum Design Pressure –127.5 psf (See General Limitation #9)
2.	Base Layer: Min. 1.5" EnergyGuard™ Ultra mopped in asphalt at the rate of 20-25 lbs./sq.
	Top Layer: Min. ¼" DensDeck® DuraGuard™ mopped in asphalt at the rate of 20-25 lbs./sq..
	Maximum Design Pressure –90 psf (See General Limitation #9)



Membrane Type: SBS, Self-Adhered

Deck Type 3I: Primed Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(11): Optional Vapor Retarder is torch adhered to the deck. All layers of insulation adhered to deck or Vapor Retarder with hot asphalt. Membrane is subsequently fully adhered.

Vapor Retarder: (Optional) One ply of Ruberoid® Torch Smooth or Ruberoid® SBS Heat-Weld™ Smooth, torch adhered to the new deck.

Insulations: See Insulation Maximum Design Pressure Table C below. Design Pressure is dependent on Item No. used in this system.

Base Sheet: One layer of Liberty™ Base/Ply Sheet self-adhered to the insulation applied according to manufacturer's application instructions with a minimum 4" lap.

Ply Sheet: (Optional) One or more layers of Liberty™ SBS Self-Adhering Base/Ply Sheet, self-adhered

Membrane: One or more layers of RUBEROID® SBS Heat-Weld™ 25, RUBEROID® SBS Heat-Weld™ Smooth, RUBEROID® SBS Heat-Weld™ Granule, RUBEROID® SBS Heat-Weld™ 170 FR, RUBEROID® SBS Heat-Weld™ Plus FR, RUBEROID® EnergyCap SBS Heat Weld Plus FR, RUBEROID® SBS Heat-Weld™ Plus, RUBEROID® Torch Smooth, RUBEROID® EnergyCap™ Torch Granule FR, RUBEROID® Torch Granule, RUBEROID® Torch 170 FR, RUBEROID® Torch FR, RUBEROID® EnergyCap™ Torch Plus FR RUBEROID® Torch Plus or RUBEROID® EnergyCap™ APP 250 FR applied according to manufacturer's application instructions.



Surfacing:

(Optional, required over RUBEROID® Torch Smooth, RUBEROID® SBS Heat-Weld™ 25 or RUBEROID® SBS Heat-Weld™ Smooth) Install one of the following:

1. Gravel or slag applied at 400 lbs./sq. and 300 lbs./sq. respectively in a flood coat of approved asphalt at 60 lbs./sq. or applied in a flood coat of Leak Buster™ Matrix™ 103 Cold Process Adhesive applied at a rate of 3 gal./sq.
2. GAFGLAS® Mineral Surfaced Cap Sheet, GAFGLAS® EnergyCap™ Mineral Surfaced Capsheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
3. Leak Buster™ Matrix™ 303 Premium Fibered Aluminum Roof Coating, at 1.5 gal./sq.
4. Leak Buster™ Matrix™ 715, Leak Buster™ Matrix™ 322, TOPCOAT® MB Plus, TOPCOAT® Fireshield Elastomeric Roofing Membrane, applied at 1 to 1.5 gal./sq.
5. Leak Buster™ Matrix™ 602 MB Xtra Elastomeric Roofing Membrane, EnergyCote™ roof coating applied at 1 to 1.5 gal./sq.
6. TOPCOAT® Surface Seal, TOPCOAT® Fireshield® SB Solvent based Elastomeric Roofing Membrane applied at 1 to 1.5 gal./sq.
7. Advance Green Technologies Photovoltaic Laminate solar energy collector auxiliary roof equipment installed in compliance with manufacturer's specifications and applicable Building Codes.

Insulation Maximum Design Pressure Table C	
Insulation	
1.	<p>Base Layer: Min. 1.5" EnergyGuard™ PolyIso, EnergyGuard™ RA, EnergyGuard™ RN or Hunter H-Shield adhered in <u>OlyBond500™ Adhesive in ¾" to 1" beads spaced at 12" o.c.</u></p> <p>Top Layer: Min. ¼" DensDeck® DuraGuard™ adhered in <u>OlyBond500™ Adhesive in ¾" to 1" beads spaced at 12" o.c.</u></p> <p>Maximum Design Pressure –120 psf (See General Limitation #9)</p>
2.	<p>Base Layer: Min. 1.5" EnergyGuard™ Ultra adhered in <u>OlyBond500™ Adhesive in ¾" to 1" beads spaced at 12" o.c.</u></p> <p>Top Layer: Min. ¼" DensDeck® DuraGuard™ adhered in <u>OlyBond500™ Adhesive in ¾" to 1" beads spaced at 12" o.c.</u></p> <p>Maximum Design Pressure –90 psf (See General Limitation #9)</p>



Membrane Type: SBS, Self-Adhered
Deck Type 3I: Concrete Decks, Insulated
Deck Description: 2500 psi structural concrete or concrete plank
System Type A(12): All layers of insulation is adhered to the deck with approved adhesive. Membrane is subsequently fully adhered.

All General and System Limitations shall apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
SECUROCK [®] Minimum ¼" thick	N/A	N/A

Note: Insulation shall be adhered to the deck with OlyBond™ 500 adhesive applied in continuous ¾" to 1" wide beads at a maximum spacing of 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One layer of Liberty™ Base/Ply Sheet self-adhered to the insulation applied according to manufacturer's application instructions with a minimum 4" lap.

Membrane: One or more layers of RUBEROID[®] SBS Heat-Weld™ Granule, RUBEROID[®] SBS Heat-Weld™ Smooth, RUBEROID[®] SBS Heat-Weld™ Plus, RUBEROID[®] SBS Heat-Weld™ 170 FR or RUBEROID[®] SBS Heat-Weld™ Plus FR, RUBEROID[®] EnergyCap SBS Heat Weld Plus FR applied according to manufacturer's application instructions.

Surfacing: (Optional, required over RUBEROID[®] SBS Heat-Weld™ Smooth)
Install one of the following:

1. Gravel or slag applied at 400 lbs./sq. and 300 lbs./sq. respectively in a flood coat of approved asphalt at 60 lbs./sq. or applied in a flood coat of Leak Buster™ Matrix™ 103 Cold Process Adhesive applied at a rate of 3 gal./sq.
2. GAFGLAS[®] Mineral Surfaced Cap Sheet, GAFGLAS[®] EnergyCap™ Mineral Surfaced Capsheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
3. Leak Buster™ Matrix™ 303 Premium Fibered Aluminum Roof Coating, at 1.5 gal./sq.
4. Leak Buster™ Matrix™ 715, Leak Buster™ Matrix™ 322, TOPCOAT[®] MB Plus, TOPCOAT[®] Fireshield Elastomeric Roofing Membrane, applied at 1 to 1.5 gal./sq.
5. Leak Buster™ Matrix™ 602 MB Xtra Elastomeric Roofing Membrane, EnergyCote™ roof coating applied at 1 to 1.5 gal./sq.
6. TOPCOAT[®] Surface Seal, TOPCOAT[®] Fireshield[®] SB Solvent based Elastomeric Roofing Membrane applied at 1 to 1.5 gal./sq.
7. Advance Green Technologies Photovoltaic Laminate solar energy collector auxiliary roof equipment installed in compliance with manufacturer's specifications and applicable Building Codes.

Maximum Design

Pressure: -270 psf (See General Limitation #9)



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Membrane Type: SBS, Self-Adhered
Deck Type 3I: Concrete Decks, Insulated
Deck Description: 2500 psi structural concrete or concrete plank
System Type A(13): All layers of insulation is adhered to the deck with approved adhesive. Membrane is subsequently fully adhered.

All General and System Limitations shall apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
DensDeck® Minimum ¼" thick	N/A	N/A

Note: Insulation shall be adhered to the deck with OlyBond™ 500 adhesive applied in continuous ¾" to 1" wide beads at a maximum spacing of 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation shall be primed with ASTM D-41 Asphalt Primer and allowed to dry prior to application of base sheet.

Base Sheet: One layer of Liberty™ Base/Ply Sheet self-adhered to the insulation applied according to manufacturer's application instructions with a minimum 4" lap.

Membrane: One or more layers of RUBEROID® SBS Heat-Weld™ Granule, RUBEROID® SBS Heat-Weld™ Smooth, RUBEROID® SBS Heat-Weld™ Plus, RUBEROID® SBS Heat-Weld™ 170 FR or RUBEROID® SBS Heat-Weld™ Plus FR, RUBEROID® EnergyCap SBS Heat Weld Plus FR applied according to manufacturer's application instructions.

Surfacing: (Optional, required over RUBEROID® SBS Heat-Weld™ Smooth)
Install one of the following:

1. Gravel or slag applied at 400 lbs./sq. and 300 lbs./sq. respectively in a flood coat of approved asphalt at 60 lbs./sq. or applied in a flood coat of Leak Buster™ Matrix™ 103 Cold Process Adhesive applied at a rate of 3 gal./sq.
2. GAFGLAS® Mineral Surfaced Cap Sheet, GAFGLAS® EnergyCap™ Mineral Surfaced Capsheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
3. Leak Buster™ Matrix™ 303 Premium Fibered Aluminum Roof Coating, at 1.5 gal./sq.
4. Leak Buster™ Matrix™ 715, Leak Buster™ Matrix™ 322, TOPCOAT® MB Plus, TOPCOAT® Fireshield Elastomeric Roofing Membrane, applied at 1 to 1.5 gal./sq.
5. Leak Buster™ Matrix™ 602 MB Xtra Elastomeric Roofing Membrane, EnergyCote™ roof coating applied at 1 to 1.5 gal./sq.
6. TOPCOAT® Surface Seal, TOPCOAT® Fireshield® SB Solvent based Elastomeric Roofing Membrane applied at 1 to 1.5 gal./sq.
7. Advance Green Technologies Photovoltaic Laminate solar energy collector auxiliary roof equipment installed in compliance with manufacturer's specifications and applicable Building Codes.

Maximum Design

Pressure: -167.5 psf (See General Limitation #9)



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Deck Type 3I: Concrete Decks, Insulated
Deck Description: 2500 psi structural concrete or concrete plank
System Type A(14): All layers of insulation is adhered to the deck with approved adhesive. Membrane is subsequently fully adhered

All General and System Limitations shall apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
DensDeck® Minimum ¼" thick	N/A	N/A

Note: Insulation shall be adhered to the deck with OlyBond™ 500 adhesive applied in continuous ¾" to 1" wide beads at a maximum spacing of 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

- Base Sheet:** One layer of Liberty™ Base/Ply Sheet self-adhered to the insulation applied according to manufacturer's application instructions with a minimum 4" lap.
- Membrane:** One or more layers of RUBEROID® SBS Heat-Weld™ Granule, RUBEROID® SBS Heat-Weld™ Smooth, RUBEROID® SBS Heat-Weld™ Plus, RUBEROID® SBS Heat-Weld™ 170 FR or RUBEROID® SBS Heat-Weld™ Plus FR, RUBEROID® EnergyCap SBS Heat Weld Plus FR applied according to manufacturer's application instructions.
- Surfacing:** (Optional, required over RUBEROID® SBS Heat-Weld™ Smooth)
 Install one of the following:
1. Gravel or slag applied at 400 lbs./sq. and 300 lbs./sq. respectively in a flood coat of approved asphalt at 60 lbs./sq. or applied in a flood coat of Leak Buster™ Matrix™ 103 Cold Process Adhesive applied at a rate of 3 gal./sq.
 2. GAFGLAS® Mineral Surfaced Cap Sheet, GAFGLAS® EnergyCap™ Mineral Surfaced Capsheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
 3. Leak Buster™ Matrix™ 303 Premium Fibered Aluminum Roof Coating, at 1.5 gal./sq.
 4. Leak Buster™ Matrix™ 715, Leak Buster™ Matrix™ 322, TOPCOAT® MB Plus, TOPCOAT® Fireshield Elastomeric Roofing Membrane, applied at 1 to 1.5 gal./sq.
 5. Leak Buster™ Matrix™ 602 MB Xtra Elastomeric Roofing Membrane, EnergyCote™ roof coating applied at 1 to 1.5 gal./sq.
 6. TOPCOAT® Surface Seal, TOPCOAT® Fireshield® SB Solvent based Elastomeric Roofing Membrane applied at 1 to 1.5 gal./sq.
 7. Advance Green Technologies Photovoltaic Laminate solar energy collector auxiliary roof equipment installed in compliance with manufacturer's specifications and applicable Building Codes.

Maximum Design Pressure: -122.5 psf (See General Limitation #9)



Membrane Type: SBS, Self-Adhered
Deck Type 3: Concrete Decks, Non-insulated
Deck Description: 2500 psi structural concrete or concrete plank
System Type F(1): Membrane and/or anchor sheet is adhered to primed deck.

All General and System Limitations shall apply.

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of base sheet.

Base Sheet: One layer of Liberty™ Base/Ply Sheet self-adhered to the primed deck applied according to manufacturer's application instructions with a minimum 4" lap.

Ply Sheet: (Optional) One or more layers of Liberty™ SBS Self-Adhering Base/Ply Sheet, self-adhered

Membrane: One layer of Liberty™ SBS Self-Adhering Cap Sheet or Liberty™ FR SBS Self-Adhering Cap Sheet, self-adhered
Or

One or more layers of RUBEROID® SBS Heat-Weld™ Granule, RUBEROID® SBS Heat-Weld™ Smooth, RUBEROID® SBS Heat-Weld™ 25, RUBEROID® SBS Heat-Weld™ Plus, RUBEROID® SBS Heat-Weld™ 170 FR, RUBEROID® EnergyCap SBS Heat Weld Plus FR, or RUBEROID® SBS Heat-Weld™ Plus FR applied according to manufacturer's application instructions.

Surfacing: (Optional, required over RUBEROID® SBS Heat-Weld™ 25 or RUBEROID® SBS Heat-Weld™ Smooth) Install one of the following:

1. Gravel or slag applied at 400 lbs./sq. and 300 lbs./sq. respectively in a flood coat of approved asphalt at 60 lbs./sq. or applied in a flood coat of Leak Buster™ Matrix™ 103 Cold Process Adhesive applied at a rate of 3 gal./sq.
2. GAFGLAS® Mineral Surfaced Cap Sheet, GAFGLAS® EnergyCap™ Mineral Surfaced Capsheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
3. Leak Buster™ Matrix™ 303 Premium Fibered Aluminum Roof Coating, at 1.5 gal./sq.
4. Leak Buster™ Matrix™ 715, Leak Buster™ Matrix™ 322, TOPCOAT® MB Plus, TOPCOAT® Fireshield Elastomeric Roofing Membrane, applied at 1 to 1.5 gal./sq.
5. Leak Buster™ Matrix™ 602 MB Xtra Elastomeric Roofing Membrane, EnergyCote™ roof coating applied at 1 to 1.5 gal./sq.
6. TOPCOAT® Surface Seal, TOPCOAT® Fireshield® SB Solvent based Elastomeric Roofing Membrane applied at 1 to 1.5 gal./sq.
7. Advance Green Technologies Photovoltaic Laminate solar energy collector auxiliary roof equipment installed in compliance with manufacturer's specifications and applicable Building Codes.

Maximum Design

Pressure: -125 psf (See General Limitation #9)

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Membrane Type: SBS, Self-Adhered

Deck Type 3: Concrete Decks, Non-insulated

Deck Description: 3000 psi structural concrete

System Type F(2): Membrane and/or anchor sheet is adhered to primed deck.

All General and System Limitations shall apply.

Note: Concrete deck shall be primed with GAF Surface Seal Bonding Adhesive.

Primer: TOPCOAT® Surface Seal applied at a rate of 1 to 1.5 gal./sq.

Base Sheet: One layer of Liberty™ Base/Ply Sheet self-adhered to the primed deck applied according to manufacturer's application instructions with a minimum 4" lap.

Ply Sheet: (Optional) One or more layers of Liberty™ Base/Ply Sheet self adhered applied according to manufacturer's application instructions

Membrane: One layer of GAF Liberty™ SBS SA Cap or Liberty™ FR SBS Self Adhering Cap Sheet, self adhered and over ribbons of GAF TOPCOAT® Surface Seal SB bonding adhesive applied 12" o.c. and ¼" wide to the base sheet.

Surfacing: (Optional) Install one of the following:

1. Gravel or slag applied at 400 lbs./sq. and 300 lbs./sq. respectively in a flood coat of approved asphalt at 60 lbs./sq. or applied in a flood coat of Leak Buster™ Matrix™ 103 Cold Process Adhesive applied at a rate of 3 gal./sq.
2. GAFGLAS® Mineral Surfaced Cap Sheet, GAFGLAS® EnergyCap™ Mineral Surfaced Capsheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
3. Leak Buster™ Matrix™ 303 Premium Fibered Aluminum Roof Coating, at 1.5 gal./sq.
4. Leak Buster™ Matrix™ 715, Leak Buster™ Matrix™ 322, TOPCOAT® MB Plus, TOPCOAT® Fireshield Elastomeric Roofing Membrane, applied at 1 to 1.5 gal./sq.
5. Leak Buster™ Matrix™ 602 MB Xtra Elastomeric Roofing Membrane, EnergyCote™ roof coating applied at 1 to 1.5 gal./sq.
6. TOPCOAT® Surface Seal, TOPCOAT® Fireshield® SB Solvent based Elastomeric Roofing Membrane applied at 1 to 1.5 gal./sq.
7. Advance Green Technologies Photovoltaic Laminate solar energy collector auxiliary roof equipment installed in compliance with manufacturer's specifications and applicable Building Codes.

Maximum Design

Pressure: - 187.5 psf (See General Limitation #9)



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Membrane Type: SBS, Self-Adhered

Deck Type 3I: Concrete Decks, Non Insulated

Deck Description: 2500 psi structural concrete

System Type F(3): Membrane and/or anchor sheet is adhered to primed deck.

All General and System Limitations shall apply.

Primer: ASTM D 41 (Matrix™ 307) asphalt primer applied 1 gallon per square

Base Sheet: One layer of Liberty™ Base/Ply Sheet self-adhered to the primed deck applied according to manufacturer's application instructions with a minimum 4" lap.

Ply Sheet: One or more layers of Liberty™ SBS Self-Adhering Base/Ply Sheet, self-adhered. Applied according to manufacturer's application instructions.

Membrane: One or more layers of RUBEROID® SBS Heat-Weld™ Granule, RUBEROID® SBS Heat-Weld™ Smooth, RUBEROID® SBS Heat-Weld™ Plus, RUBEROID® SBS Heat-Weld™ 170 FR, RUBEROID® EnergyCap SBS Heat Weld Plus FR, or RUBEROID® SBS Heat-Weld™ Plus FR applied according to manufacturer's application instructions.

Surfacing: (Optional, required over RUBEROID® SBS Heat-Weld™ Smooth)
Install one of the following:

1. Gravel or slag applied at 400 lbs./sq. and 300 lbs./sq. respectively in a flood coat of approved asphalt at 60 lbs./sq. or applied in a flood coat of Leak Buster™ Matrix™ 103 Cold Process Adhesive applied at a rate of 3 gal./sq.
2. GAFGLAS® Mineral Surfaced Cap Sheet, GAFGLAS® EnergyCap™ Mineral Surfaced Capsheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
3. Leak Buster™ Matrix™ 303 Premium Fibered Aluminum Roof Coating, at 1.5 gal./sq.
4. Leak Buster™ Matrix™ 715, Leak Buster™ Matrix™ 322, TOPCOAT® MB Plus, TOPCOAT® Fireshield Elastomeric Roofing Membrane, applied at 1 to 1.5 gal./sq.
5. Leak Buster™ Matrix™ 602 MB Xtra Elastomeric Roofing Membrane, EnergyCote™ roof coating applied at 1 to 1.5 gal./sq.
6. TOPCOAT® Surface Seal, TOPCOAT® Fireshield® SB Solvent based Elastomeric Roofing Membrane applied at 1 to 1.5 gal./sq.
7. Advance Green Technologies Photovoltaic Laminate solar energy collector auxiliary roof equipment installed in compliance with manufacturer's specifications and applicable Building Codes.

Maximum Design

Pressure: - 125 psf (See General Limitation #9)



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CONCRETE DECK SYSTEM LIMITATIONS:

1. If mechanical attachment to the structural deck through the lightweight insulating concrete is proposed, a field withdrawal resistance testing shall be performed to determine equivalent or enhanced fastener patterns and density. All testing and fastening design shall be in compliance with Testing Application Standard TAS 105 and Roofing Application Standard RAS 117, calculations shall be signed and sealed by a Florida Registered Engineer, Architect, or Registered Roof Consultant.

GENERAL LIMITATIONS:

1. Fire classification is not part of this acceptance, refer to a current Approved Roofing Materials Directory for fire ratings of this product.
2. Insulation may be installed in multiple layers. The first layer shall be attached in compliance with Product Control Approval guidelines. All other layers shall be adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq., or mechanically attached using the fastening pattern of the top layer
3. All standard panel sizes are acceptable for mechanical attachment. When applied in approved asphalt, panel size shall be 4' x 4' maximum.
4. An overlay and/or recovery board insulation panel is required on all applications over closed cell foam insulations when the base sheet is fully mopped. If no recovery board is used the base sheet shall be applied using spot mopping with approved asphalt, 12" diameter circles, 24" o.c.; or strip mopped 8" ribbons in three rows, one at each sidelap and one down the center of the sheet allowing a continuous area of ventilation. Encircling of the strips is not acceptable. A 6" break shall be placed every 12' in each ribbon to allow cross ventilation. Asphalt application of either system shall be at a minimum rate of 12 lbs./sq.

Note: Spot attached systems shall be limited to a maximum design pressure of -45 psf.

5. Fastener spacing for insulation attachment is based on a Minimum Characteristic Force (F') value of 275 lbf., as tested in compliance with Testing Application Standard TAS 105. If the fastener value, as field-tested, are below 275 lbf. insulation attachment shall not be acceptable.
6. Fastener spacing for mechanical attachment of anchor/base sheet or membrane attachment is based on a minimum fastener resistance value in conjunction with the maximum design value listed within a specific system. Should the fastener resistance be less than that required, as determined by the Building Official, a revised fastener spacing, prepared, signed and sealed by a Florida Registered Engineer, Architect, or Registered Roof Consultant may be submitted. Said revised fastener spacing shall utilize the withdrawal resistance value taken from Testing Application Standards TAS 105 and calculations in compliance with Roofing Application Standard RAS 117.
7. Perimeter and corner areas shall comply with the enhanced uplift pressure requirements of these areas. Fastener densities shall be increased for both insulation and base sheet as calculated in compliance with Roofing Application Standard RAS 117. Calculations prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant **(When this limitation is specifically referred within this NOA, General Limitation #9 will not be applicable.)**
8. All attachment and sizing of perimeter nailers, metal profile, and/or flashing termination designs shall conform with Roofing Application Standard RAS 111 and applicable wind load requirements.
9. The maximum designed pressure limitation listed shall be applicable to all roof pressure zones (i.e. field, perimeters, and corners). Neither rational analysis, nor extrapolation shall be permitted for enhanced fastening at enhanced pressure zones (i.e. perimeters, extended corners and corners). **(When this limitation is specifically referred within this NOA, General Limitation #7 will not be applicable.)**
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



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