MIAMI-DADE

BUILDING CODE COMPLIANCE OFFICE (BCCO)
PRODUCT CONTROL DIVISION

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

NOTICE OF ACCEPTANCE (NOA)

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 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: GAF Ruberoid® Modified Bitumen Roof System for Concrete Decks.

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

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

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

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

This NOA renews NOA #01-0712.14 and consists of pages 1 through 41.
The submitted documentation was reviewed by Frank Zuloaga, RRC.

ROOFING SYSTEM APPROVAL

Category:	Roofing
Sub-Category:	SBS/APP, Modified Bitumen
Deck Type:	Concrete
Maximum Design Pressure	-495 psf
Fire Classification:	See General Limitation #1

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

Product	Dimensions	Test Specification	Product Description
GAF Asphalt Concrete Primer (Matrix™ 307 Primer)	5, 55 gallons	ASTM D 41	Asphalt concrete primer used to promote adhesion of asphalt in built-up roofing.
GAF Mineral Shield® Granules	60 lb. & 100 lb bags	ASTM D 1863	Granules for surfacing of exposed asphalt, cold process cement or emulsion. GAF Mineral Shield® Granules shall be used for flashing applications only.
GAF WeatherCoat® Emulsion (Matrix™ Fibered 305 Emulsion)	5 gallons	ASTM 1227	Surface coating for smooth surfaced roofs.
GAF Premium Fibered Aluminum Roof Coating (Matrix™ System Pro Aluminum Roof Coating Fibered 301)	1, 5 gallons	ASTM D 2824	Fibered aluminum coating.
GAF Jetblak All Weather Plastic Cement (Matrix™ Standard Wet/Dry Roof Cement 204)	1, 5 gallons	ASTM D 3019 ASTM D 3409	Refined asphalt blended with a mineral stabilizer and fibers. Permits adhesion to wet and dry surfaces.
GAF Aluminum Emulsion	5 gallons		Mineral colloidial bituminous emulsion with reflective aluminum flakes.
GAF Aluminum Roof Paint (Matrix™ System Pro Aluminum Roof Coating Fibered 302)	5 gallons	ASTM D2824, Type I	Non-fibered. aluminum pigmented, asphalt roof coating.
GAF Built-Up Roofing Asphalt	100 lb. cartons, bulk	ASTM D312, Tpyes I, II, III and IV1	Interply mopping and surfacing asphalt
GAFGLAS® #75	39.37" (1 meter) Wide	ASTM D 4601	Asphalt impregnated and coated glass mat base sheet.

Product	Dimensions	Test Specification	Product Description
GAFGLAS #80 Ultima™ Base Sheet	39.37" (1 meter) Wide	ASTM D4601	Asphalt impregnated and coated, fiberglass 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.
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® STRATAVENT® Eliminator Perforated	39.37" (1 meter) Wide	ASTM D3672 ASTM D 4897	Fiberglass base sheet coated on both sides with asphalt. Surfaced on the bottom side with mineral granules embedded in asphaltic coating with factory perforations.
GAFGLAS® Flashing	various		Asphalt coated glass fiber mat flashing sheet available in three sizes.
GAFGLAS® STRATAVENT® Eliminator Perforated Nailable	39.37" (1 meter) Wide	ASTM D3672 ASTM D 4897	Fiberglass base sheet coated on both sides with asphalt. Surfaced on the bottom side with mineral granules embedded in asphaltic coating.
RUBEROID® SBS Heat-Weld™ Smooth	1 meter (39.37") wide	ASTM D-6164	Non-Woven Polyester mat coated with polymer modified asphalt and smooth surfaced.
RUBEROID® SBS Heat-Weld™ Granule	1 meter (39.37") wide	ASTM D-6164	Non-Woven Polyester mat coated with polymer modified asphalt and surfaced with mineral granules.
RUBEROID® SBS Heat-Weld™ 170 FR	1 meter (39.37") wide	ASTM D-6164	Non-Woven Polyester mat coated with fire retardant polymer modified asphalt and surfaced with mineral granules.
RUBEROID® SBS Heat-Weld™ PLUS	1 meter (39.37") wide	ASTM D-6164	Non-Woven Polyester mat coated with polymer modified asphalt and surfaced with mineral granules.
RUBEROID® SBS Heat-Weld PLUS FR	1 meter (39.37") 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	1 meter (39.37") wide	ASTM D-6164	Non-Woven Polyester mat coated with polymer modified asphalt and smooth surfaced.
RUBEROID MOP Smooth	39.37" (1 meter) Wide	ASTM D5147 ASTM D6298	Non-woven polyester mat coated with polymer modified asphalt. Does not have a factory applied surfacing.
RUBEROID ULTRACLAD® SBS	1 sq. roll 101 lb.	ASTM D5147	Woven fiberglass mat coated with polymer modified asphalt and surfaced with aluminum, copper or stainless steel foil.

Product	Dimensions	Test Specification	Product Description
RUBEROID MOD Asphalt, Asphalt L & Asphalt P	60 lb. kegs		SEBS modified asphalt
RUBEROID® Modified Base Sheet	39.37" (1 meter) Wide	ASTM D4601 Type II, Type G2 BUR	Premium glass fiber reinforced SBS-modified base sheet.
Ruberoid® Mop Granule	39.37" (1 meter) Wide	ASTM D 6222 ASTM D 5147	Non-woven polyester mat coated with polymer modified asphalt and surfaced with mineral granules.
Ruberoid® Torch Smooth	39.37" (1 meter) Wide	ASTM D 5147	Heavy duty, polyester reinforced, asphalt modified bitumen membrane.
Ruberoid® Torch Plus (Granule)	39.37" (1 meter) Wide	ASTM D 6222 ASTM D 5147	Heavy duty, polyester reinforced, asphalt modified bitumen membrane.
Ruberoid® Torch Granule	39.37" (1 meter) Wide	ASTM D 6222 ASTM D 5147	Asphalt impregnated, coated felt, surfaced with mineral granules.
Ruberoid® Torch FR	39.37" (1 meter) Wide	ASTM D 6222 ASTM D 5147	Non-woven polyester mat coated with fire retardant polymer modified asphalt surfaced with mineral granules.
Ruberoid® Mop Plus (Granule)	39.37" (1 meter) Wide	ASTM D 6164 ASTM D 5147	Non-woven polyester mat coated with polymer modified asphalt and surfaced with mineral granules.
Ruberoid® Mop FR	39.37" (1 meter) Wide	ASTM D 6164 ASTM D 5147	Non-woven polyester mat coated with fire-retardant, polymer modified asphalt surfaced with mineral granules.
Ruberoid® 20	39.37" (1 meter) Wide	ASTM D 6163 ASTM D 5147	SBS modified asphalt base sheet reinforce with a glass fiber mat.
Ruberoid® 30	39.37" (1 meter) Wide	ASTM D 6163 ASTM D 5147	Non woven fiberglass mat coated with polymer modified asphalt and surfaced with mineral granules.
Ruberoid® 30 FR	39.37" (1 meter) Wide	ASTM D 6163 ASTM D 5147	Non woven fiberglass mat coated with fire retardant, polymer modified asphalt and surfaced with mineral granules.1
Ruberoid® Mop 170 FR	39.37" (1 meter) Wide	ASTM D 6164 ASTM D 5147	Non-woven polyester mat coated with fire retardant polymer modified asphalt surfaced with mineral granules.
TopCoat® Surface Seal SB (Matrix)	5 gallons		Surface coating for smooth surfaced and mineral surfaced roofs.
GAF WeatherCote® MB+(Matrix)	5 gallons		Surface coating for smooth surfaced and mineral surfaced roofs.
TopCoat MB+	5 gallons		Surface coating for smooth surfaced and mineral surfaced roofs.
Matrix™ WeatherCote™	5 gallons		Surface coating for smooth surfaced and mineral surfaced roofs.
Matrix Low VOC	5 gallons		Surface coating for smooth surfaced and mineral surfaced roofs.

Product	Dimensions	Test Specification	Product Description
Matrix 101 System Pro SBS Adhesive	5 gallons	ASTM D3019	Cold Applied Modified SEBS Asphalt Adhesive
(Ruberoid®MB) Matrix 201 System Pro SBS Flashing	5 gallons	ASTM D3019	Cold Applied Modified SEBS Asphalt Adhesive – Flashing Grade.
(Ruberoid®MB) Matrix 102 Select SBS Adhesive	5 gallons	ASTM D3019	Cold Applied Modified SEBS Asphalt Adhesive.
(Ruberoid®MB) Matrix 202 Select SBS Flashing	5 gallons	ASTM D4586	Cold Applied Modified SEBS Asphalt Adhesive – Flashing Grade.
Matrix 203 Standard Plastic Cement	5 gallons	ASTM D4586	Standard Plastic Asphalt Roofing Cement
Matrix 213 Gun Grade Plastic Cement	5 gallons	ASTM D4586	Standard Plastic Asphalt Roofing Cement Caulk Grade.
Matrix 103 Cold Adhesive	5 gallons	ASTM D3019	Cold Applied Asphalt Adhesive.
Matrix 303 Select Fibered Aluminum	5 gallons	ASTM D 2824	Fibered aluminum coating.
Matrix 304 Select Non-Fibered	5 gallons	ASTM D2824, Type I	Non-fibered. aluminum pigmented, asphalt roof coating.
Vent Stacks (metal and plastic)		PA 100(A) ASTM D 1929 ASTM D 635	One way valve vent used to relieve built-up pressure within the roof system. GAF Vent Stacks are available in metal or plastic.

APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
GAFTEMP Isotherm RA, RN & Composite	Polyisocyanurate foam insulation	GAF Materials Corp.
GAFTEMP® Composite A & N	Polyisocyanurate foam insulation with high density fiberboard or Permalite perlite insulation.	GAF Materials Corp.
(BMCA)GAFTEMP® Fiberboard	Fiberboard insulation.	GAF Materials Corp.
EnergyGuard Perlite	Perlite insulation board.	GAF Materials Corp.
EnergyGuard Recover Board	Perlite recover board	GAF Materials Corp.
EnergyGuard High Density Fiberboard	High density wood fiberboard insulation.	GAF Materials Corp.
PYROX	Polyisocyanurate foam insulation	Apache Products Co.
White Line	Polyisocyanurate foam insulation	Apache Products Co.

APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
ACFoam I, II & Composite	Polyisocyanurate foam insulation	Atlas Energy Products
ISO 95+	Polyisocyanurate foam insulation	Firestone Building Products, Inc.
Wood Fiber	Wood fiber insulation board	generic
High Density Wood Fiberboard	Wood fiber insulation board	generic
Perlite Insulation	Perlite insulation board	generic
Type X Gypsum	Fire resistant rated gypsum	generic
Dens Deck	Water resistant gypsum board	G-P Gypsum Corp.
E'NRG'Y-2 & E'NRG'Y-2 PLUS, UltraGard Gold	Polyisocyanurate foam insulation	Johns Manville
FiberGlass Roof Insulation	Glass fiber/Mineral fiber insulation	Johns Manville
Structodek	Wood fiber insulation board	Masonite.
Foamglas Board	Expanded glass insulation board.	Pittsburgh Corning
Multi-Max	Polyisocyanurate roof insulation	RMax, Inc.

APPROVED FASTENERS:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
1.	GAFTITE® (Drill-Tec®) #12 Standard & #14 Heavy Duty Roofing Fastener	Insulation fastener for steel, wood & concrete decks.		GAF Materials Corp.
2.	GAFTITE® (Drill-Tec®) ASAP	Pre-assembled GAFTITE Fasteners and metal and plastic plates.		GAF Materials Corp.
3.	GAFTITE® (Drill-Tec®) Base Sheet Fastener and Plate	Base sheet fastening assembly.		GAF Materials Corp.
4.	Galvalume Plates (Drill-Tec® Metal)	Round galvalume stress plates.	3" and 3 ½"	GAF Materials Corp.
5.	Polypropylene Plates (Drill-Tec® Plastic)	Round polypropylene stress plates.	3" and 3 ½"	GAF Materials Corp.
6.	Dekfast Fasteners #14 & #15	Insulation fastener for wood, steel and concrete decks		Construction Fasteners Inc.

APPROVED FASTENERS:

TABLE 3

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
7.	Dekfast Hex Plate	Galvalume hex stress plate.	2 7/8" x 3 1/4"	Construction Fasteners Inc.
8.	Dekfast Lock Plate	Polypropylene locking plate.	3" x 3 1/4"	Construction Fasteners Inc.
9.	Olympic Fastener #12 & #14	Insulation fastener		Olympic Manufacturing Group, Inc.
10.	Fluted Nail (Con-Tite)	Insulation fastener		Olympic Manufacturing Group, Inc.
11.	Olympic Fastener ASAP	Pre-assembled Insulation fastener and plate		Olympic Manufacturing Group, Inc.
12.	Olympic Polypropylene	Polypropylene plastic plate	3.25" round	Olympic Manufacturing Group, Inc.
13.	Olympic G-2	3" round galvalume AZ55 steel plate	3.5" round	Olympic Manufacturing Group, Inc.
14.	Olympic Standard	3" round galvalume AZ50 steel plate	3" round	Olympic Manufacturing Group, Inc.
15.	Rawl Drive	Insulation fastener for concrete decks		Powers Fasteners, Inc.
16.	Rawl Plate	3" round galvalume AZ55 steel plate	3" round	Powers Fasteners, Inc.

EVIDENCE SUBMITTED:

Test Agency/Identifier	Name	Report	Date
Factory Mutual Research Corp.	Current Insulation Attachment Requirements	FMRC 1996	01.01.96
Factory Mutual Research Corp.	FMRC 4470 - PA 114	J.I. 0D0A8.AM	07.09.97
Factory Mutual Research Corp.	FMRC 4470 - PA 114	J.I. 2B8A4.AM	07.02.97
Factory Mutual Research Corp.		J.I. 3005640	11.09.00
Factory Mutual Research Corp.	Class 1	J.I. 3006845	10.17.00
Factory Mutual Research Corp.	Class 1	J.I. 3005175	05.23.00
Factory Mutual Research Corp.		J.I. 3005177	05.19.00
Factory Mutual Research Corp.	FMRC 4470 - PA 114	J.I. 3007500	06.15.00
Factory Mutual Research Corp.	FMRC 4470 - PA 114	J.I. 3008178	12.27.00
Factory Mutual Research Corp.	FMRC 4470	J.I. 3010215	03.01.01
Factory Mutual Research Corp.		J.I. 3009788	03.28.01

Test Agency/Identifier	Name	Report	Date
Independent Roof Testing & Consulting of South Florida	PA 114, Appendix "J"	IRT Reference No.00001, No.00002	03.30.00
Exterior Research & Design, LLC	Wind Uplift	#4483.04.97-1	06-06-97
Underwriters Laboratories, Inc.	Fire Resistance Classification UL 790 - PA 114	R1306, 00NK07638	07.17.00

APPROVED ASSEMBLIES:

Membrane Type: APP & SBS Heat-Weld

Deck Type 3: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type B: Optional base sheet adhered with approved asphalt; base insulation layer mechanically fastened, optional top layer adhered with approved asphalt.

All General and System Limitations shall apply.

One or more layers of any of the following insulations.

Insulation for Base Layer (Table 2) (When applicable: Steel plate only =S, platic plate only =P)	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
GAFTEMP® Isotherm RN (Min. 1.4" thick)	**6S**	**1:3**
	1, 2, 9, 10 or 15	**1:4**
GAFTEMP Composite A, GAFTEMP Composite N (Min. 1.5" thick)	**1, 2, 9, 10 or 15**	**1:4**
GAFTEMP® PERMALITE (Min. ¾" thick)	**1 (3.5" Plates), 2, 6, 9, 10 or 15**	**1:2**
(GAFTEMP) BMCA High Density Fiberboard (Min. ¾" thick)	**1S, 2, 6S, 9, 10 or 15**	**1:4**
(GAFTITE) BMCA Fiberboard (Min. 1" thick)	**1S, 2, 6S, 9, 10 or 15**	**1:3**

Note: Base layer shall be mechanically attached with fasteners and density described. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details). GAF requires either a ply of GAFGLAS STRATAVENT® Eliminator™ Perforated laid dry or a layer of EnergyGuard PERLITE or wood fiber overlay board on all isocyanurate applications.

Insulation for Top Layer (Table 2)	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Any of the insulations listed for Base Layer, above.	**N/A**	**N/A**

Note: Apply top layer of insulation in a full mopping of any approved mopping asphalt within the EVT range and at a rate of 20-40 lbs/100 ft^2. Please refer to Roofing Application Standard RAS 117 for insulation attachment. 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: (Optional)	Install one or more plies of Install one ply of GAFGLAS® #75, GAFGLAS #80 Ultima, GAFGLAS® PLY 4®, GAFGLAS FlexPly 6, RUBEROID Modified Base Sheet, RUBEROID Mop Smooth or RUBEROID® 20 directly to the substrate. Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Base Sheet:	Install one ply of GAFGLAS® #75, GAFGLAS #80 Ultima™, GAFGLAS® PLY 4®, GAFGLAS® FlexPly 6, GAFGLAS® STRATAVENT® Eliminator Perforated laid dry, RUBEROID Modified Base Sheet or RUBEROID® 20 directly to the insulated substrate. Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. If base sheet is applied directly to polyisocyanurate insulation only a spot or strip mopped application as detailed in this approval is approved; (See General Limitation #4.)
Ply Sheet:	(Optional, required if used with RUBEROID 20 or perforated STRATAVENT®) One or more plies of GAFGLAS® Ply 4®, GAFGLAS FlexPly 6 ply sheets or GAFGLAS #80 Ultima Base Sheet. Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Membrane:	One or more plies of Ruberoid® Torch Smooth, Ruberoid® Torch Granule, Ruberoid® Torch Plus Granule or Ruberoid® Torch FR Torch applied according to manufacturer's application instructions. Or One or more plies of RUBEROID SBS Heat-Weld Smooth, RUBEROID SBS Heat-Weld 25, RUBEROID SBS Heat-Weld 170 FR, RUBEROID SBS Heat-Weld PLUS, or RUBEROID SBS Heat-Weld PLUS FR heat welded.
Surfacing:	(Optional, required over RUBEROID SBS Heat-Weld Smooth) Install one of the following: 1. Gravel or slag applied at 400 lb./sq. and 300 lb./sq. respectively in a flood coat of approved asphalt at 60 lb./sq. 2. GAFGLAS Mineral Surfaced Cap Sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. 3. Matrix™ System Pro Aluminum Roof Coating Fibered 301 or GAF Premium Fibered Aluminum Roof Coating applied at a rate of 1-2 gal/sq. 4. Top Coat Surface Seal, Top Coat MB Plus, GAF WeatherCote or WeatherCote LOW-VOC applied at rate of 1-1.5 gal/sq.
Maximum Design Pressure:	-45 psf (See General Limitation #9)

Membrane Type:	SBS
Deck Type 3:	Concrete Decks, Insulated
Deck Description:	2500 psi structural concrete or concrete plank
System Type B:	Optional base sheet adhered with approved asphalt; base insulation layer mechanically fastened, optional top layer adhered with approved asphalt.

All General and System Limitations shall apply.

One or more layers of any of the following insulations.

Insulation for Base Layer (Table 2) (When applicable: Steel plate only =S, platic plate only =P)	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
GAFTEMP® Isotherm RN (Min. 1.4" thick)	**6S**	**1:3**
	1, 2, 9, 10 or 15	**1:4**
GAFTEMP Composite A, GAFTEMP Composite N (Min. 1.5" thick)	**1, 2, 9, 10 or 15**	**1:4**
GAFTEMP® PERMALITE (Min. ¾" thick)	**1 (3.5" Plates), 2, 6, 9, 10 or 15**	**1:2**
(GAFTEMP) BMCA High Density Fiberboard (Min. ¾" thick)	**1S, 2, 6S, 9, 10 or 15**	**1:4**
(GAFTITE) BMCA Fiberboard (Min. 1" thick)	**1S, 2, 6S, 9, 10 or 15**	**1:3**

Note: Base layer shall be mechanically attached with fasteners and density described. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details). GAF requires either a ply of GAFGLAS STRATAVENT® Eliminator™ Perforated laid dry or a layer of EnergyGuard PERLITE or wood fiber overlay board on all isocyanurate applications.

Insulation for Top Layer (Table 2)	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Any of the insulations listed for Base Layer, above.	**N/A**	**N/A**

Note: Apply top layer of insulation in a full mopping of any approved mopping asphalt within the EVT range and at a rate of 20-40 lbs/100 ft^2. Please refer to Roofing Application Standard RAS 117 for insulation attachment. 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: (Optional)	Install one or more plies of Install one ply of GAFGLAS® #75, GAFGLAS #80 Ultima™, GAFGLAS® PLY 4®, GAFGLAS FlexPly 6, RUBEROID Modified Base Sheet, RUBEROID Mop Smooth or RUBEROID® 20 directly to the substrate. Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Base Sheet:	Install one ply of GAFGLAS® #75, GAFGLAS #80 Ultima, GAFGLAS® PLY 4®, GAFGLAS® FlexPly 6, GAFGLAS® STRATAVENT® Eliminator Perforated laid dry, RUBEROID Modified Base Sheet or RUBEROID® 20 directly to the insulated substrate. Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. If base sheet is applied directly to polyisocyanurate insulation only a spot or strip mopped application as detailed in this approval is approved; (See General Limitation #4.)
Ply Sheet:	(Optional) One or more plies of GAFGLAS® Ply 4®, GAFGLAS FlexPly 6 ply sheets or GAFGLAS #80 Ultima™ Base Sheet. Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Membrane:	One or more plies ply of RUBEROID MOP Smooth, Ruberoid® Mop Granule, Ruberoid® Mop 170 FR, Ruberoid® Mop Plus Granule, Ruberoid® Mop FR, RUBEROID UltraClad, Ruberoid® 30 or Ruberoid® 30 FR. Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Surfacing:	(Optional, required over RUBERROID 20 or RUBEROID MOP Smooth) Install one of the following: 1. Gravel or slag applied at 400 lb./sq. and 300 lb./sq. respectively in a flood coat of approved asphalt at 60 lb./sq. 2. GAFGLAS Mineral Surfaced Cap Sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. 3. Matrix™ System Pro Aluminum Roof Coating Fibered 301 or GAF Premium Fibered Aluminum Roof Coating applied at a rate of 1-2 gal/sq. 4. Top Coat Surface Seal, Top Coat MB Plus, GAF WeatherCote or WeatherCote LOW-VOC applied at rate of 1-1.5 gal/sq.
Maximum Design Pressure:	-45 psf (See General Limitation #9)

Membrane Type:	SBS
Deck Type 3:	Concrete Decks, Insulated
Deck Description:	2500 psi structural concrete or concrete plank
System Type B:	Optional base sheet adhered with approved asphalt; base insulation layer mechanically fastened, optional top layer adhered with approved asphalt.

All General and System Limitations shall apply.

One or more layers of any of the following insulations.

Insulation for Base Layer (Table 2) **(When applicable: Steel plate only =S, platic plate only =P)**	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
GAFTEMP® Isotherm R, RA, RN (Min. 2" thick)	**1S or 9S**	**1:1.45**

Note: Base layer shall be mechanically attached with fasteners and density described. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details). GAF requires either a ply of GAFGLAS STRATAVENT® Eliminator™ Perforated laid dry or a layer of EnergyGuard PERLITE or wood fiber overlay board on all isocyanurate applications.

Insulation for Top Layer (Table 2)	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
Any of the insulations listed for Base Layer, above.	**N/A**	**N/A**

Note: Apply top layer of insulation in a full mopping of any approved mopping asphalt within the EVT range and at a rate of 20-40 lbs/100 ft^2. Please refer to Roofing Application Standard RAS 117 for insulation attachment. 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:	Install one ply of GAFGLAS® #75, GAFGLAS #80 Ultima, GAFGLAS® PLY 4®, GAFGLAS® FlexPly 6, GAFGLAS® STRATAVENT® Eliminator Perforated laid dry, RUBEROID Modified Base Sheet or RUBEROID® 20 directly to the insulated substrate. Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Ply Sheet:	(Optional) One or more plies of GAFGLAS® Ply 4®, GAFGLAS FlexPly 6 ply sheets or GAFGLAS #80 Ultima™ Base Sheet. Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Membrane:	One or more plies ply of RUBEROID MOP Smooth, Ruberoid® Mop Granule, Ruberoid® Mop 170 FR, Ruberoid® Mop Plus Granule, Ruberoid® Mop FR, RUBEROID UltraClad, Ruberoid® 20, Ruberoid® 30 or Ruberoid® 30 FR. Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Surfacing:	(Optional, required over RUBERROID 20 or RUBEROID MOP Smooth) Install one of the following: 1. Gravel or slag applied at 400 lb./sq. and 300 lb./sq. respectively in a flood coat of approved asphalt at 60 lb./sq. 2. GAFGLAS Mineral Surfaced Cap Sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. 3. Matrix™ System Pro Aluminum Roof Coating Fibered 301 or GAF Premium Fibered Aluminum Roof Coating applied at a rate of 1-2 gal/sq. 4. Top Coat Surface Seal, Top Coat MB Plus, GAF WeatherCote or WeatherCote LOW-VOC applied at rate of 1-1.5 gal/sq.
Maximum Design Pressure:	-67.5 psf (See General Limitation #7)

Membrane Type:	APP & SBS Heat-Weld
Deck Type 3I:	Concrete Decks, Insulated
Deck Description:	2500 psi structural concrete or concrete plank
System Type C:	All layers of insulation are mechanically attached to roof deck. Membrane is subsequently fully or partially adhered to insulation.

All General and System Limitations shall apply.

One or more layers of any of the following insulations.

Insulation for Base Layer (Table 2)	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
GAFTEMP Isotherm R, Isotherm RA, Isotherm RN (Min. 1.3" thick)	**N/A**	**N/A**
Perlite, (GAFTEMP®) Permalite, Permalite Recover Board (Min. ½" thick)	**N/A**	**N/A**
High Density Wood Fiber, (GAFTEMP®) BMCA High Density Fiberboard (Min. ¾" thick)	**N/A**	**N/A**
Wood Fiber, (GAFTEMP®) BMCA Fiberboard (Min. 1" thick)	**N/A**	**N/A**

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining e same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Insulation for Top Layer (Table 2) (When applicable: Steel plate only =S, platic plate only =P)	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
GAFTEMP® Isotherm RN (Min. 1.4" thick)	**6S**	**1:3**
	1, 2, 9, 10 or 15	**1:4**
GAFTEMP Composite A, Composite N (Min. 1.5" thick)	**1, 2, 6, 9, 10 or 15**	**1:4**
Perlite, GAFTEMP® PERMALITE (Min. ¾" thick)	**1, 2, 6, 9, 10 or 15**	**1:2**
High Density Wood Fiber, (GAFTEMP) BMCA High Density Fiberboard (Min. ¾" thick)	**1, 2, 6S, 9, 10 or 15**	**1:4**
Wood Fiber, (GAFTEMP) BMCA Fiberboard (Min. 1.3" thick)	**1, 2, 6S, 9, 10 or 15**	**1:3**

Note: Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment. GAF requires either a ply of GAFGLAS STRATAVENT® Eliminator Perforated laid dry or a layer of EnergyGuard PERLITE or wood fiber overlay board on all isocyanurate applications.

Anchor Sheet: (Optional)	Install one or more plies of Install one ply of GAFGLAS® #75, GAFGLAS #80 Ultima™, GAFGLAS® PLY 4®, GAFGLAS FlexPly 6, RUBEROID Modified Base Sheet, RUBEROID Mop Smooth or RUBEROID® 20 directly to the substrate. Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Base Sheet:	Install one ply of GAFGLAS® #75, GAFGLAS #80 Ultima™, GAFGLAS® PLY 4®, GAFGLAS® FlexPly 6, GAFGLAS® STRATAVENT® Eliminator Perforated laid dry, RUBEROID Modified Base Sheet or RUBEROID® 20 directly to the insulated substrate. Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. If base sheet is applied directly to polyisocyanurate insulation only a spot or strip mopped application as detailed in this approval is approved; (See General Limitation #4.)
Ply Sheet:	(Optional, required if used with RUBEROID 20 or perforated STRATAVENT®) One or more plies of GAFGLAS® Ply 4®, GAFGLAS FlexPly 6 ply sheets or GAFGLAS #80 Ultima Base Sheet. Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Membrane:	One or more plies of Ruberoid® Torch Smooth, Ruberoid® Torch Granule, Ruberoid® Torch Plus Granule or Ruberoid® Torch FR Torch applied according to manufacturer's application instructions. Or One or more plies of RUBEROID SBS Heat-Weld Smooth, RUBEROID SBS Heat-Weld 25, RUBEROID SBS Heat-Weld 170 FR, RUBEROID SBS Heat-Weld PLUS, or RUBEROID SBS Heat-Weld PLUS FR heat welded.
Surfacing:	(Optional, required over RUBEROID SBS Heat-Weld Smooth) Install one of the following: 1. Gravel or slag applied at 400 lb./sq. and 300 lb./sq. respectively in a flood coat of approved asphalt at 60 lb./sq. 2. GAFGLAS Mineral Surfaced Cap Sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. 3. Matrix™ System Pro Aluminum Roof Coating Fibered 301 or GAF Premium Fibered Aluminum Roof Coating applied at a rate of 1-2 gal/sq. 4. Top Coat Surface Seal, Top Coat MB Plus, GAF WeatherCote or WeatherCote LOW-VOC applied at rate of 1-1.5 gal/sq.
Maximum Design Pressure:	-45 psf (See General Limitation #9)

Membrane Type:	SBS
Deck Type 3I:	Concrete Decks, Insulated
Deck Description:	2500 psi structural concrete or concrete plank
System Type C:	All layers of insulation are mechanically attached to roof deck. Membrane is subsequently fully or partially adhered to insulation.

All General and System Limitations shall apply.

One or more layers of any of the following insulations.

Insulation for Base Layer (Table 2)	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
GAFTEMP Isotherm R, Isotherm RA, Isotherm RN (Min. 1.3" thick)	**N/A**	**N/A**
Perlite, (GAFTEMP®) Permalite, Permalite Recover Board (Min. ½" thick)	**N/A**	**N/A**
High Density Wood Fiber, (GAFTEMP®) BMCA High Density Fiberboard (Min. ¾" thick)	**N/A**	**N/A**
Wood Fiber, (GAFTEMP®) BMCA Fiberboard (Min. 1" thick)	**N/A**	**N/A**

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining e same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Insulation for Top Layer (Table 2) (When applicable: Steel plate only =S, platic plate only =P)	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
GAFTEMP® Isotherm RN (Min. 1.4" thick)	**6S**	**1:3**
	1, 2, 9, 10 or 15	**1:4**
GAFTEMP Composite A, Composite N (Min. 1.5" thick)	**1, 2, 6, 9, 10 or 15**	**1:4**
Perlite, GAFTEMP® PERMALITE (Min. ¾" thick)	**1, 2, 6, 9, 10 or 15**	**1:2**
High Density Wood Fiber, (GAFTEMP) BMCA High Density Fiberboard (Min. ¾" thick)	**1, 2, 6S, 9, 10 or 15**	**1:4**
Wood Fiber, (GAFTEMP) BMCA Fiberboard (Min. 1.3" thick)	**1, 2, 6S, 9, 10 or 15**	**1:3**

Note: Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment. GAF requires either a ply of GAFGLAS STRATAVENT® Eliminator Perforated laid dry or a layer of EnergyGuard PERLITE or wood fiber overlay board on all isocyanurate applications.

Anchor Sheet: (Optional)	Install one or more plies of Install one ply of GAFGLAS® #75, GAFGLAS #80 Ultima, GAFGLAS® PLY 4®, GAFGLAS FlexPly 6, RUBEROID Modified Base Sheet, RUBEROID Mop Smooth or RUBEROID® 20 directly to the substrate. Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Base Sheet:	Install one ply of GAFGLAS® #75, GAFGLAS #80 Ultima™, GAFGLAS® PLY 4®, GAFGLAS® FlexPly 6, GAFGLAS® STRATAVENT® Eliminator Perforated laid dry, RUBEROID Modified Base Sheet or RUBEROID® 20 directly to the insulated substrate. Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. If base sheet is applied directly to polyisocyanurate insulation only a spot or strip mopped application as detailed in this approval is approved; (See General Limitation #4.)
Ply Sheet:	(Optional) One or more plies of GAFGLAS® Ply 4®, GAFGLAS FlexPly 6 ply sheets or GAFGLAS #80 Ultima Base Sheet. Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Membrane:	One or more plies ply of RUBEROID MOP Smooth, Ruberoid® Mop Granule, Ruberoid® Mop 170 FR, Ruberoid® Mop Plus Granule, Ruberoid® Mop FR, RUBEROID UltraClad, Ruberoid® 20, Ruberoid® 30 or Ruberoid® 30 FR. Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Surfacing:	(Optional, required over RUBERROID 20 or RUBEROID MOP Smooth) Install one of the following: 1. Gravel or slag applied at 400 lb./sq. and 300 lb./sq. respectively in a flood coat of approved asphalt at 60 lb./sq. 2. GAFGLAS Mineral Surfaced Cap Sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. 3. Matrix™ System Pro Aluminum Roof Coating Fibered 301 or GAF Premium Fibered Aluminum Roof Coating applied at a rate of 1-2 gal/sq. 4. Top Coat Surface Seal, Top Coat MB Plus, GAF WeatherCote or WeatherCote LOW-VOC applied at rate of 1-1.5 gal/sq.
Maximum Design Pressure:	-45 psf (See General Limitation #9)

Membrane Type:	APP & SBS Heat-Weld
Deck Type 3:	Concrete Decks, Non-Insulated
Deck Description:	2500 psi structural concrete or concrete plank
System Type C:	All layers of insulations are mechanically attached roof deck. Membrane is subsequently fully or partially adhered to insulation.

All General and System Limitations shall apply.

Insulation for Base Layer (Table 2)	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ACFoam-I, E'NRG'Y 2, GAFTEMP® Isotherm R, E'NRG'Y 2 Plus, GAFTEMP Isotherm RA & RN, GAFTEMP Composite, Composite A & N (Min. 1.5" thick)	**N/A**	**N/A**

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining e same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Insulation for Top Layer (Table 2) **(When applicable: Steel plate only =S, platic plate only =P)** **Dens Deck (Min. ¼" thick)**	**Insulation Fasteners (Table 3)** **1S, 6S or 9S**	**Fastener Density/ft^2** **1:1**

Base Sheet:	Install one ply of GAFGLAS® STRATAVENT® Eliminator Perforated laid dry.
Ply Sheet:	One or more plies of GAFGLAS® Ply 4®, GAFGLAS FlexPly 6 ply sheets or GAFGLAS #80 Ultima Base Sheet. Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Membrane:	One or more plies of Ruberoid® Torch Smooth, Ruberoid® Torch Granule, Ruberoid® Torch Plus Granule or Ruberoid® Torch FR Torch applied according to manufacturer's application instructions. Or One or more plies of RUBEROID SBS Heat-Weld Smooth, RUBEROID SBS Heat-Weld 25, RUBEROID SBS Heat-Weld 170 FR, RUBEROID SBS Heat-Weld PLUS, or RUBEROID SBS Heat-Weld PLUS FR heat welded.
Surfacing:	(Optional, required over RUBEROID SBS Heat-Weld Smooth) Install one of the following: 1. Gravel or slag applied at 400 lb./sq. and 300 lb./sq. respectively in a flood coat of approved asphalt at 60 lb./sq. 2. GAFGLAS Mineral Surfaced Cap Sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. 3. Matrix™ System Pro Aluminum Roof Coating Fibered 301 or GAF Premium Fibered Aluminum Roof Coating applied at a rate of 1-2 gal/sq. 4. Top Coat Surface Seal, Top Coat MB Plus, GAF WeatherCote or WeatherCote LOW-VOC applied at rate of 1-1.5 gal/sq.
Maximum Design Pressure:	-82.5 psf (See General Limitation #7)

Membrane Type:	SBS
Deck Type 3:	Concrete Decks, Insulated
Deck Description:	2500 psi structural concrete or concrete plank
System Type C:	All layers of insulations are mechanically attached roof deck. Membrane is subsequently fully or partially adhered to insulation.

All General and System Limitations shall apply.

Insulation for Base Layer (Table 2)	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ACFoam-I, E'NRG'Y 2 , GAFTEMP® Isotherm R, E'NRG'Y 2 Plus, GAFTEMP Isotherm RA & RN, GAFTEMP Composite, Composite A & N (Min. 1.5" thick)	**N/A**	**N/A**

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining e same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Insulation for Top Layer (Table 2) **(When applicable: Steel plate only =S, platic plate only =P)** **Dens Deck (Min. ¼" thick)**	**Insulation Fasteners (Table 3)** **1S, 6S or 9S**	**Fastener Density/ft^2** **1:1**

Base Sheet:	Install one ply of GAFGLAS® STRATAVENT® Eliminator Perforated laid dry.
Ply Sheet:	(Optional) One or more plies of RUBEROID 20, GAFGLAS® Ply 4 or GAFGLAS FlexPly 6 ply sheets or GAFGLAS #80 Ultima Base Sheets. Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Membrane:	One or more plies ply of RUBEROID MOP Smooth, Ruberoid 20, Ruberoid® Mop Granule, Ruberoid® Mop 170 FR, Ruberoid® Mop Plus Granule, Ruberoid® Mop FR, RUBEROID® UltraClad™, Ruberoid® 30 or Ruberoid® 30 FR. Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Surfacing:	(Optional, required over RUBEROID® 20 or RUBEROID® MOP Smooth) install one of the following:

1. Gravel or slag applied at 400 lb./sq. and 300 lb./sq. respectively in a flood coat of approved asphalt at 60 lb./sq.
2. GAFGLAS Mineral Surfaced Cap Sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
3. Matrix™ System Pro Aluminum Roof Coating Fibered 301 or GAF Premium Fibered Aluminum Roof Coating applied at a rate of 1-2 gal/sq.
4. Top Coat Surface Seal, Top Coat MB Plus, GAF WeatherCote or WeatherCote LOW-VOC applied at rate of 1-1.5 gal/sq.

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

Membrane Type:	APP & SBS Heat-Weld
Deck Type 3:	Concrete Decks, Insulated
Deck Description:	2500 psi structural concrete or concrete plank
System Type D:	All insulations is loose laid with preliminary attachment to roof deck. Base sheet is subsequently mechanically fastened through insulation to the roof deck.

All General and System Limitations shall apply.

Insulation Layer (Table 2)	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ACFoam-I, E'NRG'Y 2, GAFTEMP® Isotherm R, E'NRG'Y 2 Plus, GAFTEMP Isotherm RA, GAFTEMP Isotherm RN, GAFTEMP Composite, GAFTEMP Composite A, GAFTEMP Composite N (Min. 1.3" thick)	**N/A**	**N/A**
GAFTEMP High Density Fiberboard, GAFTEMP Fiberboard (Min. 1" thick)	**N/A**	**N/A**

Note: All layers of insulation and base sheet shall be simultaneously attached. See base sheet below for fasteners and density. Refer to Roofing Application Standard RAS 117 for insulation attachment requirements. Insulation shall have preliminary attachment, prior to the installation of the roofing membrane. All insulation shall be adhered to the deck in two ¾" beads of Insta-Stik adhesive space at 12" o.c.

Base Sheet: Install one ply of GAFGLAS® #75, GAFGLAS #80 Ultima™, GAFGLAS® PLY 4, GAFGLAS FlexPly™ 6, GAFGLAS® STRATAVENT® Eliminator™ Nailable, RUBEROID Modified Base Sheet or RUBEROID® 20.
Fastened to the deck through the insulation with GAFTITE #14 Screws and 3" Plates in a 2" side laps 12" on center. Three rows are equally spaced approximately 9" o.c. in the field of the sheet spaced 12 o.c. along the length of the sheet.

Ply Sheet: (Optional, required if used with RUBEROID 20 or perforated STRATAVENT®)
One or more plies of GAFGLAS® Ply 4®, GAFGLAS FlexPly 6 ply sheets or GAFGLAS #80 Ultima Base Sheet.
Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Membrane: One or more plies of Ruberoid® Torch Smooth, Ruberoid® Torch Granule, Ruberoid® Torch Plus Granule or Ruberoid® Torch FR
Torch applied according to manufacturer's application instructions.
Or
One or more plies of RUBEROID SBS Heat-Weld Smooth, RUBEROID SBS Heat-Weld 25, RUBEROID SBS Heat-Weld 170 FR, RUBEROID SBS Heat-Weld PLUS, or RUBEROID SBS Heat-Weld PLUS FR heat welded.

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

1. Gravel or slag applied at 400 lb./sq. and 300 lb./sq. respectively in a flood coat of approved asphalt at 60 lb./sq.
2. GAFGLAS Mineral Surfaced Cap Sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
3. Matrix™ System Pro Aluminum Roof Coating Fibered 301 or GAF Premium Fibered Aluminum Roof Coating applied at a rate of 1-2 gal/sq.
4. Top Coat Surface Seal, Top Coat MB Plus, GAF WeatherCote or WeatherCote LOW-VOC applied at rate of 1-1.5 gal/sq.

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

Membrane Type:	SBS
Deck Type 3:	Concrete Decks, Insulated
Deck Description:	2500 psi structural concrete or concrete plank
System Type D:	All insulations is loose laid with preliminary attachment to roof deck. Base sheet is subsequently mechanically fastened through insulation to the roof deck.

All General and System Limitations shall apply.

Insulation Layer (Table 2)	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ACFoam-I, E'NRG'Y 2, GAFTEMP® Isotherm R, E'NRG'Y 2 Plus, GAFTEMP Isotherm RA, GAFTEMP Isotherm RN, GAFTEMP Composite, GAFTEMP Composite A, GAFTEMP Composite N Min. 1.3" thick)	**N/A**	**N/A**
GAFTEMP High Density Fiberboard, GAFTEMP Fiberboard (Mn. 1" thick)	**N/A**	**N/A**

Note: All layers of insulation and base sheet shall be simultaneously attached. See base sheet below for fasteners and density. Refer to Roofing Application Standard RAS 117 for insulation attachment requirements. Insulation shall have preliminary attachment, prior to the installation of the roofing membrane. All insulation shall be adhered to the deck in two ¾" beads of Insta-Stik adhesive space at 12" o.c.

Base Sheet:	Install one ply of GAFGLAS® #75, GAFGLAS #80 Ultima™, GAFGLAS® PLY 4, GAFGLAS FlexPly™ 6, GAFGLAS® STRATAVENT® Eliminator™ Nailable, RUBEROID Modified Base Sheet or RUBEROID® 20. Fastened to the deck through the insulation with GAFTITE #14 Screws and 3" Plates in a 2" side laps 12" on center. Three rows are equally spaced approximately 9" o.c. in the field of the sheet spaced 12 o.c. along the length of the sheet.
Ply Sheet:	(Optional) One or more plies of GAFGLAS® Ply 4 or GAFGLAS FlexPly 6 ply sheets or (optional) one, two or three plies of GAFGLAS #80 Ultima Base Sheets. Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Membrane:	One or more plies ply of RUBEROID MOP Smooth, Ruberoid 20, Ruberoid® Mop Granule, Ruberoid® Mop 170 FR, Ruberoid® Mop Plus Granule, Ruberoid® Mop FR, RUBEROID® UltraClad™, Ruberoid® 30 or Ruberoid® 30 FR. Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Surfacing:	(Optional, required over RUBEROID® 20 or RUBEROID® MOP Smooth) install one of the following: 1. Gravel or slag applied at 400 lb./sq. and 300 lb./sq. respectively in a flood coat of approved asphalt at 60 lb./sq. 2. GAFGLAS Mineral Surfaced Cap Sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. 3. Matrix™ System Pro Aluminum Roof Coating Fibered 301 or GAF Premium Fibered Aluminum Roof Coating applied at a rate of 1-2 gal/sq. 4. Top Coat Surface Seal, Top Coat MB Plus, GAF WeatherCote or WeatherCote LOW-VOC applied at rate of 1-1.5 gal/sq.
Maximum Design Pressure:	-60 psf (See General Limitation #7)

Membrane Type:	APP & SBS Heat-Weld
Deck Type 3:	Concrete Decks, Insulated
Deck Description:	2500 psi structural concrete or concrete plank
System Type D:	All insulations is loose laid with preliminary attachment to roof deck. Base sheet is subsequently mechanically fastened through insulation to the roof deck.

All General and System Limitations shall apply.

Insulation Layer (Table 2)	**Insulation Fasteners (Table 3)**	**Fastener Density/ft^2**
ACFoam-I, E'NRG'Y 2, GAFTEMP® Isotherm R, E'NRG'Y 2 Plus, GAFTEMP Isotherm RA, Isotherm RN, GAFTEMP Composite, Composite A & N (Min. 1.3" thick)	**N/A**	**N/A**
GAFTEMP High Density Fiberboard, GAFTEMP Fiberboard (Min. 1" thick)	**N/A**	**N/A**

Note: All layers of insulation and base sheet shall be simultaneously attached. See base sheet below for fasteners and density. Refer to Roofing Application Standard RAS 117 for insulation attachment requirements. Insulation shall have preliminary attachment, prior to the installation of the roofing membrane. All insulation shall be adhered to the deck in two ¾" beads of Insta-Stik adhesive space at 12" o.c.

Base Sheet:	Install one ply of SBS Heat-Weld Smooth. Fastened to the deck through the insulation with (GAFTITE) Drill-Tec #14 Screws and EverGuard 2" Barbed Plates in a 4" side laps 6" on center. Lap is torch sealed according to manufacture's instructions.
Ply Sheet:	(Optional) One or more plies of RUBEROID Heat-Weld™ Smooth. Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Membrane:	One or more plies of RUBEROID SBS Heat-Weld Smooth, RUBEROID SBS Heat-Weld 25, RUBEROID SBS Heat-Weld 170 FR, RUBEROID SBS Heat-Weld PLUS, or RUBEROID SBS Heat-Weld PLUS FR heat welded. 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 lb./sq. and 300 lb./sq. respectively in a flood coat of approved asphalt at 60 lb./sq. 2. GAFGLAS Mineral Surfaced Cap Sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. 3. Matrix™ System Pro Aluminum Roof Coating Fibered 301 or GAF Premium Fibered Aluminum Roof Coating applied at a rate of 1-2 gal/sq. 4. Top Coat Surface Seal, Top Coat MB Plus, GAF WeatherCote or WeatherCote LOW-VOC applied at rate of 1-1.5 gal/sq.
Maximum Design Pressure:	-82.5 psf (See General Limitation #7)

Membrane Type:	APP/SBS Heat-Weld
Deck Type 3:	Concrete Decks, Non-Insulated
Deck Description:	2500 psi structural concrete or concrete plank
System Type F:	Base sheet adhered with approved asphalt.

All General and System Limitations shall apply.

Base Sheet:	Install one ply of GAFGLAS® #75, GAFGLAS #80 Ultima™, GAFGLAS® PLY 4®, GAFGLAS® FlexPly™, GAFGLAS® STRATAVENT® Eliminator Perforated laid dry, RUBEROID Modified Base Sheet or RUBEROID® 20 directly to primed deck. Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Ply Sheet:	(Optional, required if used with RUBEROID 20 or GAFGLAS® STRATAVENT® Eliminator Perforated) One or more plies of GAFGLAS® Ply 4®, GAFGLAS FlexPly 6 ply sheets or GAFGLAS #80 Ultima™ Base Sheet. Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Membrane:	One or more plies of Ruberoid® Torch Smooth, Ruberoid® Torch Granule, Ruberoid® Torch Plus Granule or Ruberoid® Torch FR. Torch applied according to manufacturer's application instructions. Or One or more plies ply of RUBEROID SBS Heat-Weld™ Smooth, RUBEROID SBS Heat-Weld 25, RUBEROID SBS Heat-Weld 170 FR, RUBEROID SBS Heat-Weld PLUS, or RUBEROID SBS Heat-Weld PLUS FR heat welded.
Surfacing:	(Optional) Install one of the following: 1. Gravel or slag applied at 400 lb./sq. and 300 lb./sq. respectively in a flood coat of approved asphalt at 60 lb./sq. 2. GAFGLAS Mineral Surfaced Cap Sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. 3. Matrix™ System Pro Aluminum Roof Coating Fibered 301 or GAF Premium Fibered Aluminum Roof Coating applied at a rate of 1-2 gal/sq. 4. Top Coat Surface Seal, Top Coat MB Plus, GAF WeatherCote or WeatherCote LOW-VOC applied at rate of 1-1.5 gal/sq.
Maximum Design Pressure:	-90 psf (See General Limitation #9)

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Non-Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type F: Base sheet adhered with approved asphalt.

All General and System Limitations shall apply.

Base Sheet: Install one ply of GAFGLAS® #75, GAFGLAS #80 Ultima™, GAFGLAS® PLY 4®, GAFGLAS® FlexPly 6, GAFGLAS® STRATAVENT® Eliminator Perforated laid dry, RUBEROID Modified Base Sheet or RUBEROID® 20 directly to primed deck.

Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: (Optional) One or more plies of GAFGLAS® Ply 4®, GAFGLAS FlexPly 6 ply sheets or GAFGLAS #80 Ultima Base Sheet.
Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Membrane: One or more plies ply of RUBEROID MOP Smooth, Ruberoid® Mop Granule, Ruberoid® Mop 170 FR, Ruberoid® Mop Plus Granule, Ruberoid® Mop FR, Ruberoid® 30 or Ruberoid® 30 FR
Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq. or (RUBEROID Modified Bitumen Adhesive) Matrix™ 102 Select SBS Adhesive at an application rate of 1-2 gal./sq.

Surfacing: (Optional, required over RUBERROID 20 or RUBEROID MOP Smooth, RUBEROID SBS Heat-Weld™ Smooth and Heat-Weld 25) Install one of the following:

1. Gravel or slag applied at 400 lb./sq. and 300 lb./sq. respectively in a flood coat of approved asphalt at 60 lb./sq.
2. GAFGLAS Mineral Surfaced Cap Sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
3. Matrix™ System Pro Aluminum Roof Coating Fibered 301 or GAF Premium Fibered Aluminum Roof Coating applied at a rate of 1-2 gal/sq.
4. Top Coat Surface Seal, Top Coat MB Plus, GAF WeatherCote or WeatherCote LOW-VOC applied at rate of 1-1.5 gal/sq.

Maximum Design Pressure: -90 psf (See General Limitation #9)

Membrane Type: APP

Deck Type 3I: Concrete Decks, Non-Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type F: Base sheet adhered with approved asphalt.

All General and System Limitations shall apply.

Base Sheet: (Optional) Install one ply of GAFGLAS® #75, GAFGLAS #80 Ultima™, GAFGLAS® PLY 4, GAFGLAS® FlexPly 6, RUBEROID Modified Base Sheet or RUBEROID® 20 directly to primed deck.
Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: (Optional, required if used with RUBEROID 20) One or more plies of GAFGLAS® Ply 4®, GAFGLAS FlexPly 6 ply sheets or GAFGLAS #80 Ultima□Base Sheet.
Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Membrane: One or more plies of Ruberoid® Torch Smooth, Ruberoid® Torch Granule, Ruberoid® Torch Plus Granule or Ruberoid® Torch FR.
Torch applied according to manufacturer's application instructions.

Surfacing: (Optional) Install one of the following:

1. Gravel or slag applied at 400 lb./sq. and 300 lb./sq. respectively in a flood coat of approved asphalt at 60 lb./sq.
2. GAFGLAS Mineral Surfaced Cap Sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
3. Matrix™ System Pro Aluminum Roof Coating Fibered 301 or GAF Premium Fibered Aluminum Roof Coating applied at a rate of 1-2 gal/sq. or Matrix™ 305 Fibered Emulsion at 3 gal/sq. (for Torch Smooth applications only)
4. Top Coat Surface Seal, Top Coat MB Plus, GAF WeatherCote or WeatherCote LOW-VOC applied at rate of 1-1.5 gal/sq.

Maximum Design Pressure: -236 psf (See General Limitation #9)

Membrane Type: APP

Deck Type 3I: Concrete Decks, Non-Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type F: Base sheet adhered with approved asphalt.

All General and System Limitations shall apply.

Base Sheet: Install one ply of GAFGLAS® #75, GAFGLAS #80 Ultima™, GAFGLAS® PLY 4, GAFGLAS® FlexPly 6, RUBEROID Modified Base Sheet or RUBEROID® 20 directly to primed deck.
Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: (Optional, required if used with RUBEROID 20) One or more plies of GAFGLAS® Ply 4® or GAFGLAS FlexPly 6 ply sheets.
Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Membrane: One or more plies of Ruberoid® Torch Smooth, Ruberoid® Torch Granule, Ruberoid® Torch Plus Granule or Ruberoid® Torch FR.
Torch applied according to manufacturer's application instructions.

Surfacing: (Optional) Install one of the following:

1. Gravel or slag applied at 400 lb./sq. and 300 lb./sq. respectively in a flood coat of approved asphalt at 60 lb./sq.
2. GAFGLAS Mineral Surfaced Cap Sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
3. Matrix™ System Pro Aluminum Roof Coating Fibered 301 or GAF Premium Fibered Aluminum Roof Coating applied at a rate of 1-2 gal/sq. or Matrix™ 305 Fibered Emulsion at 3 gal/sq. (for Torch Smooth applications only)
4. Top Coat Surface Seal, Top Coat MB Plus, GAF WeatherCote or WeatherCote LOW-VOC applied at rate of 1-1.5 gal/sq.

Maximum Design Pressure: -457.5 psf (See General Limitation #9)

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Non-Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type D(2): Base sheet adhered with approved asphalt.

All General and System Limitations shall apply.

Base Sheet: Install one ply of GAFGLAS® #75, GAFGLAS #80 Ultima™, Base Sheet GAFGLAS® PLY 4®, GAFGLAS® FlexPly 6, RUBEROID Modified Base Sheet or RUBEROID® 20 directly to primed deck.

Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: (Optional) One or more plies of GAFGLAS® Ply 4®, GAFGLAS FlexPly 6 ply sheets or GAFGLAS #80 Ultima™, Base Sheet.
Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Membrane: One or more plies ply of RUBEROID 20, RUBEROID MOP Smooth, Ruberoid® Mop Granule, Ruberoid® Mop 170 FR, Ruberoid® Mop Plus Granule, Ruberoid® Mop FR, RUBEROID ULTRACLAD™, Ruberoid® 30 or Ruberoid® 30 FR
Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Surfacing: (Optional, required over RUBEROID MOP Smooth) Install one of the following:

1. Gravel or slag applied at 400 lb./sq. and 300 lb./sq. respectively in a flood coat of approved asphalt at 60 lb./sq.
2. GAFGLAS Mineral Surfaced Cap Sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
3. Matrix™ System Pro Aluminum Roof Coating Fibered 301 or GAF Premium Fibered Aluminum Roof Coating applied at a rate of 1-2 gal/sq.
4. Top Coat Surface Seal, Top Coat MB Plus, GAF WeatherCote or WeatherCote LOW-VOC applied at rate of 1-1.5 gal/sq.

Maximum Design Pressure: -457.5 psf (See General Limitation #9)

Membrane Type: SBS

Deck Type 3: Concrete Decks, Non-Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type F: Base sheet adhered with approved asphalt.

All General and System Limitations shall apply.

Base Sheet: Install one ply of GAFGLAS® #75, GAFGLAS #80 Ultima Base Sheet GAFGLAS® PLY 4®, GAFGLAS® FlexPly 6, RUBEROID Modified Base Sheet, RUBEROID MOP Smooth or RUBEROID® 20 directly to primed deck.

Adhered with Matrix™ 102 Select SBS Adhesive (Ruberoid® Modified Bitumen Adhesive) at an application rate of 1-2 gal./sq.

Membrane: One or more plies ply of RUBEROID MOP Smooth, Ruberoid® Mop Granule, Ruberoid® Mop 170 FR, Ruberoid® Mop Plus Granule, Ruberoid® Mop FR, Ruberoid® 30 or Ruberoid® 30 FR.
Adhered with Matrix™ 102 Select SBS Adhesive (Ruberoid® Modified Bitumen Adhesive) at an application rate of 1-2 gal./sq.

Surfacing: (Optional, required over RUBEROID MOP Smooth) Install one of the following:

1. Gravel or slag applied at 400 lb./sq. and 300 lb./sq. respectively in a flood coat of approved asphalt at 60 lb./sq.
2. GAFGLAS Mineral Surfaced Cap Sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
3. Matrix™ System Pro Aluminum Roof Coating Fibered 301 or GAF Premium Fibered Aluminum Roof Coating applied at a rate of 1-2 gal/sq.
   Matrix™ 305 Fibered Emulsion at 3 gal./sq. (for Mop Smooth applications only).
4. Top Coat Surface Seal, Top Coat MB Plus, GAF WeatherCote or WeatherCote LOW-VOC applied at rate of 1-1.5 gal/sq.

Maximum Design Pressure: -307.5 psf (See General Limitation #9)

Membrane Type: SBS

Deck Type 3: Concrete Decks, Non-Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type F: Membrane fully adhered with approved asphalt.

All General and System Limitations shall apply.

Base Sheet: GAFGLAS® STRATAVENT® Eliminator™ Perforated, laid dry over primed concrete deck.

Ply Sheet: (Optional) one, or more plies of RUBEROID® 20, GAFGLAS #80 Ultima, GAFGLAS® PLY 4 or GAFGLAS FlexPly™ 6 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: One or more plies of RUBEROID® 20, RUBEROID® MOP Smooth, Ruberoid® Mop 170 FR, Ruberoid® Mop Granule, Ruberoid® Mop Plus Granule, Ruberoid® 30 or Ruberoid® 30 FR or Ruberoid® Mop FR or RUBEROID® UltraClad™ SBS.

Adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq

Surfacing: (Optional, required over RUBEROID® 20 and RUBEROID MOP Smooth) Install one of the following:

1. Gravel or slag applied at 400 lb./sq. and 300 lb./sq. respectively in a flood coat of approved asphalt at 60 lb./sq.
2. GAFGLAS Mineral Surfaced Cap Sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
3. Matrix™ System Pro Aluminum Roof Coating Fibered 301 or GAF Premium Fibered Aluminum Roof Coating applied at a rate of 1-2 gal/sq.
   Matrix™ 305 Fibered Emulsion at 3 gal./sq. (for Mop Smooth applications only).
4. Top Coat Surface Seal, Top Coat MB Plus, GAF WeatherCote or WeatherCote LOW-VOC applied at rate of 1-1.5 gal/sq.

Maximum Design Pressure: -195 psf (See General Limitation #9)

Membrane Type: APP/SBS Heat Weld

Deck Type 3: Concrete Decks, Non-Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type F: Membrane fully adhered with approved asphalt.

All General and System Limitations shall apply.

Base Sheet: GAFGLAS® STRATAVENT® Eliminator™ Perforated, laid dry over primed concrete deck.

Ply Sheet: One or more plies of GAFGLAS #80 Ultima™ Base Sheets or GAFGLAS #75 Base Sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
Adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq

Membrane: One or more plies of Ruberoid® Torch Smooth, Ruberoid® Torch Granule, Ruberoid® Torch Plus Granule or Ruberoid® Torch FR, Ruberoid® Torch 170FR torch applied according to manufacturer's application instructions.
OR
Ruberoid® SBS Heat-Weld™ Smooth, Ruberoid® SBS Heat-Weld™ FR, Ruberoid® SBS Heat-Weld™ Plus FR, Ruberoid® SBS Heat-Weld™ 25, Ruberoid® SBS Heat-Weld™ Granule, Ruberoid® SBS Heat-Weld™ 170 FR, Ruberoid® SBS Heat-Weld™ Plus FR, Ruberoid® UltraClad™
Applied according to Manufacturer's application instruction.

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

1. Gravel or slag applied at 400 lb./sq. and 300 lb./sq. respectively in a flood coat of approved asphalt at 60 lb./sq.
2. GAFGLAS Mineral Surfaced Cap Sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
3. Matrix™ System Pro Aluminum Roof Coating Fibered 301 or GAF Premium Fibered Aluminum Roof Coating applied at a rate of 1-2 gal/sq.

Matrix™ 305 Fibered Emulsion at 3 gal./sq. (for Mop Smooth applications only).

4. Top Coat Surface Seal, Top Coat MB Plus, GAF WeatherCote or WeatherCote LOW-VOC applied at rate of 1-1.5 gal/sq.

Maximum Design Pressure: -195 psf (See General Limitation #9)

Membrane Type: SBS

Deck Type 3: Concrete Decks, Non-Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type F: Base sheet adhered with approved asphalt.

All General and System Limitations shall apply.

Base Sheet: One ply of RUBEROID SBS Heat Weld™ Smooth torched adhered to primed concrete deck.

Ply Sheet: (Optional) One or more plies of RUBEROID SBS Heat-Weld™ Smooth or RUBEROID SBS Heat Weld™ 25 torch adhered.
Adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq

Membrane: One or more plies ply of RUBEROID SBS Heat-Weld™ Plus, RUBEROID SBS Heat-Weld Plus FR, RUBEROID SBS Heat-Weld 170 FR, RUBEROID SBS Heat-Weld, RUBEROID SBS Heat-Weld Smooth, or RUBEROID SBS Heat-Weld 25.

Applied according to Manufacturer's application instruction.

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

1. Gravel or slag applied at 400 lb./sq. and 300 lb./sq. respectively in a flood coat of approved asphalt at 60 lb./sq.
2. GAFGLAS Mineral Surfaced Cap Sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
3. Matrix™ System Pro Aluminum Roof Coating Fibered 301 or GAF Premium Fibered Aluminum Roof Coating applied at a rate of 1-2 gal/sq. Matrix™ 305 Fibered Emulsion at 3 gal./sq. (for Mop Smooth applications only).
4. Top Coat Surface Seal, Top Coat MB Plus, GAF WeatherCote or WeatherCote LOW-VOC applied at rate of 1-1.5 gal/sq.

Maximum Design Pressure: -495 psf (See General Limitation #9)

SYSTEMS:

The following assembly is approved to a maximum design pressure per Insulation Maximum Design Pressure Table A. No substitutions shall be made:

Deck Type: Concrete, primed

(Optional) Anchor Sheet: Install one or more plies of GAFGLAS® #75, GAFGLAS #80 Ultima, GAFGLAS® PLY 4, GAFGLAS FlexPly™, RUBEROID® Modified Base sheet RUBEROID® Mop Smooth or RUBEROID® 20 mopped directly to the substrate. Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Insulations: **See Insulation Maximum Design Pressure Table A below.**

Base Sheet: Install one ply of GAFGLAS® #75, GAFGLAS #80 Ultima ™ GAFGLAS® PLY 4, GAFGLAS FlexPly™ 6, RUBEROID Modified Base Sheet or RUBEROID® 20, RUBEROID® MOP Smooth, directly to the insulated substrate. Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: (Optional) One, two or three plies of RUBEROID® 20, GAFGLAS® PLY 4 or GAFGLAS® FlexPly™ 6 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: One or more plies of RUBEROID® Torch Smooth, RUBEROID® Torch Granule, RUBEROID® Torch Plus Granule, RUBEROID® Torch FR, RUBEROID® Torch 170FR or RUBEROID® 20, RUBEROID® MOP Smooth, RUBEROID® MOP Granule, RUBEROID® MOP 170FR, RUBEROID® ULTRACLAD™, RUBEROID® 30 and RUBEROID® 30FR, RUBEROID® MOP PLUS and RUBEROID® MOP FR or RUBEROID® SBS Heat-Weld™ PLUS, RUBEROID® SBS Heat-Weld™ PLUS FR, RUBEROID® SBS Heat-Weld™ 170 FR, RUBEROID® SBS Heat-Weld™, RUBEROID® SBS Heat-Weld™ Smooth and RUBEROID® SBS Heat-Weld™ 25 applied according to manufacturer's application instructions.

Surfacing: (Optional) Install one of the following

1. Asphalt flood coat at an application rate of 60-lbs./sq. ± 20%; plus gravel or slag with an application rate of 400 lbs./sq. & 300 lbs./sq., respectively.
2. Matrix™ System Pro Aluminum Roof Coating Fibered 301, (GAF Premium Fibered Aluminum Roof Coating) at 1.5 gal./sq. or Matrix 305 Fibered Emulsion (GAF WeatherCoat® Emulsion) at 3 gal./sq. (for Torch Smooth applications only).
3. One ply of GAFGLAS® Mineral Surfaced Cap Sheet adhered in a full mopping of approved asphalt applied within its EVT range and at a rate of 20-40 lbs./sq.
4. Top Coat Surface Seal, Top Coat MB Plus, GAF WeatherCote™ or WeatherCote LOW-VOC.

Insulation Maximum Design Pressure Table A	
Insulations	
1.	Min. 1.5" GAFTEMP® Composite or GAFTEMP Composite NP laid with the polyisocyanurate side down and bonded in a full mopping of an approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
	Maximum Design Pressure –270 psf (See General Limitation #9)
2.	***Base Layer:*** Min. 1" GAFTEMP® Isotherm RN. mopped in asphalt at the rate of 20-40 lbs./sq.
	***Top Layer*:** Min. ½" BMCA or GAFTEMP® PERMALITE® adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
	Maximum Design Pressure –322.5 psf (See General Limitation #9)
3.	***Base Layer:*** Min. 1" GAFTEMP® Isotherm RA mopped in asphalt at the rate of 20-40 lbs./sq.
	***Top Layer*:** Min. ½" BMCA or GAFTEMP® High Density Wood Fiber Board (g) adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
	Maximum Design Pressure –307.5 psf (See General Limitation #9)
4.	***Base Layer:*** Min. 1" GAFTEMP® Isotherm RA mopped in asphalt at the rate of 20-40 lbs./sq.
	***Top Layer*:** Min. ½" BMCA or GAFTEMP® PERMALITE® adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
	Maximum Design Pressure –165 psf (See General Limitation #9)
5.	***Base Layer:*** Two Min. 3/4" layers BMCA or GAFTEMP® PERMALITE® adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
	***Top Layer*:** Min. ¼" Dens-Deck mopped in asphalt at the rate of 20-40 lbs./sq..
	Maximum Design Pressure –172.5 psf (See General Limitation #9)
6.	***(Optional) Base Layer:*** Min. 1.5" ACFoam-II, E'NRG'Y 2, GAFTEMP® Isotherm RA, GAFTEMP® Isotherm RN or 1 /2" High Density Fiberboard secured to underlying substrate with Insta-Stik Roofing Adhesive.
	Top Layer: One or more layers of Min. 1" ACFoam-II, E'NRG'Y-2, GAFTEMP® Isotherm RA, GAFTEMP® Isotherm RN, 1 /2" High Density Fiberboard or Min. 1/4" Dens-Deck secured to underlying substrate with Insta-Stik Roofing Adhesive.
	Maximum Design Pressure –112.5 psf (See General Limitation #9)
7.	***Base Layer:*** Min. 1" GAFTEMP® Isotherm RA mopped in asphalt at the rate of 20-40 lbs./sq..
	***Top Layer*:** Min. ½" BMCA or GAFTEMP® High Density Wood Fiber Board (c) adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
	Maximum Design Pressure –237.5 psf (See General Limitation #9)
8.	***(Optional) Base Layer:*** Min. 1.5" ACFoam-II, E'NRG'Y 2, GAFTEMP® Isotherm RA, GAFTEMP® Isotherm RN or 1 /2" High Density Fiberboard secured to underlying substrate with Insta-Stik Roofing Adhesive.
	Top Layer: One or more layers of Min. 1" ACFoam-II, E'NRG'Y-2, GAFTEMP® Isotherm RA, GAFTEMP® Isotherm RN, 1 /2" High Density Fiberboard, Structodek or Min. 1/4" Dens-Deck secured to underlying substrate with Insta-Stik Roofing Adhesive.
	Maximum Design Pressure –105 psf (See General Limitation #9)

Insulation Maximum Design Pressure Table A	
Insulations	
9.	Min. 1.75" GAFTEMP® Composite, GAFTEMP Composite A, GAFTEMP Composite N, AC Foam Composite or E'NRG'Y-2 Composite laid with the polyisocyanurate side down and bonded in a full mopping of an approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
	Maximum Design Pressure –270 psf (See General Limitation #9)
10.	Min. ½" (GAFTEMP®) BMCA High Density Fiberboard or other Approved high density wood fiberboard or min. 1" (GAFTEMP®) PERMALITE® adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
	Maximum Design Pressure –140 psf (See General Limitation #9)
11.	***Base Layer:*** Min. 2" GAFTEMP® Isotherm R, or Isotherm RN.
	Top Layer: Min. ½" BMCA or GAFTEMP® Permalite® adhered in a full mopping of approved asphalt applied within the EVT range at a rate of 20-40 lbs./sq.
	Maximum Design Pressure –322.5 psf (See General Limitation #9)
12.	***Base Layer:*** Min. 1.5" GAFTEMP® Composite NP
	Top Layer: Min. 1.5 GAFTEMP® Composite adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
	Maximum Design Pressure –270 psf (See General Limitation #9)
13.	Min. ¾" BMCA or GAFTEMP® Permalite® adhered to the primed concrete deck in a full mopping of approved asphalt applied within the EVT range at a rate of 20-40 lbs./sq.
	Maximum Design Pressure –137 psf (See General Limitation #9)
14.	***Base Layer:*** Min. 1¼" GAFTEMP® Isotherm R, GAFTEMP Isotherm RA, GAFTEMP Isotherm RN, GAFTEMP Composite, GAFTEMP Composite A, GAFTEMP Composite N, E'NRG'Y-2+, AC Foam I, II, UltraGard Gold, Multi-Max adhered to the concrete deck in a full mopping of approved asphalt applied within the EVT range at a rate of 20-40 lbs./sq..
	Top Layer: Min. ½" BMCA or GAFTEMP® Permalite® adhered to the base insulation layer or primed concrete deck in a full mopping of approved asphalt applied within the EVT range at a rate of 20-40 lbs./sq.
	Maximum Design Pressure –126 psf (See General Limitation #9)
15.	***Base Layer:*** Min. 1¼" GAFTEMP® Isotherm R, GAFTEMP Isotherm RA, GAFTEMP Isotherm RN, GAFTEMP Composite, GAFTEMP Composite A, GAFTEMP Composite N, E'NRG'Y-2+, AC Foam I, II, UltraGard Gold, Multi-Max adhered to the concrete deck in a full mopping of approved asphalt applied within the EVT range at a rate of 20-40 lbs./sq..
	Top Layer: Min. ½" BMCA or GAFTEMP® Fiberboard (c) or other approved wood fiberboard adhered to the base insulation layer or primed concrete deck in a full mopping of approved asphalt applied within the EVT range at a rate of 20-40 lbs./sq.
	Maximum Design Pressure –162 psf (See General Limitation #9)

Insulation Maximum Design Pressure Table A	
Insulations	
16.	***Base Layer:*** Min. 1¼" GAFTEMP® Isotherm R, GAFTEMP Isotherm RA, GAFTEMP Isotherm RN, GAFTEMP Composite, GAFTEMP Composite A, GAFTEMP Composite N, E'NRG'Y-2+, AC Foam I, II, UltraGard Gold, Multi-Max adhered to the concrete deck in a full mopping of approved asphalt applied within the EVT range at a rate of 20-40 lbs./sq..
	Top Layer: Min. ¾" BMCA or GAFTEMP® PERMALITE®or other approved perlite insulation board adhered to the base insulation layer or primed concrete deck in a full mopping of approved asphalt applied within the EVT range at a rate of 20-40 lbs./sq..
	Maximum Design Pressure –157 psf (See General Limitation #9)

17.	Min. 15/16" Fiberglas or ½" (GAFTEMP®) PERMALITE® adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
	Maximum Design Pressure –90 psf (See General Limitation #9)

The following assembly is approved to a maximum design pressure per Insulation Maximum Design Pressure Table B. No substitutions shall be made:

Deck Type: Concrete, primed

(Optional) Anchor Sheet: Install one or more plies of GAFGLAS® #75, GAFGLAS #80 Ultima, GAFGLAS® PLY 4, GAFGLAS FlexPly™, RUBEROID® Modified Base sheet RUBEROID® Mop Smooth or RUBEROID® 20 mopped directly to primed deck. Adhere with any approved mopping asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

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

Base Sheet: Install one ply of GAFGLAS® STRATAVENT® Eliminator™ Perforated, lose laid dry

Ply Sheet: (Optional, required if membrane is APP/SBS Heat-Weld) One or more plies of RUBEROID® 20, GAFGLAS® PLY 4 or GAFGLAS® FlexPly™ 6 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: One or more plies of RUBEROID® Torch Smooth, RUBEROID® Torch Granule, RUBEROID® Torch Plus Granule, RUBEROID® Torch FR, RUBEROID® Torch 170FR or RUBEROID® 20, RUBEROID® MOP Smooth, RUBEROID® MOP Granule, RUBEROID® MOP 170FR, RUBEROID® ULTRACLAD™, RUBEROID® 30 and RUBEROID® 30FR, RUBEROID® MOP PLUS and RUBEROID® MOP FR or RUBEROID® SBS Heat-Weld™ PLUS, RUBEROID® SBS Heat-Weld™ PLUS FR, RUBEROID® SBS Heat-Weld™ 170 FR, RUBEROID® SBS Heat-Weld™, RUBEROID® SBS Heat-Weld™ Smooth and RUBEROID® SBS Heat-Weld™ 25 applied according to manufacturer's application instructions.

Surfacing: (Optional) Install one of the following

1. Asphalt flood coat at an application rate of 60-lbs./sq. ± 20%; plus gravel or slag with an application rate of 400 lbs./sq. & 300 lbs./sq., respectively.
2. Matrix™ System Pro Aluminum Roof Coating Fibered 301, (GAF Premium Fibered Aluminum Roof Coating) at 1.5 gal./sq. or Matrix 305 Fibered Emulsion (GAF WeatherCoat® Emulsion) at 3 gal./sq. (for Torch Smooth applications only).
3. One ply of GAFGLAS® Mineral Surfaced Cap Sheet adhered in a full mopping of approved asphalt applied within its EVT range and at a rate of 20-40 lbs./sq.

4. Top Coat Surface Seal, Top Coat MB Plus, GAF WeatherCote™ or WeatherCote LOW-VOC.

Insulation Maximum Design Pressure Table B	
Insulation	
1.	Min. 1" GAFTEMP® Isotherm RA or GAFTEMP® Isotherm RN mopped in asphalt at the rate of 20-40 lbs./sq.
	Maximum Design Pressure –150 psf (See General Limitation #9)

2.	***(Optional)Base Layer:*** Min. 1" GAFTEMP® Isotherm RA or GAFTEMP® Isotherm RN mopped in asphalt at the rate of 20-40 lbs./sq.
	Top Layer: Min. ¼" Dens-Deck mopped in asphalt at the rate of 20-40 lbs./sq..
	Maximum Design Pressure –240 psf (See General Limitation #9)

3.	***(Optional) Base Layer:*** Min. 1" GAFTEMP® Isotherm RA, GAFTEMP Isotherm RN, GAFTEMP Composite, GAFTEMP Composite A, GAFTEMP Composite N mopped in asphalt at the rate of 20-40 lbs./sq.
	Top Layer: Min. ¾" BMCA or GAFTEMP® PERMALITE®or other approved perlite insulation board or Min. ½" BMCA or GAFTEMP® High Density Fiberboard (c) or other approved High Density wood fiberboard or Min. 1" BMCA or GAFTEMP® Fiberboard (c) or other approved wood fiberboard adhered to the base insulation layer or primed concrete deck in a full mopping of approved asphalt applied within the EVT range at a rate of 20-40 lbs./sq.
	Maximum Design Pressure –90 psf (See General Limitation #9)

4.	***(Optional) Base Layer:*** Min. 1" GAFTEMP® Isotherm RA, GAFTEMP Isotherm RN, GAFTEMP Composite, GAFTEMP Composite A, GAFTEMP Composite N mopped in asphalt at the rate of 20-40 lbs./sq.
	Top Layer: Min. ¾" BMCA or GAFTEMP® PERMALITE®or other approved perlite insulation board or Min. ½" BMCA or GAFTEMP® High Density Fiberboard (c) or other approved High Density wood fiberboard or Min. 1" BMCA or GAFTEMP® Fiberboard (c) or other approved wood fiberboard adhered to the base insulation layer or primed concrete deck in a full mopping of approved asphalt applied within the EVT range at a rate of 20-40 lbs./sq..
	Maximum Design Pressure –90 psf (See General Limitation #9)

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 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. **(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