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Product Approval
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FL #	FL16732-R23
Application Type	Revision
Code Version	2020
Application Status	Approved
Comments	
Archived	
Product Manufacturer	GAF
Address/Phone/Email	1 Campus Drive Parisspany, NJ 07054 (800) 766-3411 mstieh@gaf.com
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Quality Assurance Representative	
Address/Phone/Email	
Category	Roofing
Subcategory	Modified Bitumen Roof System
Compliance Method	Evaluation Report from a Florida Registered Architect or a Licensed Florida Professional Engineer Evaluation Report - Hardcopy Received
Florida Engineer or Architect Name who developed the Evaluation Report	Robert Nieminen
Florida License	PE-59166
Quality Assurance Entity	UL LLC
Quality Assurance Contract Expiration Date	03/23/2025
Validated By	John W. Knezevich, PE ☒ Validation Checklist - Hardcopy Received

Certificate of Independence

[FL16732_R23_COI_2022_01_COI_NIEMINEN.pdf](#)

Referenced Standard and Year (of Standard)

Standard	Year
ASTM D2178	2015
ASTM D4601	2012
ASTM D4897	2009
ASTM D6163	2015
ASTM D6164	2011
ASTM D6222	2011
TAS 114	2011

Equivalence of Product Standards
Certified By

Sections from the Code

Product Approval Method

Method 1 Option D

Date Submitted 04/13/2022
Date Validated 04/15/2022
Date Pending FBC Approval 04/16/2022
Date Approved 06/07/2022
Date Revised 10/16/2022

Summary of Products

FL #	Model, Number or Name	Description
16732.1	GAF Modified Bitumen Roof Systems for use in FBC HVHZ jurisdictions	SBS and APP modified bitumen roof systems
Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: No Impact Resistant: N/A Design Pressure: +N/A/-465 Other: 1.) The design pressure herein pertains to one system. Refer to ER Appendix for all systems and maximum design pressures. 2.) Refer to ER Section 5 for Limits of Use. 3.) Refer to File No. FL5680 for non-HVHZ jurisdictions.		Installation Instructions FL16732 R23 II 2022 04 11 FINAL A1 ER GAF MB HVHZ FL16732-R23.pdf Verified By: Robert Nieminen PE-59166 Created by Independent Third Party: Yes Evaluation Reports FL16732 R23 AE 2022 04 11 FINAL ER GAF MB HVHZ FL16732-R23.pdf Created by Independent Third Party: Yes

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APPENDIX 1: ATTACHMENT REQUIREMENTS FOR WIND UPLIFT RESISTANCE

TABLE	DECK	APPLICATION	TYPE	DESCRIPTION	PAGE
1A	Wood	New, Reroof (Tear-Off)	A-2	Mech. Attached Anchor Sheet, Bonded Insulation, Bonded Roof Cover	6-8
1B	Wood	New, Reroof (Tear-Off), Recover	A-2	Mech. Attached Anchor Sheet, Bonded Insulation, Bonded Roof Cover	9-12
1C	Wood	New, Reroof (Tear-Off), Recover	B-1	Mech. Attached Base Insulation, Bonded Top Insulation, Bonded Roof Cover	12
1D	Wood	New, Reroof (Tear-Off), Recover	C-1	Mech. Attached Insulation, Bonded Roof Cover	13-14
1E	Wood	New, Reroof (Tear-Off), Recover	D-2	Insulated, Mech. Attached Base Sheet, Bonded Roof Cover	14
1F	Wood	New, Reroof (Tear-Off)	E-2	Non-Insulated, Mech. Attached Base Sheet, Bonded Roof Cover	15-16
1G	Wood	New, Reroof (Tear-Off), Recover	E-2	Non-Insulated, Mech. Attached Base Sheet, Bonded Roof Cover	16-17
2A	Steel or Structural concrete	New, Reroof (Tear-Off), Recover	B-1	Mech. Attached Base Insulation, Bonded Top Insulation, Bonded Roof Cover	18-27
2B	Steel	New, Reroof (Tear-Off), Recover	B-2	Mech. Attached Thermal Barrier, Bonded Temp Roof, Bonded Insulation, Bonded Roof Cover	27-33
2C	Steel or Structural concrete	New, Reroof (Tear-Off), Recover	C-1	Mech. Attached Insulation, Bonded Roof Cover	34-41
2D	Steel or Structural concrete	New, Reroof (Tear-Off), Recover	C-1	Thermal Barrier with Vapor Barrier, Mech. Attached Insulation, Bonded Roof Cover	41
2E	Steel or Structural concrete	New, Reroof (Tear-Off), Recover	C-3	Bonded and Mech. Attached Insulation, Bonded Roof Cover	42
2F	Steel or Structural concrete	New, Reroof (Tear-Off), Recover	D-2	Insulated, Mech. Attached Base Sheet, Bonded Roof Cover	42-45
3A	Structural concrete	New, Reroof (Tear-Off)	A-1	Bonded Insulation, Bonded Roof Cover (Base Insulation Layer Only)	46-47
3B	Structural concrete	New, Reroof (Tear-Off)	A-1	Bonded Insulation, Bonded Roof Cover (Base and Top Insulation Layers)	48-56
3C	Structural concrete	New, Reroof (Tear-Off)	F	Non-Insulated, Bonded Roof Cover	56
4A	Lightweight concrete over concrete	New, Reroof (Tear-Off)	A-1	LWC to Deck, Bonded Insulation, Bonded Roof Cover	57
4B	Lightweight concrete over steel or concrete	New, Reroof (Tear-Off)	A-2	LWC to Deck, Mech. Attached Anchor Sheet, Bonded Insulation, Bonded Roof Cover	58
4C	Lightweight concrete over steel or concrete	New, Reroof (Tear-Off)	E-2	LWC to Deck, Non-Insulated, Mech. Attached Base Sheet, Bonded Roof Cover	59-62
4D	Lightweight concrete over steel	New, Reroof (Tear-Off)	E-2	Thermal Barrier to Deck, Temp Roof to Barrier, LWC to Temp Roof, Mech. Attached Base Sheet, Bonded Roof Cover	63
4E	Lightweight concrete over concrete	New, Reroof (Tear-Off)	F	LWC to Deck, Non-Insulated, Bonded Roof Cover	63
5A	Cementitious wood fiber	New, Reroof (Tear-Off)	A-1	Bonded Insulation, Bonded Roof Cover	64
5B	Cementitious wood fiber	New, Reroof (Tear-Off)	A-2	Mech. Attached Anchor Sheet, Bonded Insulation, Bonded Roof Cover	64-65
5C	Cementitious wood fiber	New, Reroof (Tear-Off)	E-2	Non-Insulated, Mech. Attached Base Sheet, Bonded Roof Cover	65-66
6A	Existing gypsum	Reroof (Tear-Off)	A-1	Bonded Insulation, Bonded Roof Cover	67
6B	Existing gypsum	Reroof (Tear-Off)	A-2	Mech. Attached Anchor Sheet, Bonded Insulation, Bonded Roof Cover	67
6C	Existing gypsum	Reroof (Tear-Off)	C-1	Mech. Attached Insulation, Bonded Roof Cover	67
6D	Existing gypsum	Reroof (Tear-Off)	E-2	Non-Insulated, Mech. Attached Base Sheet, Bonded Roof Cover	68
7A	Various	Recover	A-1	Bonded Insulation, Bonded Roof Cover (Base Insulation Layer Only)	69-76
7B	Various	Recover	A-1	Bonded Insulation, Bonded Roof Cover (Base and Top Insulation Layers)	77-92



The following notes apply to the systems outlined herein:

- 1 The roof system evaluation herein pertains to above-deck roof components. Roof decks and structural members shall be in accordance with FBC HVHZ requirements to the satisfaction of the Authority Having Jurisdiction. Deck attachment details pertain to 'as-tested' conditions under Testing Application Standard TAS 114, Appendix J.
- 2 Unless otherwise noted, fasteners and stress plates shall be as follows. Fasteners shall be of sufficient length for the following engagements:

DECK TYPE		BY	FASTENER/PLATE OPTIONS		MINIMUM ENGAGEMENT
			PARTS		
Wood		GAF	Drill-Tec #12 Fastener or Drill-Tec #14 Fastener with Drill-Tec 3" Standard Steel Plate, Drill-Tec 3" Steel Plate or Drill-Tec AccuTrac Flat Plate or Drill-Tec AccuTrac Recessed Plate (insulation only), Drill-Tec Heavy Duty ASAP Roofing Fastener Assembled with a 3" Metal Plate, Drill-Tec #12 DP Fastener or Drill-Tec #14 HD Fastener with Drill-Tec 3" Flat Steel Plate, Drill-Tec #12 DPH Fastener with Drill-Tec 3" Recessed Steel Plate, Drill-Tec 3" ASAP Flat or Drill-Tec 3" ASAP Recessed		Minimum ½-inch plywood penetration or minimum 1-inch wood plank embedment
Steel		GAF	Drill-Tec #12 Fastener, Drill-Tec #14 Fastener or Drill-Tec XHD Fastener with Drill-Tec 3" Standard Steel Plate, Drill-Tec 3" Steel Plate or Drill-Tec AccuTrac Flat Plate or Drill-Tec AccuTrac Recessed Plate (insulation only); Drill-Tec Heavy Duty ASAP Roofing Fastener Assembled with a 3" Metal Plate; Drill-Tec Extra Heavy Duty ASAP Roofing Fastener - Insulation, Drill-Tec #12 DP Fastener, Drill-Tec #14 HD Fastener or Drill-Tec #15 EHD Fastener with Drill-Tec 3" Flat Steel Plate, Drill-Tec #12 DPH Fastener with Drill-Tec 3" Recessed Steel Plate, Drill-Tec 3" ASAP Flat or Drill-Tec 3" ASAP Recessed		Minimum ¾-inch steel penetration and engage the top flute of the steel deck
Structural Concrete		GAF	Drill-Tec #14 Fastener or Drill-Tec CD-10 with Drill-Tec 3" Standard Steel Plate, Drill-Tec 3" Steel Plate or Drill-Tec AccuTrac Flat Plate or Drill-Tec AccuTrac Recessed Plate (insulation only), Drill-Tec Heavy Duty ASAP Roofing Fastener Assembled with a 3" Metal Plate, Drill-Tec #14 HD Fastener with Drill-Tec 3" Flat Steel Plate or Drill-Tec 3" ASAP Flat (#14 only)		Minimum 1.25-inch embedment. Fasteners installed with a pilot hole in accordance with the fastener manufacturer's published installation instructions

- 3 Unless otherwise noted, insulation may be any one layer or combination of FBC Approved (Local or Statewide) board(s) that meet FBC HVHZ 1516 and, for foam plastic, FBC Chapter 26, when installed with the roof cover.
- 4 If mechanical attachment to the structural deck through lightweight insulating concrete is proposed, field withdrawal resistance testing shall be performed to confirm equivalent or determine enhanced fastening patterns and density. All testing and fastening design shall be in compliance with Testing Application Standard TAS 105 and Roofing Application Standard RAS 117 and/or RAS 137. Calculations shall be prepared, signed and sealed by a qualified design professional.
- 5 Preliminary insulation attachment for System Type D: Minimum four fasteners per 4 x 8 ft board or minimum two fasteners per 4 x 4 ft board.
- 6 Unless otherwise noted, insulation adhesive application rates are as follows. Ribbon or bead width is at the time of application; the ribbons/beads shall expand as noted in the manufacturer's published instructions.

BY	ADHESIVE	INSULATION ADHESIVE REFERENCES		
		REFERENCE	FBC HVHZ FILE	MINIMUM RATE
GAF	GAF LRF Adhesive M	'LRF-M'	18-0521.05	Continuous 0.75 to 1-inch ribbons, 12-inch o.c.
GAF	GAF LRF Adhesive XF	'LRF-XF'	N/A	Continuous 0.75 to 1-inch ribbons, 12-inch o.c.
H.B. Fuller Company	Millennium One Step Foamable Adhesive	'M-OSFA'	18-1109.02	Continuous 0.25 to 0.5-inch wide ribbons, 12-inch o.c.
OMG, Inc.	OlyBond 500 Adhesive Fastener	'OB500'	19-0904.03	Continuous 0.75-inch wide ribbons, 12-inch o.c. (PaceCart, SpotShot or Canister)
Generic, ASTM D312, Type IV	hot asphalt	N/A	N/A	Full coverage at 25-30 lbs/square

Note: If applying hot asphalt to concrete deck, deck shall be primed with ASTM D41 primer.

Note: When multiple layers(s) of insulation and/or coverboard are installed in ribbon-applied adhesive, boards shall be staggered from layer-to-layer.

Note: The maximum edge distance from the adhesive ribbon to the edge of the insulation board shall be not less than one-half the specified ribbons spacing



- 7 Unless otherwise noted, all insulations are flat-stock or taper board of the minimum thickness noted. Tapered polyisocyanurate at the following thickness limitations may be substituted with the following Maximum Design Pressure (MDP) limitations. In no case shall these values be used to 'increase' the MDP listings in the tables; rather if MDP listing below meets or exceeds that listed for a particular system in the tables, then the thinner board listed below may be used as a drop-in for the equivalent thicker material listed in the table.

MDP LIMITATIONS FOR TAPERED POLYISOCYANURATE INSULATIONS					
ADHESIVE	INSULATION		FBC HVHZ FILE	MIN. TAPERED THICKNESS (IN)	MDP (PSF)
	LISTED PRODUCT				
LRF-M	EnergyGuard Polyiso Insulation, EnergyGuard Ultra Polyiso Insulation		17-0619.06	0.5	-232.5
LRF-XF	EnergyGuard Polyiso Insulation, EnergyGuard Ultra Polyiso Insulation		17-0619.06	0.5	-292.5
LRF-XF	EnergyGuard RA		18-0220.10	0.5	-487.5
M-OSFA	Any EnergyGuard polyisocyanurate listed with adhesive herein		various	0.5	-157.5
OB500	EnergyGuard Polyiso Insulation, EnergyGuard Ultra Polyiso Insulation		17-0619.06	0.5	-292.5
OB500	EnergyGuard RH		19-1017.09	0.5	-315.0
OB500	EnergyGuard RN		18-1126.10	0.5	-315.0
OB500	EnergyGuard RA		18-0220.10	0.5	-487.5
Hot asphalt	Any EnergyGuard polyisocyanurate listed with adhesive herein		Various	0.5	-240.0

- 8 Bonded polyisocyanurate insulation boards shall be maximum 4 x 4 ft.

- 9 For mechanically attached components, the maximum design pressure for the selected assembly shall meet or exceed at least the Zone 1 PRIME design pressure determined in accordance with FBC HVHZ 1620 or Roofing Application Standard RAS 128. Elevated pressure zones shall employ an attachment density designed by a qualified design professional to resist the elevated pressure criteria in accordance with Roofing Application Standard RAS 117 or Roofing Application Standard RAS 137. *This extrapolation is not permitted for systems marked with an asterisk*

- 10 For assemblies marked with an asterisk*, the maximum design pressure for the selected assembly shall meet or exceed critical design pressure determined in accordance with FBC Chapter 16. No rational analysis is permitted for these systems.

- 11 For mechanically attached components over existing decks, fasteners shall be tested in the existing deck for withdrawal resistance in accordance with Testing Application Standard TAS 105. A qualified design professional shall review the data for comparison to the minimum requirements for the system. Should the fastener resistance be less than that required, a revised fastener spacing – prepared, signed and sealed by a qualified design professional in accordance with Roofing Application Standard RAS 117 or Roofing Application Standard RAS 137 – may be submitted to the Building Official for review and acceptance.

- 12 Refer to FBC HVHZ 1521 for requirements and limitations regarding recover installations. For bonded insulation or membrane over existing substrates in a re-roof (tear off) or recover installation, the existing deck or existing roof surface shall be examined for compatibility with the adhesive to be installed. If any surface conditions exist that bring system performance into question, field uplift testing shall be conducted on mock-ups of the proposed new roof assembly. For bonded insulation or membrane over existing substrates in a recover installation, the existing roof system shall be capable of resisting project design pressures on its own merit to the satisfaction of the Authority Having Jurisdiction, as documented through field uplift testing in accordance with Testing Application Standard TAS 124.

- 13 For Structural Concrete Deck or Recover Applications using System Type C-1 the base insulation layer is optional and for System Type C-2, D-1 or D-2, the insulation is optional. Alternatively, an FBC HVHZ Approved insulation board or coverboard may be used as a separation layer. Board products shall be preliminarily attached prior to roof cover installation (Note 5 herein). The separator component shall be documented as meeting FBC HVHZ 1516 and, for foam plastic, FBC Chapter 26, when installed with the roof cover in Recover applications.

- 14 Lightweight insulating concrete (LWIC) shall be cast in accordance with FBC Section 1917 to the satisfaction of the Authority Having Jurisdiction. For systems where specific LWIC is referenced, refer to current LWIC FBC HVHZ Product Approval for specific deck construction and limitations. Unless otherwise noted, for systems where specific LWIC is not referenced, the minimum design mix shall be 300 psi. In all cases, the minimum top-coat thickness is 2-inches. For LWIC over structural concrete, reference is made to FBC Section 1917.4.1, Point 1. For "pre-existent" LWIC references, listings were established through testing over lightweight concrete cast using only foaming agent (ASTM C896), water and Portland cement (ASTM C150), with no proprietary additives, in accordance with procedures adopted by Miami-Dade BCCO (FBC CER1592). Use of these listings in new construction or re-roof (tear-off) applications is at the discretion of the Designer or Record and Authority Having Jurisdiction.



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REFERENCE	LAYER	MEMBRANE / ADHESIVE COMBINATIONS		APPLICATION
		MATERIAL		
8F-CA	Base Ply:	GAFGLAS #75 Base Sheet, Tri-Ply #75 Base Sheet		Matrix 102 SBS Membrane Adhesive at 1.5 gal/sq.
	Base Ply or Ply:	Ruberoild 20 Smooth		
	Cap Ply:	Ruberoild 30 Granule FR, Ruberoild EnergyCap 30 Granule FR, Ruberoild Mop Granule FR, Ruberoild Mop Plus Granule FR, Ruberoild EnergyCap Mop Plus Granule FR		
SBS-CA1	Base Ply:	Ruberoild 20 Smooth or Ruberoild Mop Smooth 1.5		Matrix 101 Premium SBS Membrane Adhesive at 1.5 – 2.0 gal/square
	Cap Ply:	Ruberoild 30 Granule FR, Ruberoild EnergyCap 30 Granule FR, Ruberoild Mop Plus Granule FR, Ruberoild EnergyCap Mop Plus Granule FR		
8F-AA	Base Ply:	GAFGLAS #75 Base Sheet, Tri-Ply #75 Base Sheet, GAFGLAS #80 Ultima Base Sheet		Hot asphalt at 25 lbs/square.
	Ply:	One or more plies: GAFGLAS Ply 4 M, Tri-Ply Ply 4 Ply Sheet, GAFGLAS Flex Ply 6, GAFGLAS FlexPly 6 M		
	Base Ply or Ply:	One or two plies Ruberoild 20 Smooth, Ruberoild Mop Smooth, Ruberoild Mop Smooth 1.5, Ruberoild Mop Plus Smooth		
SBS-AA	Cap Ply:	Ruberoild 30 Granule FR, Ruberoild EnergyCap 30 Granule FR, Ruberoild Mop Smooth, Ruberoild Mop Smooth 1.5, Ruberoild Mop Plus Smooth, Ruberoild Mop Granule FR, Ruberoild Mop Granule, Tri-Ply SBS Granule Cap Sheet, Intec Flex PRF, Ruberoild Mop Plus Granule FR, Ruberoild Mop Plus Granule, Ruberoild EnergyCap Mop Plus Granule FR		Torch-applied
	Base Ply or Ply:	One or two plies Ruberoild HW 25 Smooth, Ruberoild HW Smooth		
SBS-TA	Cap Ply	Ruberoild HW Granule, Ruberoild HW Granule FR, Ruberoild HW Plus Granule, Ruberoild HW Plus Granule FR, Ruberoild EnergyCap HW Plus Granule FR		
APP-TA	Base Ply or Ply:	One or two plies Ruberoild Torch Smooth, Tri-Ply APP Smooth Membrane		Torch-applied
	Cap Ply:	Ruberoild Torch Granule, Tri-Ply APP Granule Membrane, Ruberoild Torch Plus Granule FR, Ruberoild EnergyCap Torch Plus Granule FR, Ruberoild EnergyCap Torch Granule FR, Ruberoild EnergyCap Torch Granule FR, Ruberoild EnergyCap Torch Granule FR		
SBS-SA	Base Ply or Ply:	Liberty SBS Self-Adhering Base/Ply Sheet		Self-adhering
	Cap Ply	Liberty SBS Self-Adhering Cap Sheet		

Note: Systems with a smooth-surfaced cap ply shall be surfaced in accordance with GAF requirements, meeting the fire resistance requirements of FBC Section 1516, and in accordance with FBC Section 1519.12.

16 Vapor barrier options for use over **structural concrete deck** followed by bonded insulation carry the following Maximum Design Pressure (MDP) limitations. The lesser of the MDP listings below vs. that for the selected assembly from **TABLE 3A** applies.

VAPOR BARRIER OPTIONS, STRUCTURAL CONCRETE DECK, ADHERED INSULATION						
Option #	PRIMER	VAPOR BARRIER		APPLICATION	INSULATION ADHESIVE PER TABLE 3a	MDP (psf)
		TYPE				
C-VB-1.	Matrix 307 Premium Asphalt Primer or ASTM D41. primer	One or two plies, GAFGLAS #75 Base Sheet, Tri-Ply #75 Base Sheet, GAFGLAS Ply 4, GAFGLAS Ply 4 M, Tri-Ply Ply 4 Ply Sheet or GAFGLAS Flex Ply 6, GAFGLAS FlexPly 6 M		Hot asphalt applied	Hot asphalt	-360.0
C-VB-2.	None	GAF SA Vapor Retarder XL		Self-adhering	LRF-M, 12-inch o.c.	-112.5
C-VB-3.	Matrix 307 Premium Asphalt Primer or ASTM D41. primer	Ruberoid HW 25 Smooth or Ruberoid HW Smooth		Torch-applied	LRF-M, 12-inch o.c.	-180.0
C-VB-4.	GAF SA Primer	GAF SA Vapor Retarder		Self-adhering	LRF-M, 12-inch o.c.	-202.5
C-VB-5.	Matrix 307 Premium Asphalt Primer or ASTM D41. primer	One or two plies, GAFGLAS #75 Base Sheet, Tri-Ply #75 Base Sheet, GAFGLAS Ply 4, GAFGLAS Ply 4 M, Tri-Ply Ply 4 Ply Sheet or GAFGLAS Flex Ply 6, GAFGLAS FlexPly 6 M		Hot asphalt applied	LRF-M, 12-inch o.c.	-495.0
C-VB-6.	None	GAF SA Vapor Retarder XL		Self-adhering	LRF-XF, 12-inch o.c.	-112.5
C-VB-7.	Matrix 307 Premium Asphalt Primer or ASTM D41. primer	Ruberoid Torch Granule		Torch-applied	LRF-XF, 12-inch o.c.	-169.0
C-VB-8.	Matrix 307 Premium Asphalt Primer or ASTM D41. primer	Ruberoid HW 25 Smooth or Ruberoid HW Smooth		Torch-applied	LRF-XF, 12-inch o.c.	-180.0
C-VB-9.	GAF SA Primer	GAF SA Vapor Retarder		Self-adhering	LRF-XF, 12-inch o.c.	-202.5
C-VB-10.	Matrix 307 Premium Asphalt Primer or ASTM D41. primer	Libertiv SBS Self-Adhering Cap Sheet		Self-adhering	LRF-XF, 12-inch o.c.	-250.0

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7TH EDITION (2020) FBC HVHZ EVALUATION (Method ID)
GAF Modified Bitumen Roof Systems: (800) 766-3411

Evaluation Report 01506.12.13-2-R24 for FL16732-R23
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VAPOR BARRIER OPTIONS; STRUCTURAL CONCRETE DECK, ADHERED INSULATION				
OPTION #	PRIMER	VAPOR BARRIER		INSULATION ADHESIVE PER TABLE 3A
		TYPE	APPLICATION	
C-VB-11.	Matrix 307 Premium Asphalt Primer or ASTM D41 primer	One or two plies, GAFGLAS #75 Base Sheet, Tri-Ply #75 Base Sheet, GAFGLAS Ply 4, GAFGLAS Ply 4 M, Tri-Ply Ply 4 Ply Sheet or GAFGLAS Flex Ply 6, GAFGLAS FlexPly 6 M	Hot asphalt applied	LRF-XF, 12-inch o.c.
C-VB-12.	Matrix 307 Premium Asphalt Primer or ASTM D41 primer	Ruberoid 30	Hot asphalt applied	LRF-XF, 12-inch o.c.
C-VB-13.	None	GAF SA Vapor Retarder XL	Self-adhering	OB500, 12-inch o.c.
C-VB-14.	Matrix 307 Premium Asphalt Primer or ASTM D41 primer	Ruberoid Torch Smooth	Torch-applied	OB500, 12-inch o.c.
C-VB-15.	Matrix 307 Premium Asphalt Primer or ASTM D41 primer	Ruberoid HW 25 Smooth	Torch-applied	OB500, 12-inch o.c.
C-VB-16.	Matrix 307 Premium Asphalt Primer or ASTM D41 primer	Liberty SBS Self-Adhering Cap Sheet	Self-adhering	OB500, 12-inch o.c.
C-VB-17.	Matrix 307 Premium Asphalt Primer or ASTM D41 primer	Ruberoid 20 Smooth	Matrix 107 SBS Membrane Adhesive at 1.5 gal/square	OB500, 12-inch o.c.
C-VB-18.	GAF SA Primer	GAF SA Vapor Retarder	Self-adhering	OB500, 12-inch o.c.
C-VB-19.	Matrix 307 Premium Asphalt Primer or ASTM D41 primer	Ruberoid Torch Granule	Torch-applied	OB500, 12-inch o.c.
C-VB-20.	Matrix 307 Premium Asphalt Primer or ASTM D41 primer	Ruberoid HW Smooth	Torch-applied	OB500, 12-inch o.c.
C-VB-21.	Matrix 307 Premium Asphalt Primer or ASTM D41 primer	One or two plies, GAFGLAS #75 Base Sheet, Tri-Ply #75 Base Sheet, GAFGLAS Ply 4, GAFGLAS Ply 4 M, Tri-Ply Ply 4 Ply Sheet or GAFGLAS Flex Ply 6, GAFGLAS FlexPly 6 M	Hot asphalt applied	OB500, 12-inch o.c.

16A Vapor barrier options for use over **structural concrete deck** followed by cellular lightweight concrete carry the following Maximum Design Pressure (MDP) limitations. The lesser of the MDP listings below vs. that for the selected assembly from **TABLE 4A through 4E** applies.

VAPOR BARRIER OPTIONS; STRUCTURAL CONCRETE DECK FOLLOWED BY CELLULAR LIGHTWEIGHT INSULATING CONCRETE				
OPTION #	PRIMER	VAPOR BARRIER		LIGHTWEIGHT CONCRETE PER TABLE 4A – 4E (NOTE 14)
		TYPE	ATTACH	
LWC-VB-1.	Matrix 307 Premium Asphalt Primer or ASTM D41 primer	Base Ply (Optional): One or two plies Ruberoid HW 25 Smooth, Ruberoid HW Smooth Cap Ply: Ruberoid HW Granule, Ruberoid HW Granule FR, Ruberoid HW Plus Granule, Ruberoid HW Plus Granule FR	Torch-applied	Min. 200 psi Mearlcrete (NOA 19-0729.03)
LWC-VB-2.	Matrix 307 Premium Asphalt Primer or ASTM D41 primer	Base Ply (Optional): One or two plies Ruberoid HW 25 Smooth, Ruberoid HW Smooth Cap Ply: Ruberoid HW Granule, Ruberoid HW Granule FR, Ruberoid HW Plus Granule, Ruberoid HW Plus Granule FR	Torch-applied	Min. 300 psi Celcore Cellular Concrete (NOA 18-0717.05)
LWC-VB-3.	Matrix 307 Premium Asphalt Primer or ASTM D41 primer	Base Ply (Optional): One or two plies Ruberoid HW 25 Smooth, Ruberoid HW Smooth Cap Ply: Ruberoid HW Granule, Ruberoid HW Granule FR, Ruberoid HW Plus Granule, Ruberoid HW Plus Granule FR	Torch-applied	Min. 300 psi Elastizell (NOA 18-0208.03)
LWC-VB-4.	Matrix 307 Premium Asphalt Primer or ASTM D41 primer	Ruberoid HW 25 Smooth, Ruberoid HW Smooth	Torch-applied	Min. 540 psi pre-existent cellular LWC

17 Fire barriers of FireOut™ Fire Barrier Coating or VersaShield Solo™ Fire-Resistant Slip Sheet are optional in all assemblies when overlying components are mechanically fastened.



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18 The following products are interchangeable within the scope of this Evaluation Report:

SUB-CATEGORY	MANUFACTURER	FBC HVHZ FILE	ACCEPTABLE ALTERNATES	
			LISTED PRODUCT HEREIN	ALTERNATE
Roofing Insulation	GAF	17-0619.06	EnergyGuard Polyiso Insulation	EnergyGuard NH Polyiso Insulation
			EnergyGuard Ultra Polyiso Insulation	EnergyGuard NH Ultra Polyiso Insulation
			EnergyGuard HD Polyiso Cover Board	EnergyGuard HD Barrier Polyiso Cover Board, EnergyGuard NH HD Polyiso Cover Board
			EnergyGuard HD Plus Polyiso Cover Board	EnergyGuard NH HD Plus Polyiso Cover Board
Vapor Barrier	Georgia-Pacific Gypsum, LLC	21-1229.05	DensDeck Prime	DensDeck StormX Prime Roof Board
	GAF	N/A	GAF SA Vapor Retarder XL	GAF SA Vapor Retarder XL40

19 For System Types B-1, B-2, C-1, C-2, D-1 or Type D-2, GAF SA Vapor Retarder or GAF SA Vapor Retarder XL may be installed atop the roof deck, or to a loose-laid thermal barrier of DensDeck Prime or SECURROCK Gypsum-Fiber Roof Board, prior to installation of the insulation and roof cover. When adhering GAF SA Vapor Retarder to structural concrete, the substrate shall be primed with GAF SA Primer. When adhering GAF SA Vapor Retarder to DensDeck Prime or SECURROCK Gypsum-Fiber Roof Board, the substrate shall be primed with GAF SA Primer or Matrix 307 Premium Asphalt Primer. Refer to FM Loss Prevention Data Sheet 1-29 (February 2020) for design and installation limitations.

20 "MDP" = Maximum Design Pressure is the result of testing for wind load resistance based on allowable wind loads. Refer to FBC (HVHZ) 1620 and Roofing Application Standard RAS 128 for determination of design wind loads.

TABLE 1A: WOOD DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF)														
SYSTEM TYPE A-2: MECHANICALLY ATTACHED ANCHOR SHEET, BONDED INSULATION, BONDED ROOF COVER														
System No.	Deck (Note 1)	Anchor Sheet			Base Insulation			Top Insulation			Roof Cover (Note 15)			MDP (psf)
		Type	Fasteners (Note 11)	Attach	Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Base Ply	Ply	Cap Ply			
CONVENTIONAL SYSTEMS:														
W-1.	Min. 19/32-inch plywood or 1-inch wood plank; 2 ft span, 8d ring shank nails 6" o.c.	GAFGLAS #80 Ultima Base Sheet, GAFGLAS Stratavent Eliminator Nailable Venting Base Sheet, Ruberoid 20 Smooth, Ruberoid Mop Smooth, Ruberoid Mop Smooth 1.5	32 ga., 1-5/8-inch dia. tin caps with 11 ga. annular ring shank nails	9-inch o.c. at the min. 4-inch lap and 12-inch o.c. in two, equally spaced, staggered center rows	Min. 1-inch EnergyGuard Polyiso Insulation, EnergyGuard Ultra Polyiso Insulation or EnergyGuard RH Polyiso or min. 1.5-inch EnergyGuard RA or EnergyGuard RN	Hot asphalt	Min. 0.5-inch Structodek High Density Fiberboard Roof Insulation or EnergyGuard Perlite Recover Board or Min. 0.75-inch EnergyGuard Perlite Roof Insulation (homogeneous)	Hot asphalt	BP-AA, SBS-AA	(Optional) BP-AA, SBS-AA, SBS-TA, APP-TA	SBS-AA, SBS-TA, APP-TA	-45.0		
W-2.	Min. 19/32-inch plywood or 1-inch wood plank; 2 ft span, 8d ring shank nails 6" o.c.	GAFGLAS #80 Ultima Base Sheet, GAFGLAS Stratavent Eliminator Nailable Venting Base Sheet, Ruberoid 20 Smooth, Ruberoid Mop Smooth, Ruberoid Mop Smooth 1.5	32 ga., 1-5/8-inch dia. tin caps with 11 ga. annular ring shank nails	9-inch o.c. at the min. 4-inch lap and 12-inch o.c. in two, equally spaced, staggered center rows	Min. 1-inch EnergyGuard Polyiso Insulation, EnergyGuard Ultra Polyiso Insulation or EnergyGuard RH Polyiso or min. 1.5-inch EnergyGuard RA or EnergyGuard RN	Hot asphalt	Min. 0.25-inch DensDeck Prime or SECURROCK Gypsum-Fiber Roof Board	Hot asphalt	BP-AA, SBS-AA, SBS-TA, APP-TA	(Optional) BP-AA, SBS-AA, SBS-TA, APP-TA	SBS-AA, SBS-TA, APP-TA	-45.0		



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TABLE 4A: LIGHTWEIGHT INSULATING CONCRETE OVER STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION OR REROOF (TEAR-OFF)										
SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER										
SEE NOTE 16A FOR VAPOR BARRIER OPTIONS										
System No.	Deck (Note 1)	Lightweight Concrete (Note 14)	Base Insulation Layer		Coverboard		Roof Cover (Note 15)			MDP (psf)*
			Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)	Base Ply	Ply	Cap Ply	
ELASTIZELL (NOA 18-0208.03):										
LWC-1.	Structural concrete	Elastizell Range II Lightweight Insulating Concrete (min. 200 psi)	(Optional) Min. 1.5-inch EnergyGuard RA, EnergyGuard RH, EnergyGuard RN or EnergyGuard Ultra	OB500	Min. 0.5-inch Structodek High Density Fiberboard Roof Insulation	OB500	BP-AA, SBS-AA	(Optional) One or more BP-AA, SBS-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA	-225.0
LWC-2.	Structural concrete	Elastizell Range II Lightweight Insulating Concrete (min. 200 psi)	(Optional) Min. 1.5-inch EnergyGuard RA, EnergyGuard RH, EnergyGuard RN or EnergyGuard Ultra	OB500	Min. 0.25-inch DensDeck, DensDeck Prime or SECURROCK Gypsum-Fiber Roof Board	OB500	BP-AA, SBS-AA, SBS-TA or APP-TA	(Optional) One or more BP-AA, SBS-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA	-225.0
LWC-3.	Structural concrete	Elastizell Range II Lightweight Insulating Concrete (min. 200 psi)	Min. 2.0-inch, min. 1.0 pcf, ASTM C578 expanded polystyrene	OB500	Min. 0.5-inch Structodek High Density Fiberboard Roof Insulation	OB500	BP-AA, SBS-AA	(Optional) BP-AA, SBS-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA	-120.0
LWC-4.	Structural concrete	Elastizell Range II Lightweight Insulating Concrete (min. 200 psi)	Min. 2-inch Styrofoam Brand Roofmate or Highload 60	OB500	Min. 0.25-inch DensDeck or DensDeck Prime or SECURROCK Gypsum-Fiber Roof Board	OB500	BP-AA, SBS-AA, SBS-TA or APP-TA	(Optional) BP-AA, SBS-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA	-225.0

TGFU.R1306 - Roofing Systems

Note: We are enhancing our systems and you may notice duplicate entries/missing/outdated data. During this interim period, please contact our Customer Service at <https://www.ul.com/about/locations>.

Roofing Systems

GAF R1306
 1 Campus Dr
 Parsippany, NJ 07054 United States

"RUBEROID® 20 Smooth" or "RUBEROID® Mop Smooth" or "RUBEROID® Mop Smooth 1.5" may be utilized as an alternate to Type G2 "GAFGlas® #75 Base Sheet" or "Tri-Ply® #75 Base Sheet" or "GAFGlas® #80 Ultima™ Base Sheet" base sheets in any of the following Classifications.

Torch applied "RUBEROID® HW" SBS roofing membranes may be used as alternates to "RUBEROID® Mop" SBS roofing membranes in any applicable Classification as follows:

- A. "RUBEROID® HW Smooth" may be used as an alternate to "RUBEROID® Mop Smooth" or "RUBEROID® Mop Smooth 1.5"
- B. "RUBEROID® HW 25 Smooth" may be used as an alternate to "RUBEROID® 20 Smooth"
- C. "RUBEROID® HW Granule" may be used as an alternate to "RUBEROID® Mop Granule"
- D. "RUBEROID® HW Plus Granule" may be used as an alternate to "RUBEROID® Mop Plus Granule"
- E. "RUBEROID® HW Granule FR" may be used as an alternate to "RUBEROID® Mop Granule FR"
- F. "RUBEROID® HW Plus Granule FR" may be used as an alternate to "RUBEROID® Mop Plus Granule FR"
- G. "RUBEROID® EnergyCap HW Plus Granule FR" may be used as an alternate to "RUBEROID® EnergyCap Mop Plus Granule FR"

Minimum 1/2-in. thick gypsum board or minimum 1/4-in. thick Georgia-Pacific Gypsum LLC "DensDeck® Roofboard" or "DensDeck® Prime Roofboard" or "DensDeck® DuraGuard™ Roofboard" or minimum 1/4-in. thick United States Gypsum Co. "SECUROCK® Roof Board" (Type FRX-G) or "SECUROCK® Glass-Mat Roof Board" (Type SGMRX) may be used in any existing noncombustible roof deck Classification. When this is done, the resulting roofing system is acceptable for use over minimum 15/32-in. thick combustible roof decks. However, the butt joints in the gypsum board and Georgia-Pacific Gypsum LLC "DensDeck® Roofboard" or "DensDeck® Prime Roofboard" or "DensDeck® DuraGuard™ Roofboard" are to offset a minimum of 6-in. with the butt joints in the roof deck. If polystyrene is part of the roof system, it must be placed below the overlayment board. Minimum 1/4-in. thick United States Gypsum Co. "SECUROCK® Roof Board" (Type FRX-G) and "SECUROCK® Glass-Mat Roof Board" (Type SGMRX) are limited to a maximum 3:12 inline when used over a combustible roof deck in a system with any UL Classified insulation except polystyrene.

Multiple plies of Type G1 "GAFGlas® Ply 4" or "Tri-Ply® Ply 4" or "GAFGlas® Flex Ply 6" or "Tri-Ply® Ultra-Flexible Ply 6" may be adhered to Georgia-Pacific Gypsum LLC "DensDeck® Roofboard" or "DensDeck® Prime Roofboard" or "DensDeck® DuraGuard™ Roofboard" in hot roofing asphalt.

"GAFGlas® FlexPly™ 6 5L" and "GAFGlas® FlexPly™ 6" may be used interchangeably in any roof covering system listed below.

"EnergyGuard™ Ultra" is an acceptable alternate to "EnergyGuard™" in any applicable Classification.

"GAFGLAS® Stratavent® Nailable Venting Base Sheet" may be mechanically fastened or fully adhered with hot roofing asphalt over noncombustible roof decks and as a recover over existing roof covering systems.

"EnergyGuard™ Perlite Insulation" may be utilized as a cover board over "EnergyGuard™" in any of the following systems.

Unless otherwise indicated, the roof insulation is mechanically fastened, fully adhered with hot roofing asphalt or UL Classified urethane insulation adhesive. Polystyrene referenced in any of the following Classifications include insulation.

Unless otherwise indicated, all insulations may be adhered with any UL Classified Insulation Adhesive per the manufacturer's installation instructions (excluding "LRF Adhesive O") in any applicable non-combustible roof deck Classifications.

"EnergyGuard™ Tapered" is an acceptable alternate to "EnergyGuard™" in any applicable Classification.

"EnergyGuard™ Ultra Tapered" is an acceptable alternate to "EnergyGuard™ Ultra" in any applicable Classification.

"EnergyGuard™ NH Tapered" is an acceptable alternate to "EnergyGuard™ NH" in any applicable Classification.

"EnergyGuard™ NH Ultra Tapered" is an acceptable alternate to "EnergyGuard™ NH Ultra" in any applicable Classification.

"EnergyGuard™ Barrier Tapered" is an acceptable alternate to "EnergyGuard™ Barrier".

"EnergyGuard™ NH Barrier Tapered" is an acceptable alternate to "EnergyGuard™ NH Barrier".

Minimum 1/2-in. thick "EnergyGuard™ Barrier" is an acceptable alternate to "EnergyGuard™ Ultra" in any applicable Classification.

Minimum 1/2-in. thick "EnergyGuard™ NH Barrier" is an acceptable alternate to "EnergyGuard™ NH Ultra" in any applicable Classification.

"EnergyGuard™ RA Tapered" may be substituted for "EnergyGuard™ RA" in any of the systems listed below that utilize "EnergyGuard™ RA". "EnergyGuard™ RA" may be perforated on one side for use as the contact side for BUR or modified bitumen membrane.

"EnergyGuard™ RA Ultra Tapered" may be substituted for "EnergyGuard™ RA Ultra" in any of the systems listed below.

"EnergyGuard™ RA Ultra" may be substituted for "EnergyGuard™ RA" polyisocyanurate insulation in any of the following Classifications.

For Combustible Roof Decks - Class A: A minimum 3 in. layer or a minimum two layers of 1.5 in. of "EnergyGuard™ RA Ultra" is placed directly over a combustible deck and is covered with any UL Classified roofing membrane used in any UL Class A roofing assembly to achieve a Class A fire Classification. As an alternative, any UL Classified insulation (except expanded or extruded polystyrene), any combination, any thickness, may be used below the 3 in. minimum total thickness of "EnergyGuard™ RA Ultra". The insulation may be loosely laid or attached with fasteners and plates, hot roofing asphalt or cold adhesive. A vapor barrier (non-UL classified) may also be used below the insulation. All insulation joints must be staggered a minimum of 6 in. from the deck joints or from the insulation joints directly below. The maximum incline shall be in accordance with the Classification established for the membrane/insulation roofing assembly, however the incline cannot exceed 1/2:12.

ASPHALT FELT SYSTEMS WITH HOT ROOFING ASPHALT

See Above

Type G2 asphalt glass mat base sheet ("GAFGLAS® #75 Base Sheet" or "Tri-Ply® #75 Base Sheet" or "GAFGLAS® #80 Ultima™ Base Sheet") is a suitable alternate for Type G1 asphalt glass fiber ply sheet ("GAFGLAS® Ply 4" or "Tri-Ply® Ply 4" or "GAFGLAS® Flex Ply 6" or "Tri-Ply® Ultra-Flexible Ply 6") in the Class A, B or C roof covering systems indicated below.

The roof deck may first be covered with one ply Type G2 asphalt saturated glass mat base sheet "GAFGLAS® Stratavent® Nailable Venting Base Sheet" or "GAFGLAS® Stratavent® Perforated Venting Base Sheet". Perforated base sheets to be loose laid or fully adhered with hot roofing asphalt and nailable base sheets are to be mechanically fastened granule side down.

As an option Type G2 asphalt glass mat base sheet ("GAFGLAS® #75 Base Sheet" or "Tri-Ply® #75 Base Sheet" or "GAFGLAS® #80 Ultima™ Base Sheet" or "GAFGLAS® Stratavent® Nailable Venting Base Sheet") may be substituted for Type G1 asphalt glass fiber ply sheet ("GAFGLAS® Ply 4" or "Tri-Ply® Ply 4" or "GAFGLAS® Flex Ply 6" or "Tri-Ply® Ultra-Flexible Ply 6") as the nailed base ply in the following systems.

Bottom ply or base sheet may be fully adhered with hot roofing asphalt or mechanically fastened.

Unless otherwise indicated, all insulations may be fully adhered with hot roofing asphalt or mechanically fastened.

"GAFGLAS® Flashing" or "RUBEROID®" may be used for flashing in any of the Class A, B or C systems listed below.

When "perlite" is referenced, this includes any UL Classified perlite insulation.

Crushed stones or slag are suitable alternates for gravel in any of the Class A, B or C systems listed.

Structural cement fiber building units are considered suitable to be included as a deck in the following Class A, B or C systems listed over C-15/32 or NC.

The use of gypsum board under any of the following Class A, B or C systems does not adversely affect the rating. The use of minimum 1/2-in. thick gypsum board is an acceptable alternate for minimum insulation over C-15/32 thick roof decks.

The use of polystyrene insulation board between minimum 3/4-in. thick perlite board and deck with rosin paper (perlite/rosin paper/polystyrene/perlite) is a suitable alternate for polyisocyanurate board in the following Class A, B or C systems.

Trumbull "Perma Mop" may be utilized with any of the following "Asphalt Felt Systems with Hot Roofing Asphalt".

"GAFGLAS® #80 Ultima™ Base Sheet" may be used in any of the following systems.

"GAFTEMP Permalite Recover Board" may be used in lieu of any perlite insulation in any of the following NC Classifications.

Unless otherwise indicated, any of the "Asphalt Felt Systems with Hot Roofing Asphalt" may be surfaced with "United Coatings™ FireShield MB Roof Coating" or "FireShield® MB Roof Coating" applied at a rate of 2-1/2 to 3-gal./100-ft².

Class A, B and C

Hot roofing asphalt, for use with glass felts or modified bitumen membranes.

Torch applied "RUBEROID® Heat Weld" SBS roofing membranes may be used as alternates to "RUBEROID® Mop" SBS roofing membranes in any applicable Classification.

"RUBEROID® HW 25 Smooth" may be used as an alternate to "RUBEROID® Mop Smooth" or "RUBEROID® Mop Smooth 1.5".

Class A

1. Deck: C-15/32

Incline: 3

Barrier Board (Optional): — One or more layers of minimum 1/4-in. thick Georgia-Pacific Gypsum LLC "DensDeck® Roofboard" or "DensDeck® Prime Roofboard", "DensDeck® DuraGuard™ Roofboard"; or minimum 1/4-in. thick United States Gypsum Co. "SECUROCK® Roof Board" (Type FRX-G) or "SECUROCK® Glass-Mat Roof Board" (Type SGMRX) or minimum 1/4-in. thick National Gypsum Co "DEXcell Glass Mat Roof Board" or "DEXcellFA Glass Mat Roof Board".

Primer (Optional): — Asphalt primer complying with ASTM D41/D41M, applied at a rate of 0.75 - 1.0 gal./100-ft.², GAF SA Primer applied at 0.7 - 1.0 gal./100-ft.², "EverGuard® TPO Quick Spray Adhesive LV50" spray applied in full coverage to the barrier board (approximately 2000-ft.² of installed coverage per 27-lb. canister) or "EverGuard® TPO Quick Spray Adhesive" spray applied in full coverage to the barrier board (approximately 2000-ft.² of installed coverage per 30-lb. canister).

Vapor Barrier (Optional): — One or more plies "GAF® SA Vapor Retarder", "GAF SA Vapor Retarder XL" or "GAF SA Vapor Retarder XL40", self-adhered.

Insulation: — One or more layers perlite or wood fiber or glass fiber or polyisocyanurate or urethane or perlite/polyisocyanurate composite or perlite/urethane composite or wood fiber/polyisocyanurate composite or phenolic, any thickness.

Ply Sheet: — Three or more plies Type G1 "GAFGLAS® Ply 4", "Tri-Ply® Ply 4", "GAFGLAS® Flex Ply 6", "GAFGLAS Ply 4 M", "GAFGLAS FlexPly 6 M" or "Tri-Ply® Ultra-Flexible Ply 6", fully adhered with hot roofing asphalt.

Surfacing: — Roofing gravel applied at a minimum of 400-lbs./100-ft.² and embedded into a flood coat of hot roofing asphalt applied at a minimum of 60-lbs./100-ft.².

2. Deck: C-15/32

Incline: 2

Barrier Board (Optional): — One or more layers minimum 1/4-in. thick Georgia-Pacific Gypsum LLC "DensDeck® Roofboard" or "DensDeck® Prime Roofboard" or "DensDeck® DuraGuard™ Roofboard" or minimum 1/4-in. thick United States Gypsum Co. "SECUROCK® Roof Board" (Type FRX-G) or "SECUROCK® Glass-Mat Roof Board" (Type SGMRX) or minimum 1/4-in. thick National Gypsum Co "DEXcell Glass Mat Roof Board" or "DEXcellFA Glass Mat Roof Board".

Insulation: — One or more layers perlite or wood fiber or glass fiber or polyisocyanurate or urethane or perlite/polyisocyanurate composite or perlite/urethane composite or wood fiber/polyisocyanurate composite or phenolic, any thickness.

Ply Sheet: — Three or more plies Type G1 "GAFGLAS® Ply 4" or "Tri-Ply® Ply 4" or "GAFGLAS® Flex Ply 6" or "Tri-Ply® Ultra-

Barrier Board: — Minimum 1/4-in. thick Georgia-Pacific Gypsum LLC "DensDeck® Roofboard" or "DensDeck® Prime Roofboard" or "DensDeck® DuraGuard™ Roofboard" or minimum 1/4-in. thick United States Gypsum Co. "SECUROCK® Roof Board" (Type FRX-G) or "SECUROCK® Glass-Mat Roof Board" (Type SGMRX) or minimum 1/4-in. thick National Gypsum Co "DEXcell Glass Mat Roof Board" or "DEXcellFA Glass Mat Roof Board" mechanically fastened or adhered with OMG Inc. "OlyBond Fastening System" or any UL Classified insulation adhesive with butt joints in the barrier board products staggered a minimum of 6-in. from plywood deck joints.

Base Sheet: — One ply "GAFLAS® Stratavent® Nailable Venting Base Sheet" or "GAFLAS® Stratavent® Perforated Venting Base Sheet", loose laid or Type G2 "GAFLAS® #75 Base Sheet" or "Tri-Ply #75 Base Sheet" or "GAFLAS® #80 Ultima™ Base Sheet", fully adhered with hot roofing asphalt.

Ply Sheet: — One or two plies "RUBEROID® Mop Smooth" or "RUBEROID® Mop Plus Smooth" fully adhered with hot roofing asphalt.

Membrane: — "GAFLAS® Mineral Surfaced Cap Sheet" or "Tri-Ply® BUR Granule Cap Sheet", fully adhered with hot roofing asphalt.

Coating: — "EnergyCote™ Roof Coating" or "GAF EnergyCote™ Roof Coating" or "TOPCOAT® MB Plus Coating" or "United Coatings™ Roof Mate™ MB Plus Coating" or "Bleed-Block Acrylic Base Coat" or "GAF Bleed-Block Acrylic Base Coat" applied at a rate of 2-gal./100-ft.².

20. Deck: C-15/32

Incline: 1

Base Sheet: — One ply Type G2 "GAFLAS® #75 Base Sheet" or "Tri-Ply® #75 Base Sheet" mechanically fastened.

Insulation (Optional): — Any thickness or combination: perlite or wood fiber or glass fiber or polyisocyanurate, mechanically fastened or hot mopped or adhered with OMG Inc. "OlyBond Fastening System" or any UL Classified insulation adhesive.

Base Sheet: — One or more plies "RUBEROID® 20 Smooth", "Ruberoid® 20 Plus Smooth" or "RUBEROID® HW 25 Smooth", mechanically fastened or fully adhered with hot roofing asphalt.

Cap Sheet: — Type G3 "GAFLAS® Mineral Surfaced Cap Sheet" or "Tri-Ply® BUR Granule Cap Sheet" or "GAFLAS® EnergyCap™ Mineral-Surfaced Cap Sheet".

21. Deck: NC

Incline: 2

Barrier Board (Optional): — One or more layers minimum 1/4-in. thick Georgia-Pacific Gypsum LLC "DensDeck® Roofboard" or "DensDeck® Prime Roofboard" or "DensDeck® DuraGuard™ Roofboard" or minimum 1/4-in. thick United States Gypsum Co. "SECUROCK® Roof Board" (Type FRX-G) or "SECUROCK® Glass-Mat Roof Board" (Type SGMRX) or minimum 1/4-in. thick National Gypsum Co "DEXcell Glass Mat Roof Board" or "DEXcellFA Glass Mat Roof Board".

Insulation (Optional): — One or more layers perlite or wood fiber or glass fiber or polyisocyanurate or urethane or perlite/polyisocyanurate composite or perlite/urethane composite or wood fiber/polyisocyanurate composite or phenolic, any thickness.

Base Sheet: — Two plies Type G1 "GAFLAS® Ply 4" or "Tri-Ply® Ply 4" or "GAFLAS® Flex Ply 6", "GAFLAS Ply 4 M", "GAFLAS FlexPly 6 M" or one ply Type G2 "GAFLAS® #75 Base Sheet" or "Tri-Ply® #75 Base Sheet" or "GAFLAS® #80 Ultima™ Base Sheet" mechanically fastened or fully adhered with hot roofing asphalt or one ply Type G2 "GAFLAS® Stratavent® Nailable Venting Base Sheet" or "GAFLAS® Stratavent® Perforated Venting Base Sheet" loose laid, mechanically fastened or fully adhered.

Ply Sheet: — One or more plies Type G1 "GAFLAS® Ply 4" or "Tri-Ply® Ply 4" or "GAFLAS® Flex Ply 6", "GAFLAS Ply 4 M", "GAFLAS FlexPly 6 M", fully adhered with hot roofing asphalt. **See Note Section**

Cap Sheet: — Type G3 "GAFLAS® Mineral Surfaced Cap Sheet" or "Tri-Ply® BUR Granule Cap Sheet" or "GAFLAS® EnergyCap™ Mineral-Surfaced Cap Sheet", fully adhered with hot roofing asphalt.

22. Deck: NC

Incline: 3

Base Sheet: — —GAFLAS FlexPly 6 M", "GAFLAS Ply 4 M", mechanically fastened or hot mopped. May use "Modified BUR Asphalt".

Insulation (Optional): — Perlite or glass fiber, any thickness, mechanically fastened or hot mopped. May use "Modified BUR Asphalt".

Ply Sheets: — One or more layers "GAFLAS FlexPly 6 M", "GAFLAS Ply 4 M".

Surfacing: — Gravel, crushed stone or crushed slag, in a flood coat of hot roofing asphalt.

3. Deleted.

4. Deleted.

5. Deleted.

6. Deleted.

7. Deleted.

8. Deck: C-15/32

Incline: 3/4

Existing Roof System: — Class A, B or C roof covering system to retain the existing Classification covered with:

Membrane: — "EverGuard® TPO FB Ultra" or "EverGuard® TPO Fleece-Back Membrane" or "EverGuard® TPO Fleece-Back Membrane XT" 60-mil to 80-mil or "EverGuard Extreme® TPO FB Ultra" or "EverGuard Extreme® TPO Fleece-Back Membrane" 60-mil to 80-mil, fully adhered with hot roofing asphalt or mechanically fastened.

FLUID APPLIED COATING SYSTEMS

Class A

1. Deck: NC

Incline: Unlimited

Base Coat: — "TOPCOAT® Membrane Coating", "United Coatings™ Roof Mate™ TCM Roof Coating", "TOPCOAT® Membrane WOB" or "United Coatings™ Roof Mate™ WOB Coating" or "WOB Acrylic TopCoat®" applied at a rate of 1 to 1.5-gal./100-ft.².

Intermediate Coat (Optional): — TOPCOAT® Membrane Coating", "United Coatings™ Roof Mate™ TCM Roof Coating", "TOPCOAT® Membrane WOB" or "United Coatings™ Roof Mate™ WOB Coating" or "WOB Acrylic TopCoat®" applied at a rate of 1 to 1.5-gal./100-ft.².

Top Coat: — "TOPCOAT® Membrane Coating", "United Coatings™ Roof Mate™ TCM Roof Coating", "TOPCOAT® Membrane WOB" or "United Coatings™ Roof Mate™ WOB Coating" or "WOB Acrylic TopCoat®" applied at a rate of 1 to 1.5-gal./100-ft.².

2. Deck: NC

Incline: Unlimited

Coating: — "TOPCOAT® Membrane Coating", "United Coatings™ Roof Mate™ TCM Roof Coating", "TOPCOAT® Membrane WOB" or "United Coatings™ Roof Mate™ WOB Coating" or "WOB Acrylic TopCoat®" applied at a rate of 2 to 3-gal./100-ft.².

3. Deck: NC

Incline: 3

Primer (Optional): — "UniTile LV Sealer" (Not UL Classified) applied at a rate of 1/4 gal./100-ft.².

Base Coat: — "TOPCOAT® Surface Seal SB Coating" or "United Coatings™ Surface Seal SB Roof Coating" or "Surface Seal SB Roof Coating" or "GAF Surface Seal SB Roof Coating" applied at a rate of 1 to 1-1/2 gal./100-ft.².

Mid Coat (Optional): — One or two applications "TOPCOAT® Surface Seal SB Coating" or "United Coatings™ Surface Seal SB Roof Coating" or "Surface Seal SB Roof Coating" or "GAF Surface Seal SB Roof Coating" applied at a rate of 1 to 1-1/4 gal./100-ft.².

Top Coat: — "TOPCOAT® Surface Seal SB Coating" or "United Coatings™ Surface Seal SB Roof Coating" or "Surface Seal SB Roof Coating" or "GAF Surface Seal SB Roof Coating" applied at a rate of 1 to 1-1/4 gal./100-ft.².

Last Updated on 2022-10-05

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