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ENGINEER

EVALUATE

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CONSULT

EVALUATION REPORT

GAF

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(800) 766-3411

Evaluation Report 01506.09.08-R19

FL4911-R19

Date of Issuance: 09/26/2008

Revision 19: 10/07/2021

SCOPE:

This Evaluation Report is issued under **Rule 61G20-3** and the applicable rules and regulations governing the use of construction materials in the State of Florida. The documentation submitted has been reviewed by Robert Nieminen, P.E. for use of the product under the Florida Building Code. The product described herein has been evaluated for compliance with the **7th Edition (2020) Florida Building Code** sections noted herein.

DESCRIPTION: GAF Waterproofing and Plaza Deck Systems for use in FBC non-HVHZ jurisdictions

LABELING: Labeling shall be in accordance with the requirements of the Accredited Quality Assurance Agency noted herein.

CONTINUED COMPLIANCE: This Evaluation Report is valid until such time as the named product(s) changes, the referenced Quality Assurance or production facility location(s) changes, or Code provisions that relate to the product(s) change. Acceptance of our Evaluation Reports by the named client constitutes agreement to notify NEMO ETC, LLC of any changes to the product(s), the Quality Assurance or the production facility location(s). NEMO ETC, LLC requires a complete review of its Evaluation Report relative to updated Code requirements with each Code Cycle.

ADVERTISEMENT: The Florida Product Approval Number (FL#) preceded by the words **"NEMO Evaluated"** may be displayed in advertising literature. If any portion of the Evaluation Report is displayed, then it shall be done in its entirety.

INSPECTION: Upon request, a copy of this entire Evaluation Report 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 Evaluation Report consists of pages 1 through 4, plus a 5-page Appendix.

Prepared by:

Robert J.M. Nieminen, P.E.

Florida Registration No. 59166, Florida DCA ANE1983



The facsimile seal appearing was authorized by Robert Nieminen, P.E. on 10/07/2021 This does not serve as an electronically signed document.

CERTIFICATION OF INDEPENDENCE:

1. NEMO ETC, LLC does not have, nor does it intend to acquire or will it acquire, a financial interest in any company manufacturing or distributing products it evaluates.
2. NEMO ETC, LLC is not owned, operated or controlled by any company manufacturing or distributing products it evaluates.
3. Robert Nieminen, P.E. does not have nor will acquire, a financial interest in any company manufacturing or distributing products for which the evaluation reports are being issued.
4. Robert Nieminen, P.E. does not have, nor will acquire, a financial interest in any other entity involved in the approval process of the product.
5. This is a building code evaluation. Neither NEMO ETC, LLC nor Robert Nieminen, P.E. are, in any way, the Designer of Record for any project on which this Evaluation Report, or previous versions thereof, is/was used for permitting or design guidance unless retained specifically for that purpose.

ROOFING SYSTEMS EVALUATION:
1. SCOPE:

Product Category: Roofing
Sub-Category: Waterproofing

Compliance Statement: **GAF Waterproofing and Plaza Deck Systems**, as produced by **GAF**, have demonstrated compliance with the following sections of the **7th Edition (2020) Florida Building Code** through testing in accordance with the following Standards. Compliance is subject to the Installation Requirements and Limitations / Conditions of Use set forth herein.

2. STANDARDS:

Section	Property	Standard	Year
1504.3.1	Wind resistance	FM 4474	2011
1507.6.3	Material standard	ASTM D1970	2015
1507.15.2	Material standard	ASTM D6083	2018
1507.11.2	Material standard	ASTM D6164	2011
1507.11.2	Material standard	ASTM D6222	2011
1507.13.2	Material standard	ASTM D6878	2013
TAS 110	Physical Properties	TAS 139	1995

3. REFERENCES:

Entity	Examination	Reference	Date
ERD (TST6049)	FM 4474	18031.07.02	07/24/2002
ERD (TST6049)	FM 4474	18026.03.02-R2	12/05/2007
ERD (TST6049)	FM 4474	G6040.03.07-R1	12/06/2007
ERD (TST6049)	ASTM D6164 (CA-S)	G33470.01.11	01/13/2011
ERD (TST6049)	ASTM D6222 (GA)	G40620.07.12-2	07/17/2012
ERD (TST6049)	ASTM D6164 (GA)	G40630.01.14-2A-1	01/07/2014
ERD (TST6049)	ASTM D6164 (GA)	G46160.12.14-3E	12/29/2014
ERD (TST6049)	ASTM D6164 (GA)	G40630.01.14-2B-R2	01/07/2014
ERD (TST6049)	ASTM D1970 (GA)	GAF-SC13285.03.17-1	03/08/2017
ERD (TST6049)	ASTM D6164 (GA)	GAF-SC13105.03.17-R1	03/23/2017
ERD (TST6049)	ASTM D1970 (IN)	GAF-SC16440.12.17	12/31/2017
FM Approvals (TST1867)	FM 4470/4474	3015619	03/15/2006
FM Approvals (TST1867)	FM 4470/4474	3044688	03/16/2012
FM Approvals (TST1867)	FM 4470/4474	3044862	05/11/2012
FM Approvals (TST1867)	FM 4470/4474	3061784	07/25/2018
FM Approvals (TST1867)	FM 4470/4474	3055904	10/25/2018
NEMO (TST6049)	ASTM D6222 (IN)	4S-GAF-18-001.03.19.A	3/13/2019
PRI (TST5878)	TAS 139	GAF-110-02-01	02/15/2006
PRI (TST5878)	TAS 139	GAF-122-02-01	05/07/2006
PRI (TST5878)	ASTM D6083 (MA)	GAF-082-02-01	05/07/2006
PRI (TST5878)	FM 4474	GAF-416-02-01	06/26/2013
PRI (TST5878)	ASTM D6878	GAF-422-02-01	10/22/2013
PRI (TST5878)	ASTM D6878 (IN)	GAF-425-02-01	11/11/2013
PRI (TST 5878)	ASTM D6083 (MA)	GAF-499-02-01	03/11/2014
PRI (TST5878)	FM 4474	GAF-416-02-01	07/24/2014
PRI (TST 5878)	ASTM D6083, Table 2 (MA)	GAF-498-02-01	09/16/2016
PRI (TST5878)	ASTM D6878 (PA)	GAF-904-02-01	10/09/2019
PRI (TST5878)	ASTM D6878 (UT)	GAF-889-02-01	11/01/2019
UL, LLC. (QUA9625)	Quality Assurance	Service Confirmation	06/10/2021
UL, LLC. (QUA9625)	Quality Assurance	Florida BCIS	Current

4. PRODUCT DESCRIPTION:

This Evaluation Report covers **GAF Waterproofing and Plaza Deck Systems** installed in accordance with **GAF** published installation instructions and the Limitations / Conditions of Use herein.

TABLE 1: EVALUATED WATERPROOFING COMPONENTS

Type	Product	Material Standard			Plant(s)
		Reference	Type	Grade	
APP, Smooth-Surfaced Membranes	Ruberoid® Torch Smooth	ASTM D6222	I	S	GA, IN
	Tri-Ply® APP Smooth Membrane	ASTM D6222	I	S	GA, IN
APP, Granule-Surfaced Membranes	Ruberoid® Torch Granule	ASTM D6222	I	G	GA, IN
	Tri-Ply® APP Granule Membrane	ASTM D6222	I	G	GA, IN
SBS, Smooth-Surfaced Membranes	Liberty™ SBS Self-Adhering Base/Ply Sheet	ASTM D1970	N/A	N/A	GA, IN
	Ruberoid® Mop Smooth	ASTM D6164	I	S	CA-S, GA
	Ruberoid® Mop Smooth 1.5	ASTM D6164	I	S	CA-S, GA
	Ruberoid® Mop Plus Smooth	ASTM D6164	II	S	GA
SBS, Granule-Surfaced Membranes	Ruberoid® Mop Granule	ASTM D6164	I	G	GA
	Tri-Ply® SBS Granule Cap Sheet	ASTM D6164	I	G	GA
Thermoplastic	EverGuard® TPO Fleece-Back Membrane (<i>formerly EverGuard® TPO FB Ultra</i>)	ASTM D6878	N/A	N/A	IN, PA, UT
	EverGuard Extreme® TPO Fleece-Back Membrane (<i>formerly EverGuard® Extreme TPO FB Ultra</i>)	ASTM D6878	N/A	N/A	IN
Liquid Applied	TOPCOAT® Membrane	ASTM D6083	I	N/A	MA
	United Coatings™ Roof Mate™ TCM Coating	ASTM D6083	I	N/A	MA
	Surface Seal SB Roof Coating (<i>formerly United Coatings™ Surface Seal SB Roof Coating and TOPCOAT® Surface Seal SB</i>)	ASTM D6083 (film)	N/A	N/A	MA
	FlexSeal™ Sealant	TAS 139	N/A	N/A	MA
	Spray-Grade Acrylic Flashing (<i>formerly United Coatings™ Roof Mate™ Spray Grade Flashing</i>)	TAS 139	N/A	N/A	MA
	TOPCOAT® MP-300	N/A	N/A	N/A	MA
	TPO Red Primer	N/A	N/A	N/A	MA
XR-2000 Primer (<i>formerly TOPCOAT® XR-2000 Primer</i>)	N/A	N/A	N/A	MA	

5. LIMITATIONS:

- 5.1 This is a Building Code Evaluation. Neither NEMO ETC, LLC nor Robert Nieminen, P.E. are, in any way, the Designer of Record for any project on which this Evaluation Report, or previous versions thereof, is/was used for permitting or design guidance unless retained specifically for that purpose.
- 5.2 This Evaluation Report is not for use in FBC High Velocity Hurricane Zone jurisdictions (i.e., Broward and Miami-Dade Counties).
- 5.3 This Evaluation Report pertains to above-deck roof components. Roof decks and structural members shall be in accordance with FBC requirements to the satisfaction of the Authority Having Jurisdiction.
- 5.4 This Evaluation Report does not include evaluation of fire classification. Refer to **FBC 1505** for requirements and limitations regarding roof assembly fire classification. Refer to **FBC 2603** for requirements and limitations concerning the use of foam plastic insulation.
- 5.5 This Evaluation Report does not include evaluation of roof edge termination. Refer to **FBC 1504.5** for requirements and limitations regarding edge securement for low-slope roofs.
- 5.6 Refer to **FBC 1511** for requirements and limitations regarding recover installations.

- 5.6.1 For mechanically attached components over existing roof decks, fasteners shall be tested in the existing deck for withdrawal resistance. A qualified design professional shall review the data for comparison to the minimum requirements for the system. Testing shall be in accordance with **ANSI/SPRI FX-1** or **Testing Application Standard TAS 105**.
- 5.6.2 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 in accordance with **ANSI/SPRI IA-1, ASTM E907, FM Loss Prevention Data Sheet 1-52** or **Testing Application Standard TAS 124** shall be conducted on mock-ups of the proposed new roof assembly.
- 5.6.3 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 **ASTM E907, FM Loss Prevention Data Sheet 1-52** or **Testing Application Standard TAS 124**.
- 5.7 Refer to Appendix 1 for system attachment requirements for wind load resistance.
- 5.7.1 “MDP” = Maximum Design Pressure is the result of testing for wind load resistance based on allowable wind loads, and reflects the ultimate passing pressure divided by 2 (the 2 to 1 margin of safety per **FBC 1504.9** has already been applied). Refer to **FBC 1609** for determination of design wind loads.
- 5.7.2 For mechanically attached components or partially-bonded insulation, 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 Chapter 16**. Elevated pressure zones shall employ an attachment density designed by a qualified design professional to resist the elevated pressure criteria. Commonly used methods are **ANSI/SPRI WD1, FM Loss Prevention Data Sheet 1-29, Roofing Application Standard RAS 117** and **Roofing Application Standard RAS 137**. Assemblies marked with an asterisk* carry the limitations set forth in **Section 2.2.10.1 of FM Loss Prevention Data Sheet 1-29 (February 2020)** for Zone 2/3 enhancements.
- 5.7.3 For assemblies with all components fully bonded in place, 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.
- 5.8 All components in the roof assembly shall have quality assurance audit in accordance with **F.A.C. Rule 61G20-3**. Refer to the Product Approval of the component manufacturer for components listed in Appendix 1 that are produced by a Product Manufacturer other than the report holder on Page 1 of this Evaluation Report.

6. INSTALLATION:

GAF Waterproofing and Plaza Deck Systems shall be installed in accordance with **GAF** published installation instructions, subject to the Limitations / Conditions of Use noted herein.

7. BUILDING PERMIT REQUIREMENTS:

As required by the Building Official or Authority Having Jurisdiction to properly evaluate the installation of this product.

8. MANUFACTURING PLANTS:

Contact the named QA entity for manufacturing facilities covered by **F.A.C. Rule 61G20-3** QA requirements. Refer to Section 4 herein for products and production locations having met codified material standards.

9. QUALITY ASSURANCE ENTITY:

UL, LLC – QUA9625: (613) 371-2765; Jacob.Stewart@ul.com

- THE FIVE (5) PAGES THAT FOLLOW FORM PART OF THIS EVALUATION REPORT -

APPENDIX 1: ATTACHMENT REQUIREMENTS FOR WIND UPLIFT RESISTANCE

Table	Deck	Application	Type	Description	Page
1A	Structural concrete	New or Reroof (Tear-Off)	A-1	Bonded Insulation, Bonded Waterproofing (topping slab overburden)	3
1B	Structural concrete	New or Reroof (Tear-Off)	A-1	Bonded Insulation, Bonded Waterproofing (ceramic tile overburden)	4
1C	Structural concrete	New or Reroof (Tear-Off)	F	Non-Insulated, Bonded Waterproofing	5

The following notes apply to the systems outlined herein:

- The roof system evaluation herein pertains to above-deck roof components. Roof decks and structural members shall be in accordance with FBC requirements to the satisfaction of the Authority Having Jurisdiction.
- 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.
 - Hot asphalt: Full Coverage at 25-30 lbs/square. If applying to concrete deck; deck shall be primed with ASTM D41 primer.
 - GAF LRF Adhesive M (LRF-M): Continuous 0.75 to 1-inch wide ribbons, 12-inch o.c.
 - GAF LRF Adhesive XF (LRF-XF): Continuous 0.75 to 1-inch wide ribbons, 12-inch o.c.
 - OlyBond 500 (OB500): Continuous 0.75 to 1-inch wide ribbons, 12-inch o.c. using OMG PaceCart, SpotShot or Canister delivery methods.
 - *Note: When multiple layers(s) of insulation and/or coverboard are installed in ribbon-applied adhesive, board joints shall be staggered.*
 - *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.*
- 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.
 - Hot asphalt: MDP = -240.0 psf (Min. 0.5-inch thick)
 - LRF-M: MDP = -232.5 psf (Min. 0.5-inch thick EnergyGuard Polyiso Insulation, EnergyGuard Ultra Polyiso Insulation)
 - LRF-XF or OB500: MDP = -292.5 psf (Min. 0.5-inch thick EnergyGuard Polyiso Insulation, EnergyGuard Ultra Polyiso Insulation)
 - OB500: MDP = -315.0 psf (Min. 0.5-inch thick EnergyGuard RH or RN)
 - LRF-XF or OB500: MDP = -487.5 psf (Min. 0.5-inch thick EnergyGuard RA)
- For adhered roof insulation and board-size: Unless otherwise noted, refer to Section 2.2.10.6.2 of FM Loss Prevention Data Sheet 1-29 (February 2020).
- For assemblies with all components fully bonded, 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.
- 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 in accordance 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. Field uplift testing shall be in accordance with ASTM E907, FM Loss Prevention Data Sheet 1-52 or Testing Application Standard TAS 124.
- For bonded membrane applications, unless otherwise noted, refer to the following.

MEMBRANE / ADHESIVE COMBINATIONS			
REFERENCE	LAYER	MATERIAL	APPLICATION
SBS-AA (SBS, Asphalt-Applied)	Base Ply or Ply:	One (1) ply (if Cap Ply installed) or minimum two (2) plies (if no Cap Ply installed), Ruberoid Mop Smooth 1.5; Ruberoid Mop Smooth; Ruberoid Mop Plus Smooth	Hot asphalt at 25 lbs/square.
	Cap Ply:	Ruberoid Mop Granule, Tri-Ply SBS Granule Cap Sheet	

MEMBRANE / ADHESIVE COMBINATIONS			
REFERENCE	LAYER	MATERIAL	APPLICATION
SBS-CA (SBS, Cold-Applied)	Base Ply or Ply:	One (1) ply (if Cap Ply installed) or minimum two (2) plies (if no Cap Ply installed), Ruberoid Mop Smooth 1.5; Ruberoid Mop Smooth; Ruberoid Mop Plus Smooth	Matrix 102 SBS Membrane Adhesive at 1.5 gal/sq.
	Cap Ply:	Ruberoid Mop Granule, Tri-Ply SBS Granule Cap Sheet	
APP-TA (APP, Torch-Applied)	Base Ply or Ply:	One (1) ply (if Cap Ply installed) or minimum two (2) plies (if no Cap Ply installed), Ruberoid Torch Smooth; Tri-Ply APP Smooth Membrane	Torch-applied
	Cap Ply:	Ruberoid Torch Granule, Tri-Ply APP Granule Membrane	
SBS-SA (self-adhering)	Base Ply or Ply:	Liberty SBS Self-Adhering Base/Ply Sheet	Self-adhered

8 Vapor barrier options for use over structural concrete deck followed by bonded insulation carry the following MDP limitations. The lesser of the MDP listings below vs. those in Table 1B applies.

VAPOR BARRIER OPTIONS; STRUCTURAL CONCRETE DECK; FOLLOWED BY ADHESIVE-APPLIED INSULATION PER TABLE 1B:					
OPTION #	PRIMER	VAPOR BARRIER		INSULATION ADHESIVE	MDP (PSF)
		TYPE	APPLICATION		
C-VB-1.	None	GAF SA Vapor Retarder XL	Self-adhering	LRF-M, 12-inch o.c.	-112.5
C-VB-2.	GAF SA Primer	GAF SA Vapor Retarder	Self-adhering	LRF-M, 12-inch o.c.	-202.5
C-VB-3.	None	GAF SA Vapor Retarder XL	Self-adhering	LRF-XF 12-inch o.c.	-112.5
C-VB-4.	Matrix 307 Premium Asphalt Primer or ASTM D41 primer	Ruberoid Torch Granule	Torch-applied	LRF-XF, 12-inch o.c.	-169.0
C-VB-5.	GAF SA Primer	GAF SA Vapor Retarder	Self-adhering	LRF-XF, 12-inch o.c.	-202.5
C-VB-6.	None	GAF SA Vapor Retarder XL	Self-adhering	OB500, 12-inch o.c.	-127.5
C-VB-7.	Matrix 307 Premium Asphalt Primer or ASTM D41 primer	Ruberoid Torch Smooth	Torch-applied	OB500, 12-inch o.c.	-165.0
C-VB-8.	GAF SA Primer	GAF SA Vapor Retarder	Self-adhering	OB500, 12-inch o.c.	-202.5
C-VB-9.	Matrix 307 Premium Asphalt Primer or ASTM D41 primer	Ruberoid Torch Granule	Torch-applied	OB500, 12-inch o.c.	-225.0

9 Overburden of soil and plantings (for 'garden roofs'; root barriers, filter fabric, drainage components, EPS / XPS insulation, etc.) or structural concrete topping slabs which are specified by the Designer of Record, acceptable to the Authority Having Jurisdiction, and do not form part of the load path to the waterproofing system, are permissible over the waterproofing assemblies noted herein with no adverse effect on the wind uplift performance of the waterproofing system. The Authority Having Jurisdiction may require integrity flood testing (ASTM D5957) or electric field vector mapping tests of all waterproofing systems prior to placement of overburden materials. Testing, if required by the Authority Having Jurisdiction, should be conducted by a qualified testing agency or professional

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

ACCEPTABLE ALTERNATES (INSULATION)		
Manufacturer	Listed Product	Alternate
GAF	EnergyGuard Polyiso Insulation	EnergyGuard NH Polyiso Insulation
GAF	EnergyGuard Ultra Polyiso Insulation	EnergyGuard NH Ultra Polyiso Insulation
GAF	EnergyGuard HD Polyiso Insulation	EnergyGuard NH HD Polyiso Insulation
GAF	EnergyGuard HD Plus Polyiso Insulation	EnergyGuard NH HD Plus Polyiso Insulation
GAF	EverGuard TPO Fleece-Back Membrane	EverGuard Extreme TPO Fleece-Back Membrane
GAF	GAF SA Vapor Retarder XL	GAF SA Vapor Retarder XL40
Georgia-Pacific Gypsum, LLC	"DensDeck Prime"	"DensDeck StormX Prime Roof Board"

11 "MDP" = Maximum Design Pressure is the result of testing for wind load resistance based on allowable wind loads. Refer to FBC 1609 for determination of design wind loads

**TABLE 1A: STRUCTURAL CONCRETE DECKS; NEW CONSTRUCTION OR REROOF (TEAR-OFF)
SYSTEM TYPE A-1: BONDED INSULATION, BONDED WATERPROOFING (TOPPING SLAB OVERBURDEN)**

Sys. No.	Deck (Note 1)	Prime	VB / Temp Roof	Base Insulation		Top Insulation		Waterproofing System (Note 7)		Wearing Course or Over Burden	MDP (psf)
				Type	Attach (Notes 2,3,4)	Type	Attach (Notes 2,3,4)	Base Ply(s)	Cap Ply		
C-1.	Structural concrete	Matrix™ 307 Premium Asphalt Primer or ASTM D41	None	Min. 1.5-inch EnergyGuard Polyiso Insulation, EnergyGuard Ultra Polyiso Insulation, EnergyGuard RA, EnergyGuard RH, EnergyGuard RN	Hot asphalt	Min. 0.5-inch DensDeck	Hot asphalt	SBS-AA or APP-TA	(Optional) SBS-AA or APP-TA	Drainage board and structural concrete topping slab	N/A
C-2.	Structural concrete	(Optional) Matrix™ 307 Premium Asphalt Primer or ASTM D41	None	Min. 1.5-inch EnergyGuard Polyiso Insulation, EnergyGuard Ultra Polyiso Insulation, EnergyGuard RA, EnergyGuard RH, EnergyGuard RN	LRF-M, LRF-XF or OB500	Min. 0.5-inch DensDeck	LRF-M, LRF-XF or OB500	SBS-AA or APP-TA	(Optional) SBS-AA or APP-TA	Drainage board and structural concrete topping slab	N/A
C-3.	Structural concrete	ASTM D41 primer, Matrix™ 307 Premium Asphalt Primer or GAF SA Primer	GAF SA Vapor Retarder	Min. 1.5-inch EnergyGuard Polyiso Insulation, EnergyGuard Ultra Polyiso Insulation, EnergyGuard RA, EnergyGuard RH, EnergyGuard RN	LRF-M, LRF-XF or OB500	Min. 0.5-inch DensDeck	LRF-M, LRF-XF or OB500	SBS-AA or APP-TA	(Optional) SBS-AA or APP-TA	Drainage board and structural concrete topping slab	N/A
C-4.	Structural concrete	ASTM D41 primer, Matrix™ 307 Premium Asphalt Primer or GAF SA Primer	GAF SA Vapor Retarder	Min. 0.5-inch EnergyGuard Polyiso Insulation, EnergyGuard Ultra Polyiso Insulation, EnergyGuard RH, EnergyGuard RN; min. 1-inch EnergyGuard RA	LRF-M, LRF-XF or OB500	(Optional) Additional layer(s) base insulation	LRF-M, LRF-XF or OB500	Base Ply: SBS-SA Ply: (Optional if using Cap Ply) APP-TA	(Optional if using Ply) APP-TA	Drainage board and structural concrete topping slab	N/A
C-5.	Structural concrete	ASTM D41 primer, Matrix™ 307 Premium Asphalt Primer or GAF SA Primer	GAF SA Vapor Retarder	Min. 0.5-inch EnergyGuard Polyiso Insulation, EnergyGuard Ultra Polyiso Insulation, EnergyGuard RH, EnergyGuard RN; min. 1-inch EnergyGuard RA	LRF-M, LRF-XF or OB500	Min. 0.5-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board	LRF-M, LRF-XF or OB500	Base Ply: SBS-SA Ply: (Optional) if using Cap Ply) APP-TA	(Optional if using Ply): APP-TA	Drainage board and structural concrete topping slab	N/A

**TABLE 1B: STRUCTURAL CONCRETE DECKS; NEW CONSTRUCTION OR REROOF (TEAR-OFF)
SYSTEM TYPE A-1: BONDED INSULATION, BONDED WATERPROOFING (CERAMIC TILE OVERBURDEN)
REFER TO NOTE 8 FOR VAPOR BARRIER OPTIONS**

System No.	Deck (Note 1)	Base Insulation		Top Insulation		Waterproofing System			Wearing Course or Over Burden (Note 9)	MDP (psf)
		Type	Attach (Notes 2,3,4)	Type	Attach (Notes 2,3,4)	Membrane	Primer	Coating		
C-6.	Structural concrete	Min. 1-inch EnergyGuard Polyiso Insulation, EnergyGuard Ultra Polyiso Insulation or EnergyGuard RH	LRF-M, LRF-XF or OB500	Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	LRF-M, LRF-XF or OB500	EverGuard TPO Fleece-Back Membrane in LRF-M at 6-inch o.c. (<i>roll into place, creating full coverage</i>)	EverGuard® TPO Base Coat or TPO Red Primer 0.5 gal/sq.	Surface Seal SB Roof Coating at 1 gal/sq.	Exterior grade ceramic tiles (ANSI A137.1) embedded in FlexBond in accordance with ANSI A108.5 and Custom Building Products instructions	-337.5
C-7.	Structural concrete	Min. 1-inch EnergyGuard Polyiso Insulation, EnergyGuard Ultra Polyiso Insulation or EnergyGuard RH	LRF-M, LRF-XF or OB500, 6-inch o.c.	Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	LRF-M, LRF-XF or OB500, 6-inch o.c.	EverGuard TPO Fleece-Back Membrane in LRF-M at 6-inch o.c. (<i>roll into place, creating full coverage</i>)	EverGuard® TPO Base Coat or TPO Red Primer 0.5 gal/sq.	Surface Seal SB Roof Coating at 1 gal/sq.	Exterior grade ceramic tiles (ANSI A137.1) embedded in FlexBond in accordance with ANSI A108.5 and Custom Building Products instructions	-412.5

**TABLE 1C: STRUCTURAL CONCRETE DECKS; NEW CONSTRUCTION OR REROOF (TEAR-OFF)
SYSTEM TYPE F: NON-INSULATED, WATERPROOFING**

System No.	Deck (Note 1)	Primer	Waterproofing System (Note 7)		Wearing Course or Over Burden (Note 9)	MDP (psf)
			Base Ply(s)	Cap Ply		
C-8.	Structural concrete	Matrix™ 307 Premium Asphalt Primer or ASTM D41	SBS-AA, APP-TA or SBS-CA	(Optional) SBS-AA, APP-TA or SBS-CA	Drainage board and structural concrete topping slab	N/A
C-9.	Structural concrete	Matrix™ 307 Premium Asphalt Primer or ASTM D41	One or more SBS-AA	SBS-AA	Exterior grade ceramic plaza deck walking tiles embedded in Custom Building Products thin-set mortar applied with a ¼-inch notched trowel in accordance with ANSI A108.5	-447.5
C-10.	Structural concrete	Matrix™ 307 Premium Asphalt Primer or ASTM D41	One or more APP-TA	APP-TA	Exterior grade ceramic plaza deck walking tiles embedded in Custom Building Products thin-set mortar applied with a ¼-inch notched trowel in accordance with ANSI A108.5	-537.5
C-11.	Structural concrete	None	Two or more coats TOPCOAT® Membrane or United Coatings™ Roof Mate TCM Coating at 1.25 gallons/square per coat to min. wet mil thickness of 20 mils for each coat. Allow 24 hours to cure and inspect for and repair defects.	One or more finish coats TOPCOAT® Membrane or United Coatings™ Roof Mate TCM Coating at 1.75 gallons/square per coat to min. wet mil thickness of 28 mils per coat.	None	-576.0
C-12.	Structural concrete	None	Three coats TOPCOAT® Membrane or United Coatings™ Roof Mate TCM Coating at 1 gallons/square per coat to min. wet mil thickness of 16 mils for each coat. Allow 24 hours to cure and inspect for and repair defects.		Exterior grade ceramic plaza deck walking tiles embedded in Custom Building Products Polymer Modified Portland Cement applied with a ¼-inch notched trowel in accordance with ANSI A108.5	-607.5
C-13.	Structural concrete	None	Two or more coats Surface Seal SB Roof Coating at 1 gallons/square per coat to min. wet mil thickness of 16 mils for each coat. Allow 24 hours to cure and inspect for and repair defects.		Exterior grade ceramic plaza deck walking tiles embedded in Custom Building Products Polymer Modified Portland Cement applied with a ¼-inch notched trowel in accordance with ANSI A108.5	-591.0