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EVALUATE

TEST

CONSULT

EVALUATION REPORT BY FLORIDA P.E.

GAF

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Evaluation Report 01506.04.08-R26

FL10626-R26 (NON-HVHZ)

Date of Issuance: 04/25/2008

Revision 26: 02/06/2023

SCOPE:

This Evaluation Report is issued under **F.A.C. 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 Roof Underlayments for use in FBC non-HVHZ jurisdictions

LABELING: Labeling shall be in accordance with the requirements of the Accredited Quality Assurance Agency noted herein and **FBC 1507.1.1.**

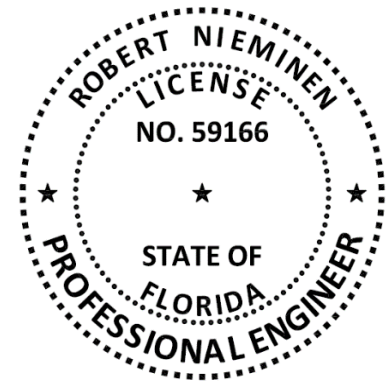
CONTINUED COMPLIANCE: This Evaluation Report is valid until such time as the named product(s) changes, the referenced Quality Assurance or production facility location(s) changes, or Code provisions that relate to the product(s) change. Acceptance of our Evaluation Reports by the named client constitutes 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 P.E. 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 10.

Prepared by:



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 COMPONENT EVALUATION:
1. SCOPE:

Product Category: Roofing
Sub-Category: Underlayment
Product Approval Method: Method 1, Option D – Codified Material, Evaluation by Engineer
Compliance Statement: **GAF Roof Underlayments**, 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 of Use](#) set forth herein.

2. STANDARDS:

SECTION	PROPERTY	STANDARD	YEAR
1504.3.1	Wind resistance	FM 4474	2011
1504.7	Impact resistance	ASTM D3746	2015
1507.1.1, 1507.2.4, 1507.2.9.2 / R905.1.1, R905.2.8.2	Material standard	ASTM D1970	2015
1507.1.1.1(2&3, Exception), 1507.1.1.1(5) / R905.1.1.1(2&3, Exception), R905.1.1.1(5)	Tear Strength	ASTM D4533	2015
1507.1.1.1(2&3, Exception), 1507.1.1.1(5) / R905.1.1.1(2&3, Exception), R905.1.1.1(5)	Tensile strength	ASTM D5035	2011
1507.1.1.1(5) / R905.1.1.1(5)	Liquid water transmission	ASTM D4869	2016
1507.1.1 / R905.1.1	Material standard	ASTM D6757	2016
1507.3.3, R905.3.3	Material standard	FRSA/TRI, Sixth Edition	2018
1507.11.2	Material standard	ASTM D6164	2011
TAS 110	Accelerated Weathering	ASTM D4798	2011

3. REFERENCES:

ENTITY	EXAMINATION	REFERENCE	DATE
ERD (TST6049)	ASTM D6164 (GA)	G40630.01.14-2B-R2	01/07/14
ERD (TST6049)	ASTM D6164 (GA)	G46160.09.14-3A	09/09/14
ERD (TST6049)	ASTM D1970 (GA)	GAF-SC13285.03.17-3	03/01/17
ERD (TST6049)	ASTM D1970 (GA)	GAF-SC13285.03.17-4	03/01/17
ERD (TST6049)	ASTM D1970 (GA)	GAF-SC13285.03.17-1	03/08/17
ERD (TST6049)	ASTM D1970 (IN)	GAF-SC16440.12.17	12/31/17
Intertek (TST1558)	ASTM D4869 (Dadra, India)	F8549.02-106-18	11/08/16
NEMO (TST6049)	Physical Properties (ON)	4q-GAF-19-SSMBB-03.A	05/13/19
NEMO (TST6049)	ASTM D1623	4p-DOW-19-SSLAP-01.A-R2	10/01/19
NEMO (TST6049)	ASTM D1970	4j-FTS-20-SSUDL-01.A	12/01/20
NEMO (TST6049)	ASTM D1970	4j-GAF-20-SSUDL-01.A	12/22/20
NEMO (TST6049)	ASTM D4798, TAS 103	4j-GAF-20-SSUDL-02.A	03/15/21
NEMO (TST6049)	ASTM D4798	4j-FTS-21-SSUDL-02.A	06/09/21
NEMO (TST6049)	ASTM D4798, ASTM D3746	4j-GAF-21-SSUDL-02.A	11/19/21
NEMO (TST6049)	ASTM D1623 & FRSA/TRI (Slippage)	4j-GAF-22-SSUDL-01.A	08/09/22
NEMO (TST6049)	ASTM D1970, D4798	4j-GAF-22-SSUDL-02.A	08/29/22
NEMO (TST6049)	ASTM D1970, D4798	4j-GAF-22-SSUDL-05.A	01/03/23
NEMO (TST6049)	ASTM D226 (OK), Service Confirm	4j-GAF-23-SSUDL-01	01/26/23
PRI (TST5878)	Wind Uplift	GAF-434-02-01	09/16/13
PRI (TST5878)	Wind Uplift	GAF-434-02-03	09/16/13
PRI (TST5878)	Wind Uplift	GAF-434-02-04	09/16/13
PRI (TST5878)	ASTM D4533 (various)	GAF-818-02-01	12/05/17
PRI (TST5878)	ASTM D1970 (AL)	MSA-047-02-01	04/11/18
PRI (TST5878)	ASTM D4533 (Dadra, India)	GAF-847-02-01	06/04/18
PRI (TST5878)	ASTM D4533 (Dadra, India)	GAF-914-02-01	04/10/19
PRI (TST5878)	ASTM D4533, D5035 (VA)	376T0012	07/15/19
PRI (TST5878)	ASTM D4533 (Parzai, India)	376T0018	07/31/19

ENTITY	EXAMINATION	REFERENCE	DATE
PRI (TST5878)	ASTM D4533 (Umerkui Kilvani, India)	376T0018	07/31/19
PRI (TST5878)	ASTM D1970 (AR)	376T0032	10/22/19
PRI (TST5878)	ASTM D4533 (Gujarat, India)	376T0058	02/18/20
PRI (TST5878)	ASTM D226 (S-CA)	376T0054	02/18/20
PRI (TST5878)	ASTM D5035 (various)	376T0103	09/11/20
PRI (TST5878)	ASTM D4533, D5035 (Rajasthan, India)	376T0111	12/22/20
PRI (TST5878)	ASTM D4533, D5035 (Gujarat, India)	376T0113	12/22/20
PRI (TST5878)	ASTM D5035 (Gujarat, India)	376T0146	03/11/21
PRI (TST5878)	ASTM D4533, D5035 (Rajasthan, India)	376T0161	05/07/21
PRI (TST5878)	ASTM D226, Type II	376T0192	09/16/21
PRI (TST5878)	TAS 114(C)	376T0310	07/19/22
PRI (TST5878)	ASTM D1970 (IN)	376T0342	12/05/22
NEMO	Traceability	FBC Cross-Listing	04/22/20
NEMO	Traceability	FBC Cross-Listing	04/08/21
UL, LLC (QUA9625)	Quality Control	Service Confirmation (AL)	05/04/20
UL, LLC (QUA9625)	Quality Control	Service Confirmation (various)	07/12/22
UL, LLC (QUA9625)	Quality Control	Florida BCIS	Current

4. PRODUCT DESCRIPTION:

TABLE 1: EVALUATED UNDERLAYMENTS		
PRODUCT	MATERIAL STANDARD	PLANT(S)
GAF Extended Dry-In Membrane	ASTM D1970 and FRSA/TRI 09-18	Langley, BC Canada
LIBERTY™ SBS Self-Adhering Base/Ply Sheet	ASTM D1970	Mt. Vernon, IN Savannah, GA
StormGuard® Film-Surfaced Leak Barrier	ASTM D1970 (Table 1) ¹	Mt. Vernon, IN Savannah, GA
WeatherWatch® Mineral-Surfaced Leak Barrier	ASTM D1970	Arkadelphia, AR Mt. Vernon, IN Savannah, GA Stockton, CA Tuscaloosa, AL
Deck-Armor™ Premium Breathable Roof Deck Protection	1507.1.1.1(2&3, Exception) / R905.1.1.1(2&3, Exception)	Dadra, India
FeltBuster® Synthetic Roofing Felt	1507.1.1.1(2&3, Exception), 1507.1.1.1(5) / R905.1.1.1(2&3, Exception), R905.1.1.1(5)	Dadra, India Gujarat, India (CPP) Rajasthan, India (MIP) Rajasthan, India Richmond, VA Spartanburg, SC
Shingle-Mate® Roof Deck Protection	ASTM D226, Type II (Table 1)	Pryor, OK Shafter, CA
StormSafe™ Anchor Sheet	1507.1.1.1(2&3, Exception) / R905.1.1.1(2&3, Exception)	North Bay, ON
Tiger Paw™ Premium Roof Deck Protection	1507.1.1.1(2&3, Exception) / R905.1.1.1(2&3, Exception)	Dadra, India Gujarat, India Parzai, India Umerkui Kilvani, India

¹ StormGuard® Film-Surfaced Leak Barrier has been found through comparative testing to have a lesser coefficient of friction than ASTM D226 roofing felt when tested at standard laboratory conditions. Agreement between purchaser and seller, as set forth in Section 4.3, Note 1 of ASTM D1970-15, should be established as to slip resistance.

TABLE 1: EVALUATED UNDERLAYMENTS		
PRODUCT	MATERIAL STANDARD	PLANT(S)
VersaShield® Fire-Resistant Roof Deck Protection	ASTM D226, Type II	Conover, NC
Ruberoid® Mop Granule	ASTM D6164 FRSA/TRI 09-18	Savannah, GA
Ruberoid® Mop Granule FR	ASTM D6164 FRSA/TRI 09-18	Savannah, GA

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 **GAF Roof Underlayments** may be used with any prepared roof cover where the product is specifically referenced within FBC approval documents. If not listed, a request may be made to the Authority Having Jurisdiction for approval based on this evaluation combined with supporting data for the prepared roof covering.
- 5.6 Allowable Roof Covers:

TABLE 2: ROOF COVER OPTIONS								
FBC NON-HVHZ:	<u>1507.2</u>	<u>1507.3</u>		<u>1507.4 & 1507.5</u>		<u>1507.7</u>	<u>1507.8 & 1507.9</u>	
UNDERLAYMENT	ASPHALT SHINGLES	CLAY AND CONCRETE TILE		METAL		SLATE OR SLATE-TYPE SHINGLES	WOOD	
		MECHANICAL ATTACH	ADHESIVE-SET	PANELS	SHINGLES		SHINGLES	SHAKES
GAF Extended Dry-In Membrane	Yes	Yes	No	Yes	Yes	Yes	Yes (joint strips, 1507.1.1.3 / R905.1.1.3)	Yes (joint strips, 1507.1.1.3 / R905.1.1.3)
LIBERTY™ SBS Self-Adhering Base/Ply Sheet	Yes	No	No	No	No	No	Yes (joint strips, 1507.1.1.3 / R905.1.1.3)	Yes (joint strips, 1507.1.1.3 / R905.1.1.3)
StormGuard® Film-Surfaced Leak Barrier	Yes	No	No	Yes	Yes	Yes	Yes (joint strips, 1507.1.1.3 / R905.1.1.3)	Yes (joint strips, 1507.1.1.3 / R905.1.1.3)
WeatherWatch® Mineral-Surfaced Leak Barrier	Yes	No	No	No	No	No	Yes (joint strips, 1507.1.1.3 / R905.1.1.3)	Yes (joint strips, 1507.1.1.3 / R905.1.1.3)
Deck-Armor™ Premium Breathable Roof Deck Protection	Yes	No	No	Yes	Yes	Yes	No	No
FeltBuster® Synthetic Roofing Felt	Yes	No	No	No	No	No	No	No
Shingle-Mate® Roof Deck Protection	Yes	No	No	No	No	No	No	No
Tiger Paw™ Premium Roof Deck Protection	Yes	No	No	Yes	Yes	Yes	No	No

TABLE 2: ROOF COVER OPTIONS								
FBC NON-HVHZ:	1507.2	1507.3		1507.4 & 1507.5		1507.7	1507.8 & 1507.9	
UNDERLAYMENT	ASPHALT SHINGLES	CLAY AND CONCRETE TILE		METAL		SLATE OR SLATE-TYPE SHINGLES	WOOD	
		MECHANICAL ATTACH	ADHESIVE-SET	PANELS	SHINGLES		SHINGLES	SHAKES
VersaShield® Fire-Resistant Roof Deck Protection	Yes	No	No	No	No	No	No	No
Ruberoid® Mop Granule	No	Yes (Cap Sheet in 2-ply system)	Yes (Cap Sheet in 2-ply system) (Table 2A)	No	No	No	No	No
Ruberoid® Mop Granule FR	No	Yes (Cap Sheet in 2-ply system)	Yes (Cap Sheet in 2-ply system) (Table 2A)	No	No	No	No	No

5.6.1 Adhesive-set is limited to use of following underlayment / tile-adhesive combinations.

TABLE 2A: ALLOWABLE UNDERLAYMENT / TILE-ADHESIVE COMBINATIONS ²		
UNDERLAYMENT	ADHESIVE	FBC
Ruberoid® Mop Granule; Ruberoid® Mop Granule FR	DAP Global “Touch ‘n Seal® Storm Bond® Low GWP Adhesive”	FL14506
	DAP Global “Touch ‘n Seal® Storm Bond® 2 Roof Tile Adhesive Low GWP”	FL14506
	Dupont de Nemours “Tile Bond™ Roof Tile Adhesive”	FL22525
	ICP Construction “Polyset® AH-160”	FL6332
	ICP Construction “APOC Polyset® RTA-1”	FL6276

5.7 Allowable Substrates:

TABLE 3: SUBSTRATE OPTIONS FOR ADHERED UNDERLAYMENTS			
UNDERLAYMENT	APPLICATION	PRIMER	SUBSTRATES
GAF Extended Dry-In Membrane	self-adhering	None	plywood
LIBERTY™ SBS Self-Adhering Base/Ply Sheet	self-adhering	(Optional) ASTM D41	plywood
StormGuard® Film-Surfaced Leak Barrier			
Weather Watch® Mineral-Surfaced Leak Barrier			
LIBERTY™ SBS Self-Adhering Base/Ply Sheet	self-adhering	None	ASTM D226 felt, Type II
StormGuard® Film-Surfaced Leak Barrier			
Weather Watch® Mineral-Surfaced Leak Barrier			
LIBERTY™ SBS Self-Adhering Base/Ply Sheet	self-adhering	ASTM D41	metal (flashing metal, valley metal, etc.)
StormGuard® Film-Surfaced Leak Barrier			
Weather Watch® Mineral-Surfaced Leak Barrier			
Ruberoid® Mop Granule	hot asphalt	ASTM D41	structural concrete
Ruberoid® Mop Granule FR			
Ruberoid® Mop Granule	hot asphalt	None	ASTM D226, Type II felt, GAFGLAS® #80 Ultima™ Base Sheet or Ruberoid® 20 Smooth
Ruberoid® Mop Granule FR			

² Refer to Tile Manufacturer’s or Adhesive Manufacturer’s Florida Product Approval for Overturning Moment Resistance Performance.

5.8 **Attachment Limitations:**

5.8.1 For use under mechanically attached NON-TILE prepared roof coverings, attachment shall be in accordance with the manufacturer’s installation instructions, but – for mechanically attached underlayments or base sheets - not less than **FBC 1507.1.1** or **R905.1.1**.

5.8.2 For use under tile roof systems, attachment shall be in accordance with the manufacturer’s installation instructions, but – for mechanically attached base sheets - not less than:

- [FRSA/TRI Florida High Wind Concrete and Clay Roof Tile Installation Manual](#), Sixth Edition, Appendix A, Table 1 (for Two-Ply Asphalt Applied Hot Mop Underlayment)
- or
- [Table 4A](#) or [Table 4B](#) herein (for other underlayment systems).

5.8.3 **Wind Resistance for Underlayment Systems in Tile Roof Applications:**

The following wind uplift limitations apply to underlayment systems that are not prescriptive in the [FRSA/TRI Florida High Wind Concrete and Clay Roof Tile Installation Manual](#), Sixth Edition. The 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).

5.8.3.1 **Direct-to-Deck:**

The maximum design pressure for the selected assembly shall meet or exceed that required under [FRSA/TRI Florida High Wind Concrete and Clay Roof Tile Installation Manual](#), Sixth Edition, Appendix A, Table 1A or the critical (highest) design pressure determined in accordance with **FBC 1609** or **FBC Residential Chapter 3**.

TABLE 4A: ALLOWABLE DESIGN PRESSURES, DIRECT-TO-DECK UNDERLAYMENT IN TILE ROOF APPLICATIONS				
SYSTEM No.	DECK	BASE PLY	CAP PLY	DESIGN PRESSURE (PSF)
1	Min. 15/32-inch PS 1-09, CDX plywood	None	GAF Extended Dry-In Membrane, self-adhered and back-nailed within the selvedge-edge side laps using corrosion resistant 12 ga. x 1¼” ring shank nails through 32 ga., 1-5/8” diameter tin caps or corrosion resistant 1-inch diameter metal cap nails, max. 12-inch o.c.	-45.0
2	Min. 2,500 psi structural concrete	GAFGLAS #75 Base Sheet, Tri-Ply #75 Base Sheet, GAFGLAS #80 Ultima Base Sheet, GAFGLAS Ply 4, Tri-Ply Ply 4 or GAFGLAS Flex Ply 6 applied in full mopping of ASTM D312, Type IV hot asphalt at 20 to 25 lbs/square	Ruberoid® Mop Granule or Ruberoid® Mop Granule FR applied in full mopping of ASTM D312, Type IV hot asphalt at 20 to 25 lbs/square, and back-nailed in accordance with GAF installation instructions, max. 12-inch o.c.	-442.5

5.8.3.2 **Mechanically-Attached Base Sheet:**

The maximum design pressure for the selected assembly shall meet or exceed that required under [FRSA/TRI Florida High Wind Concrete and Clay Roof Tile Installation Manual](#), Sixth Edition, Appendix A, Table 1A or the critical (highest) design pressure determined in accordance with **FBC 1609** or **FBC Residential Chapter 3**.

Alternatively, the maximum design pressure for the selected assembly shall meet or exceed at least the Zone 1 design pressure determined in accordance with **FBC 1609** or **FBC Residential Chapter 3**. 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 and [Roofing Application Standard](#) RAS 117. Assemblies marked with an asterisk* carry the limitations set forth in Section 2.2.10.1 of [FM Loss Prevention Data Sheet](#) 1-29 for enhancements.

TABLE 4B: ALLOWABLE DESIGN PRESSURES, 2-PLY UNDERLAYMENT SYSTEMS IN TILE ROOF APPLICATIONS				
SYSTEM No.	DECK	BASE SHEET	CAP PLY	DESIGN PRESSURE (PSF)
3	Min. 19/32-inch plywood	GAFGLAS® #80 Ultima™ Base Sheet or Ruberoid® 20 Smooth mechanically attached with 12 ga., min. 1.25-inch long ring shank nails through 32 ga., 1-5/8-inch diameter tin caps spaced 9-inch o.c. at the min. 4-inch wide side laps and 9-inch o.c. at two (2), equally spaced, staggered center rows in the field of the sheet	Ruberoid® Mop Granule or Ruberoid® Mop Granule FR applied in full mopping of ASTM D312, Type IV hot asphalt at 20 to 25 lbs/square, and back-nailed in accordance with GAF installation instructions, max. 12-inch o.c.	-45.0
4	Min. 19/32-inch plywood	GAFGLAS® #80 Ultima™ Base Sheet or Ruberoid® 20 Smooth mechanically attached with 12 ga., min. 1.25-inch long ring shank nails through 32 ga., 1-5/8-inch diameter tin caps spaced 8-inch o.c. at the min. 4-inch wide side laps and 8-inch o.c. at three (3), equally spaced, staggered center rows in the field of the sheet	Ruberoid® Mop Granule or Ruberoid® Mop Granule FR applied in full mopping of ASTM D312, Type IV hot asphalt at 20 to 25 lbs/square, and back-nailed in accordance with GAF installation instructions, max. 12-inch o.c.	-75.0
5	Min. 19/32-inch plywood	GAFGLAS® #80 Ultima™ Base Sheet or Ruberoid® 20 Smooth mechanically attached with 11 ga., min. 1.25-inch long ring shank nails through 32 ga., 1-5/8-inch diameter tin caps spaced 4-inch o.c. at the min. 2-inch wide side laps and 4-inch o.c. at four (4), equally spaced center rows in the field of the sheet	Ruberoid® Mop Granule or Ruberoid® Mop Granule FR applied in full mopping of ASTM D312, Type IV hot asphalt at 20 to 25 lbs/square, and back-nailed in accordance with GAF installation instructions, max. 12-inch o.c.	-97.5

5.9 Exposure Limitations:

TABLE 5: EXPOSURE LIMITATIONS		
UNDERLAYMENT	PREPARED ROOF COVER INSTALLATION TYPE	MAXIMUM EXPOSURE (DAYS)
Deck-Armor™ Premium Breathable Roof Deck Protection, FeltBuster® Synthetic Roofing Felt, Shingle-Mate® Roof Deck Protection, StormSafe™ Anchor Sheet, Tiger Paw™ Premium Roof Deck Protection, VersaShield® Fire-Resistant Roof Deck Protection and LIBERTY™ SBS Self-Adhering Base/Ply Sheet	Mechanically attached	30
WeatherWatch® Mineral-Surfaced Leak Barrier	Mechanically attached	60
StormGuard® Film-Surfaced Leak Barrier	Mechanically attached	90
GAF Extended Dry-In Membrane	Mechanically attached	360
Ruberoid® Mop Granule and Ruberoid® Mop Granule FR	Adhesive-set tile roof system	180
	Mechanically attached	UNLIMITED

5.10 Tile Slippage Limitations:

When loading roof tiles on the underlayment in direct-deck tile roof assemblies, the maximum roof slope shall be as follows. Slopes in excess of these limitations require the use of battens or loading boards during loading of the roof tiles, in which case the maximum staging method is a 10-tile stack.

TABLE 6: TILE SLIPPAGE LIMITATIONS FOR DIRECT-DECK TILE INSTALLATIONS			
UNDERLAYMENT	TILE PROFILE	STAGING METHOD	MAXIMUM STAGING SLOPE
GAF Extended Dry-In Membrane	Flat or Lugged	10-tile stack	4:12
	Flat or Lugged	6-tile stack (4 over 2)	7:12
Ruberoid® Mop Granule	Flat	Max. 10-tile stack	4:12
	Lugged	battens or loading-boards required	N/A
Ruberoid® Mop Granule FR	Flat or Lugged	battens or loading-boards required	N/A

5.11 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 mentioned herein that are produced by a Product Manufacturer other than the report holder on [Page 1](#) of this Evaluation Report.

6. INSTALLATION:

6.1 **GAF Roof Underlayments** shall be installed in accordance with **GAF** published installation instructions subject to the [Limitations of Use](#) set forth herein and the specifics noted below.

6.1.1 Consult GAF requirements for back-nailing at slopes 2:12 or greater.

6.2 Re-fasten any loose decking panels, and check for protruding nail heads. Sweep the substrate thoroughly to remove any dust and debris prior to application and prime the substrate (if applicable).

6.3 Deck-Armor™ Premium Breathable Roof Deck Protection or Tiger Paw™ Premium Roof Deck Protection:

6.3.1 Shall be installed in compliance with requirements for a synthetic underlayment in **FBC 1507.1.1.1(2, Exception) or 1507.1.1.1(3, Exception) or FBC Residential R905.1.1.1(2, Exception) or R905.1.1.1(3, Exception)** for the type of prepared roof covering to be installed, and the manufacturer’s installation instructions. FBC requirements take precedence over the manufacturer’s installation instructions.

6.4 FeltBuster® Synthetic Roofing Felt:

6.4.1 Shall be installed in compliance with requirements for a synthetic underlayment in **FBC 1507.1.1.1(2, Exception), 1507.1.1.1(3, Exception) or 1507.1.1.1(5) or FBC Residential R905.1.1.1(2, Exception), R905.1.1.1(3, Exception) or R905.1.1.1(5)** for the type of prepared roof covering to be installed, and the manufacturer’s installation instructions. FBC requirements take precedence over the manufacturer’s installation instructions.

6.5 StormSafe™ Anchor Sheet:

6.5.1 StormSafe™ Anchor Sheet is limited to use as a mechanically attached base layer in 2-ply underlayment systems.

6.5.2 Shall be installed in compliance with requirements for a synthetic underlayment in **FBC 1507.1.1.1(2, Exception) or 1507.1.1.1(3, Exception) or FBC Residential R905.1.1.1(2, Exception) or R905.1.1.1(3, Exception)** for the type of prepared roof covering to be installed, and the manufacturer’s installation instructions. FBC requirements take precedence over the manufacturer’s installation instructions.

6.5.3 One the same day, install LIBERTY™ SBS Self-Adhering Base/Ply; StormGuard® Film-Surfaced Leak Barrier or WeatherWatch® Mineral-Surfaced Leak Barrier over the StormSafe™ Anchor Sheet.

6.6 Shingle-Mate® Roof Deck Protection:

6.6.1 Shall be installed in compliance with requirements for an approved mechanically attached underlayment (ASTM D226, Type II) in **FBC Table 1507.1.1.1 or FBC Residential Table R905.1.1.1** for the type of prepared roof covering to be installed, and the manufacturer’s installation instructions. FBC requirements take precedence over the manufacturer’s installation instructions.

6.7 VersaShield® Fire-Resistant Roof Deck Protection:

6.7.1 Shall be installed in compliance with requirements for an approved mechanically attached underlayment (ASTM D6757) in **FBC Table 1507.1.1.1** or **FBC Residential Table R905.1.1.1** for the type of prepared roof covering to be installed, and the manufacturer’s installation instructions. FBC requirements take precedence over the manufacturer’s installation instructions.

6.8 LIBERTY™ SBS Self-Adhering Base/Ply Sheet, StormGuard® Film-Surfaced Leak Barrier or WeatherWatch® Mineral-Surfaced Leak Barrier:

6.8.1 Shall be installed in compliance with requirements for an approved self-adhering underlayment (ASTM D1970) in **FBC 1507.1.1.1** or **1507.1.1.3** or **FBC Residential R905.1.1.1** or **R905.1.1.3** for the type of prepared roof covering to be installed, and the manufacturer’s installation instructions.

6.8.2 Back-nailing is required. Back-nailing shall consist of Approved cap nails spaced max. 18-inch o.c., encapsulated within min. 4-inch side laps.

6.8.3 When installed over a mechanically attached, FBC Approved ASTM D226 Type II felt, the felt shall be fastened in accordance with **FBC 1507.1.1** or **R905.1.1**.

6.8.4 **LIBERTY™ SBS Self-Adhering Base/Ply Sheet, StormGuard® Film-Surfaced Leak Barrier or WeatherWatch® Mineral-Surfaced Leak Barrier** may be installed as a secondary water barrier using minimum 4-inch wide rolls to seal plywood deck joints prior to installation of the primary underlayment system.

6.9 GAF Extended Dry-In Membrane:

6.9.1 Non-Tile Applications:

Shall be installed in compliance with requirements for an approved self-adhering underlayment (ASTM D1970) in **FBC 1507.1.1.1** or **1507.1.1.3** or **FBC Residential R905.1.1.1** or **R905.1.1.3** for the type of prepared roof covering to be installed, and the manufacturer’s installation instructions.

Back-nailing is required. Back-nailing shall consist of Approved cap nails spaced max. 18-inch o.c., encapsulated within min. 4-inch side laps.

6.9.2 Mechanically Attached Tile Applications:

Shall be installed in compliance with the requirements for Self-Adhered Membrane set forth in [FRSA/TRI Florida High Wind Concrete and Clay Roof Tile Installation Manual](#), Sixth Edition and the manufacturer’s installation instructions.

Refer to [Section 5.8](#) herein for attachment limitations.

Refer to [Table 6](#) herein for tile staging limitations.

6.9.3 **GAF Extended Dry-In Membrane** may be installed as a secondary water barrier using minimum 4-inch wide rolls to seal plywood deck joints prior to installation of the primary underlayment system.

6.10 Ruberoid® Mop Granule; Ruberoid® Mop Granule FR:

6.10.1 Shall be installed in compliance with requirements as an alternate to the “Hot Asphalt Applied Cap Sheet” in the “Two Ply System” in the [FRSA/TRI Florida High Wind Concrete and Clay Roof Tile Installation Manual](#), Sixth Edition, and the manufacturer’s installation instructions.

6.10.2 Refer to [Section 5.8](#) herein for attachment limitations.

6.10.3 Refer to [Table 6](#) for tile staging limitations.

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 \(QUA9625\)](#): (360) 817-5512; bsai.inspections@ul.com

- END OF EVALUATION REPORT -