



NEMO|etc.

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ENGINEER

EVALUATE

TEST

CONSULT

EVALUATION REPORT

CertainTeed, LLC
20 Moores Road
Malvern, PA 19355
(610) 893-5400

Evaluation Report 11610.09.08-R19

FL11288-R18

Date of Issuance: 09/03/2009

Revision 19: 07/30/2020

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: CertainTeed Roof Underlayments

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.

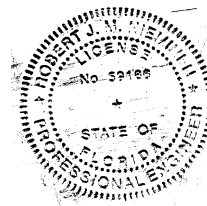
ADVERTISEMENT: The Florida Product Approval Number (FL#) preceded by the words "NEMO|etc. Evaluated" may be displayed in advertising literature. If any portion of the Evaluation Report is displayed, then it shall be done in its entirety.

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 11.

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 07/30/2020. 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 COMPONENT EVALUATION:
1. SCOPE:
Product Category: Roofing

Sub-Category: Underlayment

Compliance Statement: CertainTeed Roof Underlayments, as produced by CertainTeed, LLC, 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:

<u>Section</u>	<u>Property</u>	<u>Standard</u>	<u>Year</u>
1504.3.1	Wind resistance	FM 4474	2011
1507.1.1 / R905.1.1	Material standard	ASTM D226	2009
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 / R905.1.1	Material standard	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
1507.10.2 / R905.9.2	Material standard	ASTM D4601	2012
1507.11.2 / R905.11.2	Material standard	ASTM D6163	2015
1507.11.2 / R905.11.2	Material standard	ASTM D6164	2011
1507.11.2 / R905.11.2	Material standard	ASTM D6222	2011
TAS 110	Accelerated Weathering	ASTM D4798	2011

3. REFERENCES:

<u>Entity</u>	<u>Examination</u>	<u>Reference</u>	<u>Date</u>
ERD (TST6049)	Physical Properties	C7290.01.08	01/16/2008
ERD (TST6049)	Physical Properties	C8440.04.08	04/28/2008
ERD (TST6049)	Physical Properties	C9560.05.08	05/25/2008
ERD (TST6049)	Physical Properties	C10080.09.08-R1	04/17/2009
ERD (TST6049)	Physical Properties	C12960.06.09	06/02/2009
ERD (TST6049)	Physical Properties	3530.12.05-1-R1	10/05/2009
ERD (TST6049)	Wind Resistance	C8370.08.08-R1	10/05/2009
ERD (TST6049)	Physical Properties	3523.03.05-R2	01/12/2010
ERD (TST6049)	Physical Properties	C30890.03.10-1	03/17/2010
ERD (TST6049)	Physical Properties	C3500.04.10	04/07/2010
ERD (TST6049)	Physical Properties	C31840.05.10	05/10/2010
ERD (TST6049)	Physical Properties	C31860.05.10	05/18/2010
ERD (TST6049)	Physical Properties	C31850.06.10	06/25/2010
ERD (TST6049)	Physical Properties	C35460.05.11	06/16/2011
ERD (TST6049)	Physical Properties	C34940.09.11-R1	10/04/2011
ERD (TST6049)	Accelerated Weathering	C40840SC	06/11/2012
ERD (TST6049)	Physical Properties	C40050.09.12-2	09/28/2012
ERD (TST6049)	Wind Resistance	C39670.08.12	08/20/2012
ERD (TST6049)	Physical Properties	C31410.10.10-R1	11/02/2012
ERD (TST6049)	Physical Properties	C45240.01.14-1	01/15/2014
ERD (TST6049)	Physical Properties	C32930.01.11-R2	01/20/2014
ERD (TST6049)	Physical Properties	C45240.01.14-2	01/24/2014
ERD (TST6049)	FM 4470	CTR-SC9920.01.16-R1	01/20/2016
ERD (TST6049)	Wind Resistance	CTR-SC10420.01.16	01/25/2016
ERD (TST6049)	FRSA/TRI, Tile Slippage	CTR-SC11415.11.16	11/28/2016
ERD (TST6049)	Wind Resistance	CTR-SC12255.12.16	12/27/2016
MTI (TST 2508)	Physical Properties	DX08C4A	03/22/2004
MTI (TST 2508)	Physical Properties	TX14B6A-001	02/27/2006
MTI (TST 2508)	Physical Properties	TX14B6B-002	03/13/2006

Entity	Examination	Reference	Date
MTI (TST 2508)	Physical Properties	TX14B6F-006	03/13/2006
MTI (TST 2508)	Physical Properties	TX14B6E-005	03/13/2006
NEMO (TST6049)	Wind Resistance	4a-CTR-19-LSWUS-05.A	02/05/2020
PRI (TST5878)	Physical Properties	CTC-034-02-01	11/24/2008
PRI (TST5878)	Physical Properties	CTC-075-02-01	02/15/2011
PRI (TST5878)	Physical Properties	CTC-067-02-01	08/08/2011
PRI (TST5878)	Wind Resistance	CTC-112-02-01	12/12/2011
PRI (TST5878)	Physical Properties	CTC-163-02-01 (x3)	05/10/2013
PRI (TST5878)	Physical Properties	CTC-189-02-01	11/18/2013
PRI (TST5878)	Physical Properties	CTC-327-02-01	06/28/2017
UL, LLC. (QUA9625)	Quality Control	Service Confirmation	11/13/2019

4. PRODUCT DESCRIPTION:

	Product	Material Standard	Plant(s)	Description
4.1	WinterGuard® HT	ASTM D1970	Little Rock, AR	self-adhering, glass-scrim reinforced, film-surfaced, SBS modified bitumen roof underlayment
4.2	WinterGuard® Sand	ASTM D1970	Shakopee, MN	self-adhering, glass-mat reinforced, sand-surfaced, SBS modified bitumen roof underlayment
4.3	WinterGuard® Granular	ASTM D1970	Shakopee, MN	self-adhering, glass-mat reinforced, granule-surfaced, SBS modified bitumen roof underlayment
4.4	MetaLayment®	ASTM D1970	Little Rock, AR	self-adhering, film-surfaced, SBS modified bitumen roof underlayment
4.5	Black Diamond® Base Sheet	ASTM D1970	Shakopee, MN	self-adhering, glass mat reinforced, fine-mineral surfaced, SBS modified membrane
4.6	Flintlastic® SA PlyBase	ASTM D1970	Little Rock, AR	self-adhering, glass mat reinforced, film-surfaced, SBS modified membrane for use as a base-layer in multi-ply underlayment systems
4.7	Flintlastic SA Mid Ply	ASTM D6163	Little Rock, AR	self-adhering, heavy fiberglass mat reinforced, film-surfaced, SBS modified membrane for use as a base-layer in multi-ply underlayment systems
4.8	Flintlastic® Ultra Glass SA	ASTM D6163	Little Rock, AR	self-adhering, glass mat reinforced, fine-mineral surfaced, SBS modified membrane for use as a base-layer in multi-ply underlayment systems
4.9	Flintlastic® SA Cap FR	ASTM D6163	Little Rock, AR	self-adhering, glass mat reinforced, granule-mineral surfaced, SBS modified membrane
4.10	Flintlastic® SA Cap	ASTM D1970 ASTM D6164 FRSA/TRI 09-18	Little Rock, AR	self-adhering, polyester reinforced, granule-mineral surfaced, SBS modified membrane
4.11	Flintlastic® GTA	ASTM D6222	Little Rock, AR	torch-applied, polyester reinforced, granule-surfaced, APP modified membrane
4.12	Flintlastic® GMS	ASTM D6164	Little Rock, AR	asphalt-applied, polyester reinforced, granule-surfaced, SBS modified membrane
4.13	Flintlastic® SA NailBase	ASTM D4601	Little Rock, AR	glass mat reinforced, film-surfaced, SBS modified membrane for use as a mechanically attached base-sheet in multi-ply underlayment systems
4.14	Roofers' Select	ASTM D6757	Shreveport, LA	asphalt-impregnated, organic felt reinforced with glass fibers roof underlayment

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 CertainTeed 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 1: ROOF COVER OPTIONS									
Underlayment	Asphalt Shingles (1507.2)	Clay and Concrete Tile (1507.3)		Metal		Slate or Slate-Type Shingles (1507.7)	Wood		Photovoltaic Shingles (1507.17)
		Mechanical Attach	Adhesive-Set	Panels (1507.4)	Shingles (1507.5)		Shingles (1507.8)	Shakes (1507.9)	
Roofers' Select	Yes	No	No	Yes	No	No	No	No	No
WinterGuard HT	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)	Yes (over nailed ASTM D226 felt per Table 1507.1.1.1 / R905.1.1.1)
WinterGuard Sand	Yes	No	No	No	No	Yes	Yes (joint strips, 1507.1.1.3 / R905.1.1.3)	Yes (joint strips, 1507.1.1.3 / R905.1.1.3)	No
WinterGuard Granular	Yes	No	No	No	No	Yes	No	No	No
Black Diamond Base	Yes	No	No	No	No	Yes	Yes (joint strips, 1507.1.1.3 / R905.1.1.3)	Yes (joint strips, 1507.1.1.3 / R905.1.1.3)	No
Flintlastic SA Cap	Yes	Yes	Yes See 5.6.1	No	No	Yes	No	No	Yes See FL17670
Flintlastic SA Cap FR	Yes	No	No	No	No	Yes	No	No	No
MetaLayment	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)	Yes (over nailed ASTM D226 felt per Table 1507.1.1.1 / R905.1.1.1)
Flintlastic GTA	No	Yes	Yes See 5.6.1	No	No	No	No	No	Yes See FL17670
Flintlastic GMS	No	Yes	Yes See 5.6.1	No	No	No	No	No	Yes See FL17670

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

TABLE 1A: ALLOWABLE UNDERLAYMENT / TILE-ADHESIVE COMBINATIONS ¹		
Underlayment	Adhesive	Florida Product Approval
Flintlastic SA Cap or Flintlastic GMS	Dupont "Tile Bond™ Roof Tile Adhesive"	FL22525
Flintlastic SA Cap, Flintlastic GTA or Flintlastic GMS	ICP Adhesives and Sealants "Polyset® AH-160"	FL6332

5.7 **Allowable Substrates:**

TABLE 2: SUBSTRATE OPTIONS		
Underlayment	Primer	Substrates
WinterGuard HT, WinterGuard Sand, WinterGuard Granular or MetaLayment	(Optional) ASTM D41 or FlintPrime	plywood
	none	ASTM D226 felt
Black Diamond Base, Flintlastic SA PlyBase, Flintlastic SA Mid Ply, Flintlastic Ultra Glass SA, Flintlastic SA Cap or Flintlastic SA Cap FR	(Optional) ASTM D41, FlintPrime or FlintPrime SA	plywood
	ASTM D41, FlintPrime or FlintPrime SA	structural concrete
	none	ASTM D226 felt or Flintlastic SA NailBase
Flintlastic SA Cap or Flintlastic SA Cap FR	none	Flintlastic SA PlyBase or Flintlastic SA MidPly
Flintlastic GMS applied in hot asphalt	ASTM D41 or FlintPrime	structural concrete
	none	ASTM D226 felt, ASTM D4601 base sheet, Black Diamond Base Sheet or Flintlastic Ultra Glass SA
Flintlastic GTA torch-applied	ASTM D41 or FlintPrime	structural concrete
	none	ASTM D226 felt, ASTM D4601 base sheet, Black Diamond Base Sheet or Flintlastic Ultra Glass SA

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
- Section 5.8.3 herein (for other underlayment systems).

5.8.3 **Wind Resistance for Underlayment Systems 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**.

¹ Refer to Tile Manufacturer's or Adhesive Manufacturer's Florida Product Approval for Overturning Moment Resistance Performance.

#1 Maximum Design Pressure = -240 psf:

Deck: Structural concrete to meet project requirements to satisfaction of Authority Having Jurisdiction.
 Primer: FlintPrime or ASTM D41.
 Base Sheet: Black Diamond Base Sheet or Flintlastic Ultra Glass SA, self-adhered.
 Underlayment: Flintlastic GTA, torch-applied or Flintlastic GMS, applied in hot asphalt.

#2 Maximum Design Pressure = -555 psf:

Deck: Structural concrete to meet project requirements to satisfaction of Authority Having Jurisdiction.
 Primer: FlintPrime, FlintPrime SA or ASTM D41.
 Base Ply: (Optional) Flintlastic SA PlyBase or Flintlastic SA Mid Ply, self-adhered.
 Underlayment: Flintlastic SA Cap, self-adhered.

#3 Maximum Design Pressure = -90.0 psf:

Deck: APA rated, min. 7/16 CAT, 0.418 in., Exposure 1, OSB sheathing to meet project requirements to satisfaction of Authority Having Jurisdiction.
 Primer: FlintPrime or FlintPrime SA
 Base Ply: Flintlastic SA Mid Ply, self-adhered.
 Underlayment: Flintlastic SA Cap, self-adhered.

#4 Maximum Design Pressure = -105.0 psf:

Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.
 Primer: (Optional) FlintPrime, FlintPrime SA or ASTM D41
 Base Ply: (Optional) Flintlastic SA PlyBase or Flintlastic SA Mid Ply, self-adhered.
 Underlayment: Flintlastic SA Cap, self-adhered.

#5 Maximum Design Pressure = -127.5 psf:

Deck: Min. 19/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.
 Primer: FlintPrime, FlintPrime SA or ASTM D41
 Joints: Min. 4-inch wide strips of Flintlastic SA PlyBase, self-adhered over all plywood joints.
 Base Ply: (Optional) Flintlastic SA PlyBase or Flintlastic SA Mid Ply, self-adhered.
 Underlayment: Flintlastic SA Cap, self-adhered.

#6 All other direct-deck, adhered underlayment systems beneath tile roof systems carry a Maximum Design Pressure of -45 psf.

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, 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 enhancements.

#7 Maximum Design Pressure = -37.5 psf:

Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.

Base Sheet: ASTM D226, Type II felt or Flintlastic SA NailBase

Fasteners: 12 ga., 1¼-inch long galvanized ring shank nails through 32 ga., 1 5/8-inch diameter tin caps

Spacing: 6-inch o.c. at the 4-inch laps and 12-inch o.c. at two (2) equally spaced, staggered rows in the field of the sheet.

Base Ply: (Optional) Flintlastic SA PlyBase or Flintlastic SA Mid Ply, self-adhered.

Underlayment: Flintlastic SA Cap, self-adhered.

#8 Maximum Design Pressure = -45.0 psf*:

Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.

Base Sheet: Glasbase Base Sheet; Flexiglas Base Sheet; Flintlastic Base 20; All Weather / Empire Base Sheet; Flintlastic Poly SMS Base; Flintlastic Ultra Poly SMS Base or Yosemite Venting Base Sheet

Fasteners: Simplex MAXX Cap Fasteners

Spacing: 9-inch o.c. at the 2-inch wide side laps and 18-inch o.c. at two (2) equally spaced, staggered center rows.

Underlayment: Flintlastic GMS, applied in hot asphalt or Flintlastic GTA, torch-applied.

#9 Maximum Design Pressure = -52.5 psf:

Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.

Base Sheet: Flintlastic SA NailBase

Fasteners: Simplex MAXX Cap Fasteners

Spacing: 9-inch o.c. at the 3-inch wide side laps and 12-inch o.c. at two (2) equally spaced, staggered center rows.

Primer: FlintPrime at stress plates

Base Ply: (Optional) Flintlastic SA PlyBase or Flintlastic SA Mid Ply, self-adhered.

Underlayment: Flintlastic SA Cap, self-adhered.

#10 Maximum Design Pressure = -52.5 psf:

Deck: APA rated, min. 7/16 CAT, 0.418 in., Exposure 1, OSB sheathing to meet project requirements to satisfaction of Authority Having Jurisdiction.

Base Sheet: Flintlastic SA NailBase

Fasteners: Simplex MAXX Cap Fasteners

Spacing: 8-inch o.c. at the 3-inch wide side laps and 8-inch o.c. at three (3) equally spaced, staggered center rows.

Primer: FlintPrime at stress plates

Base Ply: (Optional) Flintlastic SA Mid Ply, self-adhered.

Underlayment: Flintlastic SA Cap, self-adhered.

#11 Maximum Design Pressure = -52.5 psf:

Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.

Base Sheet: Glasbase Base Sheet; Flexiglas Base Sheet; Flintlastic Base 20; All Weather / Empire Base Sheet; Flintlastic Poly SMS Base; Flintlastic Ultra Poly SMS Base or Yosemite Venting Base Sheet

Fasteners: Simplex MAXX Cap Fasteners

Spacing: 9-inch o.c. at the 2-inch wide side laps and 12-inch o.c. at two (2) equally spaced, staggered center rows.

Underlayment: Flintlastic GMS, applied in hot asphalt or Flintlastic GTA, torch-applied.

#12 Maximum Design Pressure = -52.5 psf:

Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.

Base Sheet: Flintlastic SA NailBase

Fasteners: Min. 1-inch long, 12 ga. Simplex Metal Cap Nails

Spacing: 6-inch o.c. at the min. 2-inch laps and 6-inch o.c. at four (4) equally spaced, staggered rows in the field of the sheet.

Base Ply: (Optional) Flintlastic SA PlyBase or Flintlastic SA Mid Ply, self-adhered.

Underlayment: Flintlastic SA Cap, self-adhered.

#13 Maximum Design Pressure = -60.0 psf:

Deck: APA rated, min. 7/16 CAT, 0.418 in., Exposure 1, OSB sheathing to meet project requirements to satisfaction of Authority Having Jurisdiction.

Base Sheet: Flintlastic SA NailBase

Fasteners: Trufast Versa Fasteners & Plates; min. two (2) screws per plate at 180° from each other

Spacing: 9-inch o.c. at the 3-inch wide side laps and 12-inch o.c. at two (2) equally spaced, staggered center rows.

Primer: FlintPrime at stress plates

Base Ply: (Optional) Flintlastic SA Mid Ply, self-adhered.

Underlayment: Flintlastic SA Cap, self-adhered.

#14 Maximum Design Pressure = -60.0 psf:

Deck: Min. 19/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.

Base Sheet: Flintlastic SA NailBase

Fasteners: 12 ga., 1¼-inch long galvanized ring shank nails through 32 ga., 1 5/8-inch diameter tin caps

Spacing: 8-inch o.c. at the min. 2-inch laps and 8-inch o.c. at three (3) equally spaced, staggered rows in the field of the sheet.

Base Ply: (Optional) Flintlastic SA PlyBase or Flintlastic SA Mid Ply, self-adhered.

Underlayment: Flintlastic SA Cap, self-adhered.

#15 Maximum Design Pressure = -67.5 psf:

Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.

Base Sheet: Flintlastic SA NailBase

Fasteners: Simplex MAXX Cap Fasteners

Spacing: 8-inch o.c. at the 3-inch wide side laps and 8-inch o.c. at three (3) equally spaced, staggered center rows.

Primer: FlintPrime at stress plates

Base Ply: (Optional) Flintlastic SA PlyBase or Flintlastic SA Mid Ply, self-adhered.

Underlayment: Flintlastic SA Cap, self-adhered.

#16 Maximum Design Pressure = -67.5 psf:

Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.

Base Sheet: Glasbase Base Sheet; Flexiglas Base Sheet; Flintlastic Base 20; All Weather / Empire Base Sheet; Flintlastic Poly SMS Base; Flintlastic Ultra Poly SMS Base or Yosemite Venting Base Sheet

Fasteners: Cap nails: 1-inch diameter, 0.032-inch thick metal cap with 0.120-inch shank diameter, annular ring shank nails

Spacing: 6-inch o.c. at 4-inch lap and 6-inch o.c. at five (5) equally spaced, staggered center rows in the field of the sheet.

Underlayment: Flintlastic GMS, applied in hot asphalt.

#17 Maximum Design Pressure = -75.0 psf:

- Deck: Min. 19/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.
- Base Sheet: Flintlastic SA NailBase
- Fasteners: 12 ga., 1¼-inch long galvanized ring shank nails through 32 ga., 1 5/8-inch diameter tin caps
- Spacing: 6-inch o.c. at the min. 2-inch laps and 6-inch o.c. at four (4) equally spaced, staggered rows in the field of the sheet.
- Base Ply: (Optional) Flintlastic SA PlyBase or Flintlastic SA Mid Ply, self-adhered.
- Underlayment: Flintlastic SA Cap, self-adhered.

#18 Maximum Design Pressure = -90.0 psf:

- Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.
- Base Sheet: Glasbase Base Sheet; Flexiglas Base Sheet; Flintlastic Base 20; All Weather / Empire Base Sheet; Flintlastic Poly SMS Base; Flintlastic Ultra Poly SMS Base or Yosemite Venting Base Sheet
- Fasteners: Simplex MAXX Cap Fasteners
- Spacing: 6-inch o.c. at the 2-inch wide side laps and 6-inch o.c. at two (2) equally spaced, staggered center rows.
- Underlayment: Flintlastic GMS, applied in hot asphalt or Flintlastic GTA, torch-applied.

#19 Maximum Design Pressure = -105.0 psf:

- Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.
- Base Sheet: Glasbase Base Sheet; Flexiglas Base Sheet; Flintlastic Base 20; All Weather / Empire Base Sheet; Flintlastic Poly SMS Base; Flintlastic Ultra Poly SMS Base or Yosemite Venting Base Sheet
- Fasteners: Simplex MAXX Cap Fasteners
- Spacing: 6-inch o.c. at the 2-inch wide side laps and 6-inch o.c. at three (3) equally spaced, staggered center rows.
- Underlayment: Flintlastic GMS, applied in hot asphalt or Flintlastic GTA, torch-applied.

#20 Maximum Design Pressure = -105.0 psf:

- Deck: Min. 19/32-inch plywood to meet project requirements to satisfaction of Authority Having Jurisdiction.
- Base Sheet: Flintlastic SA NailBase
- Fasteners: 12 ga., 1¼-inch long galvanized ring shank nails through 32 ga., 1 5/8-inch diameter tin caps
- Spacing: 4-inch o.c. at the min. 2-inch laps and 4-inch o.c. at four (4) equally spaced, staggered rows in the field of the sheet.
- Base Ply: (Optional) Flintlastic SA PlyBase or Flintlastic SA Mid Ply, self-adhered.
- Underlayment: Flintlastic SA Cap, self-adhered.

5.9 Exposure Limitations:

TABLE 3: EXPOSURE LIMITATIONS	
Underlayment	Maximum Exposure (days)
Roofer's Select	30
Black Diamond Base, WinterGuard HT, WinterGuard Sand, WinterGuard Granular or MetaLayment	180
Flintlastic SA Cap, Flintlastic SA Cap FR, Flintlastic GTA or Flintlastic GMS (with mechanically attached prepared roof cover)	No limitation
Flintlastic SA Cap, Flintlastic GTA or Flintlastic GMS (with adhesive-set tile)	30

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. These slope limitations can only be exceeded by using battens during loading of the roof tiles.

TABLE 4: TILE SLIPPAGE LIMITATIONS FOR DIRECT-DECK TILE INSTALLATIONS			
Underlayment	Tile Profile	Staging Method	Maximum Slope
Flintlastic GMS	All	Max. 10-tile stack	4:12
Flintlastic GTA	All	Max. 10-tile stack	6:12
Flintlastic SA Cap	Flat	Max. 6-tile stack (4 over 2)	6:12
	Lugged	Max. 6-tile stack (4 over 2)	5:12

6. INSTALLATION:

- 6.1 **CertainTeed Roof Underlayments** shall be installed in accordance with **CertainTeed** installation instructions subject to the Limitations set forth in Section 5 herein and the specifics noted below.
- 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 primed the substrate (if applicable).

6.3 Flintlastic SA NailBase:

- 6.3.1 Flintlastic SA NailBase is limited to use as a Base Sheet in multi-ply underlayment systems, followed by Flintlastic SA Cap or Flintlastic SA Cap FR.
- Refer to 5.8.3.2 for attachment requirements.
- Roof cover limitations are those are those associated with the top-layer underlayment, as set forth in Table 1.

6.4 Flintlastic SA PlyBase or Flintlastic SA Mid Ply:

- 6.4.1 Flintlastic SA PlyBase and Flintlastic SA Mid Ply are limited to use as a Base Ply or Ply in multi-ply underlayment systems, followed by Flintlastic SA Cap or Flintlastic SA Cap FR.
- Refer to Table 2 for substrate limitations.
- Roof cover limitations are those are those associated with the top-layer underlayment, as set forth in Table 1.

6.5 Flintlastic Ultra Glass SA:

- 6.5.1 Flintlastic Ultra Glass SA is limited to use as a Base Ply in multi-ply underlayment systems, followed by Flintlastic GTA or Flintlastic GMS.
- Refer to Table 2 for substrate limitations.
- Roof cover limitations are those are those associated with the top-layer underlayment, as set forth in Table 1.

6.6 Black Diamond Base, WinterGuard, MetaLayment or Flintlastic SA Cap FR:

- 6.6.1 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.
- When installed over a mechanically attached, FBC Approved ASTM D226 felt, the felt shall be fastened in accordance with **FBC 1507.1.1** or **R905.1.1**.

6.7 Flintlastic SA Cap:

6.7.1 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.

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

Refer to FL17670 for use with Apollo® II or Apollo® II Tile photovoltaic shingles.

6.7.2 Tile Applications:

Shall be installed in compliance with requirements for a Self-Adhered Membrane in the **FRSA/TRI Florida High Wind Concrete and Clay Roof Tile Installation Manual**, Sixth Edition, and the manufacturer's installation instructions.

Refer to 5.8.2 for attachment limitations.

Refer to Table 4 for tile staging limitations.

6.8 Flintlastic GTA:

6.8.1 Shall be installed in compliance with requirements as an alternate to the "Heat 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.

Refer to 5.8.2 for attachment limitations.

Refer to Table 4 for tile staging limitations.

Refer to FL17670 for use with Apollo® II or Apollo® II Tile photovoltaic shingles.

6.9 Flintlastic GMS:

6.9.1 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.

Refer to 5.8.2 for attachment limitations.

Refer to Table 4 for tile staging limitations.

Refer to FL17670 for use with Apollo® II or Apollo® II Tile photovoltaic shingles.

6.9 Roofers' Select:

6.9.1 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.

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; (414) 248-6409; karen.buchmann@ul.com

- END OF EVALUATION REPORT -