



NEMO|etc.

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EVALUATION REPORT

CertainTeed Corporation

20 Moores Road
Malvern, PA 19355
(610) 651-5847

Evaluation Report 11610.09.08-R18

FL11288-R17

Date of Issuance: 09/03/2009

Revision 18: 01/24/2018

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 and Florida Building Code, Residential Volume. The products described herein have been evaluated for compliance with the **6th Edition (2017) Florida Building Code** sections noted herein.

DESCRIPTION: CertainTeed Roof Underlayments

LABELING: Labeling shall be in accordance with the requirements 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 documentation changes, or provisions of the Code that relate to the product change. Acceptance of this Evaluation Report by the named client constitutes agreement to notify Robert Nieminen, P.E. of any changes to the product(s), the Quality Assurance or the production facility location(s). NEMO|etc. requires a complete review of this Evaluation Report relative to updated Code requirements with each Code Cycle.

ADVERTISEMENT: The Evaluation Report number 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.

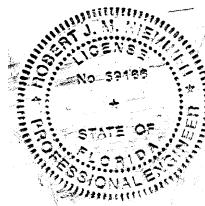
INSPECTION: Upon request, a copy of this entire Evaluation Report shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This Evaluation Report consists of pages 1 through 10.

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 01/24/2018. 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 Corporation**, have demonstrated compliance with the following sections of the **6th Edition (2017) 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 Uplift	FM 4474	2011
1507.2.3 / 1507.1.1	Physical Properties	ASTM D226	2009
1507.2.3 / 1507.1.1	Physical Properties	ASTM D4869	2016
1507.2.3 / 1507.1.1	Physical Properties	ASTM D6757	2016
1507.3.3	Physical properties	FRSA/TRI April 2012 (04-12)	2012
1507.2.4 / 1507.1.1, 1507.2.9.2	Physical Properties	ASTM D1970	2015
1507.10.2	Physical Properties	ASTM D4601	2012
1507.11.2	Physical Properties	ASTM D6163	2008
1507.11.2	Physical Properties	ASTM D6164	2011
1507.11.2	Physical Properties	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 Uplift	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 Uplift	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 Uplift	CTR-SC10420.01.16	01/25/2016
ERD (TST6049)	FRSA/TRI April 2012, Tile Slippage	CTR-SC11415.11.16	11/28/2016
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
MTI (TST 2508)	Physical Properties	TX14B6F-006	03/13/2006
MTI (TST 2508)	Physical Properties	TX14B6E-005	03/13/2006
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 Uplift	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

Entity
PRI (TST5878)
UL, LLC. (QUA9625)

Examination
Physical Properties
Quality Control

Reference
CTC-327-02-01
Service Confirmation

Date
06/28/2017
Exp. 03/09/2020

4. PRODUCT DESCRIPTION:

4.1 Self-Adhering Underlayments:

4.1.1 **WinterGuard™ HT** is a glass scrim reinforced, self-adhering, film-surfaced waterproofing underlayment; meets ASTM D1970.

4.1.2 **WinterGuard™ Sand** is a glass mat reinforced, self-adhering, sand-surfaced waterproofing underlayment; meets ASTM D1970.

4.1.3 **WinterGuard™ Granular** is a glass mat reinforced, self-adhering, granule-surfaced waterproofing underlayment; meets ASTM D1970.

4.1.4 **MetaLaym™** is a self-adhering, film-surfaced, waterproofing underlayment; meets ASTM D1970.

4.1.5 **Black Diamond Base Sheet** is a self-adhering, glass mat reinforced, fine-mineral surfaced, SBS modified roof underlayment; meets ASTM D1970.

4.1.6 **Flintlastic SA PlyBase** is a self-adhering, glass mat reinforced, film-surfaced, SBS modified roof underlayment for use as a base-layer in multi-ply underlayment systems; meets ASTM D1970.

4.1.7 **Flintlastic SA Mid Ply** is a self-adhering, polyester reinforced, film-surfaced, SBS modified roof underlayment for use as a base-layer in multi-ply underlayment systems; meets ASTM D6163, Type I, Grade S.

4.1.8 **Flintlastic Ultra Glass SA** is a self-adhering, glass mat reinforced, fine-mineral surfaced, SBS modified roof underlayment for use as a base-layer in multi-ply underlayment systems; meets ASTM D6163, Type I, Grade S.

4.1.9 **Flintlastic SA Cap FR** is a self-adhering, glass mat reinforced, granule-mineral surfaced, SBS modified roof underlayment; meets ASTM D6163, Type I, Grade G.

4.1.10 **Flintlastic SA Cap** is a self-adhering, polyester reinforced, granule-mineral surfaced, SBS modified roof underlayment; meets ASTM D1970, ASTM D6164, Type I, Grade G and FRSA/TRI April 2012.

4.2 Torch Applied Underlayments:

4.2.1 **Flintlastic GTA** is a torch-applied, polyester reinforced, granule-surfaced, APP modified roof underlayment; meets ASTM D6222, Type I, Grade G.

4.3 Asphalt Applied Underlayments:

4.3.1 **Flintlastic GMS** is an asphalt-applied, polyester reinforced, granule-surfaced, SBS modified roof underlayment; meets ASTM D6164, Type I, Grade G.

4.4 Mechanically Attached Underlayments:

4.4.1 **Flintlastic SA NailBase** is a glass mat reinforced, film-surfaced, SBS modified roof underlayment for use as a mechanically attached base-layer in multi-ply underlayment systems; meets ASTM D4601, Type II.

4.4.2 **Roofers' Select** is an asphalt-impregnated, organic felt reinforced with glass fibers roof underlayment; meets ASTM D6757.

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 HVHZ** jurisdictions.
- 5.3 Fire Classification is not part of this Laboratory Report; refer to current Approved Roofing Materials Directory or test report from accredited testing agency for fire ratings of this product.
- 5.4 **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 (AHJ) for approval based on this evaluation combined with supporting data for the prepared roof covering.
- 5.5 Allowable Roof Covers:

TABLE 1: ROOF COVER OPTIONS							
Underlayment	Asphalt Shingles	Nail-On Tile	Foam-On Tile	Mortar-Set Tile	Metal	Wood Shakes & Shingles	Slate
Roofers' Select	Yes	No	No	No	No	No	No
WinterGuard HT	Yes	No	No	No	Yes	Yes	Yes
WinterGuard Sand or Granular	Yes	No	No	No	No	Yes	Yes
Black Diamond Base	Yes	No	No	No	No	Yes	Yes
Flintlastic SA Cap	Yes	Yes	Yes <i>See 5.5.1</i>	Yes	No	Yes	Yes
Flintlastic SA Cap FR	No	No	No	No	No	Yes	Yes
MetaLayment	Yes	No	No	No	Yes	Yes	Yes
Flintlastic GTA	No	Yes	Yes <i>See 5.5.1</i>	Yes	No	Yes	Yes
Flintlastic GMS	No	Yes	Yes <i>See 5.5.1</i>	Yes	No	Yes	Yes

- 5.5.1 "Foam-On Tile" is limited to use of the following Approved tile adhesives / underlayment combinations.

TABLE 1A: ALLOWABLE TILE ADHESIVE / UNDERLAYMENT COMBINATIONS ¹		
Adhesive	Florida Product Approval	Underlayments
Dow TileBond™	FL22525	Flintlastic SA Cap or Flintlastic GMS
ICP Adhesives Polyset® AH-160	FL6332	Flintlastic SA Cap, Flintlastic GTA or Flintlastic GMS

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

5.6 Allowable Substrates:

5.6.1 Direct-Bond to Deck:

WinterGuard HT, WinterGuard Sand, WinterGuard Granular or MetaLayment self-adhered to:

- New or existing plywood
- FlintPrime or ASTM D41 primed new or existing plywood.

Black Diamond Base, Flintlastic SA PlyBase, Flintlastic SA Mid Ply, Flintlastic Ultra Glass SA, Flintlastic SA Cap or Flintlastic SA Cap FR self-adhered to:

- New or existing plywood;
- FlintPrime, FlintPrime SA or ASTM D41 primed new or existing plywood;
- FlintPrime, FlintPrime SA or ASTM D41 primed structural concrete.

Flintlastic GMS in hot asphalt to:

- FlintPrime or ASTM D41 primed structural concrete.

Flintlastic GTA torch-applied to:

- FlintPrime or ASTM D41 primed structural concrete.

5.6.2 Bond to Mechanically Attached Base Sheet or Adhered Base Ply:

- WinterGuard HT, WinterGuard Sand, WinterGuard Granular or MetaLayment self-adhered to: ASTM D226, Type I or II felt.
- Black Diamond Base Sheet, Flintlastic SA PlyBase, Flintlastic SA Mid Ply, Flintlastic Ultra Glass SA, Flintlastic SA Cap, Flintlastic SA Cap FR self-adhered to: Flintlastic SA NailBase or ASTM D226, Type I or II felt.
- Flintlastic SA Cap or Flintlastic SA Cap FR self-adhered to: Flintlastic SA PlyBase or Flintlastic SA MidPly.
- Flintlastic GMS in hot asphalt to: ASTM D226, Type I or II felt, ASTM D4601, Type II base sheet, Black Diamond Base Sheet or Flintlastic Ultra Glass SA.
- Flintlastic GTA torch-applied to: ASTM D226, Type I or II felt, ASTM D4601, Type II base sheet, Black Diamond Base Sheet or Flintlastic Ultra Glass SA.

5.6.3 Wind Resistance for Underlayment Systems in Foam-On Tile Applications:

FRSA/TRI April 2012 (04-12) does not address wind uplift resistance of all underlayment systems beneath foam-on or mortar-set tile systems, where the underlayment forms part of the load-path. The following wind uplift limitations apply to underlayment systems that are not addressed in **FRSA/TRI April 2012 (04-12)** and are used in foam-on or mortar-set tile applications. 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 **FRSA/TRI April 2012 (04-12), Appendix A, Table 1A** or **FBC 1609** for determination of design wind loads.

#1 Maximum Design Pressure = -240 psf:

Deck: Structural concrete to meet project requirements to satisfaction of AHJ.

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 AHJ.

Primer: FlintPrime, FlintPrime SA or ASTM D41.

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

Underlayment: Flintlastic SA Cap, self-adhered.

- #3 **Maximum Design Pressure = -105.0 psf:**
 Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of AHJ.
 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.
- #4 **Maximum Design Pressure = -127.5 psf:**
 Deck: Min. 19/32-inch plywood to meet project requirements to satisfaction of AHJ.
 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.
- #5 **Maximum Design Pressure = -37.5 psf:**
 Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of AHJ.
 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.
- #6 **Maximum Design Pressure = -45.0 psf*:**
 Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of AHJ.
 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.
- #7 **Maximum Design Pressure = -52.5 psf:**
 Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of AHJ.
 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.
- #8 **Maximum Design Pressure = -52.5 psf:**
 Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of AHJ.
 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.
- #9 **Maximum Design Pressure = -60.0 psf:**
 Deck: Min. 19/32-inch plywood to meet project requirements to satisfaction of AHJ.
 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.

- #10 Maximum Design Pressure = -67.5 psf:**
 Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of AHJ.
 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.
- #11 Maximum Design Pressure = -75.0 psf:**
 Deck: Min. 19/32-inch plywood to meet project requirements to satisfaction of AHJ.
 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.
- #12 Maximum Design Pressure = -90.0 psf:**
 Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of AHJ.
 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.
- #14 Maximum Design Pressure = -105.0 psf:**
 Deck: Min. 15/32-inch plywood to meet project requirements to satisfaction of AHJ.
 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.
- #15 Maximum Design Pressure = -105.0 psf:**
 Deck: Min. 19/32-inch plywood to meet project requirements to satisfaction of AHJ.
 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.
- 5.6.3.1 All other direct-deck, adhered CertainTeed underlayment systems beneath foam-on or mortar-set tile systems carry a Maximum Design Pressure of -45 psf.
- 5.6.3.2 For mechanically attached Base Sheet, the maximum design pressure for the selected assembly shall meet or exceed that required under FRSA/TRI April 2012 (04-12), Appendix A, Table 1A. Alternatively, the maximum design pressure for the selected assembly shall meet or exceed the Zone 1 design pressure determined in accordance with FBC 1609. In this case, Zones 2 and 3 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 (January 2016) for Zone 2/3 enhancements.

5.7 Exposure Limitations:

Roofers' Select shall not be left exposed for longer than 30-days after installation. Refer to installation instructions specific to anticipated exposure in Section 6.

Black Diamond Base, WinterGuard HT, WinterGuard Sand, WinterGuard Granular or MetaLayment shall not be left exposed for longer than 180-days after installation.

Flintlastic SA Cap, Flintlastic SA Cap FR, Flintlastic GTA or Flintlastic GMS do not have an exposure limitation, unless the prepared roof covering is to be adhesive-set tile atop Flintlastic SA Cap, GTA or GMS, in which case the maximum exposure is 180 days.

Flintlastic SA NailBase, Flintlastic SA PlyBase, Flintlastic SA Mid Ply and Flintlastic Ultra Glass SA, for use as a base-layer in a multi-ply underlayment system, shall not be left exposed for longer than 30-days after installation, prior to placement of subsequent underlayment layer.

5.8 Tile Slippage Limitations (per FRSA/TRI April 2012 (04-12)):

When loading roof tiles on the underlayment in direct-deck tile 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 2: 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** published installation requirements 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, Flintlastic SA PlyBase, Flintlastic SA Mid Ply or Flintlastic Ultra Glass SA:

6.3.1 **Flintlastic SA NailBase, Flintlastic SA PlyBase and Flintlastic SA Mid Ply** are limited to use as a base or mid-layer in multi-ply underlayment systems beneath **Flintlastic SA Cap** or **Flintlastic SA Cap FR**.

6.3.2 **Flintlastic Ultra Glass SA** is limited to use as a base-layer in multi-ply underlayment systems beneath **Flintlastic GTA** or **Flintlastic GMS**.

6.3.3 Install the base-layer underlayment to the substrates detailed in **Section 5.6** in accordance with **CertainTeed** published installation instructions, followed by the final underlayment layer in accordance with the instructions outlined below for the particular top-layer underlayment.

6.3.4 Roof cover limitations are those associated with the top-layer underlayment, as set forth in **Table 1**.

6.4 Black Diamond Base, Flintlastic SA Cap or SA Cap FR, WinterGuard or MetaLaymat:

6.4.1 Shall be installed in compliance with current **CertainTeed** published installation requirements and **FBC 1507** for the type of prepared roof covering to be installed.

6.4.2 Non-Tile Applications:

Shall be fully self-adhered to the substrates noted in **Section 5.6**. Side laps shall be minimum 4-inch and end-laps minimum 6-inch wide, pressed firmly with a seam-roller, and offset end-laps minimum 2 feet from course to course.

Consult **CertainTeed** instructions for use of **FlintBond SBS Modified Bitumen Adhesive**, trowel grade, on the 6-inch end laps and T-seam detailing.

Consult **CertainTeed** instructions regarding back-nailing requirements.

6.4.3 Tile Applications (Flintlastic SA Cap only):

Reference is made to **FRSA/TRI April 2012 (04-12)** Installation Manual and **Table 1** herein.

For mechanically fastened tile roofing over 2-ply system, consisting of Base Sheet and self-adhering top sheet(s), Base Sheet fastening shall be not less than **FRSA/TRI April 2012 (04-12), Table 1**.

For adhesive-set tile applications, refer to **Section 5.6.3** herein.

6.5 Flintlastic GTA:

6.5.1 **Flintlastic GTA** shall be installed in compliance with current **CertainTeed** published installation requirements. For use in tile applications, **Flintlastic GTA** is for use as an alternate to the Heat Applied "Cap Sheet" in the "Two Ply System" from **FRSA/TRI April 2012 (04-12)** beneath mechanically fastened or adhered tile roof systems (Base Sheet Limited per 5.6.2)

6.5.2 **Flintlastic GTA** shall be fully torch applied to the substrates noted in Section 5.6. Side (horizontal) laps shall be minimum 3-inch and end (vertical) laps minimum 6-inch wide, and offset end-laps minimum 3 feet from course to course. Side and end-laps shall be fully heat-welded and inspected to ensure minimum 3/8-inch flow of modified compound beyond the lap edge.

6.5.3 Consult CertainTeed instructions regarding back-nailing requirements.

6.6 Flintlastic GMS:

6.6.1 **Flintlastic GMS** shall be installed in compliance with current **CertainTeed** published installation requirements. For use in tile applications, **Flintlastic GMS** is for use as an alternate to "Mineral Surface Roll Roofing" (ASTM D6380, Class M) in the "Single Ply System" from **FRSA/TRI April 2012 (04-12)** beneath mechanically fastened tile roof systems or the Hot Asphalt applied "Cap Sheet" in the "Two Ply System" from **FRSA/TRI April 2012 (04-12)** beneath mechanically fastened or adhered tile roof systems.

6.6.2 **Flintlastic GMS** shall be fully asphalt-applied to the substrates noted in Section 5.6. Side (horizontal) laps shall be minimum 3-inch and end (vertical) laps minimum 6-inch wide, and offset end-laps minimum 3 feet from course to course. Side and end-laps shall be fully adhered in a complete mopping of hot asphalt with asphalt extending approximately 3/8-inch beyond the lap edge.

6.6.3 Consult CertainTeed instructions regarding back-nailing requirements.

6.7 Roofers' Select:

- 6.7.1 Standard-Slope Application (4:12 and greater): Starting at the lower edge of the roof, apply a single layer of Roofers' Select parallel to the eaves, overhanging drip edge by ½-inch. Overlap ends (vertical laps) at least 4-inch and sides (horizontal laps) at least 2-inch. Offset end laps from course to course at least 6-feet. Apply flat and unwrinkled, fastening as required to hold in place.
- 6.7.2 Low Slope Application (2:12 up to 4:12): Starting at the lower edge of the roof, cover the entire deck by applying a double layer of Roofers' Select parallel to the eaves. Begin by applying a 19-inch wide starter strip of Roofers' Select along the eaves, overlapping the drip edge by ½-inch. Place a full-width sheet over the starter, with lower edge flush to the starter's lower edge. Apply succeeding 36-inch wide courses up the roof slope, overlapping the previous course by 19-inch in "shingle-fashion". Overlap ends at least 12-inch. Offset end laps from course to course at least 6-feet. Apply flat and unwrinkled, fastening as required to hold in place.
- 6.7.3 Eaves Flashing for Ice Dam Protection (all slopes): Eaves flashing may be constructed from self-adhering waterproofing underlayment holding Florida Product Approval, or by applying a double layer of Roofers' Select cemented together with asphalt roofing cement (ASTM D 4586, Type II). Eaves flashing should be installed to a level of at least 24-inch inside the interior wall line, or in areas of severe icing, at least up to the highest water level expected to occur from ice dams to the satisfaction of the Authority Having Jurisdiction (AHJ).

6.8 Tile Staging (Flintlastic SA Cap, Flintlastic GTA or Flintlastic GMS):

- 6.8.1 Tile shall be loaded and staged in a manner that prevents tile slippage and/or damage to the underlayment. Refer to **Table 2** herein, and CertainTeed published requirements for tile staging.
- 6.8.2 Battens and/or Counter-battens, as required by the tile manufacturer and **FRSA/TRI April 2012 (04-12)** must be used on all roof slopes greater than 7:12. Precautions should be taken as needed, such as the use of battens or nail-boards, to prevent tile sliding and/or damage to the underlayment during the loading process.

7. BUILDING PERMIT REQUIREMENTS:

As required by the Building Official or Authority Having Jurisdiction (AHJ) in order to properly evaluate the installation of this product.

8. MANUFACTURING PLANTS:

Contact the noted QA agency for information on product locations covered for **F.A.C. 61G20-3** QA requirements. The following plants have qualified products under their respective physical properties specifications.

Plant	Specification	Product(s)
Little Rock, AR	ASTM D1970	WinterGuard HT, MetaLayment, Flintlastic SA PlyBase
	ASTM D4601	Flintlastic SA NailBase
	ASTM D6163	Flintlastic SA Mid Ply, Flintlastic Ultra Glass SA, Flintlastic SA Cap FR
	ASTM D6164	Flintlastic GMS
	ASTM D1970, ASTM D6164 & FRSA/TRI April 2012	Flintlastic SA Cap
	ASTM D6222	Flintlastic GTA
Shakopee, MN	ASTM D1970	WinterGuard Sand, WinterGuard Granular, Black Diamond Base Sheet,
Shreveport, LA	ASTM D6757	Roofers' Select

9. QUALITY ASSURANCE ENTITY:

UL, LLC. – QUA9625; (414) 248-6409; karen.buchmann@ul.com

- END OF EVALUATION REPORT -