FL #	FL21350-R4
Application Type	Revision
Code Version	2020
Application Status	Approved
Comments	
Archived	
Product Manufacturer	Atlas Roofing Corporation
Address/Phone/Email	2000 RiverEdge Parkway Suite 800 Atlanta, GA 30328 (770) 946-4571 mcollins@atlasroofing.com
Authorized Signature	Meldrin Collins mcollins@atlasroofing.com
Technical Representative	
Address/Phone/Email	
Quality Assurance Representative	
Address/Phone/Email	
Category	Roofing
Subcategory	Underlayments
Compliance Method	Evaluation Report from a Florida Registered Architect or a Licensed Florida Professional Engineer Evaluation Report - Hardcopy Received
Florida Engineer or Architect Name who developed the Evaluation Report	Zachary R. Priest
Florida License	PE-74021
Quality Assurance Entity	Intertek Testing Services NA, Inc. - QA Entity
Quality Assurance Contract Expiration Date	12/31/2023
Validated By	Steven M. Urich, PE Validation Checklist - Hardcopy Received
Certificate of Independence	FL21350_R4_COI_ATL16001.4 2020 FBC Eval Summit Underlayments Final.pdf
Referenced Standard and Year (of Standard)	
Equivalence of Product Standards Certified By	
Sections from the Code	1507.1.1
Product Approval Method	Method 2 Option B

Date Submitted	01/10/2021
Date Validated	01/10/2021
Date Pending FBC Approval	01/21/2021
Date Approved	04/13/2021

Summary of Products

FL #	Model, Number or Name	Description
21350.1	Summit 60 and Summit 180 Underlayments	Mechanically attached, synthetic underlayments used as an alternative to ASTM D 226 Type II underlayment.
Limits of Use **Approved for use in HVHZ:** No **Approved for use outside HVHZ:** Yes **Impact Resistant:** N/A **Design Pressure:** N/A **Other:** See evaluation report for limits of use.		**Installation Instructions** FL21350_R4_II_ATL16001.4 2020 FBC Eval Summit Underlayments Final.pdf Verified By: Zachary R. Priest PE-74021 Created by Independent Third Party: Yes **Evaluation Reports** FL21350_R4_AE_ATL16001.4 2020 FBC Eval Summit Underlayments Final.pdf Created by Independent Third Party: Yes

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CREEK
TECHNICAL SERVICES, LLC

Certificate of Authorization No. 29824
17520 Edinburgh Drive
Tampa, FL 33647
(813) 480-3421

EVALUATION REPORT

FLORIDA BUILDING CODE, 7TH EDITION (2020)

Issued January 10, 2021

Manufacturer: ATLAS ROOFING CORPORATION
2000 Riveredge Parkway, Suite 800
Atlanta, GA 30328
(770) 612-6267
www.atlasroofing.com

Manufacturing Locations: Hebei, China

Quality Assurance: Intertek Testing Services NA Inc. (QUA1673)

SCOPE

Category: Roofing
Subcategory: Underlayments
Code Sections: 1507.1.1
Properties: Physical properties

REFERENCES

Entity	Report No.	Standard	Year
Intertek Testing Services NA, Inc. (EVL11327)	CCRR-1038	AC 188	2012
Intertek Testing Services NA, Inc. (EVL11327)	CCRR-1038	ASTM D 226	2009
Intertek Testing Services NA Ltd. (TST1509)	141128020SHJ-BP-1	AC 188	2012
		ASTM D 4869	2016
PRI Construction Materials Technologies (TST5878)	ATL-238-020-1	TAS 117(B)	2020
PRI Construction Materials Technologies (TST5878)	117T0023	ASTM D 4533	2015
		ASTM D 5035	2011(2019)
PRI Construction Materials Technologies (TST5878)	117T0025	ASTM D 4533	2015
		ASTM D 5035	2011(2019)

PRODUCT DESCRIPTION

Summit 60 A mechanically attached, synthetic underlayment used an alternative to ASTM D 226, Type II roofing underlayments with a minimum tear strength per ASTM D 4533 of 15 pounds, a minimum tensile strength per ASTM D 5035 of 20 pounds/inch, and meets liquid water transmission test of Section 8.6 of ASTM D 4869. The roll is available in 48-inch wide x 250-ft long format and weighs approximately 23 lbs.

Summit 180 A mechanically attached, synthetic underlayment used an alternative to ASTM D 226, Type II roofing underlayments with a minimum tear strength per ASTM D 4533 of 15 pounds, a minimum tensile strength per ASTM D 5035 of 20 pounds/inch, and meets liquid water transmission test of Section 8.6 of ASTM D 4869. The roll is available in 48-inch wide x 250-ft long format and weighs approximately 30 lbs.

APPLICATION INSTRUCTIONS

Deck Type: The roof deck shall be constructed of closely fitted, solid sheathing for new or existing construction. Sheathing shall be installed in accordance with FBC requirements. Roof decks shall have no more than 1/8" gap at abutting joints.

Attachment method: Underlayment shall be attached in accordance with the FBC and manufacturer's installation instructions. The underlayment is installed starting at the eave, with the length of the roll parallel to the eave with the printed side facing up. All side laps shall be installed to shed water from the deck. End laps shall be staggered between courses in accordance with the manufacturer's application instructions. Minimum application temperature shall be 50°F.

1507.1.1 Exception: Equivalency of 1-inch diameter plastic cap nails where the ultimate design wind speed, V_{ult}, equals or exceeds 170mph has been demonstrated for Summit 60 and Summit 180 by increasing the attachment density by a factor of 3.

Allowable roof coverings: Mechanically fastened roof coverings as prescribed in FBC Section 1507.1.1 and Table 1507.1.1.1 shall be permitted.

LIMITATIONS

1) This evaluation report is not for use in the HVHZ.
2) Fire Classification is not within the scope of this evaluation.
3) Wind uplift resistance is not within the scope of this evaluation.
4) Installation of the evaluated product shall comply with this report, the FBC, and the manufacturer's published application instructions. Where discrepancies exist between these sources, the more restrictive and FBC compliant installation detail shall prevail.
5) Deck substrates shall be clean, dry, and free from any irregularities and debris. All fasteners in the deck shall be checked for protrusion and corrected prior to underlayment application.
6) Roof slope limitations shall be in accordance with FBC requirements.
7) Contact the manufacturer when installing at temperatures below the minimum application temperature.
8) The underlayment may be used as described in other current FBC product approval documents.
9) Roof coverings shall not be adhered directly to the underlayment. Roof coverings shall be mechanically fastened through the underlayment to the roof deck.
10) The underlayment shall be exposed on the roof deck for a maximum 30 days unless otherwise stated.
11) All products listed in this report shall be manufactured under a quality assurance program in compliance with Rule 61G20-3.

COMPLIANCE STATEMENT

The products evaluated herein by Zachary R. Priest, P.E. have demonstrated compliance with the Florida Building Code, 7th Edition (2020) as evidenced in the referenced documents submitted by the named manufacturer.

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Zachary R. Priest, P.E.
Florida Registration No. 74021
Organization No. ANE9641

CERTIFICATION OF INDEPENDENCE

CREEK Technical Services, LLC does not have, nor will it acquire, a financial interest in any company manufacturing or distributing products under this evaluation.

CREEK Technical Services, LLC is not owned, operated, or controlled by any company manufacturing or distributing products under this evaluation.

Zachary R. Priest, P.E. does not have, nor will acquire, a financial interest in any company manufacturing or distributing products under this evaluation.

Zachary R. Priest, P.E. does not have, nor will acquire, a financial interest in any other entity involved in the approval process of the product.

END OF REPORT

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TECHNICAL SERVICES, LLC

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17520 Edinburgh Drive
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FLORIDA BUILDING CODE, 7TH EDITION (2020)

Issued January 10, 2021

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Manufacturing Locations: Hebei, China

Quality Assurance: Intertek Testing Services NA Inc. (QUA1673)

SCOPE

Category: Roofing
Subcategory: Underlayments
Code Sections: 1507.1.1
Properties: Physical properties

REFERENCES

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Allowable roof coverings:	Mechanically fastened roof coverings as prescribed in FBC Section 1507.1.1 and Table 1507.1.1.1 shall be permitted.

LIMITATIONS

1) This evaluation report is not for use in the HVHZ.
2) Fire Classification is not within the scope of this evaluation.
3) Wind uplift resistance is not within the scope of this evaluation.
4) Installation of the evaluated product shall comply with this report, the FBC, and the manufacturer's published application instructions. Where discrepancies exist between these sources, the more restrictive and FBC compliant installation detail shall prevail.
5) Deck substrates shall be clean, dry, and free from any irregularities and debris. All fasteners in the deck shall be checked for protrusion and corrected prior to underlayment application.
6) Roof slope limitations shall be in accordance with FBC requirements.
7) Contact the manufacturer when installing at temperatures below the minimum application temperature.
8) The underlayment may be used as described in other current FBC product approval documents.
9) Roof coverings shall not be adhered directly to the underlayment. Roof coverings shall be mechanically fastened through the underlayment to the roof deck.
10) The underlayment shall be exposed on the roof deck for a maximum 30 days unless otherwise stated.
11) All products listed in this report shall be manufactured under a quality assurance program in compliance with Rule 61G20-3.

COMPLIANCE STATEMENT

The products evaluated herein by Zachary R. Priest, P.E. have demonstrated compliance with the Florida Building Code, 7th Edition (2020) as evidenced in the referenced documents submitted by the named manufacturer.

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Zachary R. Priest, P.E.
Florida Registration No. 74021
Organization No. ANE9641

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Zachary R. Priest, P.E. does not have, nor will acquire, a financial interest in any other entity involved in the approval process of the product.

END OF REPORT

Product Approval
USER: Public User

OFFICE OF THE SECRETARY

FL #	FL2533-R26
Application Type	Revision
Code Version	2020
Application Status	Approved
Comments	
Archived	☐
Product Manufacturer	CertainTeed, LLC (Roofing)
Address/Phone/Email	20 Moores Road Malvern, PA 19355 (610) 893-5400 mark.d.harner@saint-gobain.com
Authorized Signature	Mark Harner mark.d.harner@saint-gobain.com
Technical Representative	
Address/Phone/Email	
Quality Assurance Representative	
Address/Phone/Email	
Category	Roofing
Subcategory	Modified Bitumen Roof System
Compliance Method	Evaluation Report from a Florida Registered Architect or a Licensed Florida Professional Engineer ☐ Evaluation Report - Hardcopy Received
Florida Engineer or Architect Name who developed the Evaluation Report	Robert Nieminen
Florida License	PE-59166
Quality Assurance Entity	UL LLC
Quality Assurance Contract Expiration Date	09/15/2023
Validated By	John W. Knezevich, PE ☑ Validation Checklist - Hardcopy Received
Certificate of Independence	FL2533_R26_COI_2021_01_COI_NIEMINEN.pdf

Referenced Standard and Year (of Standard)

Standard	Year
ASTM D1970	2015
ASTM D2178	2015
ASTM D4601	2012
ASTM D6163	2015
ASTM D6164	2011
ASTM D6222	2011
ASTM D6509	2015
ASTM G155	2013
FM 4470	2016
FM 4474	2011

Equivalence of Product Standards

Certified By

Sections from the Code

Product Approval Method	Method 1 Option D
Date Submitted	07/23/2021
Date Validated	08/03/2021
Date Pending FBC Approval	08/07/2021
Date Approved	10/12/2021

Summary of Products

FL #	Model, Number or Name	Description
2533.1	Flintlastic Modified Bitumen Roof Systems for use in FBC non-HVHZ jurisdictions	Modified Bitumen Roof Systems
Limits of Use **Approved for use in HVHZ:** No **Approved for use outside HVHZ:** Yes **Impact Resistant:** N/A **Design Pressure:** +N/A/-635 **Other:** 1.) Refer to ER Section 5 for Limits of Use. 2.) The design pressure noted in this application relates to one specific system. Refer to the ER Appendix for all systems and max design pressures.		**Installation Instructions** FL2533_R26_II_2021_07_20_FINAL_A1_ER_CERTAINTEED_MODBIT_FL2533-R26.pdf Verified By: Robert Nieminen, PE PE-59166 Created by Independent Third Party: Yes **Evaluation Reports** FL2533_R26_AE_2021_07_20_FINAL_ER_CERTAINTEED_MODBIT_FL2533-R26.pdf Created by Independent Third Party: Yes

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APPENDIX 1: ATTACHMENT REQUIREMENTS FOR WIND UPLIFT RESISTANCE

TABLE	DECK	APPLICATION	TYPE	DESCRIPTION	PAGE
1A	Wood	New or Reroof (Tear-Off)	A-1	Bonded Insulation, Bonded Roof Cover	5-6
1B	Wood	New or Reroof (Tear-Off)	A-2	Mech. Attached Anchor Sheet, Bonded Insulation, Bonded Roof Cover	6-7
1C	Wood	New, Reroof (Tear-Off) or Recover	B-1	Mech. Attached Base Insulation, Bonded Top Insulation, Bonded Roof Cover	8
1D	Wood	New, Reroof (Tear-Off) or Recover	C-1	Mech. Attached Insulation, Bonded Roof Cover	9-10
1E	Wood	New, Reroof (Tear-Off) or Recover	D-2	Insulated, Mech. Attached Base Sheet, Bonded Roof Cover	11-13
1F	Wood	New, Reroof (Tear-Off)	E-2	Non-Insulated, Mech. Attached Base Sheet, Bonded Roof Cover	13-16
1G	Wood	New, Reroof (Tear-Off) or Recover	E-2	Non-Insulated, Mech. Attached Base Sheet, Bonded Roof Cover	16-18
1H	Wood	New or Reroof (Tear-Off)	F	Non-Insulated, Bonded Roof Cover	18
2A	Steel or Structural concrete	New, Reroof (Tear-Off) or Recover	B-1	Mech. Attached Base Insulation, Bonded Top Insulation, Bonded Roof Cover	19-22
2B	Steel or Structural concrete	New, Reroof (Tear-Off) or Recover	C-1	Mech. Attached Insulation, Bonded Roof Cover	22-26
2C	Steel or Structural concrete	New, Reroof (Tear-Off) or Recover	D-2	Insulated, Mech. Attached Base Sheet, Bonded Roof Cover	27-29
3A	Structural concrete	New or Reroof (Tear-Off)	A-1	Bonded Insulation, Bonded Roof Cover	30-39
3B	Structural concrete	New or Reroof (Tear-Off)	A-3	Bonded Temp Roof/Vapor Barrier, Bonded Insulation, Bonded Roof Cover	40
3C	Structural concrete	New or Reroof (Tear-Off)	F	Non-Insulated, Bonded Roof Cover	40
4A	LWIC / steel	New or Reroof (Tear-Off)	A-1	Bonded Insulation, Bonded Roof Cover	41-42
4B	LWIC / structural concrete	New or Reroof (Tear-Off)	A-1	Bonded Insulation, Bonded Roof Cover	43-49
4C	LWIC / structural concrete	New, Reroof (Tear-Off)	A-1	Bonded Vapor Barrier, Bonded Insulation, Bonded Roof Cover	50-51
4D	LWIC / steel	New or Reroof (Tear-Off)	A-2	Mech. Attached Anchor Sheet, Bonded Insulation, Bonded Roof Cover	52-54
4E	LWIC / steel or struct. conc.	New or Reroof (Tear-Off)	E-2	Non-Insulated, Mech. Attached Base Sheet, Bonded Roof Cover	55-59
4F	LWIC / steel	Reroof (Tear-Off) or Recover	E-2	Non-Insulated, Mech. Attached Base Sheet, Bonded Roof Cover	60
4G	LWIC / steel	Reroof (Tear-Off)	F	Non-Insulated, Bonded Roof Cover	60
5A	Cementitious wood fiber	New or Reroof (Tear-Off)	A-1	Bonded Insulation, Bonded Roof Cover	61-62
5B	Cementitious wood fiber	New or Reroof (Tear-Off) or Recover	A-2	Mech. Attached Anchor Sheet, Bonded Insulation, Bonded Roof Cover	63
5C	Cementitious wood fiber	Reroof (Tear-Off) or Recover	C-1	Mech. Attached Insulation, Bonded Roof Cover	64
5D	Cementitious wood fiber	New, Reroof (Tear-Off) or Recover	E-2	Non-Insulated, Mech. Attached Base Sheet, Bonded Roof Cover	64
6A	Existing gypsum	Reroof (Tear-Off)	A-1	Bonded Insulation, Bonded Roof Cover	65-67
6B	Existing gypsum	Reroof (Tear-Off)	A-2	Mech. Attached Anchor Sheet, Bonded Insulation, Bonded Roof Cover	68
6C	Existing gypsum	Reroof (Tear-Off)	C-1	Mech. Attached Insulation, Bonded Roof Cover	69
6D	Existing gypsum	Reroof (Tear-Off)	E-2	Non-Insulated, Mech. Attached Base Sheet, Bonded Roof Cover	69
7A	Various	Recover	A-1	Bonded Insulation, Bonded Roof Cover	70-75
7B	Various	Recover	F	Non-Insulated, Bonded Roof Cover	75

The following notes apply to the systems outlined herein:

1. The roof system evaluation herein pertains to above-deck roof components. Roof decks and structural members shall be in accordance with FBC requirements to the satisfaction of the Authority Having Jurisdiction.

2. Unless otherwise noted, fasteners and stress plates for insulation attachment shall be as follows. Fasteners shall be of sufficient length for the following engagements:
   - Wood Deck: FlintFast #14 Fastener with FlintFast 3" Insulation Plates, Dekfast DF-#14-PH3 with Dekfast PLT-H-2-7/8 or Dekfast PLT-R-3, OMG #14 Roofgrip with Flat Bottom Plate (Accutrac), OMG HD with OMG 3 in. Galvalume Steel Plate or Trufast #14 HD with Trufast 3" Metal Insulation Plates. Minimum ¾-inch plywood penetration or minimum 1-inch wood plank embedment.
   - Steel Deck: FlintFast #12 or #14 Fastener with FlintFast 3" Insulation Plates, Dekfast DF-#12-PH3 or DF-#14-PH3 with Dekfast PLT-H-2-7/8 or Dekfast PLT-R-3, OMG #12 or #14 Roofgrip with Recessed or Flat Bottom Plate (Accutrac), OMG #12 Standard or HD with OMG 3 in. Galvalume Steel Plate or Trufast #12 DP or Trufast #14 HD with Trufast 3" Metal Insulation Plates or. Minimum ¾-inch steel penetration and engage the top flute of the steel deck.
   - Structural Concrete: FlintFast #14 Fastener with FlintFast 3" Insulation Plates, Dekfast DF-#14-PH3 with Dekfast PLT-H-2-7/8 or Dekfast PLT-R-3, OMG #14 Roofgrip with Recessed or Flat Bottom Plate (Accutrac), OMG HD or CD-10 with OMG 3 in. Galvalume Steel Plate or Trufast #14 HD or Trufast Fluted Concrete Nail with Trufast 3" Metal Insulation Plates. Minimum 1-inch embedment. Fasteners installed with a pilot hole in accordance with the fastener manufacturer's published installation instructions.

3. Unless otherwise noted, insulation may be any one layer or combination of FBC Approved (Local or Statewide) board(s) that meet FBC 1505 and, for foam plastic, FBC Chapter 26, when installed with the roof cover.

4. Minimum 200 psi, minimum 2-inch thick FBC Approved lightweight insulating concrete may be substituted for rigid insulation board for System Types B, C or D, whereby fasteners are installed through the lightweight insulating concrete to engage the structural deck. The structural deck shall be of equal or greater type, thickness and strength to the steel and structural concrete deck listings. Roof decks and structural members shall be in accordance with FBC requirements to the satisfaction of the Authority Having Jurisdiction. This is a wind uplift resistance allowance and does not purport to address non-wind-uplift-related issues, such as deck venting or moisture levels within the LWIC and the potential effect on overlying components.

5. Preliminary insulation attachment for System Type D: Unless otherwise noted, refer to Section 2.2.10.1.3 of FM Loss Prevention Data Sheet 1-29 (February 2020).

6. Unless otherwise noted, insulation adhesive application rates are as follows. Ribbon or bead width is at the time of application, the ribbons/beads shall expand as noted in the manufacturer's published instructions.
   - hot asphalt: Full coverage at 25-30 lbs/square
   - "FlintFast QS Insulation Adhesive" (FlintFast QS): Continuous 0.25 to 0.5-inch wide ribbons, 12-inch o.c. *Note: HB Fuller "Millennium One Step Foamable Adhesive" may be used wherever FlintFast QS is listed.*
   - "FlintFast LV Insulation Adhesive" (FlintFast LV): Continuous 0.5 to 0.75-inch wide ribbons, 12-inch o.c. *Note: HB Fuller "Millennium PG-1 Pump Grade Adhesive" may be used wherever FlintFast LV is listed.*
   - Dupont "INSTA STIK Quik Set Commercial Roofing Adhesive" (Insta Stik QS): Continuous 0.75 to 1 inch wide ribbons, 12-inch o.c.
   - ICP Adhesives and Sealants "Polyset Board-Max": Continuous 3-inch ribbons, 12-inch o.c.
   - ICP Adhesives and Sealants "Polyset CR-20": Continuous 2.5 to 3-inch wide ribbons, 12-inch o.c.
   - OMG OlyBond 500 Adhesive Fastener (OB500): Continuous 0.75-inch wide ribbons, 12-inch o.c. (PaceCart, SpotShot or Canister)
   - *Note: When multiple layers(s) of insulation and/or coverboard are installed in ribbon-applied adhesive, boards shall be staggered from layer-to-layer.*
   - *Note: The maximum edge distance from the adhesive ribbon to the edge of the insulation board shall be not less than one-half the specified ribbons spacing.*

7. Unless otherwise noted, all insulations are flat-stock or taper board of the minimum thickness noted. Tapered polyisocyanurate at the following thickness limitations may be substituted with the following Maximum Design Pressure (MDP) limitations. In no case shall these values be used to 'increase' the MDP listings in the tables, rather if MDP listing below meets or exceeds that listed for a particular system in the tables, then the thinner board listed below may be used as a drop-in for the equivalent thicker material listed in the table:
   - FlintFast QS: MDP -157.5 psf (Min. 1.0-inch)
   - FlintFast LV: MDP -157.5 psf (Min. 1.0-inch)
   - Insta Stik QS: MDP -120.0 psf (Min. 1.0-inch)
   - Polyset CR-20: MDP -117.5 psf (Min. 1.0-inch)
   - OB500: MDP -45.0 psf (Min. 0.5-inch Multi-Max FA3)
   - OB500: MDP -187.5 psf (Min. 0.5-inch ISO 95+ GL)
   - OB500: MDP -315.0 psf (Min. 0.5-inch ENRGY 3)
   - OB500: MDP -487.5 psf (Min. 0.5-inch ACFoam II)

8. 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).

9. 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.

10. 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.

11. For mechanically attached components over existing 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 and analysis shall be in accordance with ANSI/SPRI FX-1 or Testing Application Standard TAS 105.

12. 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.

13. Refer to **FBC 1511** for requirements and limitations regarding recover installations. For Structural Concrete Deck or Recover Applications using System Type D, the insulation is optional. Alternatively, an FBC Approved insulation board or coverboard may be used as a separation layer. Board products shall be preliminarily attached prior to roof cover installation (Note 5 herein). The separator component shall be documented as meeting FBC 1505 and, for foam plastic, FBC Chapter 26, when installed with the roof cover in Recover applications.

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

15. Unless otherwise noted, refer to the following references for bonded applications.

MEMBRANE / ADHESIVE COMBINATIONS			
REFERENCE	**LAYER**	**MATERIAL**	**APPLICATION**
SBS-CA1	Base Ply:	Flintlastic Base 20, Flintlastic Poly SMS Base Sheet, Flintlastic Ultra Poly SMS Base	Karnak No. 81 Cold Process Modified Bitumen Adhesive Brush Grade at 1 gal/square
	Note:	Base ply cures overnight prior to application of the ply or cap ply.	
	Ply:	Flintlastic Base 20, Flintlastic Poly SMS Base Sheet, Flintlastic Ultra Poly SMS Base	
	Cap Ply:	Flintlastic FR Cap 30, Flintlastic FR Cap 30 CoolStar, Flintlastic FR-P, Flintlastic FR-P CoolStar, Flintlastic Premium FR-P, Flintlastic Premium FR-P CoolStar, Flintlastic GMS, Flintlastic GMS CoolStar	
BP-CA2	Base Ply:	Glasbase Base Sheet, All Weather/Empire Base Sheet, Flintlastic Base 20	Henry #903 Adhesive at 1.5 gal/square.
SBS-CA2	Base Ply:	Flintlastic Base 20, Flintlastic Poly SMS Base Sheet, Flintlastic Ultra Poly SMS Base	
	Ply:	Flintlastic Base 20, Flintlastic Poly SMS Base Sheet, Flintlastic Ultra Poly SMS Base	
	Cap Ply:	Flintlastic FR Cap 30, Flintlastic FR Cap 30 CoolStar, Flintlastic FR-P, Flintlastic FR-P CoolStar, Flintlastic Premium FR-P, Flintlastic Premium FR-P CoolStar, Flintlastic GMS, Flintlastic GMS CoolStar	
BP-CA3	Base Ply:	Glasbase Base Sheet, All Weather/Empire Base Sheet, Flintlastic Base 20	HB Fuller "Millennium Hurricane Force Membrane Adhesive", beads spaced 6-inch o.c.
SBS-CA3	Base Ply:	Flintlastic Base 20, Flintlastic Poly SMS Base Sheet, Flintlastic Ultra Poly SMS Base	
	Ply:	Flintlastic Base 20, Flintlastic Poly SMS Base Sheet, Flintlastic Ultra Poly SMS Base	
	Cap Ply:	Flintlastic FR Cap 30, Flintlastic FR Cap 30 CoolStar, Flintlastic FR-P, Flintlastic FR-P CoolStar, Flintlastic Premium FR-P, Flintlastic Premium FR-P CoolStar, Flintlastic GMS, Flintlastic GMS CoolStar	

Membrane / Adhesive Combinations			
REFERENCE	**LAYER**	**MATERIAL**	**APPLICATION**
SBS-CA4	Base Ply:	Flintlastic Base 20, Flintlastic Poly SMS Base Sheet, Flintlastic Ultra Poly SMS Base	FlintBond Brush or Tropical Roofing Products #216 Modified Bitumen Adhesive at 1 to 1.5 gal/square.
	Note:	Base ply cures overnight prior to application of the ply or cap ply.	
	Ply:	Flintlastic Base 20, Flintlastic Poly SMS Base Sheet, Flintlastic Ultra Poly SMS Base	
	Cap Ply:	Flintlastic FR Cap 30, Flintlastic FR Cap 30 CoolStar, Flintlastic FR-P, Flintlastic FR-P CoolStar, Flintlastic Premium FR-P, Flintlastic Premium FR-P CoolStar, Flintlastic GMS, Flintlastic GMS CoolStar	
BP-AA	Base Ply:	Glasbase Base Sheet, All Weather/Empire Base Sheet, Flintlastic Base 20	hot asphalt at 20-40 lbs/square
	Ply:	One or more Flintglas Ply 4, Flintglas Premium Ply 6	
SBS-AA	Base Ply:	Flintlastic Base 20, Flintlastic Poly SMS Base Sheet, Flintlastic Ultra Poly SMS Base	hot asphalt at 20-40 lbs/square
	Ply:	One or more Flintlastic Base 20, Flintlastic Poly SMS Base Sheet, Flintlastic Ultra Poly SMS Base	
	Cap Ply:	Flintlastic FR Cap 30, Flintlastic FR Cap 30 CoolStar, Flintlastic FR-P, Flintlastic FR-P CoolStar, Flintlastic Premium FR-P, Flintlastic Premium FR-P CoolStar, Flintlastic GMS, Flintlastic GMS CoolStar	
SBS-TA	Base Ply:	Flintlastic Ultra Poly SMS Base Sheet, Flintlastic Base 20 T	torch-applied
	Ply:	One or more Flintlastic Ultra Poly SMS Base Sheet, Flintlastic Base 20 T	
	Cap Ply:	Flintlastic FR Cap 30 T, Flintlastic FR Cap 30 T CoolStar	
APP-TA	Base Ply:	One or more Flintlastic APP Base T, Flintlastic STA, Flintlastic STA Plus	torch-applied
	Cap Ply:	Flintlastic STA, Flintlastic STA Plus, Flintlastic GTA, Flintlastic GTA CoolStar, Flintlastic GTA-FR, Flintlastic GTA-FR CoolStar	
SBS-SA-H	Base Ply:	Black Diamond Base Sheet, Flintlastic Ultra Glass SA	self-adhering (activated by overlying membrane)
SBS-SA	Base Ply:	Flintlastic SA PlyBase, Flintlastic SA Mid Ply	self-adhering
	Ply:	Flintlastic SA PlyBase, Flintlastic SA Mid Ply	
	Cap Ply:	Flintlastic SA Cap, Flintlastic SA Cap FR CoolStar, Flintlastic SA Cap FR, Flintlastic SA Cap FR CoolStar	

16. Vapor barrier options for use over **structural concrete deck** followed by adhesive-applied insulation carry the following Maximum Design Pressure (MDP) limitations. The **lesser** of the MDP listings below vs. those in **Table 3A** applies:

Vapor Barrier Options, Structural Concrete Deck, Adhered Insulation per Table 3A, (The lesser of the MDP listings below vs. those in Table 3A applies)					
OPTION #	**PRIMER**	**VAPOR BARRIER**		**INSULATION ADHESIVE**	**MDP (PSF)**
		TYPE	**ATTACH**		
VB-1.	FlintPrime QD, Karnak #108 or ASTM D41	Flintlastic SA PlyBase	Self-adhering	OB500, 12-inch o.c.	-82.5
VB-2.	None	All Weather/Empire Base Sheet, 3-inch wide side laps and 6-inch wide end laps are sealed with HB Fuller "HB Fuller "Millennium Hurricane Force Lap and Flashing Adhesive"	HB Fuller "Millennium Hurricane Force Membrane Adhesive HS", max. 6-inch o.c.	FlintFast QS or FlintFast LV, 12-inch o.c.	-82.5
VB-3.	None	Flintlastic Ultra Poly SMS Base Sheet, 3-inch wide side laps and 6-inch wide end laps are hot-air-welded, torch-welded or sealed with HB Fuller "HB Fuller "Millennium Hurricane Force Lap and Flashing Adhesive"	HB Fuller "Millennium Hurricane Force Membrane Adhesive HS", max. 6-inch o.c.	FlintFast QS or FlintFast LV, 12-inch o.c.	-82.5
VB-4.	FlintPrime QD, Karnak #108 or ASTM D41 primer	Black Diamond Base Sheet, Flintlastic Ultra Glass SA or Flintlastic SA Cap	Self-adhering	FlintFast QS or FlintFast LV, 12-inch o.c.	-97.5

VAPOR BARRIER OPTIONS, STRUCTURAL CONCRETE DECK, ADHERED INSULATION PER TABLE 3A, (The lesser of the MDP listings below vs. those in Table 3A applies)					
OPTION #	PRIMER	VAPOR BARRIER		INSULATION ADHESIVE	MDP (PSF)
		TYPE	ATTACH		
VB-5.	FlintPrime QD, Karnak #108 or ASTM D41 primer	Black Diamond Base Sheet, Flintlastic Ultra Glass SA or Flintlastic SA Cap	Self-adhering	FlintFast QS or FlintFast LV, 6-inch o.c.	-315.0
VB-6.	ASTM D41 or Karnak #108 Asphalt Primer	Flintlastic GTA	Torch-applied	FlintFast QS or FlintFast LV, 12-inch o.c.	-420.0
VB-7.	FlintPrime QD, Karnak #108 or ASTM D41 primer	Flintlastic Base 20 T or Flintlastic FR Cap 30 T	Torch-applied	FlintFast QS or FlintFast LV, 12-inch o.c.	-495.0

17. "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: WOOD DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER										
Sys. No.	Deck (Note 1)	Base Insulation		Top Insulation		Primer	Roof Cover (Note 15)			MDP (psf)
		Type	Attach (Notes 6,7,8)	Type	Attach (Notes 6,7,8)		Base Ply	Ply	Cap Ply	
SELF-ADHERING SYSTEMS:										
W-1	Min. 15/32-inch APA rated CDX plywood, 24-inch span	Min. 1.5-inch FlintBoard ISO, ACFoam II, FlintBoard H ISO, H-Shield	FlintFast QS or FlintFast LV	(Optional) Additional layer(s) of base insulation and/or min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board.	FlintFast QS or FlintFast LV	FlintPrime QD, Karnak #108 or ASTM D41 primer	SBS-SA	(Optional) SBS-SA	SBS-SA	-60.0
W-2	Min. 15/32-inch APA rated CDX plywood, 24-inch span, blocked 48-inch o.c.	Min. 1.5-inch FlintBoard ISO, ACFoam II, FlintBoard H ISO, H-Shield	FlintFast QS or FlintFast LV, 6-inch o.c.	(Optional) Additional layer(s) of base insulation and/or min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board.	FlintFast QS or FlintFast LV, 6-inch o.c.	FlintPrime QD, Karnak #108 or ASTM D41 primer	SBS-SA	(Optional) SBS-SA	SBS-SA	-97.5
HYBRID SYSTEMS:										
W-3	Min. 15/32-inch APA rated CDX plywood, 24-inch span	Min. 1.5-inch FlintBoard ISO, ACFoam II, FlintBoard H ISO, H-Shield	FlintFast QS or FlintFast LV	(Optional) Additional layer(s) of base insulation and/or min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board.	FlintFast QS or FlintFast LV	None	SBS-SA-H	(Optional) BP-AA, SBS-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA	-60.0
W-4	Min. 15/32-inch APA rated CDX plywood, 24-inch span, blocked 48-inch o.c.	Min. 1.5-inch FlintBoard ISO, ACFoam II, FlintBoard H ISO, H-Shield	FlintFast QS or FlintFast LV, 6-inch o.c.	(Optional) Additional layer(s) of base insulation and/or min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board.	FlintFast QS or FlintFast LV, 6-inch o.c.	None	SBS-SA-H	(Optional) BP-AA, SBS-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA	-97.5
CONVENTIONAL SYSTEMS:										
W-5	Min. 15/32-inch APA rated CDX plywood, 24-inch span	Min. 1.5-inch FlintBoard ISO, ACFoam II, FlintBoard H ISO, H-Shield	FlintFast QS or FlintFast LV	Optional additional layers of base insulation, followed by min. 0.25-inch DensDeck Prime or SECUROCK Gypsum-Fiber Roof Board	FlintFast QS or FlintFast LV	None	BP-AA, SBS-AA, SBS-TA or APP-TA	(Optional) BP-AA, SBS-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA	-60.0

TABLE 1F: WOOD DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE E-2: NON-INSULATED, MECHANICALLY ATTACHED BASE SHEET, BONDED ROOF COVER								
System No.	Deck (Note 1)	Base Sheet			Primer	Roof Cover (Note 15)		MDP (psf)
		Base	Fasteners	Attach		Base Ply	Cap Ply	
W-61	Min. 19/32-inch plywood, 24-inch span	Flintlastic SA NailBase	32 ga., 1-5/8-inch dia. tin caps with 11 ga. annular ring shank nails	4-inch o.c. at min. 2-inch lap and 4-inch o.c. in four (4), equally spaced, staggered center rows	None	(Optional) SBS-SA	SBS-SA	-105.0
HYBRID SYSTEMS:								
W-62	Min. 19/32-inch plywood, 24-inch span	Glasbase Base Sheet, Flintlastic Base 20, All Weather/Empire Base Sheet, Flintlastic Poly SMS Base Sheet, Flintlastic Ultra Poly SMS Base Sheet	32 ga., 1-5/8-inch dia. tin caps with 11 ga. annular ring shank nails	9-inch o.c. at 4-inch lap and 12-inch o.c. in two (2), equally spaced, staggered center rows	None	SBS-SA-H	SBS-AA, SBS-TA or APP-TA	-45.0*
W-63	Min. 15/32-inch plywood, 24-inch span	Glasbase Base Sheet, Flintlastic Base 20, All Weather/Empire Base Sheet, Flintlastic Poly SMS Base Sheet, Flintlastic Ultra Poly SMS Base Sheet	Min. 1-inch long, 12 ga. Simplex Metal Cap Nails	6-inch o.c. at 3-inch lap and 6-inch o.c. in four (4), equally spaced, staggered center rows	None	SBS-SA-H	SBS-AA, SBS-TA or APP-TA	-52.5
W-64	Min. 19/32-inch plywood, 24-inch span	Glasbase Base Sheet, Flintlastic Base 20, Flintlastic Poly SMS Base Sheet, Flintlastic Ultra Poly SMS Base Sheet	32 ga., 1-5/8-inch dia. tin caps with 11 ga. annular ring shank nails	8-inch o.c. at 4-inch lap and 8-inch o.c. in three (3), equally spaced, staggered center rows	None	SBS-SA-H	SBS-AA, SBS-TA or APP-TA	-52.5
W-65	Min. 19/32-inch plywood, 24-inch span	Glasbase Base Sheet, Flintlastic Base 20, Flintlastic Poly SMS Base Sheet, Flintlastic Ultra Poly SMS Base Sheet	32 ga., 1-5/8-inch dia. tin caps with 11 ga. annular ring shank nails	8-inch o.c. at 4-inch lap and 8-inch o.c. in three (3), equally spaced, staggered center rows	None	SBS-SA-H	SBS-AA, SBS-TA or APP-TA	-60.0
W-66	Min. 19/32-inch plywood, 24-inch span	Glasbase Base Sheet, Flintlastic Base 20, Flintlastic Poly SMS Base Sheet, Flintlastic Ultra Poly SMS Base Sheet	32 ga., 1-5/8-inch dia. tin caps with 11 ga. annular ring shank nails	6-inch o.c. at 4-inch lap and 6-inch o.c. in four (4), equally spaced, staggered center rows	None	SBS-SA-H	SBS-AA, SBS-TA or APP-TA	-82.5
W-67	Min. 19/32-inch plywood, 24-inch span	Glasbase Base Sheet, Flintlastic Base 20, Flintlastic Poly SMS Base Sheet, Flintlastic Ultra Poly SMS Base Sheet	32 ga., 1-5/8-inch dia. tin caps with 11 ga. annular ring shank nails	4-inch o.c. at 3-inch lap and 4-inch o.c. in four (4), equally spaced, staggered center rows	None	SBS-SA-H	SBS-AA, SBS-TA or APP-TA	-105.0
CONVENTIONAL SYSTEMS:								
W-68	Min. 19/32-inch plywood, 24-inch span	Glasbase Base Sheet, Flintlastic Base 20, All Weather/Empire Base Sheet, Flintlastic Poly SMS Base Sheet, Flintlastic Ultra Poly SMS Base Sheet	32 ga., 1-5/8-inch dia. tin caps with 11 ga. annular ring shank nails	9-inch o.c. at 4-inch lap and 12-inch o.c. in two (2), equally spaced, staggered center rows	None	BP-AA, SBS-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA	-45.0*
W-69	Min. 15/32-inch plywood, 24-inch span	Glasbase Base Sheet, Flintlastic Base 20, All Weather/Empire Base Sheet, Flintlastic Poly SMS Base Sheet	Simplex MAXX Cap	9-inch o.c. at 2-inch lap and 18-inch o.c. in two (2), equally spaced, staggered center rows	None	(Optional) BP-AA, SBS-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA	-45.0*
W-70	Min. 15/32-inch plywood, 24-inch span	Flintlastic APP Base T	Simplex MAXX Cap	9-inch o.c. at 2-inch lap and 18-inch o.c. in two (2), equally spaced, staggered center rows	None	(Optional) APP-TA	APP-TA	-45.0*

TABLE 1F: WOOD DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF)
SYSTEM TYPE E-2: NON-INSULATED, MECHANICALLY ATTACHED BASE SHEET, BONDED ROOF COVER

System No.	Deck (Note 1)	Base Sheet			Primer	Roof Cover (Note 15)		MDP (psf)
		Base	Fasteners	Attach		Base Ply	Cap Ply	
W-71	Min. 15/32-inch plywood, 24-inch span	Glasbase Base Sheet, Flintlastic Base 20, All Weather/Empire Base Sheet, Flintlastic Poly SMS Base Sheet, Flintlastic Ultra Poly SMS Base Sheet	Min. 1-inch long, 12 ga. Simplex Metal Cap Nails	6-inch o.c. at 3-inch lap and 6-inch o.c. in four (4), equally spaced, staggered center rows	None	(Optional) BP-AA, SBS-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA	-52.5
W-72	Min. 19/32-inch plywood, 24-inch span	Glasbase Base Sheet, Flintlastic Base 20, All Weather/Empire Base Sheet, Flintlastic Poly SMS Base Sheet, Flintlastic Ultra Poly SMS Base Sheet	32 ga., 1-5/8-inch dia. tin caps with 11 ga. annular ring shank nails	8-inch o.c. at 4-inch lap and 8-inch o.c. in three (3), equally spaced, staggered center rows	None	BP-AA, SBS-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA	-52.5
W-73	Min. 15/32-inch plywood, 24-inch span	Glasbase Base Sheet, Flintlastic Base 20, All Weather/Empire Base Sheet, Flintlastic Poly SMS Base Sheet	Simplex MAXX Cap	9-inch o.c. at 2-inch lap and 12-inch o.c. in two (2), equally spaced, staggered center rows	None	(Optional) BP-AA, SBS-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA	-52.5
W-74	Min. 15/32-inch plywood, 24-inch span	Flintlastic APP Base T	Simplex MAXX Cap	9-inch o.c. at 2-inch lap and 12-inch o.c. in two (2), equally spaced, staggered center rows	None	(Optional) APP-TA	APP-TA	-52.5
W-75	Min. 19/32-inch plywood, 24-inch span	Glasbase Base Sheet, Flintlastic Base 20, All Weather/Empire Base Sheet, Flintlastic Poly SMS Base Sheet, Flintlastic Ultra Poly SMS Base Sheet	32 ga., 1-5/8-inch dia. tin caps with 11 ga. annular ring shank nails	8-inch o.c. at 4-inch lap and 8-inch o.c. in three (3), equally spaced, staggered center rows	None	BP-AA, SBS-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA	-60.0
W-76	Min. 15/32-inch plywood, 24-inch span	Glasbase Base Sheet, Flintlastic Base 20, All Weather/Empire Base Sheet, Flintlastic Poly SMS Base Sheet, Flintlastic Ultra Poly SMS Base Sheet	Cap nails: 1-inch diameter, 0.032-inch thick metal cap with 0.120-inch shank diameter, annular ring shank nails.	6-inch o.c. at 4-inch lap and 6-inch o.c. at five (5) equally spaced, staggered center rows	None	(Optional) BP-AA, SBS-AA or SBS-TA	SBS-AA or SBS-TA	-67.5
W-77	Min. 19/32-inch plywood, 24-inch span	Glasbase Base Sheet, Flintlastic Base 20, All Weather/Empire Base Sheet, Flintlastic Poly SMS Base Sheet, Flintlastic Ultra Poly SMS Base Sheet	32 ga., 1-5/8-inch dia. tin caps with 11 ga. annular ring shank nails	6-inch o.c. at 4-inch lap and 6-inch o.c. in four (4), equally spaced, staggered center rows	None	BP-AA, SBS-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA	-82.5
W-78	Min. 15/32-inch plywood, 24-inch span	Glasbase Base Sheet, Flintlastic Base 20, All Weather/Empire Base Sheet, Flintlastic Poly SMS Base Sheet	Simplex MAXX Cap	6-inch o.c. at 2-inch lap and 6-inch o.c. in two (2), equally spaced, staggered center rows	None	(Optional) BP-AA, SBS-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA	-90.0
W-79	Min. 15/32-inch plywood, 24-inch span	Flintlastic APP Base T	Simplex MAXX Cap	6-inch o.c. at 2-inch lap and 6-inch o.c. in two (2), equally spaced, staggered center rows	None	(Optional) APP-TA	APP-TA	-90.0
W-80	Min. 19/32-inch plywood, 24-inch span	Glasbase Base Sheet, Flintlastic Base 20, All Weather/Empire Base Sheet, Flintlastic Poly SMS Base Sheet, Flintlastic Ultra Poly SMS Base Sheet	32 ga., 1-5/8-inch dia. tin caps with 11 ga. annular ring shank nails	4-inch o.c. at 3-inch lap and 4-inch o.c. in four (4), equally spaced, staggered center rows	None	BP-AA, SBS-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA	-105.0

TABLE 1F: WOOD DECKS – NEW CONSTRUCTION OR REROOF (TEAR-OFF) SYSTEM TYPE E-2: NON-INSULATED, MECHANICALLY ATTACHED BASE SHEET, BONDED ROOF COVER								
System No.	Deck (Note 1)	Base Sheet			Primer	Roof Cover (Note 15)		MDP (psf)
		Base	Fasteners	Attach		Base Ply	Cap Ply	
W-81	Min. 15/32-inch plywood, 24-inch span	Glasbase Base Sheet, Flintlastic Base 20, All Weather/Empire Base Sheet, Flintlastic Poly SMS Base Sheet	Simplex MAXX Cap	6-inch o.c. at 2-inch lap and 6-inch o.c. in three (3), equally spaced, staggered center rows	None	(Optional) BP-AA, SBS-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA	-105.0
W-82	Min. 15/32-inch plywood, 24-inch span	Flintlastic APP Base T	Simplex MAXX Cap	6-inch o.c. at 2-inch lap and 6-inch o.c. in three (3), equally spaced, staggered center rows	None	(Optional) APP-TA	APP-TA	-105.0

TABLE 1G: WOOD DECKS – NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE E-2: NON-INSULATED, MECHANICALLY ATTACHED BASE SHEET, BONDED ROOF COVER								
System No.	Deck (Note 1)	Base Sheet			Primer	Roof Cover (Note 15)		MDP (psf)
		Base	Fasteners	Attach		Base Ply	Cap Ply	
SELF-ADHERING SYSTEMS:								
W-83	APA rated, min. 7/16 CAT, 0.418 in., Exposure 1, OSB, 24-inch span	Flintlastic SA NailBase	Trufast Versa Fasteners & Plates, two (2) screws per plate at 180° from each other*	9-inch o.c. at min. 3-inch lap and 12-inch o.c. in two (2), equally spaced, staggered center rows	ASTM D41 primer at plates	(Optional) Flintlastic SA Mid Ply, self-adhering	SBS-SA	-60.0*
	Note:	**For re-roof (tear-off) or recover applications, field withdrawal resistance testing (Note 11) shall yield minimum 109 lbf. Additional Versa-Fast Fasteners within each Versa-Fast Plate may be utilized to produce minimum withdrawal resistance. For recover installations, screws shall be of sufficient length for minimum 1" penetration through OSB sheathing.*						
W-84	Min. 19/32-inch plywood, 24-inch span	Flintlastic SA NailBase	Note 2	8-inch o.c. at min. 3-inch lap and 8-inch o.c. in two (2), equally spaced, staggered center rows	Prime stress plates with Karnak #108	(Optional) SBS-SA	SBS-SA	-82.5*
W-85	Min. 15/32-inch plywood, 24-inch span	Flintlastic SA NailBase	FlintFast #12 or #14 with FlintFast 3 in. Insulation Plate, OMG #14 HD with OMG 3 in. Round Metal Plate or Trufast #12 DP or #14 HD with Trufast 3" Metal Insulation Plate	6-inch o.c. at min. 2-inch lap and 6-inch o.c. in three (3), equally spaced, staggered center rows	Prime stress plates with Karnak #108	(Optional) SBS-SA	SBS-SA	-97.5*
W-86	Min. 15/32-inch plywood, 24-inch span	Flintlastic SA NailBase	FlintFast #12 or #14 with FlintFast 3 in. Insulation Plate, OMG #14 HD with OMG 3 in. Round Metal Plate or Trufast #12 DP or #14 HD with Trufast 3" Metal Insulation Plate	6-inch o.c. at min. 2-inch lap and 6-inch o.c. in four (4), equally spaced, staggered center rows	Prime stress plates with Karnak #108	(Optional) SBS-SA	SBS-SA	-127.5*
HYBRID SYSTEMS:								
W-87	Min. 15/32-inch plywood, 24-inch span	Glasbase Base Sheet, Flintlastic Base 20, Flintlastic Poly SMS Base Sheet, Flintlastic Ultra Poly SMS Base Sheet	FlintFast #12 or #14 with FlintFast 3 in. Insulation Plate, OMG #14 HD with OMG 3 in. Round Metal Plate or Trufast #12 DP or #14 HD with Trufast 3" Metal Insulation Plate	6-inch o.c. at 4-inch lap and 6-inch o.c. in three (3), equally spaced, staggered center rows	Prime stress plates with Karnak #108	SBS-SA-H	SBS-AA, SBS-TA or APP-TA	-97.5

TABLE 1G: WOOD DECKS – NEW CONSTRUCTION, REROOF (TEAR-OFF) OR RECOVER SYSTEM TYPE E-2: NON-INSULATED, MECHANICALLY ATTACHED BASE SHEET, BONDED ROOF COVER								
System No.	Deck (Note 1)	Base Sheet			Primer	Roof Cover (Note 15)		MDP (psf)
		Base	Fasteners	Attach		Base Ply	Cap Ply	
W-88	Min. 19/32-inch plywood, 24-inch span	Glasbase Base Sheet, Flintlastic Base 20, Flintlastic Poly SMS Base Sheet, Flintlastic Ultra Poly SMS Base Sheet	Note 2	7-inch o.c. at 3-inch lap and 7-inch o.c. in three (3), equally spaced, staggered center rows	None	SBS-SA-H	SBS-AA, SBS-TA or APP-TA	-105.0
W-89	Min. 15/32-inch plywood, 24-inch span	Glasbase Base Sheet, Flintlastic Base 20, Flintlastic Poly SMS Base Sheet, Flintlastic Ultra Poly SMS Base Sheet	FlintFast #12 or #14 with FlintFast 3 in. Insulation Plate, OMG #14 HD with OMG 3 in. Round Metal Plate or Trufast #12 DP or #14 HD with Trufast 3" Metal Insulation Plate	6-inch o.c. at 4-inch lap and 6-inch o.c. in four (4), equally spaced, staggered center rows	Prime stress plates with Karnak #108	SBS-SA-H	SBS-AA, SBS-TA or APP-TA	-127.5
CONVENTIONAL SYSTEMS:								
W-90	Min. 23/32-inch plywood, 24-inch span	Glasbase Base Sheet, All Weather/Empire Base Sheet, Flintlastic Base 20	Note 2	12-inch o.c. at 4-inch lap and 36-inch o.c. in two (2), equally spaced, staggered center rows	None	BP-AA, SBS-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA	-30.0*
W-91	Min. 23/32-inch plywood, 24-inch span	Glasbase Base Sheet, All Weather/Empire Base Sheet, Flintlastic Base 20	Note 2	12-inch o.c. at 4-inch lap and 24-inch o.c. in two (2), equally spaced, staggered center rows	None	BP-AA, SBS-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA	-45.0*
W-92	Min. 23/32-inch plywood, 24-inch span	Flintlastic Poly SMS Base Sheet, Flintlastic Ultra Poly SMS Base Sheet	Note 2	12-inch o.c. at 4-inch lap and 36-inch o.c. in two (2), equally spaced, staggered center rows	None	BP-AA, SBS-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA	-45.0*
W-93	Min. 15/32-inch plywood, 24-inch span	Glasbase Base Sheet, Flintlastic Base 20, Flintlastic Poly SMS Base Sheet, Flintlastic Ultra Poly SMS Base Sheet	FlintFast #12 or #14 with FlintFast 3 in. Insulation Plate, OMG #14 HD with OMG 3 in. Round Metal Plate or Trufast #12 DP or #14 HD with Trufast 3" Metal Insulation Plate	6-inch o.c. at 4-inch lap and 6-inch o.c. in three (3), equally spaced, staggered center rows	None	(Optional) BP-AA, SBS-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA	-97.5
W-94	Min. 15/32-inch plywood, 24-inch span	Flintlastic APP Base T	OMG #14 HD with OMG 3 in. Round Metal Plates	6-inch o.c. at 4-inch lap and 6-inch o.c. in three (3), equally spaced, staggered center rows.	None	APP-TA	APP-TA	-97.5
W-95	Min. 15/32-inch plywood, 24-inch span	Glasbase Base Sheet, Flintlastic Base 20, All Weather/Empire Base Sheet, Flintlastic Poly SMS Base Sheet, Flintlastic Ultra Poly SMS Base Sheet	FlintFast #14 with FlintFast 3 in. Insulation Plate or Trufast #14 HD with Trufast 3" Metal Insulation Plate	8-inch o.c. at 4-inch lap and 8-inch o.c. at three (3) equally spaced, staggered center rows	None	(Optional) BP-AA, SBS-AA or SBS-TA	SBS-AA or SBS-TA	-97.5
W-96	Min. 19/32-inch plywood, 24-inch span	Glasbase Base Sheet, Flintlastic Base 20, Flintlastic Poly SMS Base Sheet, Flintlastic Ultra Poly SMS Base Sheet	Note 2	7-inch o.c. at 3-inch lap and 7-inch o.c. in three (3), equally spaced, staggered center rows	None	BP-AA, SBS-AA, SBS-TA or APP-TA	SBS-AA, SBS-TA or APP-TA	-105.0
W-97	Min. 19/32-inch plywood, 24-inch span	Flintlastic APP Base T	Dekfast DF-#14-PH3 with PLT-H-2-7/8 or OMG #14 HD with OMG 3 in. Round Metal Plate	7-inch o.c. at 3-inch lap and 7-inch o.c. in three (3), equally spaced, staggered center rows	None	APP-TA	APP-TA	-105.0

FL #	FL16305-R10
Application Type	Revision
Code Version	2020
Application Status	Approved
Comments	
Archived	
Product Manufacturer	Atlas Roofing Corporation
Address/Phone/Email	2000 RiverEdge Parkway Suite 800 Atlanta, GA 30328 (770) 946-4571 mcollins@atlasroofing.com
Authorized Signature	Meldrin Collins mcollins@atlasroofing.com
Technical Representative	
Address/Phone/Email	
Quality Assurance Representative	
Address/Phone/Email	
Category	Roofing
Subcategory	Asphalt Shingles
Compliance Method	Evaluation Report from a Florida Registered Architect or a Licensed Florida Professional Engineer Evaluation Report - Hardcopy Received
Florida Engineer or Architect Name who developed the Evaluation Report	Zachary R. Priest
Florida License	PE-74021
Quality Assurance Entity	PRI Construction Materials Technologies, LLC
Quality Assurance Contract Expiration Date	12/31/2024
Validated By	Steven M. Urich, PE Validation Checklist - Hardcopy Received
Certificate of Independence	FL16305_R10_COI_ATL13002.10 2020 FBC Eval Shingles final.pdf

Referenced Standard and Year (of Standard)

Standard	Year
ASTM D 3161	2016
ASTM D 3462	2010
ASTM D 7158	2019
TAS 100	1995
TAS 107	2020

Equivalence of Product Standards Certified By

Sections from the Code

Product Approval Method	Method 1 Option D
Date Submitted	02/11/2021
Date Validated	02/11/2021
Date Pending FBC Approval	02/22/2021
Date Approved	04/13/2021

Summary of Products

FL #	Model, Number or Name	Description
16305.1	Atlas Shingles	Fiberglass reinforced laminated asphalt shingles
Limits of Use **Approved for use in HVHZ:** Yes **Approved for use outside HVHZ:** Yes **Impact Resistant:** N/A **Design Pressure:** N/A **Other:** See evaluation report for limits of use		**Installation Instructions** FL16305_R10_II_ATL13002.10 2020 FBC Eval Shingles final.pdf Verified By: Zachary R. Priest 74021 Created by Independent Third Party: Yes **Evaluation Reports** FL16305_R10_AE_ATL13002.10 2020 FBC Eval Shingles final.pdf Created by Independent Third Party: Yes

Back Next

CREEK
TECHNICAL SERVICES, LLC

Registry No. 29824
17520 Edinburgh Dr
Tampa, FL 33647
(813) 480-3421

EVALUATION REPORT **FLORIDA BUILDING CODE 7TH EDITION (2020)**

Manufacturer: ATLAS ROOFING CORPORATION
2000 Riveredge Parkway, Suite 800
Atlanta, GA 30328
(770) 612-6267

Issued February 11, 2021

Manufacturing Plants: Hampton, GA
Meridian, MS
Dangerfield, TX
Ardmore, OK
Franklin, OH

Quality Assurance: PRI Construction Materials Technologies, LLC
(QUA9110)

SCOPE

Category: Roofing
Subcategory: Asphalt Shingles
Code Edition: Florida Building Code, 7th Edition (2020) including High-Velocity Hurricane Zones (HVHZ)
Code Sections: 1504.1.1, 1507.2.5, 1507.2.7.1, 1523.6.5.1
Properties: Physical properties, Wind Resistance, Wind Driven Rain

PRODUCT DESCRIPTION

Legend (Ardmore)	ASTM D 3161, Class F fiberglass reinforced, 3-tab asphalt shingle with a dashed, thermally-activated, self-sealing sealant stripe that complies with ASTM D 3462.
GlassMaster® 30 (Ardmore & Hampton)	ASTM D 3161, Class F fiberglass reinforced, 3-tab asphalt shingle with a dashed, thermally-activated, self-sealing sealant stripe that complies with ASTM D 3462.
Tough-Master® 20 (Ardmore & Hampton)	ASTM D 3161, Class F fiberglass reinforced, 3-tab asphalt shingle with a dashed, thermally-activated, self-sealing sealant stripe that complies with ASTM D 3462.
Pro-Cut® Hip & Ridge (Ardmore & Hampton)	ASTM D 3161, Class F fiberglass reinforced, hip and ridge asphalt shingle with a dashed, thermally-activated, self-sealing sealant stripe that complies with ASTM D 3462.
Pro-Cut® Starter Strip (Ardmore & Hampton)	ASTM D 3161, Class F fiberglass reinforced, starter asphalt shingle with a dashed, thermally-activated, self-sealing sealant stripe that complies with ASTM D 3462.
ProLAM™ Architectural (Hampton, Franklin & Meridian)	ASTM D 3161, Class F & ASTM D 7158, Class H fiberglass reinforced, laminated architectural asphalt shingle with a dashed, thermally-activated, self-sealing sealant stripe that complies with ASTM D 3462.
Pinnacle® Pristine, Pinnacle® Pristine Lifetime w/Scotchgard (Dangerfield, Hampton, Franklin & Meridian)	ASTM D 3161, Class F & ASTM D 7158, Class H fiberglass reinforced, laminated architectural asphalt shingle with two, dashed, thermally-activated, self-sealing sealant stripes that complies with ASTM D 3462.
StormMaster® Hip & Ridge (Ardmore)	ASTM D 3161, Class F fiberglass reinforced, hip and ridge modified asphalt shingle with a dashed, thermally-activated, self-sealing sealant stripe that complies with ASTM D 3462.

StormMaster® Shake (Dangerfield)	ASTM D 3161, Class F & ASTM D 7158, Class H fiberglass reinforced, laminated architectural modified asphalt shingle with two, dashed, thermally-activated, self-sealing sealant stripe that complies with ASTM D 3462.
StormMaster® Slate (Ardmore)	ASTM D 3161, Class F & ASTM D 7158, Class H fiberglass reinforced, laminated architectural modified asphalt shingle with two, dashed, thermally-activated, self-sealing sealant stripe that complies with ASTM D 3462.

REFERENCES

Entity	Report No.	Standard	Year
PRI Construction Materials Technologies (TST5878)	ATL-079-02-01	ASTM D 3161	2016
		TAS 107	2020
PRI Construction Materials Technologies (TST5878)	ATL-083-02-01	TAS 100	1995
PRI Construction Materials Technologies (TST5878)	ATL-086-02-01 Rev 1	ASTM D 3462	2010A
PRI Construction Materials Technologies (TST5878)	ATL-104-02-01	ASTM D 3462	2010A
PRI Construction Materials Technologies (TST5878)	ATL-106-02-01	ASTM D 3161	2016
		TAS 107	2020
PRI Construction Materials Technologies (TST5878)	ATL-106-02-01 Rev 1	ASTM D 3161	2016
		TAS 107	2020
PRI Construction Materials Technologies (TST5878)	ATL-107-02-01	TAS 100	1995
PRI Construction Materials Technologies (TST5878)	ATL-107-02-01.1	TAS 100	1995
PRI Construction Materials Technologies (TST5878)	ATL-109-02-01	ASTM D 7158	2019
PRI Construction Materials Technologies (TST5878)	ATL-116-02-01	ASTM D 3462	2010A
PRI Construction Materials Technologies (TST5878)	ATL-118-02-01	ASTM D 3462	2010A
PRI Construction Materials Technologies (TST5878)	ATL-119-02-01	TAS 100	1995
PRI Construction Materials Technologies (TST5878)	ATL-123-02-01	ASTM D 7158	2019
PRI Construction Materials Technologies (TST5878)	ATL-125-02-01	TAS 100	1995
PRI Construction Materials Technologies (TST5878)	ATL-127-02-01 Rev 1	ASTM D 7158	2019
PRI Construction Materials Technologies (TST5878)	ATL-132-02-01	ASTM D 3161	2016
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PRI Construction Materials Technologies (TST5878)	ATL-133-02-01	ASTM D 3161	2016
		TAS 107	2020
PRI Construction Materials Technologies (TST5878)	ATL-135-02-01	ASTM D 3462	2010A
PRI Construction Materials Technologies (TST5878)	ATL-136-02-01	ASTM D 3462	2010A
PRI Construction Materials Technologies (TST5878)	ATL-137-02-01 Rev 1	ASTM D 7158	2019
PRI Construction Materials Technologies (TST5878)	ATL-138-02-01 Rev 1	ASTM D 7158	2019
PRI Construction Materials Technologies (TST5878)	ATL-143-02-01	ASTM D 3161	2016
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PRI Construction Materials Technologies (TST5878)	ATL-144-02-01	ASTM D 3161	2016
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PRI Construction Materials Technologies (TST5878)	ATL-151-02-01	ASTM D 3462	2010A
PRI Construction Materials Technologies (TST5878)	ATL-162-02-01	TAS 100	1995
PRI Construction Materials Technologies (TST5878)	ATL-167-02-01	ASTM D 3161	2016
PRI Construction Materials Technologies (TST5878)	ATL-168-02-01	ASTM D 3161	2016
		TAS 107	2020
PRI Construction Materials Technologies (TST5878)	ATL-169-02-01	ASTM D 3462	2010A
PRI Construction Materials Technologies (TST5878)	ATL-170-02-01	ASTM D 3462	2010A
PRI Construction Materials Technologies (TST5878)	ATL-171-02-01	ASTM D 3462	2010A
PRI Construction Materials Technologies (TST5878)	ATL-172-02-01	ASTM D 3462	2010A
PRI Construction Materials Technologies (TST5878)	ATL-174-02-01	ASTM D 3462	2010A
PRI Construction Materials Technologies (TST5878)	ATL-179-02-01	TAS 100	1995
PRI Construction Materials Technologies (TST5878)	ATL-184-02-01	ASTM D 3161	2016
		TAS 107	2020
PRI Construction Materials Technologies (TST5878)	ATL-185-02-01	ASTM D 7158	2019
PRI Construction Materials Technologies (TST5878)	ATL-186-02-01	TAS 100	1995
PRI Construction Materials Technologies (TST5878)	ATL-187-02-01	ASTM D 3462	2010A
PRI Construction Materials Technologies (TST5878)	ATL-220-02-01	ASTM D 3462	2010A
PRI Construction Materials Technologies (TST5878)	ATL-220-02-02	TAS 100	1995
PRI Construction Materials Technologies (TST5878)	ATL-220-02-03	ASTM D 3161	2016
		TAS 107	2020
PRI Construction Materials Technologies (TST5878)	ATL-220-02-04	ASTM D 7158	2019
PRI Construction Materials Technologies (TST5878)	ATL-221-02-01	ASTM D 3462	2010A
PRI Construction Materials Technologies (TST5878)	ATL-221-02-02	TAS 100	1995
PRI Construction Materials Technologies (TST5878)	ATL-221-02-03	ASTM D 3161	2016
		TAS 107	2020

Entity	Report No.	Standard	Year
PRI Construction Materials Technologies (TST5878)	ATL-221-02-04	ASTM D 7158	2019
PRI Construction Materials Technologies (TST5878)	ATL-222-02-01	ASTM D 3462	2010A
PRI Construction Materials Technologies (TST5878)	ATL-222-02-02	TAS 100	1995
PRI Construction Materials Technologies (TST5878)	ATL-222-02-03	ASTM D 3161	2016
		TAS 107	2020
PRI Construction Materials Technologies (TST5878)	ATL-222-02-04	ASTM D 7158	2019
PRI Construction Materials Technologies (TST5878)	ATL-223-02-01	ASTM D 3462	2010A
PRI Construction Materials Technologies (TST5878)	ATL-223-02-02	TAS 100	1995
PRI Construction Materials Technologies (TST5878)	ATL-223-02-03	ASTM D 3161	2016
		TAS 107	2020
PRI Construction Materials Technologies (TST5878)	ATL-223-02-04	ASTM D 7158	2019
PRI Construction Materials Technologies (TST5878)	ATL-224-02-01	ASTM D 3462	2010A
PRI Construction Materials Technologies (TST5878)	ATL-225-02-01	ASTM D 3462	2010A
PRI Construction Materials Technologies (TST5878)	ATL-225-02-02	TAS 100	1995
PRI Construction Materials Technologies (TST5878)	ATL-225-02-03	ASTM D 3161	2016
		TAS 107	2020
PRI Construction Materials Technologies (TST5878)	ATL-225-02-04	ASTM D 7158	2019
PRI Construction Materials Technologies (TST5878)	117T0021	ASTM D 3462	2010A
PRI Construction Materials Technologies (TST5878)	117T0026	ASTM D 3462	2010A
PRI Construction Materials Technologies (TST5878)	117T0027	TAS 100	1995
PRI Construction Materials Technologies (TST5878)	117T0028	ASTM D 3161	2016
		TAS 107	2020
CREEK Technical Services LLC (ANE11669)	ATL13002.7	Calculations	2018

INSTALLATION

Legend

Basic Wind Speed (V_{ult}):	Max. 194 mph
Basic Wind Speed (V_{asd}):	Max. 150 mph
Deck (HVHZ):	In accordance with FBC requirements; Solidly sheathed min. 19/32 in. plywood or wood plank for new construction; Min. 15/32 in. plywood existing construction.
Deck (Non-HVHZ):	Solidly sheathed in accordance with FBC requirements.
Underlayment:	In accordance with FBC requirements.
Min. slope:	2:12 and in accordance with FBC requirements. Contact the Atlas Roofing Corporation when installing at slope greater than 21:12.
Installation (HVHZ):	Installed with 5-inch exposure in accordance with RAS 115 and manufacturer's published installation instructions. Shingles shall be attached using "6 Nail Pattern" detailed below.
Installation (Non-HVHZ):	Installed with 5-inch exposure in accordance with FBC requirements and manufacturer's published installation instructions. Shingles shall be attached using either "4 Nail Pattern" or "6 Nail Pattern" detailed below.

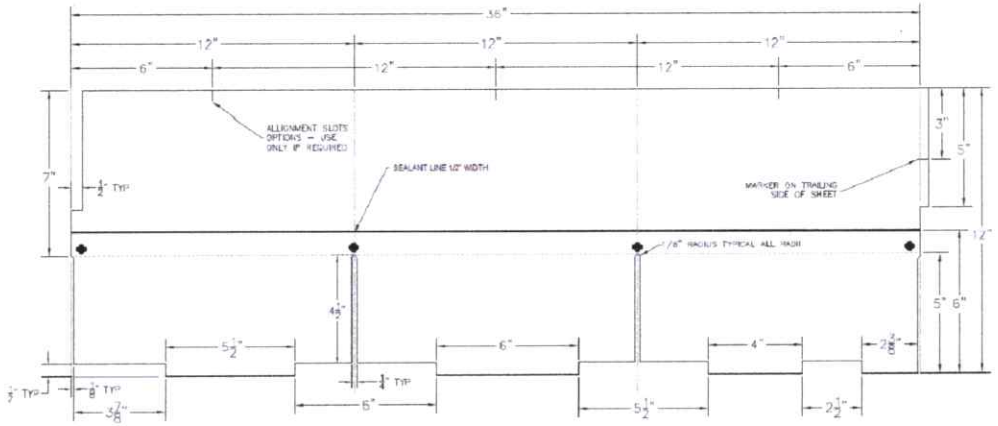

Figure 1. Legend 4 Nail Pattern (Non-HVHZ only)

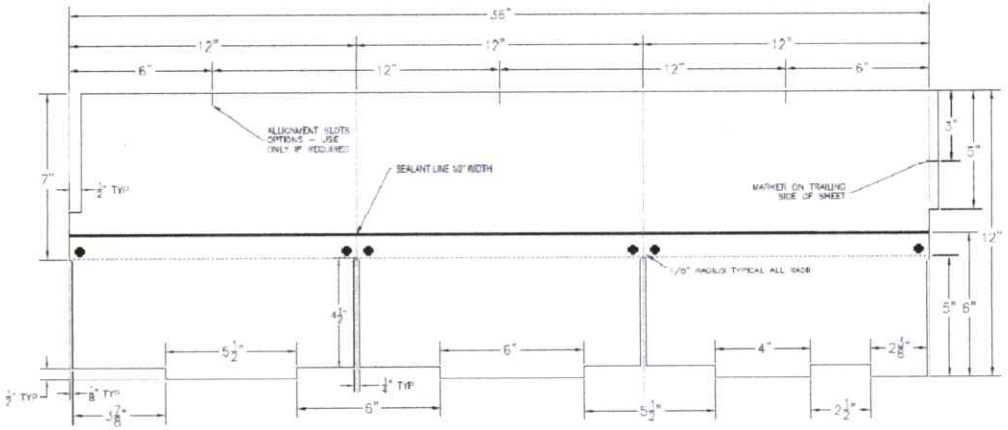

Figure 2. Legend 6 Nail Pattern

GlassMaster® 30 & Tough-Master® 20	Basic Wind Speed (V_{ult}):	Max. 194 mph
	Basic Wind Speed (V_{asd}):	Max. 150 mph
	Deck (HVHZ):	In accordance with FBC requirements; Solidly sheathed min. 19/32 in. plywood or wood plank for new construction; Min. 15/32 in. plywood existing construction.
	Deck (Non-HVHZ):	Solidly sheathed in accordance with FBC requirements.
	Underlayment:	In accordance with FBC requirements.
	Min. slope:	2:12 and in accordance with FBC requirements. Contact the Atlas Roofing Corporation when installing at slope greater than 21:12.
	Installation (HVHZ):	Installed with 5-inch exposure in accordance with RAS 115 and manufacturer's published installation instructions. Shingles shall be attached using "6 Nail Pattern" detailed below.
	Installation (Non-HVHZ):	Installed with 5-inch exposure in accordance with FBC requirements and manufacturer's published installation instructions. Shingles shall be attached using either "4 Nail Pattern" or "6 Nail Pattern" detailed below.

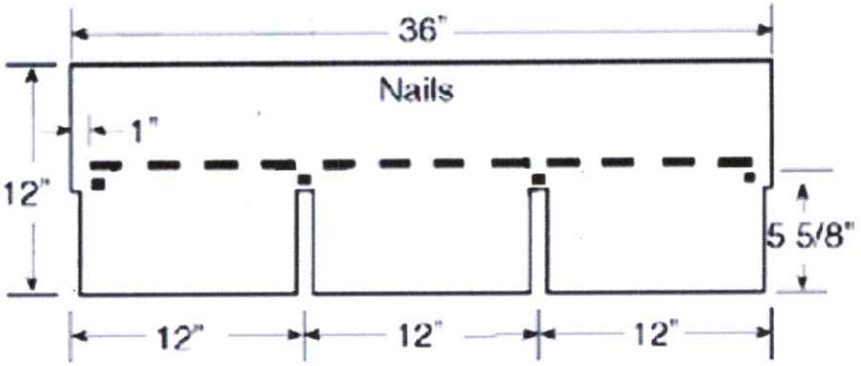

Figure 3. GlassMaster® 30 & Tough-Master® 20 4 Nail Pattern (Non-HVHZ only)

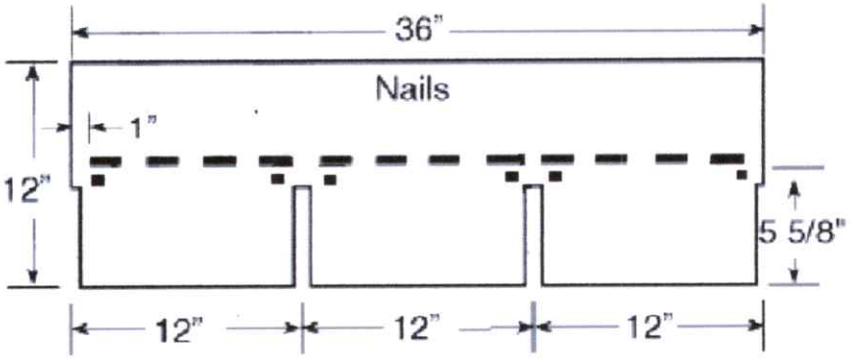

Figure 4. GlassMaster® 30 & Tough-Master® 20 6 Nail Pattern

ProLAM™ Architectural	Basic Wind Speed (V_{ult}):	Max. 194 mph
	Basic Wind Speed (V_{asd}):	Max. 150 mph
	Deck (HVHZ):	In accordance with FBC requirements; Solidly sheathed min. 19/32 in. plywood or wood plank for new construction; Min. 15/32 in. plywood existing construction.
	Deck (Non-HVHZ):	Solidly sheathed in accordance with FBC requirements.
	Underlayment:	In accordance with FBC requirements.
	Min. slope:	2:12 and in accordance with FBC requirements. Contact the Atlas Roofing Corporation when installing at slope greater than 21:12.
	Installation (HVHZ):	Installed with 6 in. exposure in accordance with RAS 115 and manufacturer's published installation instructions. Shingles shall be attached using "6 Nail Pattern" detailed below.
	Installation (Non-HVHZ):	Installed with 6 in. exposure in accordance with FBC requirements and manufacturer's published installation instructions. Shingles shall be attached using either "4 Nail Pattern" or "6 Nail Pattern" detailed below.

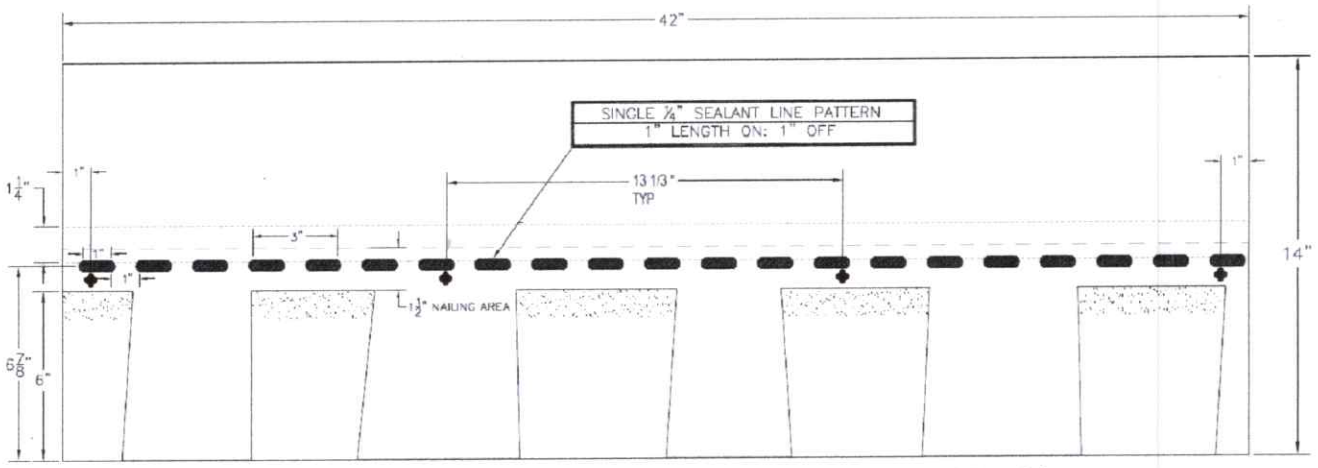

Figure 5. ProLAM™ Architectural Shingle 4 Nail Pattern (non-HVHZ only)

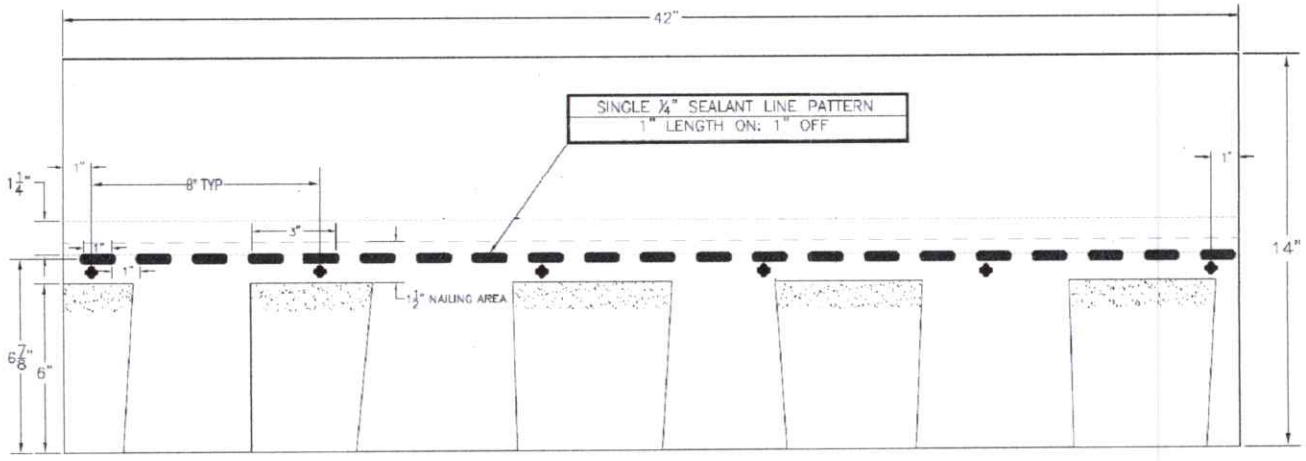

Figure 6. Pro-LAM™ Architectural Shingle 6 Nail Pattern

Pinnacle® Pristine & StormMaster® Shake	Basic Wind Speed (V_{ult}):	Max. 194 mph
	Basic Wind Speed (V_{asd}):	Max. 150 mph
	Deck (HVHZ):	In accordance with FBC requirements; Solidly sheathed min. 19/32 in. plywood or wood plank for new construction; Min. 15/32 in. plywood existing construction.
	Deck (Non-HVHZ):	Solidly sheathed in accordance with FBC requirements.
	Underlayment:	In accordance with FBC requirements.
	Min. slope:	2:12 and in accordance with FBC requirements. Contact the Atlas Roofing Corporation when installing at slope greater than 21:12.
	Installation (HVHZ):	Installed with 6 in. exposure in accordance with RAS 115 and manufacturer's published installation instructions. Shingles shall be attached using "6 Nail Pattern" detailed below.
	Installation (Non-HVHZ):	Installed with 6 in. exposure in accordance with FBC requirements and manufacturer's published installation instructions. Shingles shall be attached using either "4 Nail Pattern" or "6 Nail Pattern" detailed below.

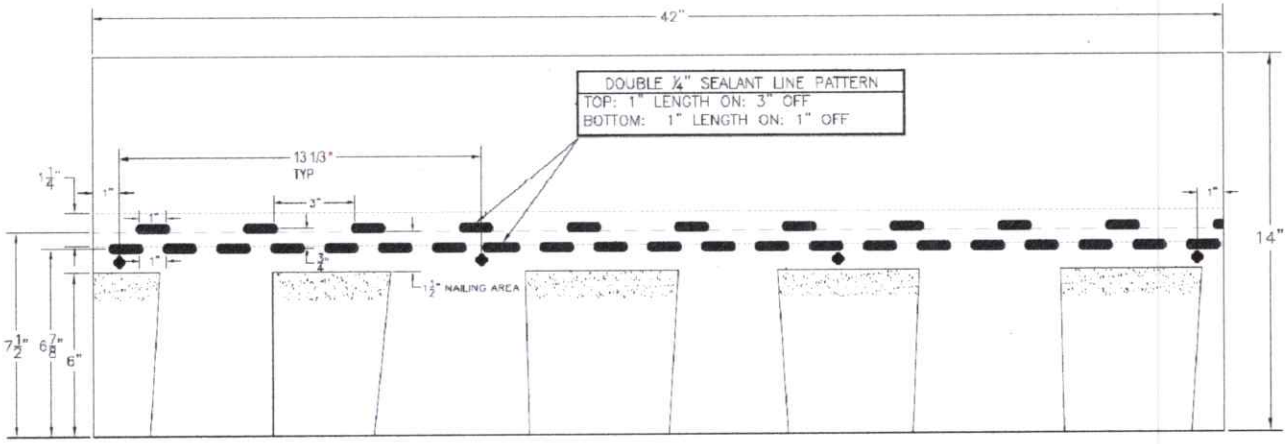

Figure 7. Pinnacle® Pristine and StormMaster® Shake 4 Nail Pattern (Non-HVHZ only)

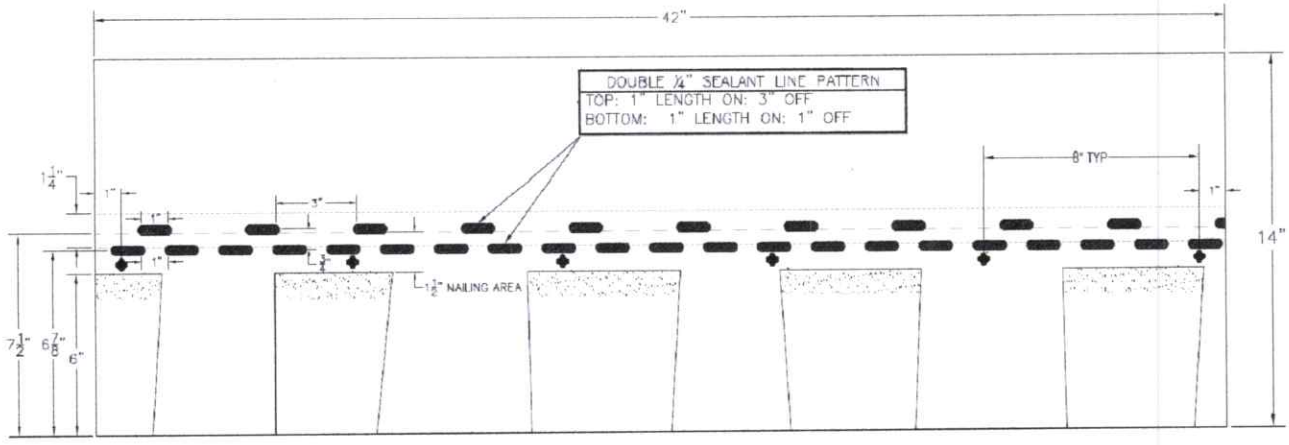

Figure 8. Pinnacle® Pristine and StormMaster® Shake 6 Nail Pattern

StormMaster® Slate

Basic Wind Speed (V_{ult}):	Max. 194 mph
Basic Wind Speed (V_{asd}):	Max. 150 mph
Deck (HVHZ):	In accordance with FBC requirements; Solidly sheathed min. 19/32 in. plywood or wood plank for new construction; Min. 15/32 in. plywood existing construction.
Deck (Non-HVHZ):	Solidly sheathed in accordance with FBC requirements.
Underlayment:	In accordance with FBC requirements.
Min. slope:	2:12 and in accordance with FBC requirements. Contact the Atlas Roofing Corporation when installing at slope greater than 21:12.
Installation (HVHZ):	Installed with 8.5 in. exposure in accordance with RAS 115 and manufacturer's published installation instructions. Shingles shall be attached using "6 Nail Pattern" detailed below.
Installation (Non-HVHZ):	Installed with 8.5 in. exposure in accordance with FBC requirements and manufacturer's published installation instructions. Shingles shall be attached using either "4 Nail Pattern" or "6 Nail Pattern" detailed below.

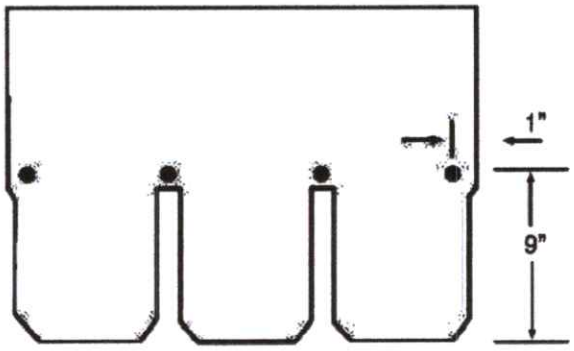

Figure 9. StormMaster® Slate 4 Nail Pattern

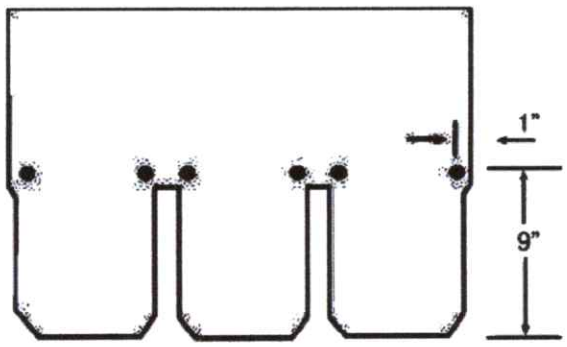

Figure 10. StormMaster® Slate 6 Nail Pattern

Pro-Cut® Starter Strip	Basic Wind Speed (V_{ult}):	Max. 194 mph
	Basic Wind Speed (V_{asd}):	Max. 150 mph
	Deck (HVHZ):	In accordance with FBC requirements; Solidly sheathed min. 19/32 in. plywood or wood plank for new construction; Min. 15/32 in. plywood existing construction.
	Deck (Non-HVHZ):	Solidly sheathed in accordance with FBC requirements.
	Underlayment:	In accordance with FBC requirements.
	Min. slope:	2:12 and in accordance with FBC requirements. Contact the Atlas Roofing Corporation when installing at slope greater than 21:12.
	Installation (HVHZ):	Installed in accordance with RAS 115 and manufacturer's published installation instructions. Shingles shall be attached as shown below.
	Installation (Non-HVHZ):	Installed in accordance with FBC requirements and manufacturer's published installation instructions. Shingles shall be attached as shown below.

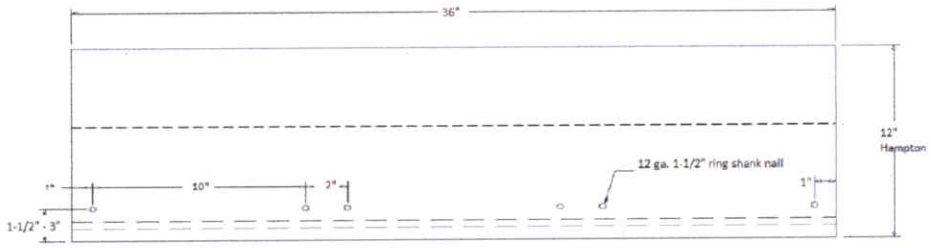

Figure 11. Pro-Cut® Starter Strip

Pro-Cut® Hip & Ridge & StormMaster® Hip & Ridge	Basic Wind Speed (V_{ult}):	Max. 194 mph
	Basic Wind Speed (V_{asd}):	Max. 150 mph
	Deck (HVHZ):	In accordance with FBC requirements; Solidly sheathed min. 19/32 in. plywood or wood plank for new construction; Min. 15/32 in. plywood existing construction.
	Deck (Non-HVHZ):	Solidly sheathed in accordance with FBC requirements.
	Underlayment:	In accordance with FBC requirements.
	Min. slope:	2:12 and in accordance with FBC requirements.
	Installation (HVHZ and non-HVHZ):	Installed with 5-5/8 inch exposure in accordance with RAS 115 (HVHZ only) and manufacturer's published installation instructions. The direction of the exposed end shall be away from the prevailing wind.

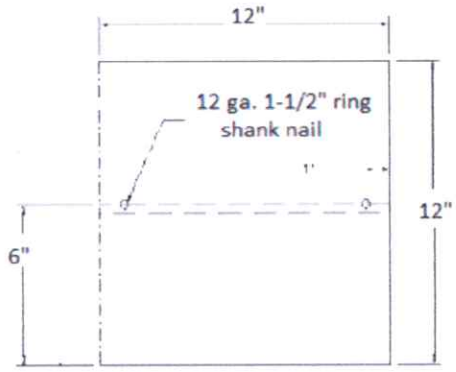

Figure 12. Pro-Cut® Hip & Ridge and StormMaster® Hip & Ridge

LIMITATIONS

1) Fire Classification is not within the scope of this evaluation.
2) The roof deck and the roof deck attachment information are provided based on testing. FBC requirements for the rational design of the roof deck, including the attachment, are not within the scope of this evaluation.
3) The mean roof height shall be restricted to a maximum 33 ft in the HVHZ.
4) Classification to ASTM D 7158 applies to exposure B & C with a building mean roof height of 60-ft or less.
5) Deck substrates shall be clean, dry, and free from any irregularities and debris. All fasteners in the deck shall be checked for protrusion and corrected prior to underlayment application.
6) Shingles shall be installed starting at the eave in horizontal layers such that the laps shed water from the deck.
7) Installation of the evaluated products shall comply with this report, the FBC, and the manufacturer's published application instructions. Where discrepancies exist between these sources, the more restrictive and code compliant detail shall prevail.
8) All products listed in this report shall be manufactured under a quality assurance program in compliance with Rule 61G20-3.

COMPLIANCE STATEMENT

The products evaluated herein by Zachary R. Priest, P.E. have demonstrated compliance with the Florida Building Code, 7th Edition (2020) including High-Velocity Hurricane Zones (HVHZ) as evidenced in the referenced documents submitted by the named manufacturer.

Digitally signed by Zachary R. Priest
2021.02.11 12:45:39 -05'00'

Zachary R. Priest, P.E.
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CERTIFICATION OF INDEPENDENCE

CREEK Technical Services, LLC does not have, nor will it acquire, a financial interest in any company manufacturing or distributing products under this evaluation.

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END OF REPORT