



PRI Evaluation Report

PRI ER 2458E01-FBC2023

Issue Date: 10/21/2024

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This Report is Reviewed Annually

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Report Holder:

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SCOPE

Subject: Roofing Underlayments

Products:

- Citadel® Plus
- Citadel® Pro
- GatorSeal®
- Westlake Royal™ MetalSeal™ HT
- Westlake Royal™ TileSeal™ HT

CSI MasterFormat® :

DIVISION: 07 00 00 – THERMAL AND MOISTURE PROTECTION
Sub-level 2: 07 30 00 – Steep Slope Roofing

Code References:

- F.A.C. Rule 61G20-3
- Florida Building Code, 8th Edition (2023) including the High-Velocity Hurricane Zone

Properties Evaluated:

- Wind Resistance (ANSI/UL 1897)
- Physical Properties (ASTM D1970)
- Other (ASTM D1623 & ASTM D4798)
- Physical Properties (TAS 103-2020)
- Physical Properties (TAS 110-2000)

Evidence Submitted:

- Recognized test report(s) in accordance with ANSI/UL 1897
- Recognized test report(s) indicating compliance with ASTM D1970
- Recognized test report(s) indicating compliance with TAS 103-2020
- Recognized test report(s) indicating compliance with TAS 110-2000
- Recognized test report(s) in accordance with ASTM D1623 and ASTM D4798
- Quality Documentation
- Manufacturer’s Drawings and Installation Instructions

Manufacturing Locations:

<u>Factory ID</u>	<u>Location</u>
Brentwood, NH	61 Pine Road Brentwood, NH 03833



PRODUCT DESCRIPTIONS and APPLICATIONS

Product Descriptions:

Underlayments covered under this report are self-adhering modified bitumen membranes. They are ASTM D1970 underlayments as specified in the following code:

- FBC 1507.1.1, 1507.1.1.1, 1507.2.9.2, 1518.2, 1518.2.1, 1523.1.1, 1523.6.5.2.1
- FRC R905.1.1, R905.1.1.1, R905.2.8.2

Westlake Royal™ MetalSeal™ HT and Westlake Royal™ TileSeal™ HT comply with the requirements for “Self-Adhered Membrane” as set forth in the FRSA-TRI 7th Edition, *Florida High Wind Concrete and Clay Tile Installation Manual*, dated December 31, 2023 and TAS 103-2020.

<u>Product with Description:</u>	<u>Factory IDs:</u>	<u>Dimensions:</u>
Citadel® Plus A self-adhered roof underlayment, reinforced with a fiberglass mat, with a poly faced surface.	Brentwood, NH	Length: 72 ft Width: 36 in Thickness: 52 mils
Citadel® Pro A self-adhered roof underlayment, reinforced with a fiberglass mat, with a poly faced surface.	Brentwood, NH	Length: 66.7 ft Width: 36 in Thickness: 45 mils
GatorSeal® A self-adhered roof underlayment, reinforced with a fiberglass mat, with a granulated surface.	Brentwood, NH	Length: 66.7 ft Width: 36 in Thickness: 46 mils
Westlake Royal™ MetalSeal™ HT A self-adhering SBS modified asphalt membrane with a polyester, non-woven fabric surface and a split release backing.	Brentwood, NH	Length: 72 ft Width: 36 in Thickness: 64 mils
Westlake Royal™ TileSeal™ HT A self-adhering SBS modified asphalt membrane with a polyester, non-woven fabric surface and a split release backing.	Brentwood, NH	Length: 72 ft Width: 36 in Thickness: 64 mils

Wind Resistance:

The following underlayments systems shall have demonstrated wind resistance in accordance with FBC 1504.2.1.4 and TAS 103-2020.

<u>No.</u>	<u>MDP¹</u>	<u>System Details</u>
D1	-142.5psf	Deck ² : Minimum ¹⁵ / ₃₂ inch thick, 32/16 span rated, 4-ply, Exposure 1, plywood (DOC PS-1) Underlayment: Westlake Royal™ MetalSeal™ HT or Westlake Royal™ TileSeal™ HT applied in accordance with manufacturer’s installation instructions. Underlayment shall be backnailed along selvage with minimum No. 12 gage (0.105 inch), ³ / ₈ inch diameter head, corrosion resistant, ring shank roofing nails through 32 gage x 1- ⁵ / ₈ inch diameter tin caps spaced 12 inches o.c. The underlayment shall be rolled with a minimum 75lb steel roller immediately following application.



No.	MDP ¹	System Details	
D2	-202.5psf	Deck ² : Primer: Underlayment:	Minimum ¹⁵ / ₃₂ inch thick, 32/16 span rated, 4-ply, Exposure 1, plywood (DOC PS-1) ASTM D41 primer Westlake Royal™ MetalSeal™ HT or Westlake Royal™ TileSeal™ HT applied in accordance with manufacturer's installation instructions. Underlayment shall be backnailed along selvage with minimum No. 12 gage (0.105 inch), ³ / ₈ inch diameter head, corrosion resistant, ring shank roofing nails through 32 gage x 1- ⁵ / ₈ inch diameter tin caps spaced 12 inches o.c. The underlayment shall be rolled with a minimum 75lb steel roller immediately following application.
D3	-210psf	Deck ² : Primer: Underlayment:	Minimum ¹⁵ / ₃₂ inch thick, 32/16 span rated, 4-ply, Exposure 1, plywood (DOC PS-1) Karnak #89 Sta-Tak Primer Westlake Royal™ MetalSeal™ HT or Westlake Royal™ TileSeal™ HT applied in accordance with manufacturer's installation instructions. Underlayment shall be backnailed along selvage with minimum No. 12 gage (0.105 inch), ³ / ₈ inch diameter head, corrosion resistant, ring shank roofing nails through 32 gage x 1- ⁵ / ₈ inch diameter tin caps spaced 12 inches o.c. The underlayment shall be rolled with a minimum 75lb steel roller immediately following application.
D4	-67.5psf	Deck ² : Base Ply: Underlayment:	Minimum ¹⁵ / ₃₂ inch thick, 32/16 span rated, 4-ply, Exposure 1, plywood (DOC PS-1) Citadel® Pro applied in accordance with manufacturer's installation instructions. Underlayment shall be backnailed along selvage with minimum No. 12 gage (0.105 inch), ³ / ₈ inch diameter head, corrosion resistant, ring shank roofing nails through 32 gage x 1- ⁵ / ₈ inch diameter tin caps spaced 12 inches o.c. The underlayment shall be rolled with a minimum 75lb steel roller immediately following application. Westlake Royal™ MetalSeal™ HT or Westlake Royal™ TileSeal™ HT applied in accordance with manufacturer's installation instructions. Underlayment shall be backnailed along selvage with minimum No. 12 gage (0.105 inch), ³ / ₈ inch diameter head, corrosion resistant, ring shank roofing nails through 32 gage x 1- ⁵ / ₈ inch diameter tin caps spaced 12 inches o.c. The underlayment shall be rolled with a minimum 75lb steel roller immediately following application.
C1	-120psf	Deck ² : Primer: Base ply: Underlayment:	Structural concrete ASTM D41 primer Optional ply of Citadel® Plus self-adhered in accordance with manufacturer's installation instructions. Westlake Royal™ MetalSeal™ HT or Westlake Royal™ TileSeal™ HT self-adhered in accordance with manufacturer's installation instructions. Underlayment shall be optionally backnailed as required. The underlayment shall be rolled with a minimum 75lb steel roller immediately following application.
M1	-30psf	Deck ² : Base Sheet: Underlayment:	Minimum ¹⁵ / ₃₂ inch thick, 32/16 span rated, 4-ply, Exposure 1, plywood (DOC PS-1) SwiftAnchor Nailable Base Sheet fastened with minimum 0.120 inch, ³ / ₈ inch diameter head, corrosion resistant, ring shank roofing nails through 32 gage x 1- ⁵ / ₈ inch diameter tin caps spaced 6 inches o.c. at the 4 inch wide side laps and 12 inches o.c. in two (2) equally spaced rows in the field of the roll. Westlake Royal™ MetalSeal™ HT or Westlake Royal™ TileSeal™ HT applied in accordance with manufacturer's installation instructions. Underlayment shall be backnailed along selvage with minimum 0.120 inch, ³ / ₈ inch diameter head, corrosion resistant, ring shank roofing nails through 32 gage x 1- ⁵ / ₈ inch diameter tin caps spaced 12 inches o.c. The underlayment shall be rolled with a minimum 75lb steel roller immediately following application.
M2	-45psf	Deck ² : Base Sheet: Underlayment:	Minimum ¹⁵ / ₃₂ inch thick, Exposure 1, plywood (DOC PS-1) SwiftAnchor Nailable Base Sheet fastened with 1- ¹ / ₂ inch Grip-Rite Plastic Cap Nails spaced 6 inches o.c. at the 4 inch wide side laps and 6 inches o.c. in five (5) equally spaced rows in the field of the roll. Westlake Royal™ MetalSeal™ HT or Westlake Royal™ TileSeal™ HT applied in accordance with manufacturer's installation instructions. Underlayment shall be backnailed along selvage with 1- ¹ / ₂ inch Grip-Rite Plastic Cap Nails spaced 12 inches o.c. The underlayment shall be rolled with a minimum 75lb steel roller immediately following application.



No.	MDP ¹	System Details	
M3	-52.5psf	Deck ² : Base Sheet: Underlayment:	Minimum ¹⁵ / ₃₂ inch thick, Exposure 1, plywood (DOC PS-1) SwiftAnchor Nailable Base Sheet fastened with minimum 0.120 inch, ³ / ₈ inch diameter head, corrosion resistant, ring shank roofing nails through 32 gage x 1- ⁵ / ₈ inch diameter tin caps spaced 6 inches o.c. at the 4 inch wide side laps and 9 inches o.c. in three (3) equally spaced rows in the field of the roll. Westlake Royal™ MetalSeal™ HT or Westlake Royal™ TileSeal™ HT applied in accordance with manufacturer's installation instructions. Underlayment shall be backnailed along selvage with minimum 0.120 inch, ³ / ₈ inch diameter head, corrosion resistant, ring shank roofing nails through 32 gage x 1- ⁵ / ₈ inch diameter tin caps spaced 12 inches o.c. The underlayment shall be rolled with a minimum 75lb steel roller immediately following application.
M4	-60psf	Deck ² : Base Sheet: Underlayment:	Minimum ¹⁹ / ₃₂ inch thick, 40/20 span rated, 4-ply, Exposure 1, plywood (DOC PS-1) SwiftAnchor Nailable Base Sheet fastened with minimum 0.120 inch, ³ / ₈ inch diameter head, corrosion resistant, ring shank roofing nails through 32 gage x 1- ⁵ / ₈ inch diameter tin caps spaced 6 inches o.c. at the 4 inch wide side laps and 8 inches o.c. in four (4) equally spaced rows in the field of the roll. Westlake Royal™ MetalSeal™ HT or Westlake Royal™ TileSeal™ HT applied in accordance with manufacturer's installation instructions. Underlayment shall be backnailed along selvage with minimum 0.120 inch, ³ / ₈ inch diameter head, corrosion resistant, ring shank roofing nails through 32 gage x 1- ⁵ / ₈ inch diameter tin caps spaced 12 inches o.c. The underlayment shall be rolled with a minimum 75lb steel roller immediately following application.
M5	-67.5psf	Deck ² : Base Sheet: Underlayment:	Minimum ¹⁹ / ₃₂ inch thick, 40/20 span rated, 4-ply, Exposure 1, plywood (DOC PS-1) SwiftAnchor Nailable Base Sheet fastened with minimum 0.120 inch, ³ / ₈ inch diameter head, corrosion resistant, ring shank roofing nails through 32 gage x 1- ⁵ / ₈ inch diameter tin caps spaced 6 inches o.c. at the 4 inch wide side laps and 7 inches o.c. in four (4) equally spaced rows in the field of the roll. Westlake Royal™ MetalSeal™ HT or Westlake Royal™ TileSeal™ HT applied in accordance with manufacturer's installation instructions. Underlayment shall be backnailed along selvage with minimum 0.120 inch, ³ / ₈ inch diameter head, corrosion resistant, ring shank roofing nails through 32 gage x 1- ⁵ / ₈ inch diameter tin caps spaced 12 inches o.c. The underlayment shall be rolled with a minimum 75lb steel roller immediately following application.
M6	-90psf	Deck ² : Base Sheet: Underlayment:	Minimum ¹⁵ / ₃₂ inch thick, 32/16 span rated, 4-ply, Exposure 1, plywood (DOC PS-1) SwiftAnchor Nailable Base Sheet fastened with minimum 0.120 inch, ³ / ₈ inch diameter head, corrosion resistant, ring shank roofing nails through 32 gage x 1- ⁵ / ₈ inch diameter tin caps spaced 6 inches o.c. at the 4 inch wide side laps and 6 inches o.c. in five (5) equally spaced rows in the field of the roll. Westlake Royal™ MetalSeal™ HT or Westlake Royal™ TileSeal™ HT applied in accordance with manufacturer's installation instructions. Underlayment shall be backnailed along selvage with minimum 0.120 inch, ³ / ₈ inch diameter head, corrosion resistant, ring shank roofing nails through 32 gage x 1- ⁵ / ₈ inch diameter tin caps spaced 12 inches o.c. The underlayment shall be rolled with a minimum 75lb steel roller immediately following application.
M7	-97.5psf	Deck ² : Base Sheet: Underlayment:	Minimum ¹⁹ / ₃₂ inch thick, 40/20 span rated, 4-ply, Exposure 1, plywood (DOC PS-1) SwiftAnchor Nailable Base Sheet fastened with minimum 0.120 inch, ³ / ₈ inch diameter head, corrosion resistant, ring shank roofing nails through 32 gage x 1- ⁵ / ₈ inch diameter tin caps spaced 6 inches o.c. at the 4 inch wide side laps and 6 inches o.c. in five (5) equally spaced rows in the field of the roll. Westlake Royal™ MetalSeal™ HT or Westlake Royal™ TileSeal™ HT applied in accordance with manufacturer's installation instructions. Underlayment shall be backnailed along selvage with minimum 0.120 inch, ³ / ₈ inch diameter head, corrosion resistant, ring shank roofing nails through 32 gage x 1- ⁵ / ₈ inch diameter tin caps spaced 12 inches o.c. The underlayment shall be rolled with a minimum 75lb steel roller immediately following application.

Note(s): 1- indicates Maximum Design Pressure (2:1 margin of safety applied to the maximum test load achieved without failure).

2- indicates design of the roof deck is outside the scope of this evaluation and shall be to the satisfaction of the Authority Having Jurisdiction.



INSTALLATION

Underlayments covered under this report must be installed in accordance with the applicable code, this report, and the manufacturer’s published installation instructions, which must be available at all times on the jobsite during installation. The underlayments are not the primary roof cover and as such are not intended to be left permanently exposed to direct weather. Underlayments shall be limited to direct weather exposure as stated in the table below.

Product	Maximum Exposure
Citadel® Pro	30 days
GatorSeal®	30 days
Westlake Royal™ MetalSeal™ HT	180 days
Westlake Royal™ TileSeal™ HT	180 days

Roof slopes must be minimum 2:12 (16.67% slope or 9°). Prior to application, all underlayments shall be unrolled and allowed to relax for 3-5 min. The underlayment shall be installed with the release backer removed and pressed firmly into place to ensure complete contact with the deck. Side laps shall be a minimum of 3 inches. End laps shall be a minimum of 6 inches, and sealed with asphalt cement as required by the manufacturer. Shingle laps, with the upslope piece overlapping the downslope piece, shall be implemented. The minimum application temperature is 40°F and the manufacturer must be contacted when installing below this temperature.

Underlayments covered under this report are moisture and vapor barriers. The spaces under the covered deck area and the attic space must be properly ventilated in accordance with local building codes.

Underlayments covered under this report are intended for exterior applications only.

Substrates:

Substrate surface shall be clean, smooth, dry, free of debris, and structurally sound prior to installing underlayment. All fasteners shall be checked for protrusion and corrected prior to underlayment application.

Underlayments shall be limited to installation over substrates as shown in the table below.

Product	Allowable Substrates
Citadel® Plus	Plywood
	ASTM D41 primed Plywood
Citadel® Pro	Plywood
	ASTM D41 primed Plywood
	OSB
GatorSeal®	ASTM D41 primed OSB
	Plywood
	ASTM D41 primed Plywood
Westlake Royal™ MetalSeal™ HT, Westlake Royal™ TileSeal™ HT	ASTM D226 felt
	Plywood
	ASTM D41 primed Plywood
	OSB
	ASTM D41 primed OSB
	Citadel® Plus
	ASTM D226 felt
Huber Zip Deck	

Refer to WIND RESISTANCE section for additional stipulations for roof deck as associated with Wind Resistance System(s).

Asphalt Cement:

When used with underlayment, asphalt cement must comply with ASTM D4586.

Asphalt Primer:

When used with underlayment, asphalt primer must comply with ASTM D41.

Flashing:

Underlayments covered under this report may be used as flashing material where self-adhering polymer modified bitumen sheet and/or ASTM D1970 are referenced in the code. Where underlayment is intended to adhere to metal flashing materials, metal surface shall be primed.

Roof Coverings:

Underlayments covered in this report are acceptable for use with mechanically fastened roof coverings as stated in the table below.

Product	Allowable Roof Coverings
GatorSeal®, Citadel® Pro	Asphalt Shingles
	Slate and Slate-Type Shingles
	Wood Shake and Shingles

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Product	Allowable Roof Coverings
Westlake Royal™ MetalSeal™ HT, Westlake Royal™ TileSeal™ HT	Asphalt Shingles
	Clay and Concrete Tile
	Metal Roof Panels and Shingles
	Slate and Slate-Type Shingles
	Wood Shake and Shingles

It is permissible to store tiles directly atop the underlayment as stated in the table. For all other conditions, tiles shall be stored on battens in stacks no greater than ten (10) tiles per stack.

System No. ¹	Maximum Stack	Maximum Slope
D1, D2, or D3	10 tiles	6:12
M2, M6, or M7	10 tiles	6:12

Note(s): 1- Refer to Wind Resistance section of this report.

Underlayments covered in this report are acceptable for use with adhered Clay and Concrete Tile as stated in the table below.

Product	Allowable Tile Adhesives
Westlake Royal™ MetalSeal™ HT, Westlake Royal™ TileSeal™ HT	DAP Touch 'n Seal Storm Bond® Roof Tile Adhesive
	DAP Touch 'n Seal Storm Bond® 2 Roof Tile Adhesive
	DuPont Tile Bond™ Roof Tile Adhesive
	APOC® Polyset® AH-160 Roof Tile Adhesive

CONDITIONS OF USE & IDENTIFICATION

The products described in this report comply with, or are suitable alternatives to, the codes listed in this report, subject to the following conditions:

- The products as well as the installation methods must be in compliance with the applicable code, this report, and the installation instruction provided by the manufacturer. If the manufacturer's installation instructions differ from what is listed in this report, this report governs.
- This report does not supersede the local jurisdiction regulations and the final approval of the building products, materials, or systems in this report is the responsibility of the authorities having jurisdiction.
- This report is only valid if the product(s) and/or the referenced documentation/codes related to the products do not change. If there is a change in product(s) and/or the referenced documentation/codes related to the products, PRI Construction Materials Technologies, LLC must be informed and further action may be necessary to revalidate this report.
- This report, in its entirety, must be available at job sites upon request by the user or for inspection by the Building Official. A copy of this report in full shall be provided by the manufacturer or its distributors.
- The products are identified by marks bearing the report holder's name, the manufacture location, the product name, and the Seal of PRI Validation Program for Building Materials. The Seal shall indicate, at a minimum, the following:
 - a. ASTM D1970
- The products are manufactured at the locations listed in this report and are manufactured under a quality control program with inspections and/or surveillance by PRI Construction Materials Technologies, LLC.
- This report is a supplement to product certification. The products listed herein must be certified separately under the PRI Validation Program for Building Products. This report alone is not a product certification and requires separate product certification under the PRI Validation Program for Building Products to be valid.
- The current status of this report as well as a directory of certified products, including supplemental PRI Evaluation Reports, can be found at pri-group.com.



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