# CBUCK Engineering

#### Specialty Structural Engineering

CBUCK, Inc. Certificate of Authorization #8064

## **Evaluation Report**

"Sharkskin"

**Roof Underlayments** 

#### Manufacturer:

#### KIRSCH BUILDING PRODUCTS, LLC

1464 Madera Road Suite N-387 Simi Valley, CA 93065

for

**Florida Product Approval** 

# FL 40958.1

Florida Building Code 7th Edition (2020)

Method: 1 - D

**Category: Roofing** 

Sub - Category: Underlayment

**Products:** Listed Herein

**Description:** Multi-layer Underlayments

## Prepared by:

James L. Buckner, P.E., SECB Florida Professional Engineer # 31242 Florida Evaluation ANE ID: 1916 Project Manager: Diana Galloway Report No. 22-459-Sharkskin-ER (New)

Date: 02 / 09 / 21

Contents:

Evaluation Report Pages 1-13

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Manufacturer: KIRSCH BUILDING PRODUCTS, LLC

1464 Madera Road, Suite N-387

Simi Valley, CA 93065

(877) 742-7507

www.sharkskinroof.com

**Product Category:** Roofing

**Product Sub-Category** Underlayment

Compliance Method: State Product Approval Rule 61G20-3.005 (1) (d)

TABLE 1 – PRODUCT DESCRIPTION				
Product Name	Standard	Roll	Description	
		Dimensions		
Sharkskin Comp®	ASTM D 226	48"x250' /	Multi-layer laminated roof underlayment comprised of	
	Type I or II &	40lbs roll	a high-strength woven polypropylene scrim with a UV	
	ASTM D 4533/		& antioxidant protection bond layer and a slip-resistant	
	ASTM D 5305		top layer.	
Sharkskin Ultra®	ASTM D 226	48"x250' /	Multi-layer laminated roof underlayment comprised of	
	Type I or II	50lbs roll	a high-strength woven polypropylene scrim with a UV	
	TAS 104		& antioxidant protection bond layer to both sides and	
			a slip-resistant top layer.	
Sharkskin Ultra Radiant®	ASTM D 226	48"x250' /	Multi-layer laminated roof underlayment comprised of	
	Type I or II	55lbs roll	a high-strength woven polypropylene scrim with a	
			reflective barrier on the underside and a UV &	
			antioxidant protection bond layer on both sides and a	
			slip-resistant top layer.	
Sharkskin Ultra SA®	ASTM D 1970	48"x 125' /	Multi-layer laminated roof underlayment comprised of	
	TAS 103	70lbs roll	a high-strength woven polypropylene scrim between	
			two layers of UV & antioxidant protection bond and a	
			self-adhering underside and a slip-resistant top layer.	

#### **Performance Standards:**

The product described herein has demonstrated compliance with:

- ASTM D 226-09 Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing
- ASTM D 1970-15a Specification Self-adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roof Underlayment for Ice Dam Protection
- TAS-103-95 Test Procedure for Self-Adhered Underlayments for Use in Discontinuous Roof Systems
- TAS 104-95 Test Procedure for Nail-On Underlayments for Use in Discontinuous Roof Systems
- ASTM D1623 Standard Test Method for Tensile and Tensile Adhesion Properties
  of Rigid Cellular Plastics
- **ASTM D 4533/D4533M-15** Standard Test Method for Trapezoid Tearing Strength of Geotextiles
- **ASTM D 5035-11 (2019)** Standard Test Method for Breaking Force and Elongation of Textile Fabrics (Strip Method)
- FM 4474-11 Evaluating the Simulated Wind Uplift Resistance of Roof Assemblies Using Static Positive and/or Negative Differential Pressures



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Code Compliance: The product(s) described herein have demonstrated compliance with the

performance standards as referenced in this report to comply with Florida Building

Code 7th Edition (2020).

Evaluation Report Scope: This product has been evaluated in compliance with the building envelope

requirements of the Florida Building Code, as related to the scope section to Florida

Product Approval Rule 61G20-3.001

Quality Assurance: The manufacturer has demonstrated compliance of roof panel products in

accordance with the Florida Building Code and Rule 61G20-3.0005 (3) for manufacturing under a quality assurance program audited by an approved quality assurance entity through Intertek Testing Services QA. (FBC Organization ID# QUA

1673).

#### **TABLE 2 – APPROVED SUBSTRATES**

Sharkskin has been evaluated for application to the following substrates:

Plywood Deck (APA Rated), Wood Plank, Insulated & Non-Insulated Steel Deck

(Design of support is outside the scope of this evaluation.)

TABLE 3 – ALLOWABLE ROOF COVERINGS						
Product Name	Asphalt Shingles	Clay & Concrete Tile	Clay & Concrete Tile	Metal Panels &	Wood, Shakes	Slate or Slate Type Shingle
		Nail-On	Adhesive Set	Shingles	& Shingles	
		Attachment	Attachment <sup>3</sup>			
Sharkskin Comp®	Υ	N	N	Υ	N	Υ
Sharkskin Ultra®	Υ	Υ <sup>1</sup>	Υ1	Υ	N	Υ
Sharkskin Ultra Radiant®	N	N	N	Y <sup>2</sup>	N	Υ <sup>2</sup>
Sharkskin Ultra SA®	Υ	Υ	Υ <sup>3</sup>	Υ	N	Υ

- 1. As the anchor sheet in a 2-ply system
- 2. With battens only
- 3. Adhesive Set-Foam-On Tile: Approved for use with:
  - a. ICP Adhesives & Sealants, Inc. 2-Component Foam Roof Tile Adhesive AH-160 (FL6332-R8)
  - b. Dow TILE BOND™ Roof Tile Adhesive (FL22525-R3)
  - c. DAP Products, Inc., Touch 'n Seal Stormbond Roof Tile Adhesive (FL14506-R4)
  - d. DAP Products, Inc., Touch 'n Seal Stormbond 2 Roof Tile Adhesive (FL14506-R4).

TABLE 4 – MININ	TABLE 4 – MINIMUM INSTALLATION REQUIREMENTS		
Product Name	INSTALLATION INSTRUCTIONS		
Sharkskin	For application in mechanically attached systems- Non-Tile Roofs:		
Comp <sup>®</sup>	Attach Sharkskin Comp in compliance with FBC Section 1507.1.1.		
	For application to steel deck (insulated or non-insulated) in Metal roof systems:		
	Attach Sharkskin Comp with #10, #12 or #14 screws with metal stress plates attached to steel		
	deck, with a minimum penetration through steel deck of ¾". Screws and plates at a spacing of		
	6-inches o.c. at every lap and 3 staggered rows in the field at 10-inches o.c. or per roof system		
	approval.		



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#### Sharkskin Ultra®

For application in mechanically attached systems- Non-Tile Roofs:

Attach Sharkskin Ultra in compliance with FBC Section 1507.1.1.

For application in mechanically attached systems- Tile Roofs:

Attach Sharkskin Ultra in compliance with FRSA/TRI Florida High Wind Clay and Concrete Roof Tile Installation Manual, Sixth Edition per FBC 1507.3.3 and 1507.3.3.1. Refer to Table 5 for additional underlayment systems that have been evaluated for uplift wind design loads.

For application in 2-ply adhered Tile Roofs:

As a base sheet in a 2-ply system with Sharkskin Ultra SA. Attach Sharkskin Ultra with max. fastener spacing in the field, 10" o.c.

For application to steel deck (insulated or non-insulated) in Metal roof systems:

Attach Sharkskin Ultra with #10, #12 or #14 screws with metal stress plates attached to steel deck, with a minimum penetration through steel deck of ¾". Screws and plates at a spacing of 6-inches o.c. at every lap and 3 staggered rows in the field at 10-inches o.c. or per roof system approval.

# Sharkskin Ultra Radiant®

For application in mechanically attached systems with and without Battens- Non-Tile Roofs:

Horizontal battens can be installed over Sharkskin Ultra Radiant.

Attach Sharkskin Ultra Radiant laid horizontally, parallel to the eave with he printed side down; reflective side up (installer to wear tinted protective sunglasses/eyewear) and have 4-inch horizontal and minimum 6-inch vertical laps.

# Sharkskin Ultra SA®

For application in adhered systems- Non-Tile Roofs:

Adhere Sharkskin Ultra SA directly to deck in compliance with FBC Section 1507.1.1.1 with min. 2-inch horizontal laps and min. 6-inch vertical laps.

For application in adhered systems- Non-Tile Roofs, Two-Ply System:

Adhere Sharkskin Ultra SA directly to Sharkskin Ultra in compliance with FBC Section 1507.1.1.1. with min. 2-inch horizontal laps and min. 6-inch vertical laps.

For tile application in adhered systems- Tile Roofs:

Adhere Sharkskin Ultra SA in compliance with FRSA/TRI Florida High Wind Clay and Concrete Roof Tile Installation Manual, Sixth Edition per FBC 1507.3.3 and 1507.3.3.1. Refer to Table 5 for additional underlayment systems that have been evaluated for uplift wind design loads. For adhesive set tile, backnail Sharkskin Ultra SA at 12-inch o.c. with approved fasteners.

For application in 2-ply adhered Tile Roofs:

As a cap sheet in a 2-ply system with Sharkskin Ultra. Adhere Sharkskin Ultra SA directly to Sharkskin Ultra. Sharkskin Ultra base sheet mechanically attached to roof deck per FBC 1507.1.1.

Installation shall be in accordance with the attached installation method and in compliance with applicable code sections of the FBC 7th Edition (2020) and FRSA/TRI Florida High Wind Concrete and Clay Roof Tile Installation Manual, Sixth Edition subject to the Limitations and Conditions of Use listed in this Evaluation Report. Refer to installation details in this report. Refer to manufacturer's installation instructions as a supplemental guide for attachment.



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TABLE 5 – WIND UPLIFT RESISTANT A	ATTACHMENT SYSTEM	S:
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For applications with tile roofs, underlayment maximum design pressure shall meet or exceed wind design loads for the roof assembly.

The following systems are evaluated for uplift wind design pressures as listed in this Table.

Assembly #:	1	
Deck Type:	Wood Deck,	
	15/32" or greater Plywood or Wood Plank	
System Description:	One ply system:	
	Membrane mechanically attached to deck.	
Fasteners:	0.120" ø, ring shank roofing nail, heads not less than 3/8-inch diameter and length sufficient to penetrate through the thickness of the roof deck not less than 3/16-inch with minimum 32 ga., 1-5/8-inch diameter tin caps.	
Spacing:	6-inch o.c. at 4" horizontal overlaps and 6-inch o.c. in a grid pattern having 6, equally spaced staggered rows in the field of the underlayment.	
Membrane:	One ply of Sharkskin Ultra: Install a 48-inch wide first course at the eave of the roof. Followed by a 48-inch wide second and subsequent courses, with 4-inch-wide horizontal laps and 6-inch wide vertical laps.	
Performance:	Design Uplift Pressure*: -112.5 PSF  *Allowable design pressure(s) for allowable stress design (ASD)	

Assembly #:	2		
Deck Type:	Wood Deck,		
	15/32" or greater Plywood or Wood Plank		
System Description:	Two-ply system:		
	Membrane mechanically attached to deck.		
Fasteners:	0.120" $\phi$ , ring shank roofing nail, heads not less than 3/8-inch diameter and		
	length sufficient to penetrate through the thickness		
	of the roof deck not less than 3/16-inch with minimum 32 ga., 1-5/8-inch		
	diameter tin caps.		
Spacing:	6-inch o.c. at 4" horizontal overlaps and 6-inch o.c. in a grid		
	pattern having 3, equally spaced staggered rows in the field of the		
	underlayment.		
Membrane:	Two ply of Sharkskin Ultra:		
	Install a 24-inch wide first course and then a 48-inch wide second course		
	at the eave of the roof. Followed by a 48-inch wide third course covering		
	the previous 48-inch course by 24", leaving 24-inches of exposed		
	underlayment. The subsequent courses are to overlap the previous course		
	by 24-inches, leaving 24-inches of exposed underlayment. Install with 6-		
	inch-wide vertical laps.		
Performance:	Design Uplift Pressure*: -120 PSF		
	*Allowable design pressure(s) for allowable stress design (ASD)		



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Assembly #:	3	
Deck Type:	Wood Deck,	
	15/32" or greater Plywood or Wood Plank	
System Description:	Three ply system:	
	Membrane mechanically attached to deck.	
Fasteners:	0.120" ø, ring shank roofing nail, heads not less than 3/8-inch diameter and	
	length sufficient to penetrate through the thickness	
	of the roof deck not less than 3/16-inch with minimum 32 ga., 1-5/8-inch	
	diameter tin caps.	
Spacing:	6-inch o.c. at 4" horizontal overlaps and 6-inch o.c. in a grid	
	pattern having 1, equally spaced staggered row in the field of the	
	underlayment.	
Membrane:	Three ply of Sharkskin Ultra:	
	Install a 24-inch wide first course and then a 48-inch wide second course	
	at the eave of the roof. Followed by a 48-inch wide third course covering	
	the previous 48-inch course by 36", leaving 12-inches of exposed	
	underlayment. The subsequent courses are to overlap the previous course	
	by 36-inches, leaving 12-inches of exposed underlayment. Install with 6-	
	inch-wide vertical laps.	
Performance:	• Design Uplift Pressure*: -165 PSF	
	*Allowable design pressure(s) for allowable stress design (ASD)	

Assembly #:	4
Deck Type:	Wood Deck,
	15/32" or greater Plywood or Wood Plank
System Description:	Two ply system:
	Base sheet mechanically attached to deck, Cap sheet self-adhered.
Base Sheet:	One ply Sharkskin Ultra: Install a 48-inch wide first course at the eave of
	the roof. Followed by a 48-inch wide second and subsequent courses, with
	4-inch-wide horizontal laps and 6-inch wide vertical laps.
Fasteners:	0.120" ø, ring shank roofing nail, heads not less than 3/8-inch diameter and
	length sufficient to penetrate through the thickness
	of the roof deck not less than 3/16-inch with minimum 32 ga., 1-5/8-inch
	diameter tin caps.
Spacing:	6-inch o.c. at 4" horizontal overlaps and 6-inch o.c. in a grid
	pattern having 6, equally spaced staggered rows in the field of the
	underlayment.
Membrane:	One ply of Sharkskin Ultra SA:
	Self-adhered to Sharkskin Ultra. Shark Sharkskin Ultra SA is to be installed
	with 4-inch horizontal laps and 6-inch vertical laps skin Ultra SA is to be
	installed with 4-inch horizontal laps and 6-inch vertical laps.
Performance:	• Design Uplift Pressure*: -75 PSF
	*Allowable design pressure(s) for allowable stress design (ASD)



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Assembly #:	5	
Deck Type:	Wood Deck,	
	15/32" or greater Plywood or Wood Plank	
System Description:	One ply system:	
	Membrane adhered direct to deck.	
Membrane:	One ply of Sharkskin Ultra:	
	Self-adhered to Sharkskin Ultra. Shark Sharkskin Ultra SA is to be installed	
	with 4-inch horizontal laps and 6-inch vertical laps skin Ultra SA is to be	
	installed with 4-inch horizontal laps and 6-inch vertical laps.	
Performance:	• Design Uplift Pressure*: -142.5 PSF	
	*Allowable design pressure(s) for allowable stress design (ASD)	

Assembly #:	6
Deck Type:	Wood Deck,
	19/32" or greater Plywood or Wood Plank
System Description:	One ply system:
	Membrane mechanically attached to deck.
Fasteners:	0.120" ø, ring shank roofing nail, heads not less than 3/8-inch diameter and
	length sufficient to penetrate through the thickness
	of the roof deck not less than 3/16-inch with minimum 32 ga., 1-5/8-inch
	diameter tin caps.
Spacing:	6-inch o.c. at 4" horizontal overlaps and 6-inch o.c. in a grid
	pattern having 6, equally spaced staggered rows in the field of the
	underlayment.
Membrane:	One ply of Sharkskin Ultra:
	Install a 48-inch wide first course and then a 48-inch wide second and
	subsequent courses with 4-inch-wide horizontal laps and 6-inch wide
	vertical laps.
Performance:	Design Uplift Pressure*: -180 PSF
	*Allowable design pressure(s) for allowable stress design (ASD)



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Assembly #:	7	
Deck Type:	Wood Deck,	
	19/32" or greater Plywood or Wood Plank	
System Description:	Two ply system:	
	Membrane mechanically attached to deck.	
Fasteners:	0.120" ø, ring shank roofing nail, heads not less than 3/8 inch diameter and length sufficient to penetrate through the thickness of the roof deck not less than 3/16-inch with minimum 32 ga., 1-5/8-inch	
	diameter tin caps.	
Spacing:	6-inch o.c. at 4" horizontal overlaps and 6-inch o.c. in a grid pattern having 3, equally spaced staggered rows in the field of the underlayment.	
Membrane:	Two ply of Sharkskin Ultra: Install a 24-inch wide first course and then a 48-inch wide second course at the eave of the roof. Followed by a 48-inch wide third course covering the previous 48-inch course by 24", leaving 24-inches of exposed underlayment. The subsequent courses are to overlap the previous course by 24-inches, leaving 24-inches of exposed underlayment. Install with 6-inch-wide vertical laps.	
Performance:	Design Uplift Pressure*: -202.5 PSF	
	*Allowable design pressure(s) for allowable stress design (ASD)	

Assembly #:	8
Deck Type:	Wood Deck,
,,,,	19/32" or greater Plywood or Wood Plank
System Description:	Three ply system:
	Membrane mechanically attached to deck.
Fasteners:	0.120" ø, ring shank roofing nail, heads not less than 3/8-inch diameter and
	length sufficient to penetrate through the thickness
	of the roof deck not less than 3/16-inch with minimum 32 ga., 1-5/8-inch
	diameter tin caps.
Spacing:	6-inch o.c. at 6" horizontal overlaps and 6-inch o.c. in a grid
	pattern having 1, equally spaced staggered row in the field of the
	underlayment.
Membrane:	Three plies of Sharkskin Ultra:
	Install a 24-inch wide first course, a 48-inch wide second and third course
	at the eave of the roof. Followed by a 48-inch wide forth course covering
	the previous 48-inch course by 36-inches, leaving 12-inches exposed. The
	subsequent courses are to overlap the previous course by 36-inches,
	leaving 12-inches exposed. Install with 6" vertical laps.
Performance:	Design Uplift Pressure*: -210 PSF
	*Allowable design pressure(s) for allowable stress design (ASD)



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Assembly #:	9					
Deck Type:	Wood Deck,					
	19/32" or greater Plywood or Wood Plank					
System Description:	Two ply system:					
	Base sheet mechanically attached to deck, Cap sheet self-adhered.					
Base Sheet:	One ply Sharkskin Ultra:					
	Install a 48-inch wide first course at the eave of the roof. Followed by a					
	48-inch wide second and subsequent courses, with 4-inch-wide horizor					
	laps and 6-inch wide vertical laps.					
Fasteners:	0.120" ø, ring shank roofing nail, heads not less than 3/8-inch diameter and					
	length sufficient to penetrate through the thickness					
	of the roof deck not less than 3/16-inch with minimum 32 ga., 1-5/8-inch					
	diameter tin caps.					
Spacing:	6-inch o.c. at 4" horizontal overlaps and 6-inch o.c. in a grid					
	pattern having 6, equally spaced staggered rows in the field of the					
	underlayment.					
Membrane:	One ply of Sharkskin Ultra SA:					
	Self-adhered to Sharkskin Ultra. Sharkskin Ultra SA to be installed					
	inch horizontal laps and 6-inch-wide vertical laps.					
Performance:	Design Uplift Pressure*: -127.5 PSF					
	*Allowable design pressure(s) for allowable stress design (ASD)					

Assembly #:	10					
Deck Type:	Wood Deck,					
	19/32" or greater Plywood or Wood Plank					
System Description:	One ply system:					
	Membrane adhered direct to deck.					
Membrane:	One ply of Sharkskin Ultra SA:					
	Self-adhered direct to deck. Sharkskin Ultra SA is to be installed with 4-					
	inch horizontal laps and 6-inch vertical laps.					
Performance:	Design Uplift Pressure*: -202.5 PSF					
	*Allowable design pressure(s) for allowable stress design (ASD)					

# Product Limitations and Conditions of Use:

- Deck shall be in compliance with applicable building code. Deck surface shall be dry and free of dust, dirt, loose nails, debris and other protrusions.
- Product is a moisture/vapor barrier. Ensure that roof system provides adequate ventilation to prevent moisture buildup in interior structure.
- Minimum slope shall be 2:12 or greater.
- For applications with tile roofs, underlayment maximum design pressure shall meet or exceed wind design loads for the roof assembly.
- Roof Tile Slippage Limitation: Direct to Deck Installations:



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2-Ply System: The standard maximum roof pitch for the Sharkskin Ultra and Sharkskin Ultra SA two-ply underlayment system shall be 6:12 for flat tile and profiled tiles with lugs. A maximum of 10 per stack are allowed when loading tile on the underlayments.

1-Ply Sharkskin Ultra SA: Tile shall be loaded and staged in a manner that prevents tile slippage and/or damage to the underlayment.

- Product is acceptable for use with any roof covering system which specifically references product in the FBC approval. If not listed, an application may be submitted to the local building jurisdiction for approval based on this evaluation combined with supporting data for the roof covering and its attachment to support.
- Fasteners shall comply with FBC 1507.1.1.
- Metal cap nails shall be required where the ultimate design wind speed, V<sub>ult</sub>, equals or exceeds 170 mph.
- Sharkskin Roof Underlayments shall not be exposed to sunlight for longer than:
  - a. Sharkskin Comp®: 180-days after installation.
  - b. Sharkskin Ultra, Sharkskin Ultra Radiant® and Sharkskin Ultra SA®: 360 days after installation.

# General Limitations and Conditions of Use:

#### • Scope of "Limitations and Conditions of Use" for this evaluation:

This evaluation report for "Optional Statewide Approval" contains technical documentation, specifications and installation method(s) which include "Limitations and Conditions of Use" throughout the report in accordance with Rule 61G20-3.005. Per Rule 61G20-3.004, the Florida Building Commission is the authority to approve products under "Optional Statewide Approval".

- This report is a building code product evaluation per FLPE rule (FAC) 61G15-36 to comply with Florida product approval rule (FAC) 61G20-3. This evaluation report is part of the Florida Building Commission approval for the listed code related criteria. This report by James Buckner, P.E. and CBUCK Engineering is not a design certification of code compliance construction submittal documentation, per FBC section 107, for any individual structure, site specific or permit design.
- Design of support system is outside the scope of this report.
- All metal components and fasteners shall be corrosion resistant in accordance with applicable sections of FBC.
- Fire Classification is outside the scope of Rule 61G20-3, and is therefore not included in this evaluation.
- This evaluation report does not evaluate the use of this product for use in the High Velocity Hurricane Zone code section. (Dade & Broward Counties)
- Option for application outside "Limitations and Conditions of Use"
  Rule 61G20-3.005(1)(e) allows engineering analysis for "project specific approval
  by the local authorities having jurisdiction in accordance with the alternate
  methods and materials authorized in the Code". Any modification of the product
  as evaluated in this report and approved by the Florida Building Commission is
  outside the scope of this evaluation and will be the responsibility of others.



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TAI	TABLE 6 – REFERENCED DATA							
	TEST STANDARD	TEST LABORATORY	TEST ID#	TEST REPORT NO.	DATE			
1.	ASTM D1623-03 PolyPro AH160	Exterior Research & Design	TST 1633	K0810.12.05	Dec 16,2005			
2.	ASTM D1623-03 ICP, DAP1, DAP 2	Momentum Technologies International	TST 2508	JX17A7A-1	Sept 25, 2017			
3.	TAS 103-95 Ultra SA	Momentum Technologies International	TST 2508	JX17A7A	Dec 28, 2017			
4.	TAS 103-95 & TAS 117 B Ultra SA/Ultra	Exterior Research & Design	TST 1633	K6540.03.08-1	Mar 10, 2008			
5.	TAS 104-95 & TAS 117 B Ultra SA/Ultra	Exterior Research & Design	TST 1633	K6540.03.08-2	Mar 10, 2008			
6.	TAS-104-95 Ultra	Momentum Technologies International	TST 2508	JX17A7B	Dec 28, 2017			
7.	TAS-104-95 Tile Slippage Ultra	Momentum Technologies International	TST 2508	JX17A7B-1	Dec 28, 2017			
8.	ASTM D1970-17a Ultra SA	Momentum Technologies International	TST 2508	JX06F8A	June 7, 2018			
9.	ASTM D226-17 Comp	Momentum Technologies International	TST 2508	JX17A7C	Dec 28, 2017			
10.	ASTM D226-09 Ultra Radiant	Momentum Technologies International	TST 2508	JX17A7D	May 11, 2017			
11.	FM 4474-11	American Test Lab of South Florida	TST 3782	RT1206.01-21	Dec 14,2021			
12.	FM 4474-11	American Test Lab of South Florida	TST 3782	RT1206.02-21	Dec 14,2021			
13.	FM 4474-11	American Test Lab of South Florida	TST 3782	RT1206.03-21	Dec 14,2021			
14.	FM 4474-11	American Test Lab of South Florida	TST 3782	RT1206.04-21	Dec 14,2021			
15.	FM 4474-11	American Test Lab of South Florida	TST 3782	RT1206.05-21	Dec 14,2021			
16.	FM 4474-11	American Test Lab of South Florida	TST 3782	RT1206.06-21	Dec 14,2021			
17.	FM 4474-11	American Test Lab of South Florida	TST 3782	RT1206.07-21	Dec 14,2021			
18.	FM 4474-11	American Test Lab of South Florida	TST 3782	RT1206.08-21	Dec 14,2021			
19.	FM 4474-11	American Test Lab of South Florida	TST 3782	RT1206.09-21	Dec 14,2021			
20.	FM 4474-11	American Test Lab of South Florida	TST 3782	RT1206.10-21	Dec 14,2021			
21.	ASTM D4533 & ASTM D5035	Intertek Building & Construction, Canada	NONE	104736235COQ-001	Sept 15, 2021			



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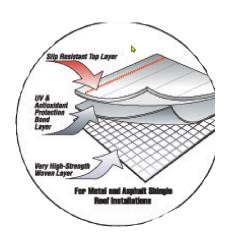
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# Kirsch Building Products Product Illustrations

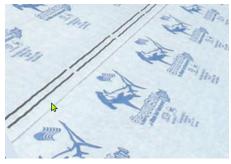
SHARKSKIN'





Sharkskin Comp®

SHARKSKIN®



Sharkskin Ultra®



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# **Kirsch Building Products Product Illustrations**

SHARKSKIN® Ladiant Radiant



Sharkskin Ultra Radiant®





Sharkskin Ultra SA®