



**EVALUATION REPORT**

**FLORIDA BUILDING CODE, 7<sup>TH</sup> EDITION (2020)**

**Manufacturer:** MULE-HIDE PRODUCTS CO., INC.  
 1195 Prince Hall Dr  
 Beloit, WI 53511  
 (800) 786-1492  
[www.mulehide.com](http://www.mulehide.com)

*Issued October 13, 2021*

**Manufacturing Location:** Pryor, OK

**Quality Assurance:** Keystone Certifications ,Inc. (QUA1824)

**SCOPE**

**Category:** Roofing  
**Subcategory:** Underlayments  
**Code Edition:** Florida Building Code, 7<sup>th</sup> Edition (2020) including High-Velocity Hurricane Zones (HVHZ)  
**Code Sections:** 1507.1.1, 1507.3.3, 1523.1.1, 1523.6.5.2.1  
**Properties:** Physical properties

**REFERENCES**

<u>Entity</u>	<u>Report No.</u>	<u>Standard</u>	<u>Year</u>
PRI Construction Materials Technologies (TST5878)	GAPR-014-02-01	ASTM D 1970	2015a
PRI Construction Materials Technologies (TST5878)	GAPR-018-02-01	ASTM D 1970	2015a
PRI Construction Materials Technologies (TST5878)	GAPR-029-02-01	ASTM D 1970	2015a
PRI Construction Materials Technologies (TST5878)	GAPR-030-02-01	ASTM D 1623	2017
PRI Construction Materials Technologies (TST5878)	GAPR-034-02-01	ASTM D 1623	2017
PRI Construction Materials Technologies (TST5878)	GAPR-034-02-01.1	TAS 103	2020
PRI Construction Materials Technologies (TST5878)	GAPR-034-02-02	TAS 110	2000
PRI Construction Materials Technologies (TST5878)	1047T0001	ASTM D 1970	2015a
PRI Construction Materials Technologies (TST5878)	1047T0004.1	TAS 110	2000
		TAS 103	2020
PRI Construction Materials Technologies (TST5878)	1047T0011	TAS 110	2000
		TAS 103	2020
PRI Construction Materials Technologies (TST5878)	1047T0012	TAS 110	2000
PRI Construction Materials Technologies (TST5878)	1047T0016	ASTM D 1970	2015a
PRI Construction Materials Technologies (TST5878)	1047T0017	ASTM D 1970	2015a
PRI Construction Materials Technologies (TST5878)	1047T0018.1	TAS 103	2020
PRI Construction Materials Technologies (TST5878)	1047T0029	ASTM D 1623	2017
		TAS 103	2020
PRI Construction Materials Technologies (TST5878)	1047T0035	ASTM D 1623	2017
		TAS 103	2020
PRI Construction Materials Technologies (TST5878)	1047T0038	ASTM D 7379	2008 (2015)
PRI Construction Materials Technologies (TST5878)	1047T0040	ASTM D 1970	2015a
PRI Construction Materials Technologies (TST5878)	1047T0041	TAS 103	2020
PRI Construction Materials Technologies (TST5878)	1047T0042	TAS 110	2000
		TAS 103	2020
PRI Construction Materials Technologies (TST5878)	1047T0043	ASTM D 1623	2017
		TAS 103	2020
PRI Construction Materials Technologies (TST5878)	1047T0044	ASTM D 1623	2017
PRI Construction Materials Technologies (TST5878)	1047T0046	UL1897	2012
		ASTM D 903	1998(2010)
PRI Construction Materials Technologies (TST5878)	1047T0047A	ASTM D 1970	2015a
PRI Construction Materials Technologies (TST5878)	1047T0047B	ASTM D 1970	2015a
PRI Construction Materials Technologies (TST5878)	1047T0047C	ASTM D 1970	2015a
PRI Construction Materials Technologies (TST5878)	1047T0049	ANSI/FM 4474	2011



**PRODUCT DESCRIPTION AND LIMITS OF USE**

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**Shur-Gard MU Force HT** Shur-Gard MU Force HT is an ASTM D 1970, TAS 103, and FRSA/TRI *Florida High Wind Concrete and Clay Tile Installation* Manual, Sixth Edition compliant self-adhered underlayment constructed of a SBS polymer modified asphalt top coating and a polymer film. The product is supplied in rolls having nominal dimensions of 39 3/8-in. x 66-ft.

Exposure on the roof deck shall be limited to a maximum 180 days. Tiles shall be placed on battens for all roof slopes.

**Shur-Gard MU Ultra HT** Shur-Gard MU Ultra HT is a nominal 60-mil thick ASTM D 1970 self-adhered underlayment constructed of a dual SBS polymer formulation and a non-woven, synthetic surface. The product is supplied in rolls having nominal dimensions of 36-in. x 67-ft.

Exposure on the roof deck shall be limited to a maximum 120 days.

**Shur-Gard TU Force HT** Shur-Gard TU Force HT is a nominal 80-mil thick ASTM D 1970, TAS 103, and FRSA/TRI *Florida High Wind Concrete and Clay Tile Installation* Manual, Sixth Edition compliant self-adhered underlayment constructed of a dual SBS polymer formulation and a non-woven, polyester top surface. The product is supplied in 2 sq. rolls with nominal dimensions of 39 3/8-in x 66-ft.

Exposure on the roof deck shall be limited to a maximum 180 days. The maximum roof slope shall be 6:12 when the roof tiles are placed directly on the underlayment. Tiles shall be placed on battens for roof slopes greater than 6:12.

**Shur-Gard TU Ultra HT** Shur-Gard TU Ultra HT is a nominal 80-mil thick ASTM D 1970, TAS 103, and FRSA/TRI *Florida High Wind Concrete and Clay Tile Installation* Manual, Sixth Edition self-adhered underlayment constructed of a dual SBS polymer formulation and a non-woven, polyester reinforced top surface. The product is supplied in 2 sq. rolls with nominal dimensions of 39 3/8-in x 66-ft.

Exposure on the roof deck shall be limited to a maximum 180 days. The maximum roof slope shall be 6:12 when the roof tiles are placed directly on the underlayment. Tiles shall be placed on battens for roof slopes greater than 6:12.

**PRODUCT APPLICATION**

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Min. Roof Slope: 2:12 in accordance with the FBC

Roof Deck: Shall be in accordance with the FBC requirements  
In the non-HVHZ, the following roof deck substrates are permitted for direct deck applications:

Underlayment	Plywood	Primed Plywood	Primed OSB	Concrete	Primed Concrete
Shur-Gard MU Force HT	Y	Y	N	Y	Y
Shur-Gard MU Ultra HT	Y	N	N	N	N
Shur-Gard TU Force HT	Y	Y	Y	N	Y
Shur-Gard TU Ultra HT	Y	Y	N	Y	Y

Application: *All underlayments shall be installed in accordance with the FBC and the manufacturer's installation requirements.*

*Substrates shall be clean, dry, and free from any irregularities and debris. All fasteners in the substrate shall be checked for protrusion and corrected prior to underlayment application. Prior to beginning installation, the underlayment shall be unrolled and allowed to relax for a minimum of 3-5 minutes.*

The Shur-Gard underlayments shall be installed with the release backer removed and pressed firmly into place to ensure complete contact with the substrate. The underlayment shall be installed with the roll length parallel to the eave, starting at the eave, and with 4" headlaps (MetalGuard and Rain & Ice only) or 3" headlaps (TileGuard) and minimum 6" end laps staggered min. 6-ft. from preceding course. **Shur-Gard TU Force HT** end laps shall be sealed with Mule-Hide #420 Mod Bit Adhesive – Brush Grade or Mule-Hide #421 Mod Bit Flashing Adhesive – Trowel Grade.

In the HVHZ, the Shur-Gard underlayments shall be installed over one of more plies of ASTM D 226 Type II or ASTM D 2626 organic felt with minimum 4" headlaps and minimum 6" endlaps in accordance with FBC Section 1518.3.

It is permissible to backnail the Shur-Gard underlayments 12-inches o.c. within the headlaps (nails shall be installed perpendicular to deck with the nail heads flush to the top surface of the underlayment).

Min. Application Temperature: 40°F and rising; *Contact the manufacturer when installing at temperatures below the minimum application temperature.*

Roof Coverings: All Shur-Gard underlayments are permitted to be used with mechanically fastened metal roofing, slate shingles, asphalt shingles, photovoltaic shingles, and composite plastic shingles in accordance with the FBC.

Shur-Gard MU Force HT is permitted to be used with mechanically fastened clay and concrete tiles set on battens only in accordance with the FBC.

Shur-Gard TU Ultra HT is permitted to be used with mechanically fastened clay and concrete tiles in accordance with the FBC.

Shur-Gard TU Force HT and Shur-Gard TU Ultra HT are permitted to be used with mechanically fastened clay and concrete roof tiles or clay and concrete roof tiles set in the following roof tile adhesive in accordance with the FBC.

1. DuPont TILE BOND™ Roof Tile Adhesive
2. DAP Touch'n Seal Storm Bond Roof Tile Adhesive
3. ICP Adhesives Polyset AH-160

**WIND RESISTANCE OF ROOF TILE UNDERLAYMENT SYSTEMS**

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The *Allowable Design Pressures* below shall be used in accordance with the FRSA/TRI *Florida High Wind Concrete and Clay Tile Installation Manual*, Sixth Edition for the selected underlayment system. The *Allowable Design Pressures* shown below were calculated using a 2:1 margin of safety per FBC Section 1504.9.

System No. 1                      Direct Deck application

Roof Deck:                      Min. 15/32-inch CDX plywood attached to wood supports spaced a maximum 24" o.c.

Underlayment:                **Shur-Gard MU Force HT, Shur-Gard TU Ultra HT or Shur-Gard TU Force HT** shall be self-adhered to the deck in accordance with manufacturer's installation instructions. The underlayment may be *optionally* backnailed along the selvage with minimum 12ga., 1-1/4-inch galvanized ring shank roofing nails through *optionally primed*, 32ga. x 1-5/8-inch Ø tin caps spaced 12" o.c. The applied underlayment shall be rolled with a minimum 75lb steel roller immediately following application.

Allowable Design Pressure:   -90 psf

System No. 2                      Direct Deck application

Roof Deck:                      Concrete primed with ASTM D 41 primer

Underlayment:                **Shur-Gard MU Force HT, Shur-Gard TU Ultra HT or Shur-Gard TU Force HT** shall be self-adhered to the deck in accordance with manufacturer's installation instructions. The applied underlayment shall be rolled with a minimum 75lb steel roller immediately following application.

Allowable Design Pressure:   -67.5 psf

**GENERAL LIMITATIONS**

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- 1) Fire Classification is not within the scope of this evaluation.
- 2) 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.
- 3) The space under the deck area shall be properly ventilated in accordance with the FBC requirements.
- 4) All headlaps shall be installed to shed water from the deck.
- 5) The underlayment may be used as described in other current FBC product approval documents.
- 6) The roof deck shall be designed by others in accordance with FBC requirements to resist the design wind load pressures for components and cladding.
- 7) All products listed in this report shall be manufactured under a quality assurance program in compliance with Rule 61G20-3.

**COMPLIANCE STATEMENT**

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



**This item has been digitally signed and sealed by Zachary R. Priest, PE, on 10/13/2021.**

**Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.**

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

**CERTIFICATION OF INDEPENDENCE**

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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**