



PRI Construction Materials Technologies LLC

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Laboratory Test Report

Report for: Michelle Stander
Lifetime Roofing Specialists, Inc.
3546 E Apple Rd. Cortland, NE 68331

Product Name: Mosaic Sicily Tile

Project No.: 2581T0009

Dates Tested: Nov. 2 - 14, 2023

Test Methods: TAS 125-03
UL 580-06
UL 1897-12

Results Summary: No. 1, 8 fasteners/panel; 2x2 battens; 15/32 plywood: -292psf, Class 90
No. 2, 8 fasteners/panel; 2x2 battens; 15/32 plywood: -247psf, Class 90
No. 3, 13 fasteners/panel; 2x2 battens; 15/32 plywood: -322psf, Class 90

Purpose: Determine the uplift resistance in accordance with **Florida Building Code Test Protocols for the High Velocity Hurricane Zone (HVHZ) Testing Application Standard (TAS) 125-03: Standard Requirements for Metal Roofing Systems, Section 8: UL 580 (as modified for the Florida Building Code, Building), UL 580-06 Test for Uplift Resistance of Roof Assemblies and UL 1897-12 Uplift Tests for Roof Covering Systems**

Test Methods: Testing was completed as described in Florida Building Code Test Protocols for the High Velocity Hurricane Zone (HVHZ) Testing Application Standard (TAS) 125-03: Standard Requirements for Metal Roofing Systems, Section 8: UL 580 (as modified for the *Florida Building Code, Building*), UL 580-06 *Test for Uplift Resistance of Roof Assemblies* and UL 1897-12 *Uplift Tests for Roof Covering Systems*. Specimens were tested to the loading schedule as described in UL 580, and where applicable, incrementally loaded in accordance with UL 1897 until failure.

Sampling: The following materials were received by PRI.

<u>Product</u>	<u>Source</u>	<u>Date</u>	<u>Sampling</u>
26 ga. Mosaic Sicily Tile	Client drop-off	Nov. 03, 2023	Lifetime
#10-15 x 2" Wood Grip screw	Client drop-off	Nov. 03, 2023	Lifetime
#9 x 4-1/2" Structural Wood Screw	Client drop-off	Nov. 03, 2023	Lifetime

All other roofing components were procured by PRI Construction Materials Technologies LLC through local distribution.

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Product Description:	Mosaic Sicily Tile:	26ga. stone-coated steel panels; Coverage is 49.2" (1250mm) x 14.6" (370mm);
	#10-15 x 2" Woodgrip:	#10-15 x 2" Woodgrip HiLo MP, ¼" HWH, From SFS.
Deck Description:	Battens:	No. 2 SYP 2" x 2" wood battens installed approximately 14-5/8" o.c. parallel to the eave; Fastened using two (2) #9 x 4-1/2" Flat Head HeadLok Structural Wood Screws at each rafter intersection, and 24" o.c. between rafters.
	Underlayment:	ASTM D 226 Type II felt
	Decks:	CAT 15/32 PS 1-09, 32/16 span rated, CDX, 4-ply plywood sheathing installed over No. 2 lumber supports spaced 24" o.c. Decking attached with 0.113" x 2-3/8" ring shank nails spaced 6" o.c. along the perimeter and intermediate supports.

¹It is the judgment of the test engineer that the film and tape used to seal the specimen against air leakage did not influence the results of the test.

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Results: Test data are contained in Appendix A. Photographs after testing are shown in Appendix C.

Table 1. Summary of Test Results

Specimen No.	Panel	Attachment	Passing Uplift Pressure (psf)
1	26ga. steel Mosaic Sicily Tile	26ga stone coated steel Mosaic Sicily Tile installed over No 2 battens #10 x 2" screws placed along the back shelf starting at 1" from the edge of the panel and continuing for 28" and 10" o.c. for a total of 3 fasteners through the back shelf. #10 x 2" fasteners placed at the low point of the barrel starting 1" from the edge of the panel and continuing 9"o.c for a total of 5 fasteners per panel into the foot of the panel. 8 fasteners total.	292
2	26ga. steel Mosaic Sicily Tile	26ga stone coated steel Mosaic Sicily Tile installed over No 2 battens #10 x 2" screws placed along the back shelf starting at 1" from the edge of the panel and continuing for 28" and 10" o.c. for a total of 3 fasteners through the back shelf. #10 x 2" fasteners placed at the low point of the barrel starting 1" from the edge of the panel and continuing 9"o.c for a total of 5 fasteners per panel into the foot of the panel. 8 fasteners total.	247
3	26ga. steel Mosaic Sicily Tile	26ga stone coated steel Mosaic Sicily Tile installed over No 2 battens #10 x 2" screws placed along the back shelf starting at 1" from the edge of the panel and continuing for 28" and 10" o.c. for a total of 3 fasteners through the back shelf. #10 x 2" fasteners placed at the low point of the barrel in a pattern of 4"-5"-4"...o.c for a total of 10 fasteners per panel into the foot of the panel. 13 fasteners total.	322

Classification:

Specimen Nos. 1, 2, and 3 installed as described herein meet **Class 90** requirements.

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Statement of Attestation:

Testing was conducted in accordance with **Florida Building Code Test Protocols for the High Velocity Hurricane Zone (HVHZ) Testing Application Standard (TAS) 125-03: Standard Requirements for Metal Roofing Systems, Section 8: UL 580 (as modified for the Florida Building Code, Building), UL 580-06 Test for Uplift Resistance of Roof Assemblies and UL 1897-12 Uplift Tests for Roof Covering Systems.** The test results and interpretations presented herein are representative of the materials supplied by the client.

Signed:



Bill Hinkle
Manager, Client Services

Date: 04/02/2024

Signed:


Zachary R. Priest, P.E.
No. 74021
Florida Registered Professional Engineer
PE No. 74021
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Date: 05/07/2024

Report Issue History:

Issue #	Date	Pages	Revision Description (if applicable)
Original	04/02/2024	15	NA

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Specimen No. 1 (UL 580 Load Schedule)

Class 30 Loading Sequence (UL 580)							
Duration (min)	Positive Pressure	Negative Pressure	Max Deflection Under Load (in.)				Result
			1	2	3	4	
5	0	16.2	0.050	0.101	0.000	0.101	Pass
5	13.8	16.2	0.101	0.101	0.050	0.151	Pass
60	13.8	8.1-27.7	0.151	0.151	0.101	0.151	Pass
5	0	24.2	0.101	0.101	0.101	0.151	Pass
5	20.8	24.2	0.151	0.151	0.101	0.202	Pass
Permanent Set:			0.101	0.101	0.050	0.000	Pass

Class 60 Loading Sequence (UL 580)							
Duration (min)	Positive Pressure	Negative Pressure	Max Deflection Under Load (in.)				Result
			1	2	3	4	
5	0	32.3	0.151	0.151	0.050	0.151	Pass
5	27.7	32.3	0.202	0.202	0.151	0.202	Pass
60	27.7	16.2-55.4	0.353	0.303	0.252	0.303	Pass
5	0	40.4	0.252	0.202	0.151	0.202	Pass
5	34.6	40.4	0.353	0.303	0.252	0.303	Pass
Permanent Set:			0.000	0.050	0.000	0.101	Pass

Class 90 Loading Sequence (UL 580)							
Duration (min)	Positive Pressure	Negative Pressure	Max Deflection Under Load (in.)				Result
			1	2	3	4	
5	0	48.5	0.252	0.252	0.151	0.202	Pass
5	41.5	48.5	0.353	0.353	0.303	0.303	Pass
60	41.5	24.2-48.5	0.353	0.353	0.303	0.353	Pass
5	0	56.5	0.252	0.303	0.202	0.252	Pass
5	48.5	56.5	0.454	0.454	0.353	0.404	Pass
Permanent Set:			0.050	0.050	0.050	0.101	Pass

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Specimen No. 1 (UL 1897 Load Schedule)

Ultimate Loading Sequence (UL 1897)						
Duration (min)	Combined Test Pressure (psf)	Max Deflection Under Load (in.)				Result
		1	2	3	4	
1	112	0.505	0.505	0.404	0.404	Pass
1	127	0.555	0.555	0.505	0.505	Pass
1	142	0.706	0.656	0.555	0.555	Pass
1	157	0.757	0.706	0.656	0.656	Pass
1	172	0.807	0.858	0.706	0.706	Pass
1	187	0.858	0.908	0.807	0.757	Pass
1	202	0.959	0.959	0.858	0.908	Pass
1	217	1.009	1.060	0.959	0.908	Pass
1	232	1.060	1.110	1.009	1.009	Pass
1	247	1.161	1.211	1.110	1.060	Pass
1	262	1.211	1.312	1.161	1.110	Pass
1	277	1.312	1.413	1.262	1.211	Pass
1	292	1.362	1.514	1.413	1.312	Pass
1	307	-	-	-	-	Fail - Fastener Withdrawal

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Specimen No. 2 (UL 580 Load Schedule)

Class 30 Loading Sequence (UL 580)							
Duration (min)	Positive Pressure	Negative Pressure	Max Deflection Under Load (in.)				Result
			1	2	3	4	
5	0	16.2	0.101	0.101	0.101	0.050	Pass
5	13.8	16.2	0.202	0.151	0.151	0.050	Pass
60	13.8	8.1-27.7	0.252	0.202	0.202	0.050	Pass
5	0	24.2	0.202	0.151	0.151	0.050	Pass
5	20.8	24.2	0.252	0.202	0.202	0.050	Pass
Permanent Set:			0.000	0.050	0.050	0.000	Pass

Class 60 Loading Sequence (UL 580)							
Duration (min)	Positive Pressure	Negative Pressure	Max Deflection Under Load (in.)				Result
			1	2	3	4	
5	0	32.3	0.202	0.151	0.151	0.101	Pass
5	27.7	32.3	0.353	0.303	0.303	0.101	Pass
60	27.7	16.2-55.4	0.454	0.404	0.353	0.050	Pass
5	0	40.4	0.303	0.252	0.252	0.050	Pass
5	34.6	40.4	0.454	0.353	0.353	0.050	Pass
Permanent Set:			0.000	0.050	0.000	0.101	Pass

Class 90 Loading Sequence (UL 580)							
Duration (min)	Positive Pressure	Negative Pressure	Max Deflection Under Load (in.)				Result
			1	2	3	4	
5	0	48.5	0.252	0.202	0.202	0.202	Pass
5	41.5	48.5	0.454	0.404	0.353	0.353	Pass
60	41.5	24.2-48.5	0.454	0.404	0.353	0.404	Pass
5	0	56.5	0.404	0.353	0.353	0.353	Pass
5	48.5	56.5	0.555	0.454	0.454	0.454	Pass
Permanent Set:			0.050	0.050	0.050	0.050	Pass

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Specimen No. 2 (UL 1897 Load Schedule)

Ultimate Loading Sequence (UL 1897)						
Duration (min)	Combined Test Pressure (psf)	Max Deflection Under Load (in.)				Result
		1	2	3	4	
1	112	0.555	0.454	0.454	0.454	Pass
1	127	0.706	0.606	0.555	0.555	Pass
1	142	0.757	0.606	0.606	0.656	Pass
1	157	0.858	0.706	0.606	0.757	Pass
1	172	1.009	0.807	0.706	0.858	Pass
1	187	1.665	0.959	0.807	1.211	Pass
1	202	1.687	0.983	0.824	1.251	Pass
1	217	1.694	0.996	0.839	1.263	Pass
1	232	1.709	1.012	0.863	1.281	Pass
1	247	1.723	1.019	0.877	1.296	Pass
1	262	-	-	-	-	Fail – Panel Tear

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Specimen No. 3 (UL 580 Load Schedule)

Class 30 Loading Sequence (UL 580)							
Duration (min)	Positive Pressure	Negative Pressure	Max Deflection Under Load (in.)				Result
			1	2	3	4	
5	0	16.2	0.101	0.101	0.050	0.151	Pass
5	13.8	16.2	0.151	0.151	0.101	0.151	Pass
60	13.8	8.1-27.7	0.151	0.151	0.101	0.151	Pass
5	0	24.2	0.101	0.101	0.050	0.151	Pass
5	20.8	24.2	0.151	0.151	0.101	0.151	Pass
Permanent Set:			0.000	0.050	0.101	0.000	Pass

Class 60 Loading Sequence (UL 580)							
Duration (min)	Positive Pressure	Negative Pressure	Max Deflection Under Load (in.)				Result
			1	2	3	4	
5	0	32.3	0.101	0.151	0.050	0.151	Pass
5	27.7	32.3	0.151	0.151	0.101	0.151	Pass
60	27.7	16.2-55.4	0.252	0.202	0.151	0.202	Pass
5	0	40.4	0.151	0.151	0.101	0.151	Pass
5	34.6	40.4	0.202	0.202	0.151	0.202	Pass
Permanent Set:			0.050	0.000	0.101	0.000	Pass

Class 90 Loading Sequence (UL 580)							
Duration (min)	Positive Pressure	Negative Pressure	Max Deflection Under Load (in.)				Result
			1	2	3	4	
5	0	48.5	0.151	0.151	0.101	0.151	Pass
5	41.5	48.5	0.252	0.202	0.151	0.202	Pass
60	41.5	24.2-48.5	0.252	0.252	0.202	0.252	Pass
5	0	56.5	0.202	0.202	0.151	0.151	Pass
5	48.5	56.5	0.252	0.252	0.202	0.252	Pass
Permanent Set:			0.000	0.000	0.101	0.000	Pass

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Specimen No. 3 (UL 1897 Load Schedule)

Ultimate Loading Sequence (UL 1897)						
Duration (min)	Combined Test Pressure (psf)	Max Deflection Under Load (in.)				Result
		1	2	3	4	
1	112	0.252	0.303	0.252	0.303	Pass
1	127	0.303	0.303	0.303	0.303	Pass
1	142	0.303	0.353	0.303	0.353	Pass
1	157	0.353	0.404	0.353	0.353	Pass
1	172	0.353	0.454	0.353	0.404	Pass
1	187	0.404	0.505	0.404	0.454	Pass
1	202	0.454	0.505	0.454	0.505	Pass
1	217	0.505	0.555	0.505	0.555	Pass
1	232	0.505	0.606	0.555	0.606	Pass
1	247	0.555	0.656	0.656	0.656	Pass
1	262	0.606	0.706	0.706	0.706	Pass
1	277	0.656	0.757	0.706	0.757	Pass
1	292	0.706	0.807	0.757	0.807	Pass
1	307	0.757	0.858	0.858	0.908	Pass
1	322	1.262	1.110	1.312	1.211	Pass
1	337	-	-	-	-	Fail – Deck Failure

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ASTM E 8 Tensile Properties of 26ga. steel

Specimen	Width (in)	Thickness (in)	Gage Length (in)	Yield Strength (ksi)	Tensile Strength (ksi)	Elongation at Break (%)
1	0.499	0.0179	2	50.5	53.7	27.1
2	0.499	0.0178	2	54.6	56.8	32.0
3	0.499	0.0179	2	54.6	56.7	33.7
4	0.497	0.0178	2	53.4	55.7	28.2
5	0.499	0.0178	2	58.0	58.4	32.1
Average	0.4986	0.0178	2.0	54.1	56.3	30.6
St.Dev.	0.0	0.0	0.0	2.7	1.7	2.8

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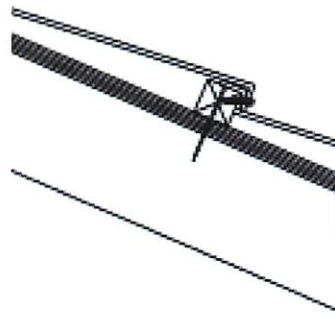


MOSAIC SICILY TILE		
Thickness of steel (mm)	0.45	0.0177"
Length of sheet (mm)	1340 ± 10	52.8"
Cover length (mm)	1250	49.2"
Width of sheet (mm)	420 ± 10	16.5"
Cover width (mm)	370	14.6"
Side overlap (mm)	90	3.5"
Weight of tile (kg)	3 ± 0.1	6lb 9oz
Weight of tiled roof (kg/m ²)	6.5	14lbs 5oz
Coverage per tile (m ²)	0.46	5 ft ²

26ga. Mosaic Sicily Tile

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Mosaic Sicily Tile Fastening



26ga. Steel Mosaic Sicily Tile – 8 fasteners/panel



26ga. Steel Mosaic Sicily Tile – 13 fasteners/panel

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Specimen No. 1 After Testing



Specimen No. 2 After Testing

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Specimen No. 3 After Testing

END OF REPORT

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