4789072767_VS_Report.final.pdf
August 29, 2023

Energy Performance Solutions
Russell McNeice
21011 Hegar Road
Hockley, TX 77447
US

Our Reference: Project 4789072767 / File SV31460
Energy Efficiency Testing on coating product

Dear Mr. McNeice,

This is a Report summarizing the results of tests conducted under the Verification Services (VS) program of UL LLC (UL) as Project No. 4789072767. Testing was conducted a roof coating designated by the manufacturer as "EPSCOT Thermax", per the following standard:

- ASTM/CRRC S100 Stand Test Methods for Determining Radiative Properties of Materials – Approved March 29, 2021

This test standard references the following standards:

- ASTM C1549 Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer – Published November 1, 2016 (R 2022)
- ASTM C1371 Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emissometers – Published March 1, 2015 (R 2022)

The attached test results constitute the only report provided to you under this investigation. These results relate only to the items tested. The samples utilized in this investigation were neither prepared nor selected by a UL representative such that no verification of composition can be provided.

Summary of Test Results

Samples tested were received from Atlas Material Testing Solutions at the conclusion of a three-year weathering exposure.

Product Model	Solar Reflectance	Thermal Emittance
EPSCOT Thermax	0.80	0.87

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The Certification Marking of UL on a product is the only method provided by UL to identify products which have been produced under its Certification and Follow-Up Service. No use of a Certification Marking has been authorized as a result of this investigation.

Very truly yours,

Steven Cuculich
Senior Project Engineer
Building Materials & Systems

Tested by: Denver Leturno Date 2023-07-31

Number of pages in this package ____ [including additional pages ____]
(Fill in when using printed copy as record)

CLIENT INFORMATION	
Company Name	Energy Performance Solutions
Address	21011 Hegar Road Hockley, TX 77447 US

AUDIT INFORMATION:		
[x] Description of Tests: Standard Test Methods for Determining Radiative Properties of Materials	Per Standard: ANSI/CRRC S100	Edition Date: Approved March 29, 2021
[x] Tests Conducted by[1]	See Data Sheets Printed name	Signature
[ ] UL Staff witnessing testing (WTDP only)	 Printed name	Signature
Reviewed and accepted by qualified Project Handler	Steven Cuculich Printed Name	Signature

TESTS TO BE CONDUCTED:

Test No.	Done[3]	Test Name	**[ ]** Comments/Parameters **[ ]** Tests Conducted by[2] **[ ]** Link to separate data files[4]
1	2023-07-31	Solar Reflectance	
2	2023-07-31	Thermal Emittance	

Instructions -
1 - When all tests are conducted by one person, name can be inserted here instead of including name on each page containing data.
2 - When test conducted by more than one person, name of person conducting the test can be inserted next to the test name instead of including name on each page containing data. Test dates may be recorded here instead of entering test dates on the individual datasheet pages.
3 - Use of this field is optional and may be employed differently. If used to include a date instead of entering the testing date on the individual datasheet pages, the date shall be the date the test was conducted.
4 – Link to separate data files for a test can be inserted here. The link must be to a server that is accessible to UL staff, that provides for backup, required retention periods and a path, including file name, that does not change and result in a broken link. Not applicable to DAP.

RISK ANALYSIS RELATED TO TESTING PERFORMANCE:

The following types of risks have been identified. Take necessary precautions. This list is not all inclusive.

[ ] Electric shock
[ ] Energy related hazards
[ ] Fire
[ ] Heat related hazards
[ ] Mechanical
[ ] Radiation
[ ] Chemical hazards
[ ] Noise
[ ] Vibration
[ ] Other (Specify)__

TEST LOCATION:

To be completed by Staff conducting the testing:

[x] UL or Affiliate **[ ]** WTDP **[ ]** CTDP **[ ]** TPTDP **[ ]** TCP **[ ]** PPP
[ ] WMT **[ ]** TMP **[ ]** SMT

Company Name: UL LLC
Address: 333 Pfingsten Road
Northbrook, Illinois 60062

TEST EQUIPMENT INFORMATION:

[X] UL test equipment information is recorded on Meter Use in UL's Laboratory Project Management (LPM) database.

[ ] UL test equipment information is recorded on Dept. 3019's electronic equipment database tracking system (ShrCal) – See the attached sheet(s) "Department 3019FPD Instrument Calibration Tracking".

Inst. ID No.	Instrument Type	Test Number+, Test Title or Conditioning	Function /Range	Last Cal. Date	Next Cal. Date

+ - If Test Number is used, the Test Number must be identified on the data sheet pages or on the Data Sheet Package cover page.

The following additional information is required when using client's or rented equipment, or when a UL ID Number for an instrument number is not used. The Inst. ID No. below corresponds to the Inst. ID No. above.

Inst. ID No.	Make/Model/Serial Number/Asset No.

Tested by: Denver Leturno Date 2023-07-31

TEST SAMPLE IDENTIFICATION:

The table below is provided to establish correlation of sample numbers to specific product related information. Refer to this table when a test identifies a test sample by "Sample No." only.

Sample Card No.	Date Received	[ ] Test No.+	Sample No.	Manufacturer, Product Identification and Ratings
6145432	2023-06-02			EPSCOT Thermax

+ - If Test Number is used, the Test Number or Numbers the sample was used in must be identified on the data sheet pages or on the Data Sheet Package cover page.

[ ] Sampling Procedure - _____

SPECIAL INSTRUCTIONS:

[x] Unless specified otherwise in the individual Methods, the tests shall be conducted under the following ambient conditions. Confirmation of these conditions shall be recorded at the time the test is conducted.

Ambient Temperature, °C	23±3	Relative Humidity, %	50±10	Barometric Pressure, mBar	N/A

[ ] No general environmental conditions are specified in the Standard(s) or have been identified that could affect the test results or measurements.

[ ] This document contains data or information using color and if printed, should be printed in color to retain legibility and the information represented by the color.

TEST SPECIMENT SELECTION

Test Specimen Description:	EPSCOT Thermax
Test Specimen Type:	Field-applied coating
Batch A Description:	A1-A5 batch 20-104
Batch B Description:	B1-B4 batch 20-110

Test Specimen Stage:	**[ ]** Initial **[x]** Aged – field-exposed **[ ]** Aged – laboratory-exposed

Roof product specimen selection was determined in accordance with:
[x] Section S.3.1(A) of ANSI/CRRC S100 for standard roofing products
[ ] Section S.3.1(B) of ANSI/CRRC S100 for factory-applied coatings and factory-coated metal products
[ ] Section S.3.1(C) of ANSI/CRRC S100 for variegated roofing products
[ ] Section S.3.1(D) of ANSI/CRRC S100 for laboratory-soiled and weathered products

[x] Test specimen met the size requirements of ANSI/CRRC S100

[x] Test specimen thickness verification not needed
[ ] Test specimen target thickness verified in accordance with section S.2.5 of ANSI/CRRC S100

Manufacturer provided thickness:	18 mil

Test specimen surface is:
[x] Non-variegated
[ ] Variegated
[ ] Presumed non-variegated and verified in accordance with section S.2.2(C)2.a of ANSI/CRRC S100

SOLAR REFLECTANCE

Client Name: Energy Performance Solutions
Sample Description: EPSCOT Thermax

METHODS

Solar Reflectance tests were conducted in accordance with:
[x] Section S.2.2(A)3 of ANSI/CRRC S100, with reference to ASTM C1549
[ ] Section S.2.2(A)5 of ANSI/CRRC S100, with reference to ASTM C1549 and section S.2.2(B) of ANSI/CRRC S100 for variegated roofing products
[ ] Section S.2.2(A)5 of ANSI/CRRC S100, with reference to ASTM C1549 and the Tile Test Method described in Section S.2.2(D)1 of ANSI/CRRC S100
[ ] Section S.2.2(A)5 of ANSI/CRRC S100, with reference to ASTM C1549 and the Tile Template Method described in Section S.2.2(D)2 of ANSI/CRRC S100
[ ] Section S.2.2(A)5 of ANSI/CRRC S100, with reference to ASTM C1549 and section S.2.2(F) of ANSI/CRRC S100 for wood products
[ ] Section S.2.2(A)6 of ANSI/CRRC S100, with reference to ASTM C1549 and the Tile Template Method described in Section S.2.2(D)2 of ANSI/CRRC S100

Air Mass:	1.5

Additional test data was recorded using the following tools found at https://portal.coolroofs.org/company, controlled by the Cool Roof Ratings Council:
[ ] CRRC-1 Test Method #1 Released 2010-08-24.xlt
[ ] CRRC-1 Test Method #1 for Tiles released 2012-02-09.xltm
[ ] CRRC-1 Test Method #1 for AGED Tiles 2019-10-08.xlsm
[ ] CRRC Tile Template Method Tool 2019-07-02.xlsx

Tested by: Denver Leturno Date 2023-07-31

RESULTS

Test Date:	2023-07-31
Ambient Temp. (°C):	21.9
Relative Humidity:	49.0

Batch	Sample	Solar Reflectance Measurement	Averaged Solar Reflectance
A	A1	0.788	0.786
		0.783	
		0.787	
	A2	0.801	0.787
		0.787	
		0.774	
	A3	0.767	0.765
		0.762	
		0.766	
A & B	A4	0.777	0.769
		0.769	
		0.760	
	A5	0.854	0.851
		0.849	
		0.850	
	B1	0.794	0.799
		0.803	
		0.800	
B	B2	0.787	0.781
		0.782	
		0.774	
	B3	0.845	0.846
		0.845	
		0.847	
	B4	0.844	0.844
		0.848	
		0.841	

Average for all Solar Reflectance tests: 0.803

THERMAL EMITTANCE

Client Name: Energy Performance Solutions
Sample Description: EPSCOT Thermax

METHODS

Thermal Emmittance tests were conducted in accordance with: **[ ]** Section S.2.3 of ANSI/CRRC S100, with reference to ASTM C1371 **[x]** Section S.2.3 of ANSI/CRRC S100 using the Slide Method, with reference to ASTM C1371	
High Standard Reference:	0.87
High Reference Reading:	0.87
Low Standard Reference:	0.05
Low Reference Reading:	0.05

RESULTS

Test Date:	2023-07-31
Ambient Temp. (°C):	21.9
Relative Humidity:	49.0

Batch	Sample	Thermal Emittance Measurement	Averaged Thermal Emittance
A	A1	0.88	0.88
		0.87	
		0.88	
	A2	0.88	0.88
		0.88	
		0.88	
	A3	0.87	0.87
		0.87	
		0.88	
A & B	A4	0.86	0.87
		0.87	
		0.87	
	A5	0.87	0.87
		0.87	
		0.88	
	B1	0.87	0.88
		0.88	
		0.89	
B	B2	0.87	0.87
		0.87	
		0.87	
	B3	0.87	0.87
		0.87	
		0.87	
	B4	0.86	0.87
		0.87	
		0.87	

Average for all Thermal Emittance tests: 0.87

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