

## TEST REPORT FOR BIODEFENSE 24/7 EXTERIOR PLUS

Report No.: 105671610MID-001

Date: 01/05/24

### SECTION 3

#### TEST METHOD(S)

The specimen was evaluated in accordance with the following:

**ASTM E1980-11(Reapproved 2019);** *Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces*

**ASTM C1371-15 (Reapprove 2022);** *Standard Test Method for Determination of Emittance of Material Near Room Temperature Using Portable Emissometers*

**ASTM C1549-16(Reapproved 2022);** *Standard Test Method for Determination of Solar Reflectance Near Ambient Temperatures Using a Portable Solar Reflectometer*

**ANSI/CRRC S100 (2021)** *Standard Test Methods for Determining Radiative Properties of Materials*

### SECTION 4

#### MATERIAL SOURCE/INSTALLATION

Samples were provided by the client. The samples were received at the Middleton Evaluation Center on November 29, 2023 in good condition and verified by Sample ID # MID2311291323-001

### SECTION 5

#### EQUIPMENT

EQUIPMENT			
DESCRIPTION - ASSET #:	Thickness meter -1043	CALIBRATION DUE:	1/13/2024
DESCRIPTION - ASSET #:	Emissometer #1096	VBU:	1/5/2024
DESCRIPTION - ASSET #:	Spectrum Reflectometer - #1113	VBU:	1/5/2024
DESCRIPTION - ASSET #:	Stop Watch #1584	CALIBRATION DUE:	7/5/2024
DESCRIPTION - ASSET #:	Temperature Humidity #1451	CALIBRATION DUE:	3/7/2024

### SECTION 6

#### TEST PROCEDURE

Measurements for thermal emittance were conducted in accordance with ASTM C1371 for 90 seconds. The measurements for solar reflectance were conducted in accordance with ANSI/CRRC S100 (2021) Standard Test Methods for Determining Radiative Properties of Materials.

Per ASTM E1980, using the solar reflectance and thermal emissivity of the specimen surface, the SRI is calculated on three convective coefficients of 5, 12, and 30 Wm<sup>-2</sup> K<sup>-1</sup>, corresponding to low, medium, and high-wind conditions, respectively.

### SECTION 7

#### TEST SPECIMEN DESCRIPTION

(9-12)-FT-W is a white membrane. No weathering or aging was performed.

## TEST REPORT FOR BIODEFENSE 24/7 EXTERIOR PLUS

Report No.: 105671610MID-001

Date: 01/05/24

### SECTION 8

#### TEST RESULTS

Thermal Emittance Sample Measurements	
#	Thermal Emittance
9-FT-W (A)	0.90
9-FT-W (B)	0.89
10-FT-W (A)	0.90
10-FT-W (B)	0.88
11-FT-W (A)	0.89
11-FT-W (B)	0.88
12-FT-W (A)	0.90
12-FT-W (B)	0.89

Thermal Emittance Results	
Average Emittance	0.891
Average Deviation	0.007
Standard Deviation	0.008
Instrument Uncertainty (As supplied by the manufacturer)	0.01
Measurement of Uncertainty	0.029

Solar Reflectance Sample Measurements	
Set Number	Reflectance
9-FT-W (1)	0.802
9-FT-W (2)	0.793
9-FT-W (3)	0.797
10-FT-W (1)	0.808
10-FT-W (2)	0.807
10-FT-W (3)	0.798
11-FT-W (1)	0.801
11-FT-W (2)	0.802
11-FT-W (3)	0.804
12-FT-W (1)	0.807
12-FT-W (2)	0.802
12-FT-W (3)	0.808

## TEST REPORT FOR BIODEFENSE 24/7 EXTERIOR PLUS

Report No.: 105671610MID-001

Date: 01/05/24

Solar Reflectance Results	
Average Reflectance	0.802
Average Deviation	0.004
Standard Deviation	0.005
Instrument Uncertainty (As supplied by the manufacturer)	0.03
Estimated Uncertainty	0.061

Solar Reflectance Index (SRI) Results	
Convective Coefficient	SRI Value
Low	100
Medium	100
High	100

Total Thickness in mm:

Trial	1 (mm)	2 (mm)	3 (mm)	4 (mm)	5 (mm)	Average
9-FT-W	1.39	1.39	1.38	1.39	1.39	1.39
10-FT-W	1.40	1.40	1.39	1.40	1.40	1.40
11-FT-W	1.39	1.40	1.38	1.39	1.38	1.39
12-FT-W	1.40	1.39	1.43	1.40	1.39	1.40
Total Average						1.39

## SECTION 9

### CONCLUSION

The standard has no pass-fail criteria. The average SRI using the medium convective coefficient for (9-12)-FT-W is 100.

## SECTION 10

### REVISION LOG

REVISION #	DATE	SECTION	REVISION
0	01/05/24	N/A	Original Report Issue