MIL-STD-810G METHOD 524 DIURNAL CYCLING EFFECTS TEST REPORT

FOR

VISTAGREEN
ARTIFICIAL GREEN WALLS

VISTAGREEN
UNIT 6, TRADE CITY, LYON WAY
FRIMLEY, GU167AL
ON

ARTIFICIAL GREEN WALL PANELS

Company Representative: Ric Lumb
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Document Control

Report	Project	Release Date	Revision	Notes	Signed
3365	3365	2019/03/01	Initial		

Executive Summary

The purpose of the test was to expose the VistaGreen Artificial Green Wall product to a series of environmental freeze thaw cycle tests with the objective of assessing the ability of the product to meet the possible stresses of the installation life environments in accordance with the MIL-STD-810 Method 524 Procedure 1.

The following observations are based on the results of the tests performed on the samples or Units Under Test (UUTs) tested.

Below is a chronological list of tests performed with explanations of stresses:

Test	*Description*	*Results*
Diurnal Cycling Effects	MIL-STD-810G Method 524; The test item to be sprayed with water to fill any horizontal pockets. The temperature to be reduced 10° below freezing point at a transition rate of 3°/min and dwell a minimum of 1 hour after stabilization. Increase the chamber temperature linearly over a period of three hours. When the chamber air temperature reaches 0°C, introduce moisture using water vapor, steam, vapor generator or other means to raise and maintain the humidity at or close to saturation. When the test item surface temperature reaches 0°C, ensure frost has formed on the test item surfaces. Continue raising the test chamber towards a test item surface temperature of 4°C (water at maximum density) until the frost just melts, then reduce the temperature linearly to l0°C below the freeze point over a period of three hours. Maintain the conditions for a minimum of one hour following test item temperature stabilization.	PASS

Note:

1. No signs of product degradation was observed during and after testing.

1.0 Introduction

Three VistaGreen Artificial Green Wall panel product was tested according to MIL-STD-810G Method 524, Freeze/ Thaw Diurnal Cycling Effects.

1.1 Process

The MIL-STD-810G Method 524 standard and ARL Quotation #3365 outlined the tests required.

Deviations from the test procedure were:

- None

1.2 Product Description

VistaGreen's lush artificial green wall system plant panels create a beautiful green environment in even the most inhospitable planting locations.
Designed by a multi-award winning horticulturalist, they have been created using individual plant designs which are unique and not available elsewhere.
The artificial foliage panels are 800mm x 800mm and have been designed to ensure a natural looking coverage of plants over a large or small areas. Installation is quick and easy.

Product Identifiers

UUT	*Description*	*Model*	*Serial Number*
1	Artificial Green Wall Panel	Signature Panel	1
2	Artificial Green Wall Panel	Signature Panel	2
3	Artificial Green Wall Panel	Signature Panel	3

1.3 Description of Test Equipment

The equipment used in the test is described by manufacturer, model, and serial number, when applicable, calibration dates.

Test Equipment

Equipment	*Description*			
	Manufacturer	***Model***	***Serial Number***	***Calibration Due***
Thermal Chamber	Thermotron	SM-8C	29099	5/7/2019

2.0 Test Results

2.1 Diurnal Cycling Effects

Three (3) VistaGreen Artificial Green Wall Signature Panels were placed in a thermal chamber and programmed in accordance to Mil-Std 810G Method 524 Procedure I.

The test was performed as follows:

- Sprayed the test item sufficient to fill any horizontal pockets to simulate water collected during a rain storm.
- Reduced the temperature inside the chamber to 10°C below the freeze point for the initial conditions at a rate not exceeding 3°C per minute. Maintained the condition for a minimum of one hour after the test item temperature had stabilized.
- Increased the chamber temperature linearly over a period of three hours. When the chamber air temperature reached 0°C, introduced moisture to raise and maintain the humidity at or close to saturation.
- When the test item surface temperature reached 0°C, ensure frost has formed on the test item surfaces.
- Continue raising the test chamber towards a test item surface temperature of 4°C (water at maximum density) until the frost just melts, then reduce the temperature linearly to l0°C below the freeze point over a period of three hours. Maintain the conditions for a minimum of one hour following test item temperature stabilization.
- 20 cycles were performed.
- Performed a complete visual check post stress.

The results are summarized in following table. Photographs of the UUT's configuration during the test are included within Appendix A.

Diurnal Cycling Effects Test Result

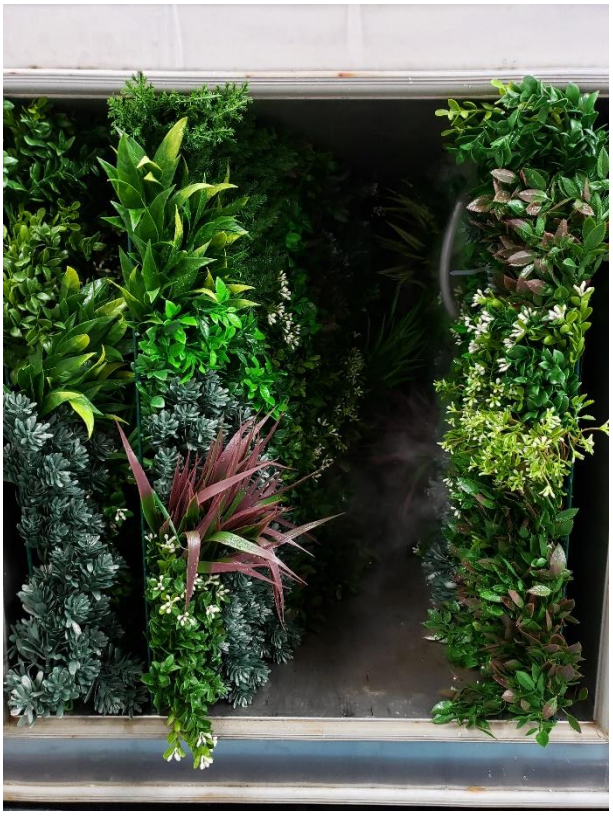
Test	*Description*	*Result*
Diurnal Cycling Effect	Mil-Std 810G Method 524 Procedure I	**PASS**

The results are summarized in following table. Photographs of the UUT's configuration during the test are included within Appendix A.

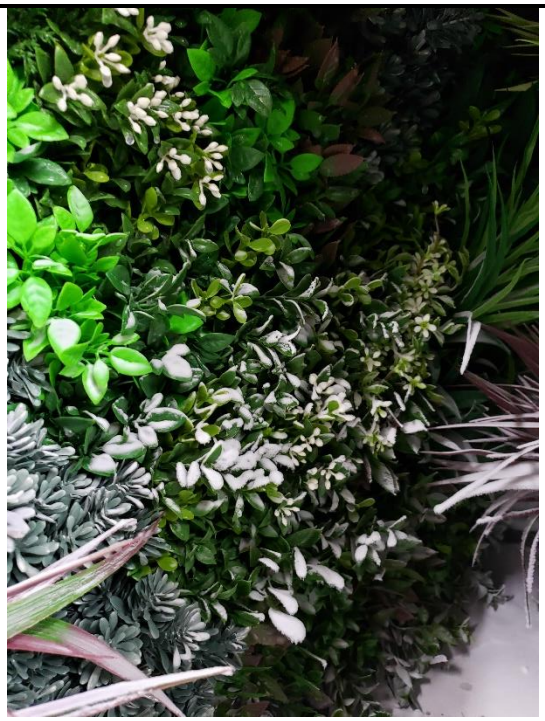
APPENDIX A: Photographs

UUT Chamber Installation

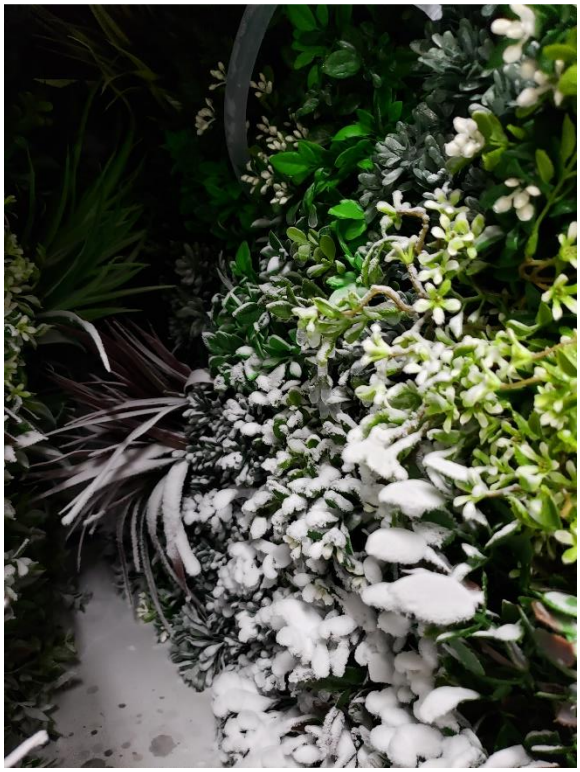
Saturation Pretest



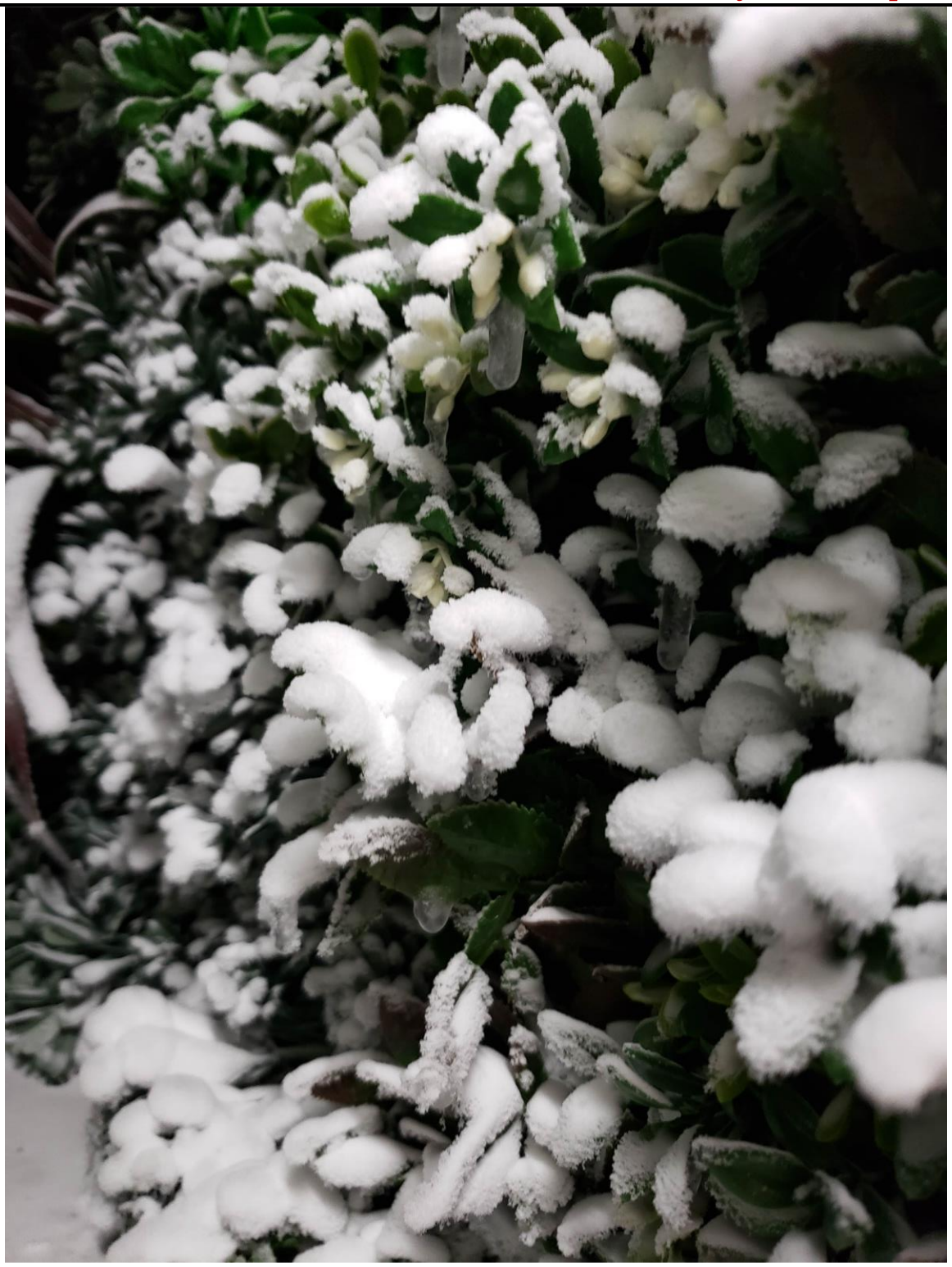
Cycle 1 Test Inspection



Cycle 5 Inspection



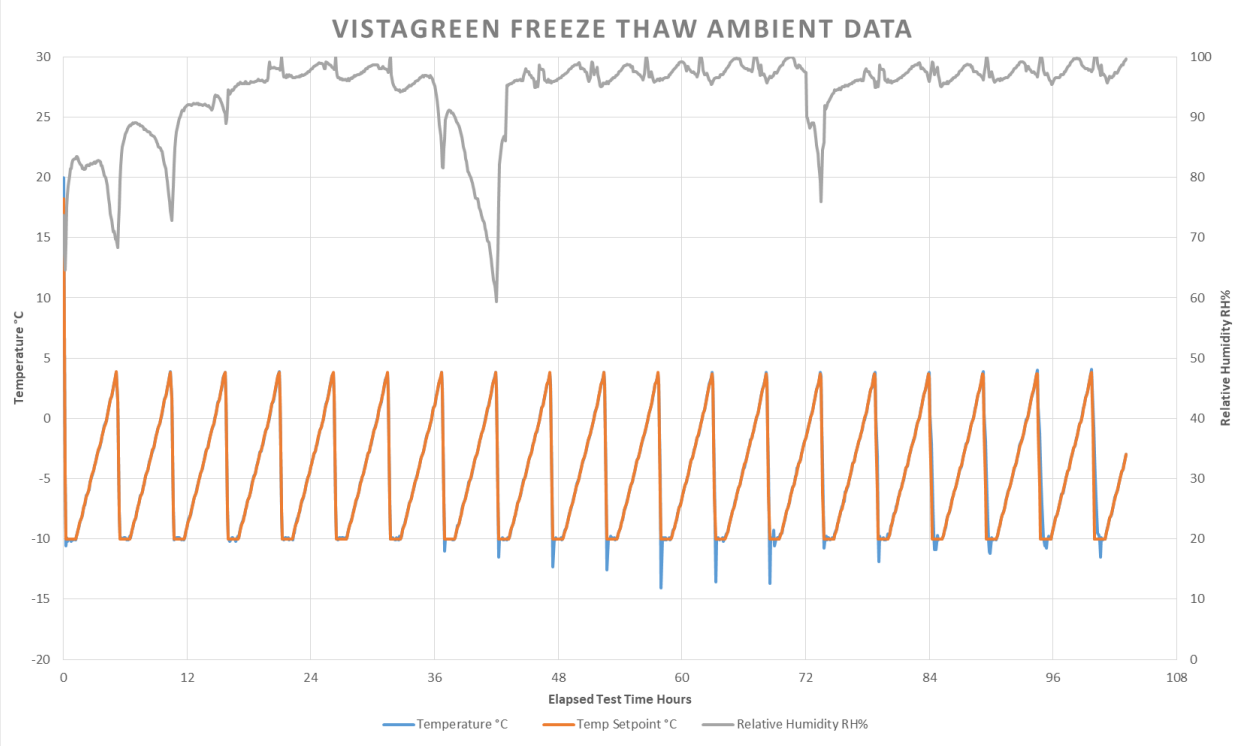
Cycle 15 Inspection



Cycle 20 Inspection

Typical Posttest Inspection

APPENDIX B: DATA



Diurnal Cycling Effect Chart

END OF REPORT