



# CONSTRUCTION MATERIALS TECHNOLOGIES

## LABORATORY TEST RESULTS

**Report for:** Hanover Specialties, Inc.  
35 Feldland Street  
Bohemia, NY 11716

**Attention:** Steve Noskin

<b>Product Name:</b> Vitriturf	<b>Manufacturer:</b> Hanover Specialties, Inc.
<b>Date Received:</b> November 18, 2011	<b>Source:</b> Hanover Specialties, Inc.
<b>PRI-CMT Report No.:</b> HSV-002-02-01-A	<b>Test Dates:</b> Nov 11 – Dec 5, 2011

**Purpose:** The purpose of this testing was to determine the solar reflectance, thermal emittance, and solar reflectance index value of Vitriturf.

**Materials:** The samples for testing were received from Hanover Specialties, Inc. on November 18, 2011.

**Test Methods:** The test methods used included ASTM C 1549-09: *Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Reflectometer* and ASTM C 1371-04a: *Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emissometers*. Both of these methods are Energy Star, Leadership in Energy and Environmental Design (LEED), and Cool Roof Rating Council (CRRC) approved methods for determining radiative properties.

The solar reflectance index (SRI) was calculated in compliance with ASTM E 1980-98e1: *Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces*.

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**Results:** All measurements were conducted at controlled laboratory conditions of 72±3 °F and 50 ± 5 %RH.

**Reflectance**

Specimen	Test Method	N	Avg.	Std. Error
Solar Reflectance at air mass = 1.5	ASTM C 1549			
Gray/Eggshell		57	0.344	0.005
Lite Blue/Eggshell		32	0.432	0.002
Red/Gray		32	0.237	0.002

*Note: Reflectance measurements were conducted using a Devices and Services SSR-ER Version 5.0 Reflectometer calibrated with Devices and Services Reference Standard: 0.807.*

**Emittance**

Specimen	Test Method	1	2	Avg.	Std. Dev.
Emittance	ASTM C 1371				
Gray/Eggshell		0.84	0.88	0.86	0.028
Lite Blue/Eggshell		0.87	0.84	0.86	0.021
Red/Gray		0.86	0.85	0.86	0.007

*Note: Emittance measurements were conducted using a Devices and Services Emittance Model AE calibrated with Devices and Services Reference Standards: High Emittance: 0.90 and Low Emittance: 0.06.*

**Solar Reflectance Index (SRI)**

**Vitriturf - Gray/Eggshell**

Reflectance (a) 0.34  
 Emittance (ε) 0.86  
 Absorptance (α) 0.66

<u>Low-Wind Condition</u>	
$h_c = 5 \text{ W/m}^2 \cdot \text{K}$	
$C_{\text{low-wind}}$	0.660
<b>SRI<sub>low-wind</sub></b>	<b>35</b>

<u>Medium-Wind Condition</u>	
$h_c = 12 \text{ W/m}^2 \cdot \text{K}$	
$C_{\text{medium-wind}}$	0.650
<b>SRI<sub>medium-wind</sub></b>	<b>36</b>

<u>High-Wind Condition</u>	
$h_c = 30 \text{ W/m}^2 \cdot \text{K}$	
$C_{\text{high-wind}}$	0.641
<b>SRI<sub>high-wind</sub></b>	<b>37</b>

**Vitriturf - Lite Blue/Eggshell**

Reflectance (a) 0.43  
 Emittance ( $\epsilon$ ) 0.86  
 Absorptance ( $\alpha$ ) 0.57

<u>Low-Wind Condition</u>	
$h_c = 5 \text{ W/m}^2 \cdot \text{K}$	
$C_{\text{low-wind}}$	0.568
<b>SRI<sub>low-wind</sub></b>	<b>47</b>

<u>Medium-Wind Condition</u>	
$h_c = 12 \text{ W/m}^2 \cdot \text{K}$	
$C_{\text{medium-wind}}$	0.559
<b>SRI<sub>medium-wind</sub></b>	<b>48</b>

<u>High-Wind Condition</u>	
$h_c = 30 \text{ W/m}^2 \cdot \text{K}$	
$C_{\text{high-wind}}$	0.552
<b>SRI<sub>high-wind</sub></b>	<b>49</b>

**Vitriturf - Red/Gray**


Reflectance (a) 0.24  
 Emittance ( $\epsilon$ ) 0.86  
 Absorptance ( $\alpha$ ) 0.76

<u>Low-Wind Condition</u>	
$h_c = 5 \text{ W/m}^2 \cdot \text{K}$	
$C_{\text{low-wind}}$	0.772
<b>SRI<sub>low-wind</sub></b>	<b>21</b>

<u>Medium-Wind Condition</u>	
$h_c = 12 \text{ W/m}^2 \cdot \text{K}$	
$C_{\text{medium-wind}}$	0.760
<b>SRI<sub>medium-wind</sub></b>	<b>22</b>

<u>High-Wind Condition</u>	
$h_c = 30 \text{ W/m}^2 \cdot \text{K}$	
$C_{\text{high-wind}}$	0.750
<b>SRI<sub>high-wind</sub></b>	<b>23</b>

The Solar Reflectance Index of this material was calculated in accordance with **ASTM E 1980: Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces**. The laboratory test results presented in this report are representative of the material supplied.

Signed:   
 Brandon Clark  
 Laboratory Technician

Signed:   
 Zach Priest  
 Director

Date: December 14, 2011

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**Report Issue History:**

Issue #	Date	Pages	Revision Description (if applicable)
Original	12/07/2011	3	NA
A	12/14/2011	3	Update product names

**END OF REPORT**

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