



# CONSTRUCTION MATERIALS TECHNOLOGIES

## LABORATORY TEST RESULTS

**Report for:** Alnet (PTY) Limited  
Epping, Cape Town  
South Africa

**Attention:** Design Govender

<b>Description(s):</b> twelve (12) samples	<b>Manufacturer:</b> Alnet (PTY) Limited
<b>Date Received:</b> Mar. 19, 2012	<b>Source:</b> Alnet (PTY) Limited
<b>PRI-CMT Project No.:</b> ALNL-001-02-01	<b>Test Date(s):</b> Mar. 28, 2012

**Purpose:** The purpose of this testing was to determine the solar reflectance, thermal emittance, and solar reflectance index value of twelve (12) samples identified as HDPE knitted shade-cloth and labeled by color code/designation.

**Materials:** The samples for testing were received from Alnet (PTY) Limited. The samples were labeled as indicated in the data table in the results section of this report.

**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(2010)<sup>61</sup>: *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 1980-11: *Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces*.

ALNL-001-02-01 PRI-CMT Accreditations: IAS TL-189; Miami-Dade 11-0429.05; Florida TST5878; Los Angeles TA24819; CRRC  
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**Results:** All measurements were conducted at 72±3°F and 50±5%RH.

Sample ID	Solar Reflectance		Thermal Emittance		SRI		
	ASTM C 1549 <sup>1</sup>		ASTM C 1371 <sup>2</sup>		ASTM E 1980 <sup>3</sup>		
	Avg.	Std.Dev.	Avg.	Std.Dev.	Low-Wind	Medium-Wind	High-Wind
Extra Block - Charcoal	0.046	0.001	0.89	0.01	-2	-1	0
Extra Block - Bottle Green	0.061	0.002	0.87	0.00	-1	0	1
Extra Block - True Blue	0.068	0.001	0.88	0.00	0	1	3
Extra Block - Plain Cream	0.397	0.002	0.86	0.01	42	43	44
Extra Block - Plain Beige	0.319	0.002	0.86	0.00	31	33	34
Extra Block - Midnight Black	0.030	0.000	0.90	0.00	-3	-2	-2
Extra Block - Latte	0.136	0.002	0.88	0.00	9	10	11
Extra Block - Plain Silver	0.109	0.003	0.85	0.00	3	5	7
Extra Block - Sunblaze	0.111	0.001	0.90	0.01	7	8	9
Extra Block - Forest Green	0.047	0.000	0.88	0.00	-2	-1	0
Extra Block - Yellow	0.427	0.003	0.86	0.01	46	47	48
Extra Block - Red	0.406	0.001	0.83	0.00	41	43	45

Note(s):  
 1- Reflectance measurements were conducted using a Devices and Services SSR-ER Version 6.4 Reflectometer operated in v5 emulation mode and calibrated with Devices and Services Reference Tile # D-18.  
 2- 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.  
 3- SRI calculations per ASTM E 1980 utilize the following assumptions: Low-Wind  $h_c = 5 \text{ W/m}^2\text{-K}$ , Medium-Wind  $h_c = 12 \text{ W/m}^2\text{-K}$ , and High-Wind  $h_c = 30 \text{ W/m}^2\text{-K}$ .

**Statement of Attestation:** The Solar Reflectance Index of these samples 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:   
 Brad Grzybowski  
 Managing Director

Date: March 29, 2012

**Report Issue History:**

Issue #	Date	Pages	Revision Description (if applicable)
Original	03/29/2012	2	NA

**END OF REPORT**

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