

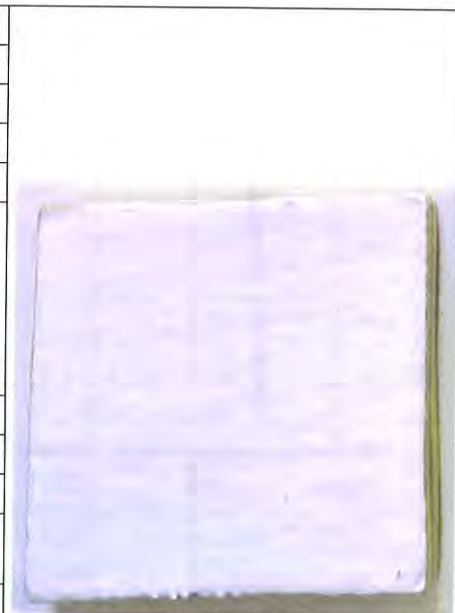
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GENERAL INFORMATION

Subject:	Test report on testing activities to determine solar reflectance, infrared emittance and solar reflectance index (SRI).		
Client	ISOMAX- Baychev Ltd Bul. Vitosha 67 1 000 Sofia, Bulgaria VatNo. BG131370237	Client reference person	(Title) Petar Baychev Phone +359-02 981 22 65 Email: info@isomax.bg
Commitment document	Mail dated 20/01/2016 sent by Petar Baychev	Report release date	01/03/2016

SAMPLE DATA

Receipt date	01/02/2016		
Sample id. sub.	-		
Manufacturer	Same as client		
Product name	IsomaxTerm		
Sampling	Supplied by the Client		
Short physical description *	IsomaxTerm is applied by roller over a: plate of fibrecement on three layers. Every further layer is applied on completely dried previous one. The surface is AQUAPanel Outdoor by KNAUF. Specimen substrate: IsomaxTerm is an aqueous solution of acrylic resin, special microspheres, inorganic pigments and fillers.		
Sample thickness	nn.n mm	Total sample size	nn.n x nn.n mm
Surface coate*	YES	Coating thickness	0,3 mm
Surface state	<i>variegated</i> NO	<i>aged</i> NO	<i>cleaned</i> NO
Information on history and ageing *	The samples was prepared 6 months ago.		
Optical properties	Diffusive reflecting	NO	
	Specular reflecting	NO	
	Intermediate reflecting	YES	
	Clear transmitting	NO	
	Translucent transmitting	NO	
	Opaque	YES	
Notes	*Information on surface coating, aging and cleaning provided by the Client where known.		



Sample picture

The test results are based on the material supplied by the client. This report shall not be reproduced except in full without the written approval of this laboratory. This laboratory assumes no responsibility nor makes a performance or warranty statement for this material or products and processes containing this material in connection with this report.

The reported expanded uncertainty (when requested) is based on a standard uncertainty multiplied by a coverage factor $k = 2$, which for a normal distribution provides a level of confidence of approximately 95%.

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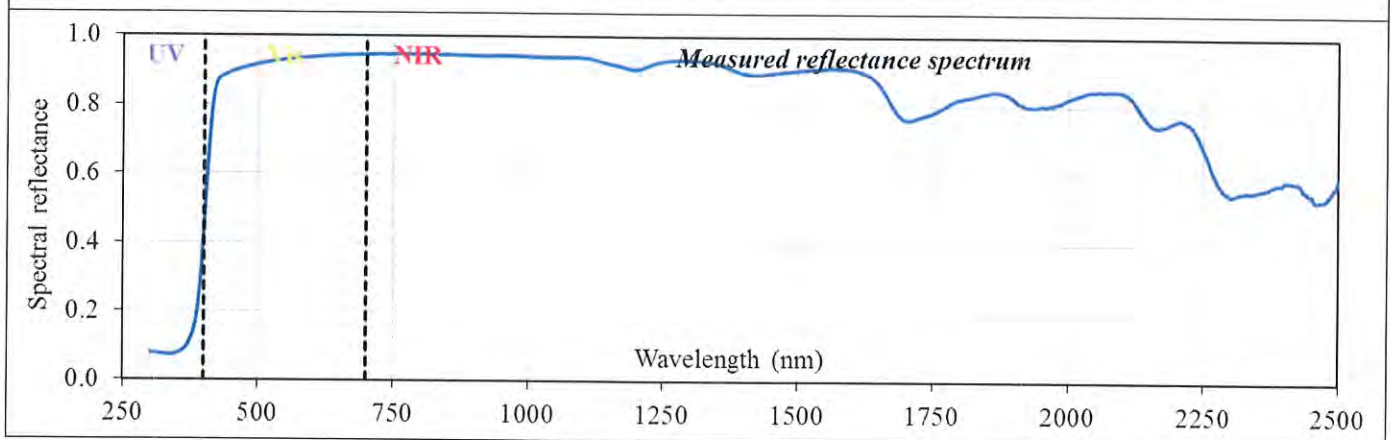
TEST RESULTS

Test Date		Solar Reflectance (SR)	Standard Deviation	Measured Values		
11/02/2016	<i>Value</i>	0.892	0.003	0.888	0.894	0.893
Reference Standard		ASTM E903-12				
Reference Solar Spectrum		ASTM Standard G173 Hemispherical Tilt				

Notes

This test was performed according to *ASTM E903-12: Standard Test Method for Solar Absorptance, Reflectance, and Transmittance of Materials Using Integrating Spheres with air mass 1.5*. A UV-Vis-NIR spectrometer Jasco V-670 with a 150 mm integrating sphere ILN-725 was used. Calibration standard made of Spectralon was provided by ACAL BFi. The uncertainty was established by ILC data collected in 2013 by the European Cool Roof Council (ref. Synnefa et al., *Interlaboratory comparison of cool roofing material measurement methods, Proc. 34th AIVC – 3rd TightVent – 2nd Cool Roofs' – 1st venticool Conferences, Athens (2013) pp. 52-54*).

Measurements were conducted at ambient temperature of $25 \pm 4^\circ\text{C}$ and relative humidity of $50\% \pm 10\%$.



Test Date		Infrared Emittance (IE)	Standard Deviation	Measured Values		
11/02/2016	<i>Value</i>	0.847	0.002	0.845	0.848	0.847
Reference Standard		ASTM C1371-15- Slide Method				

Notes

This test was performed according to *ASTM C1371-15: Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emittance Meters*, with the exception of using the method described in the *D&S Technical Note 10-2: Slide Method for High Emittance Materials with Low Thermal Conductivity*, released by the instrument manufacturer. An emittance meter with scaling digital voltmeter Devices and Services AE1 RD1 was used. Calibration standards with low (0.060) and high (0.870) emittance were provided by the instrument manufacturer.

Measurements were conducted at ambient temperature of $25 \pm 4^\circ\text{C}$ and relative humidity of $40\% \pm 10\%$ in a time period of about 1 h.

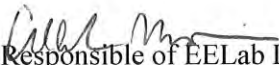


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Test Date	Value	Solar Reflectance (SR)	Infrared Emittance (IE)	Solar Reflectance Index (SRI) [%]		
				Low wind	Medium wind	High Wind
11/02/2016		0.892	0.847	113.7	112.6	112.0
				Surface temperature (ST) [°C]		
				41.8	39.9	38.3
Reference Standard		ASTM E1980-11				

Notes

This calculation was performed according to *ASTM E1980-11: Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces*. This utilizes the following values for the convection coefficient: $h_c = 5 \text{ W/m}^2\cdot\text{K}$ for low-wind (0 to 2 m/s), $h_c = 12 \text{ W/m}^2\cdot\text{K}$ for medium-wind (2 to 6 m/s), and $h_c = 30 \text{ W/m}^2\cdot\text{K}$ for high-wind (6 to 10 m/s).


The Responsible of EELab Laboratory
Prof. Alberto Muscio