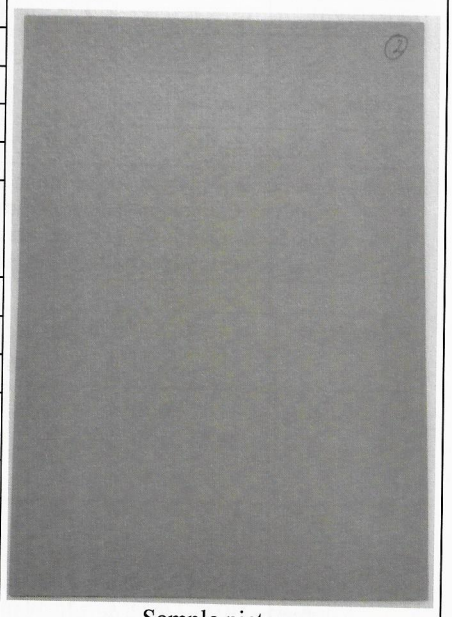
Sample Id.	TEST REPORT N° ETR-17-0206	Page
0362_20102017		1/2

GENERAL INFORMATION

Subject:	Test report on testing activities to determine solar reflectance, infrared emittance and solar reflectance index (SRI).		
Client	RENOLIT IBÉRICA S.A. Ctra. Montnegre S/N 08470 Sant Celoni Spain VAT A08058943	***Client reference person***	Hans Tanghe +34 93 848 4266 hans.tanghe@renolit.com
Commitment document	MO_PG-07_05 dated 10/10/2017 sent by Sergio Matabuena Peña	***Report release date***	12/12/2017

SAMPLE DATA

Receipt date	20/10/2017					
Sample id. sub.	-					
ECRC id	-					
Manufacturer	RENOLIT IBÉRICA S.A.					
Product name	Alkorplan Cool Grey					
Sampling	Carried out by the Client					
Short physical description*	Product type: PVC based single ply roofing membranes Surface: Smooth Embossing					
Sample thickness	1.2 mm		***Total sample size***	296 x 210 mm		
Surface coated	YES		***Coating thickness****	20 µm		
Surface state	***variegated***	NO	***aged***	NO	***cleaned***	NO
Information on history and ageing*	N.A.					
Optical properties	Diffusive reflecting	NO				
	Specular reflecting	NO				
	Intermediate reflecting	YES				
	Clear transmitting	NO				
	Translucent transmitting	NO				
	Opaque	YES				



Sample picture

Notes
* Information on surface coating, aging and cleaning provided by the Client where known.

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 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%.

Sample Id.	TEST REPORT N° ETR-17-0206	Page
0362_20102017		2/2

TEST RESULTS

Test Date		Solar Reflectance (SR)	Standard Deviation	Measured Values				
23/10/2017	Value	0.543	0.002	0.544	0.543	0.543	0.539	0.544
	U(k=2, P=95%)	(± 0.008)						
Test method		ASTM C1549-09						
Reference Solar Spectrum		ASTM E 891– 87 Direct normal						

Notes This test was performed according to *ASTM C1549-09: Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Reflectometer* with air mass 1.5. A solar spectrum reflectometer Devices and Services SSR-ER was used. Calibration standards with low (0.000) and high (0.864) solar reflectance were provided by the instrument manufacturer. Measurements were conducted at ambient temperature of 20.5 ± 1°C and relative humidity of 45% ± 3%.

Test Date		Infrared Emittance (IE)	Standard Deviation	Measured Values				
23/10/2017	Normal value	0.904	0.006	0.915	0.901	0.900	0.902	0.901
	U(k=2, P=95%)	(± 0.021)						
Hemispherical corrected value		0.853	Corrected according to: "A correlation between normal and hemispherical emissmty of low-emissmty coatings on glass" M. Rubin et Al. 1987					
Test method		UNI EN 15976: 2011(Accredited except point 10)						

Notes This test was performed according to *UNI EN 15976: 2011: Flexible sheets for waterproofing. Determination of emissivity* (except point 10). Calibration standards with low (0.010) and high (0.964) emittance were provided by the instrument manufacturer. Samples have been conditioned at room temperature for 2 h before the test.
Measurements were conducted at ambient temperature of 20.5 ± 1°C and relative humidity of 44 ± 3% in a time period of about 1 h.

Test Date		Solar Reflectance (SR)	Infrared Emittance (IE)	Solar Reflectance Index (SRI)[%]		
				Low wind	Medium wind	High Wind
23/10/2017	Value	0.543	0.853	60.1	62.8	64.4
				Surface temperature (ST) [°C]		
				71.0	58.7	48.0
Test method		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 W/m²•K for low-wind (0 to 2 m/s), h_c = 12 W/m²K for medium-wind (2 to 6 m/s), and h_c = 30 W/m²K for high-wind (6 to 10 m/s).

The Responsible of EELab Laboratory (Prof. Alberto Muscio)