

IC PLGBC

Fundacja Instytut Certyfikacji IC PLGBC

Certificate of Recommendation

Selena

Product:

COOL-R

highly reflective, waterproofing coating

Fundacja Instytut Certyfikacji IC PLGBC is a non-governmental organization dedicated to promoting sustainable design, construction and operations in Poland. IC PLGBC's mission is to positively influence the Polish construction industry by recognizing and promoting green building products and materials.



Agnes Vorbrodt
Prezes / Chairman

Certificate valid from July 2016 - July 2017



IC PLGBC Certificate of Recommendation demonstrates that a product or building material has been evaluated against 2 criteria:

- possible contribution to LEED® certification
- other health or environmental benefits

using documentation provided by the product/material manufacturer, consisting of third-party certifications, laboratory results and/or other supporting documentation.

LEED® is a green building rating system developed by the U.S. Green Building Council. LEED® is a registered trademark of the U.S. Green Building Council. Fundacja Instytut Certyfikacji IC PLGBC is an independent non-governmental organization, not affiliated with the USGBC. Fundacja Instytut Certyfikacji IC PLGBC does not perform any laboratory testing and relies on the manufacturer supplied documentation. LEED® does not certify products or materials, however products and materials may contribute to select LEED® credits.

The purpose of IC PLGBC Certificate of Recommendation:

- to help the manufacturer recognize it's products' possible contribution to the LEED® green building certification
- to help the manufacturer gather and present in a clear and concise manner information useful to design teams for rating system certification submittals
- to help the green building community navigate and access products and materials which will help them achieve selected credits under green building rating system
- to educate the green building community about products which already contributed to credit achievement on certified projects
- helping the green building community recognize products/materials which do not directly contribute to the achievement of credits under green building rating system, however present other health or environmental benefits



LEED® green building certification contribution

LEED-NC 2009 / LEED-CS 2009 SS_c7.2 HEAT ISLAND EFFECT - ROOF

COOL-R has been tested by an independent laboratory, SRI=107
Solar Reflectance = 86.2%
Infrared Emittance = 0.86

LEED-NC 2009 / LEED-CS 2009 MR_c5 REGIONAL MATERIALS

For projects located in Poland, the projects should report this product as 5% regionally extracted and manufactured.

		% regional for projects in Poland (by weight)
Place of manufacturing	Poland	100%
Place of extraction	Poland	5%

Other environmental/health benefits

N/A

LEED submission: Please see pages 6 and 7 for testing results and SRI value

REPORT No.	050898-002
CUSTOMER	SELENA LABS SP. Z O.O
APPLICANT	IGOR KORCZAIN
ADDRESS	UL. POLNA 14-18 55-011 SIECHNICE (POLAND)
PURPOSE	SRI INDEX IN ACCORDANCE WITH ASTM E1980-11
SAMPLE TESTED	ACRYLIC COATING REF. «15%»
DATE OF RECEIPT	07.04.2015
TEST DATES	05.05.2015
DATE ISSUED	18.06.2015

Susana Santamaría
Technical Consultant
Construction - Services

- * The results of this report solely and exclusively concern the material tested at the time and under the conditions in which the measurements were taken.
- * This report shall not be reproduced without the express authorisation of FUNDACIÓN TECNALIA R&I, except where done so in its entirety.

CHARACTERISTICS OF THE SAMPLES

On 7th April 2015, TECNALIA received from the company SELENA LABS SP. Z O.O, one test specimens of white acrylic coating on a metallic substrate measuring (100 x 100) mm and referred to as:

«15%»



The customer has not supplied a technical data sheet for the product tested.

CALCULATION REQUESTED

The calculation requested is the determination of the **SRI index** of the test specimen received in accordance with **ASTM E1980-11** «Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces».

Two tests must be done prior to the determination of the SRI index;

- Determination of the **solar reflectance** in accordance with **ASTM E903-12** «Standard Test Method for Solar Absorptance, Reflectance, and Transmittance of Materials Using Integrating Spheres».
- Determination of the **emissivity** in accordance with **ASTM C1371-04a (2010)e1** «Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emisometers».

TESTS CARRIED OUT

SOLAR REFLECTANCE

The determination of the reflectance between 280 and 2,500 nm was carried out using a Perkin-Elmer Spectrometer Lambda 900 UV/VIS/NIR spectrophotometer with an integrating sphere of 150 mm in diameter and white standard.

The test was carried out under laboratory conditions at (23 ± 2) °C and a relative humidity of under 70%. The test specimens were conditioned for 24 hours under the laboratory conditions described above.

The method used has the following characteristics:

- Wavelength interval: 5 nm
- Scan speed: 284.6 nm/min
- Slit UV/VIS:1
- Detector gain NIR:4

Three measurements were taken on the test specimen received and the average was calculated.

Based on the reflectance average value of the test specimen, solar reflectance has been calculated using the selected ordinate method set out in Section 8.3.4.. Ordinates have been selected from the values of direct normal solar irradiance specified in Table X2.3 of the ASTM E903-12 «50 Selected Ordinates for G173 Direct Normal Irradiance AM 1.5».

EMISSIVITY

The measuring equipment used was an emissometer model AE manufactured by Device & Services Company for low and high emissivity.

The test was carried out under laboratory conditions at (23 ± 2) °C and a relative humidity of under 70%. The test specimens and test device (Emissometer Model AE) were conditioned for 24 hours under the laboratory conditions described above.

Emissivity values are determined by comparing the minimum standard value estimated at 0.06 using a silver and copper alloy disc and the maximum standard value estimated at 0.88 using a black disc close to perfect black with a value of 1, made of galvanized aluminium and coated with Teflon. The values of these materials of reference are described in technical note 78-2 provided by the Device & Services Company, which explains how these standard emissivity values have been reached.

The values obtained have an estimated deviation of ± 0.02 .

Ten measurements were taken on the test specimen received and the average was calculated.

RESULTS

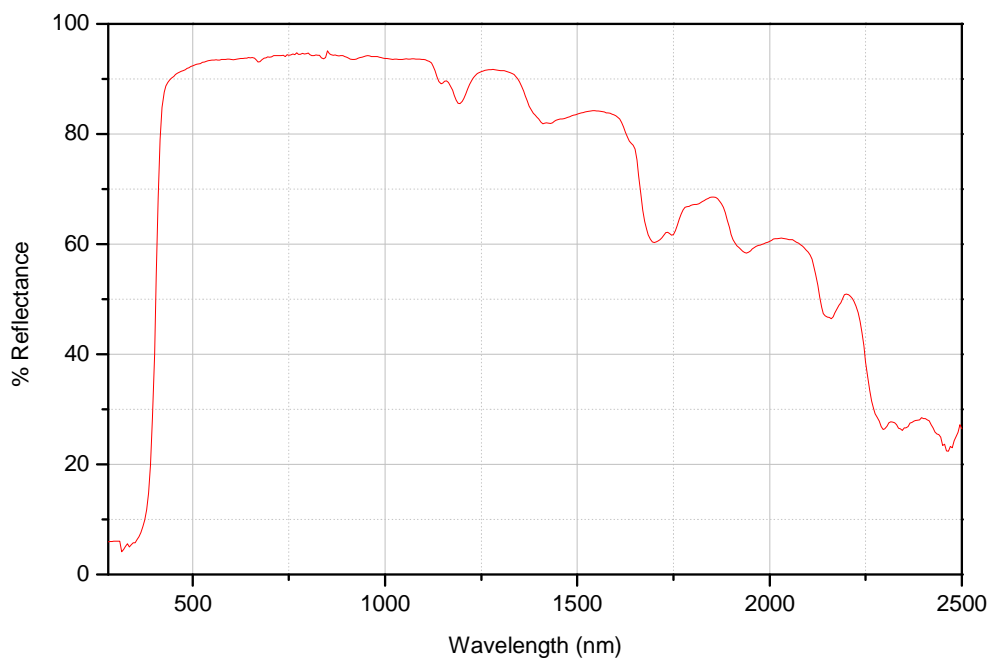
SOLAR REFLECTANCE

The result of solar reflectance of the test specimen referenced as «15%» is:

Solar reflectance (%)

86.2 ± 0.2

The following graph shows the data of the spectral reflectance of the test specimen.



EMISSIVITY

The results of emissivity are:

Measurement	1	2	3	4	5	6	7	8	9	10
Emissivity	0.87	0.86	0.86	0.86	0.86	0.87	0.86	0.87	0.86	0.86

Therefore, the mean emissivity value of the test specimen referenced as «15%» is:

Emissivity	0.86 ± 0.03
------------	-----------------

SRI

Using the solar reflectance and emissivity values obtained, the following SRI index values are obtained, in accordance with the ASTM E1980-11 Standard for different convection coefficients:

Convective coefficient	SRI
Low (0-2 m/s)	107.4 ± 0.2
Medium(2-6 m/s)	107.6 ± 0.2
High (6-10 m/s)	107.8 ± 0.3