

DEKRA Group – Your partner for sustainable construction

Green product card for **Cool-R water insulation system** manufactured by Selena FM S.A. including multicriteria certification requirements in accordance with standard



LEED v4





Green product card's content

This green product card contains a summary of LEED v4 requirements applicable to COOL-R and narratives explaining how COOL-R helps to meet the requirements of LEED v4 Building Design and Construction and Existing Buildings.

Each of the requirements, which according to DEKRA is applicable to COOL-R, has been described on the following pages of this card.

Summary of LEED compliance

COOL-R helps to achieve points and meet the requirements of the following LEED credits:

| LEED credit | Number of points |
|--|-----------------------|
| Heat Island Reduction: <i>NC/CS-v4 SSc5: EBOM-v4 SSc3 - Heat Island Reduction</i> | up to 2 points |
| Energy performance: <i>NC/CS-v4 EAp2: Minimum Energy Performance and EAc2 Optimize Energy Performance</i> | 1-18 points |
| Life Cycle Assessment Analysis: <i>NC/CS-v4 MRc1: Building life-cycle impact reduction</i> | up to 3 points |
| Products with EPD: <i>NC/CS-v4 MRc2: Building product disclosure and optimization - environmental product declarations</i> | 1 point |



POINTS POSSIBLE TO OBTAIN: up to 2

Credit LEED NC/CS-v4 SSc5: EBOM-v4 SSc3: *Heat Island Reduction*

Applicable to the following rating systems: New Construction; Hospitality; Retail; Schools, Data Centers, Warehouses, Healthcare, Core and Shell, EBOM

INTENT

To minimize effects on microclimates and human and wildlife habitats by reducing heat islands.

LEED requirements applicable to COOL-R

High-reflectance roof

One of the options for meeting LEED requirements is to use roofing material that have an SRI* equal or greater than listed in table below and meet the three-year aged SRI value. If three-year aged value information is not available, use materials that meet the initial SRI value.

| | Slope | Initial SRI | 3-year aged SRI |
|-------------------|--------|-------------|-----------------|
| Low-sloped roof | ≤ 2:12 | 82 | 64 |
| Steep-sloped roof | > 2:12 | 39 | 32 |

Parking under cover

One of the options for meeting LEED requirements is to place a minimum of 75% of parking spaces under cover. Any roof used to shade or cover parking must (1) have a three-year aged SRI of at least 32 (if three-year aged value information is not available, use materials with an initial SRI of at least 39 at installation), (2) be a vegetated roof, or (3) be covered by energy generation systems, such as solar thermal collectors, photovoltaics, and wind turbines.

How COOL-R helps meet LEED requirements

Product meets the initial SRI requirement for low-sloped roof and steep-sloped roof and parking under cover:

- **COOL-R Coating SRI – 107 ± 0.2**

SRI was determined by laboratory tests in accordance with ASTM E1980-11.

POINTS POSSIBLE TO OBTAIN: 1-18

Credit LEED NC/CS-v4 EAp2: **Minimum Energy Performance**
EAc2: **Optimize Energy Performance**

Applicable to the following rating systems: New Construction; Hospitality; Retail; Schools, Data Centers, Warehouses, Healthcare and Core and Shell



INTENT

To reduce the environmental and economic harms of excessive energy use by achieving a minimum level of energy efficiency for the building and its systems.

To achieve increasing levels of energy performance beyond the prerequisite standard to reduce environmental and economic harms associated with excessive energy use.

LEED requirements applicable to COOL-R

Whole-building energy simulation

Minimum Energy Performance („prerequisite“):

Demonstrate an improvement of 5% for new construction, 3% for major renovations, or 2% for core and shell projects in the proposed building performance rating compared with the baseline building performance rating.

Calculate the baseline building performance according to ANSI/ASHRAE/IESNA Standard 90.1–2010, Appendix G, with errata (or a USGBC-approved equivalent standard for projects outside the U.S.), using a simulation model.

Optimize Energy Performance („credits“):

Follow the criteria in EA Prerequisite Minimum Energy Performance to demonstrate a percentage improvement in the proposed building performance rating compared with the baseline.

How COOL-R helps meet LEED requirements

Product has EPD Type II number 076/2018 confirming it's contribution to energy efficiency improvement.

Product with ITB EKO label delivered:



076/2018
valid till 30.08.2021
Reduces energy consumption*

*Concerns possible decrease of energy consumption required for cooling the premises and possible decrease of energy demand required for cooling devices operation in the buildings where COOL-R reflective waterproofing coating was applied.



POINTS POSSIBLE TO OBTAIN: up to 3

Credit: LEED NC/CS-v4 MRc1: *Building life-cycle impact reduction*

Applicable to the following rating systems: New Construction; Hospitality; Retail; Schools, Data Centers, Warehouses, Healthcare and Core and Shell

INTENT

To encourage adaptive reuse and optimize the environmental performance of products and materials.

LEED requirements applicable to COOL-R

Europe ACP: Option 4 Whole Building Life-Cycle Assessment

Demonstrate reduced environmental effects during initial project decision-making by reusing existing building resources or demonstrating a reduction in materials use through life-cycle assessment.

One of the applicable options to demonstrate compliance is to carry out a life-cycle assessment of the project's structure and enclosure that demonstrates a minimum of 10% reduction, compared with a baseline building, in at least three of the six impact categories, one of which must be global warming potential.

For European projects, EN standard 15978 may be used as framework for the Life-Cycle-Assessment and combining EPD data in WBLCA (Whole Building LCA).

How COOL-R helps meet LEED requirements

Product has EPD Type III in accordance with PN EN ISO14025: 2010 and PN-EN 15804: 2013 + A1:

- ✓ **COOL-R Coating – has EPD Type III number 075/2018**

Combining EPD impacts with WBLCA results shall follow the best practice guidance outlined in Athena Guide to Whole Building LCA in Green Building Programs which stipulates that EPD results may only be combined provided the EPD:

- ✓ Has not expired – **requirement met, EPD was issued on 30th of August 2018 and is valid for 5 years**
- ✓ EPD scenarios should be representative of contemporary technologies and/or practice, and the project location - **requirement met, EPD Type III is specific to COOL-R Coating and was carried out using contemporary norms and is representative for contemporary technology**



POINTS POSSIBLE TO OBTAIN: up to 3

Credit: LEED NC/CS-v4 MRc1: *Building life-cycle impact reduction*

Applicable to the following rating systems: New Construction; Hospitality; Retail; Schools, Data Centers, Warehouses, Healthcare and Core and Shell

- ✓ Reports all indicators and system boundary information modules required by the WBLCA tool – **dependent on simulation tool used**
- ✓ Characterizes the impact categories reported according to the same LCA methodology as the WBLCA tool – **dependent on simulation tool used**
- ✓ Can be applied to the study period of the assessment – **dependent on study period used used**
- ✓ Clearly indicates which product (including manufacturer and product name) or geographical region it reflects in comparison to the industry-wide weighted average results of a material or fuel already available in the tool – **requirement met, EPD Type III was issued for specific product**

Additionally, comparability shall be ensured in accordance with Section 5 of the BRE Briefing Paper "*Assessing the environmental impacts of construction – understanding European Standards and their implications*".



POINTS POSSIBLE TO OBTAIN: 1

Credit LEED NC/CS-v4 MRc2: *Building product disclosure and optimization – environmental product declarations*

Applicable to the following rating systems: New Construction; Hospitality; Retail; Schools, Data Centers, Warehouses, Healthcare and Core and Shell

INTENT

To encourage the use of products and materials for which life cycle information is available and that have environmentally, economically, and socially preferable life cycle impacts.

LEED requirements applicable to COOL-R

EPD environmental product declaration (EPD)

One of the options for meeting LEED requirements is to use Environmental Product Declarations which conform to ISO 14025, 14040, 14044, and EN 15804 or ISO 21930 and have at least a cradle to gate scope.

Industry-wide (generic) EPD - Products with third-party certification (Type III), including external verification, in which the manufacturer is explicitly recognized as a participant by the program operator are valued as one half (1/2) of a product for purposes of credit achievement calculation.

Product-specific Type III EPD - Products with third-party certification (Type III), including external verification in which the manufacturer is explicitly recognized as the participant by the program operator are valued as one whole product for purposes of credit achievement calculation.

How COOL-R helps meet LEED requirements

Product has EPD Type III in accordance with PN EN ISO14025: 2010 and PN-EN 15804: 2013 + A1:

- ✓ **COOL-R Coating – has EPD Type III number 075/2018**



Definitions and other parameters

SRI

A measure of the constructed surface's ability to stay cool in the sun by reflecting solar radiation and emitting thermal radiation. It is defined such that a standard black surface (initial solar reflectance 0.05, initial thermal emittance 0.90) has an initial SRI of 0, and a standard white surface (initial solar reflectance 0.80, initial thermal emittance 0.90) has an initial SRI of 100. To calculate the SRI for a given material, obtain its solar reflectance and thermal emittance via the Cool Roof Rating Council Standard (CRRRC-1). SRI is calculated according to ASTM E 1980. Calculation of the aged SRI is based on the aged tested values of solar reflectance and thermal emittance.

Environmental Product Declaration – EPD

A statement that the item meets the environmental requirements of ISO 14021-1999, ISO 14025-2006 and EN 15804, or ISO 21930-2007.

Recycled content

Defined in accordance with the International Organization of Standards document ISO 14021 D Environmental labels and declarations D Self-declared environmental claims (Type II environmental labeling). **COOL-R Coating does not contain recycled content.**

Green product card delivery process

DEKRA Polska was instructed SELENA FM S.A. to assess compliance with selected LEED v4 credits for COOL-R high-reflectance roofing membrane, referred to as COOL-R, based on the following:

- ✓ Technical data sheet COOL-R Coating TDS-1-2018-EN
- ✓ European Technical Assessment ETA: ETA COOL-R 16-0609,
- ✓ Material Safety Data Sheet: MSDS-D-213-EN-Cool-R
- ✓ SRI laboratory testing reports for MATISOL and AQUA PROTECT COOL-R
- ✓ Declaration of VOC content
- ✓ EPD Type III issued in August 2018
- ✓ EPD Type II issued in August 2018

The purpose of this green product card is to enable easier assessment of compliance with LEED requirements for the building in which COOL-R will be used. The product itself can contribute towards earning LEED points as described in this card, provided that all other credit requirements are met.

The information contained herein has been obtained from sources deemed reliable. While every reasonable effort has been made to ensure its accuracy, DEKRA Polska cannot guarantee it.