Thermoplastic Single Ply and Multi-Ply
Roofing & Waterproofing Systems
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FLEX COOL ROOFS AND LEED™ REQUIREMENTS

LEED™ stands for Leadership in Energy and Environmental Design. It is a **voluntary** consensus based on national standards for developing high performance sustainable buildings. The rating system was developed by members of the **U.S. Green Building Council** representing all segments of the Building Industry. The rating system includes 6 prerequisite categories covering the building from design to site work to indoor air quality. The 6 categories are divided into a total of 41 sub categories. The LEEDÊ rating system requires that a candidate project must total a minimum of 26 points plus all prerequisite requirements.

The roof system is addressed in the category **Sustainable Sites** and is included in the sub category **Landscape & Exterior Design to Reduce Heat Islands.** The requirement for the roof system to be considered under LEEDÊ is to use an Energy Star® compliant, highly reflective roof membrane based on testing using ASTM E 903 and a high emissivity roofing membrane with an emissivity rating of at least 0.9 when tested in accordance with ASTM E 408 for a minimum of at least 75% of the roof surface or install a ñgreenò vegetated roof for at least 50% of the roof area. Combinations of high albedo and vegetated roof can be used providing they collectively cover 75% of the roof area. Meeting these requirements is worth **1 credit point.**

Flex has an Energy Star® **solar reflectance rating of 0.87** as tested in accordance with ASTM E 903 and an **emissivity rating of 0.919** as tested in accordance with ASTM E 408. Flex white Elvaloy® roof membranes meet or exceed the requirements to qualify for the LEEDÊ rating system. A Flex Cool Roof System may be applicable to the following categories and sub categories.

1) **Sustainable Sites**: cleaning, paints, sealants, maintenance of building exterior, use of green/vegetated roofs, heat island reduction (non roof), heat island reduction (roof).

2) **Water Efficiency**: reduction in watering roof/courtyard, roof drainage, storm water collection system.

3) **Energy and Atmosphere**: adhere to meet applicable EPA Energy Star® requirements, Building maintenance, photovoltaic roof system or solar panels on roof, exceed ASHRAE 90.1 by specified percent.

4) **Materials and Resources**: building reuse, manufacturing of roofing materials within 500 miles of the project. Please contact the Flex Customer Service Department for plant locations.

The simplicity of the LEEDÊ program is adding to the growing awareness about the importance of sustainable construction. The program is growing and rapidly gaining acceptance in transforming the way the built environment is perceived. A statement by a founding board member of the Green Roundtable best describes the process, ñLEED™ is doing a wonderful job of getting people to look at the effects buildings have on the environment. Itôs doing exactly what it is designed to do. Itôs a force to be reckoned with. The US Green Building Council has talked about transforming the marketplace, and that is exactly what LEED™ is doing.ò

It is important to understand that LEED™ certifies buildings and not materials, and that 1 credit can be directly contributed from a white reflective Flex Roof System with the required reflectance and emissivity ratings. A Flex Garden Roof System may earn 2 credits. It is also important to understand that the Flex Roof System may contribute to the other environmental categories. Up to date information on the LEEDÊ program is available at www.usgbc.org.

The definition for Solar Reflectance Index (SRI) is described in the Lawrence Berkeley national laboratory pamphlet containing definitions and terms for Reflectance properties of roofing material. It defines SRI as a measure of the roofôs ability to reject solar heat as shown by a small temperature rise. It is defined that a standard black (reflectance 0.05, emittance 0.90) is 0 and a standard white (reflectance 0.80, emittance 0.90) is 100. Warm roofing materials will have low or even negative values while cool roofing material may high values even greater than 100.

The Solar Reflectance Index (SRI) is calculated in accordance with the ASTEM E 1980. The Flex Cool Roof Membrane was tested by an independent third party, CRRC accredited laboratory. The testing determined the Flex Cool Roof Membrane to have a Solar Reflectance Index (SRI) value of: **109.**

The LEED for New Construction Version 2.2 requires the SRI value for low slope roof material to be equal to or greater than: **78.** The Flex Cool Roof Membrane easily qualifies for the 1 credit point provided under Heat Island Effect: Roof.