

LEED™

In 2000, the U.S. Green Building Council (USGBC), a nonprofit organization, developed a rating system known as the Leadership in Energy and Environmental Design or LEED™ system. The main purpose of LEED™ is to increase the use of green building and accelerate sustainability in building construction. There are five categories that LEED™ uses to rate building construction: sustainable site development, water efficiency, energy and atmosphere, materials and resources, and indoor environmental quality. LEED™ awards innovation credits for design and building processes to construction projects for both new construction and renovation (LEED™-NC) and for existing buildings (LEED™-EB). These credits are rated as platinum, gold, silver or certified. Other objectives of LEED™'s include: defining “green building,” promoting integrated whole-building design practices, recognizing environmental leadership in the building industry, stimulating “green” competition, raising consumer awareness of “green” building benefits, and transforming the building market.

The LEED™ rating system references to roofing are concerned mainly with the reduction of the “**urban heat island**” effect through landscaping and exterior design using reflective roof coverings which reduce the cooling energy demand of a building. Other topics of roofing applicable to LEED™ certification include the energy and thermal performance of insulated roof assemblies, the use of recycled content, the reduction of air leakage in roofing systems, and the management of storm water through the use of

vegetative covered roof systems, rooftop gardens or green roofs. Additional LEED™ points are often available with a roof coating or roof recover option due to the reduction in waste (versus a re-roofing project). Due to the increased demand for “green building”, architects and construction specifiers are striving to make efforts to work on projects with are LEED™ certified to increase their environmental and sustainable profile.

Cool Roofing

The 2005 California Energy Code, contained new roofing requirements in Title 24 of the California Code of Regulations, that went into effect in October of 2005. The mandated Title 24 standard was the first of the California standards to identify roofing membranes as a factor in saving energy besides the insulation normally required in a roof assembly. For the first time, the standard identified the requirement for the use of “Cool Roofs”, i.e. a roof containing a cover with thermal reflectance and emittance values greater than or equal to 0.75, when tested in accordance with the CRRC-1² and established the procedures for certifying and implementing the roofing product. To encourage the use of “Cool Roofs”, many states and utility companies offer rebate programs and other financial incentives to persuade owners to install **“cool roofing”** products on their buildings. The voluntary US EPA/DOE Energy Star Program³ has identified Reflective Roofing Products as a means of reducing a building’s cooling energy costs.

² CRRC-1: Cool Roof Rating Council: Product Rating Program Manual.

³ U.S. Environmental Protection Agency and the U.S. Department Energy Star Program

Several states have adopted an energy policy which awards points in the form of tax credits and rebates to building owners that offset their energy use by using cool or reflective roofs. These states include Arizona, California as mandated by Title 24 of the 2005 California Energy Code, Florida, Georgia, Texas, and Idaho (www.coolroofs.org/codes_and_programs.html).

To help offset the costs for implementing energy efficient technologies to new and existing buildings; there are a number of federal and state rebates, grants, loans, and incentives available. A comprehensive source of information for the available incentive programs for renewable energy, is the DSIRE database⁴, an ongoing project of the IREC⁵, funded by the U.S Department of Energy and managed by the North Carolina Solar Center.

⁴ DSIRE: Database of State Incentives for Renewable Energy: www.dsireusa.org

⁵ IREC: Interstate Renewable Energy Council : www.irecusa.org