TECHNICAL PAPER

USGBC, LEED® and Sustainable Roofing

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The USGBC

The United States Green Building Council (USGBC) was formed with its mission to be "… the nation's foremost coalition of leaders from across the building industry working to promote buildings that are environmentally responsible, profitable and healthy places to live and work. It is leading a national consensus for producing a new generation of buildings that deliver performance both inside and out."

The LEED Program, Leadership in Energy and Environmental Design

LEED for New Construction and Renovation (LEED-NC) was launched in March 2000 and is designed for rating new and existing commercial and institutional buildings. Projects are rated as Platinum (52-69 points), Gold (39-51 points) Silver (33-38 points) and Certified (26-32 points). LEED was created to:

- Define "green building" (not to be confused with green or vegetative covered roofing) by establishing a common standard of measurement
- Promote integrated whole-building design practices
- Recognize environmental leadership in the building industry
- Stimulate green competition
- Raise consumer awareness of green building benefits
- Transform the building market

LEED provides a complete framework for assessing building performance and meeting sustainability goals. LEED emphasizes state-of the-art strategies for sustainable site development, water savings, energy efficiency, material selection and indoor environmental quality. Currently a USGBC committee is developing criteria for existing buildings (LEED-EB) which is similar to the rating system already in place for new construction.

Sustainable Roofing Reflectance and Emittance Criteria

The LEED rating system references to the roof and roof coverings are under the section on Sustainable Sites. The intent of the USGBC in the LEED program is solely to reduce the "urban heat island" effect. For meeting the reflectance and emittance standards, the building is awarded 1 point.

The LEED System indirectly addresses the impact high albedo roof surfaces can have on reducing air conditioning size and increasing energy efficiency, lowering roof life cycle costs, increasing roof service life, and reducing roof contribution to landfill through the requirements for solar reflectance and thermal emittance.

LEED Ratings on National Coatings AcryShield® Products

By installing a high performance Cool Roof System using AcryShield roof coatings from National Coatings, building owners can meet the LEED requirements for a sustainable roofing system as well as experience the added benefits described above. Many National Coatings products have been rated by independent testing laboratories and have been found to exceed the LEED minimum values for reflectance by as much as 32% and for emittance by as much as 6%.

Conclusion

By creating the LEED Green Building Rating System™, the USGBC has developed the tool building owners need to assess building performance and sustainability. Using a high albedo, highly emissive roof surface can enable a candidate building to receive LEED certification and provide added benefits towards the overall performance and sustainability of the building.

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