

Cool Metal Roofing Coalition: Crowning The Building Envelope With Energy Efficiency And Sustainability

Scott Kriner

Name	Organization	Title	Address	Phone	Fax	Email
Scott Kriner	Metal Construction Association	Technical Director	6289 Maple Lane, Macungie, PA 18062	610-966-2430	877-734-8752	skriner@enter.net

Abstract

Buildings consume two-thirds of all electricity generated, or about one-third of all energy resources. Escalating energy costs and heightened environmental concerns are rapidly changing the energy design and materials selection for roofing. The Cool Metal Roofing Coalition is a new industry resource for supplying responsible technical information on these subjects.

Building owners and architects need the real facts about how "cool metal roofing" is crowning the better commercial and residential building envelope with its energy efficiency and sustainability. Metal roofing now boasts advances in coatings and finishes, making it cooler than ever. Reflective metal roofs can save up to 40% in energy costs by lowering building envelope cooling loads. In addition, highly emissive metal roofs can lower urban air temperatures.

Where annual cooling loads dominate, a highly reflective and highly emissive painted or granular-coated metal roof is optimal for reducing overall energy consumption. Where annual heating loads dominate, an unpainted metal roof may be desired because of its low infrared emittance.

Cool metal roofing can also mitigate the urban heat island effect. About half of the North American population lives in built-up areas where dark building materials and pavements, coupled with a lack of vegetation, can increase ambient temperatures as much as 12° F (7° C). Higher reflectance roofs with lower surface temperatures can reduce these ambient air temperatures. Metal roofing retains reflectance better by resisting organic growth and shedding surface contamination.

As a "green" building product, metal roofing is becoming more popular in the architectural community because of its sustainability, defined in part by durability, recycled content, recyclability, and less landfill waste. Metal roofing survives for many years with adverse wind, hail, ice, and snow. It has a minimum of 25% recycled content, desirable for US Green Building Council certification under Leadership in Energy and Environmental Design (LEED). It is also 100% recyclable after renovation or demolition. Metal roofing also weighs much less, reducing static and dynamic loads, and often allowing installation over old roofing.

"Cool metal roofing" is crowning the better commercial and residential building envelope with its energy efficiency and sustainability. Its architectural appeal and flexibility make it desirable for residential and commercial projects, both in low-slope and steep-slope applications. Building owners, architects, and other decision makers can obtain "cool metal roofing" technical information and assistance at www.coolmetalroofing.org.

Three primary learning objectives

1. Metal roofing is energy efficient
2. Metal roofing allows for sustainable building design
3. Metal roofing can help mitigate urban heat island effects.

Keywords

cool metal roofing, metal roofing, energy efficient, sustainable, building envelope, technology

Bio

Scott Kriner is the Technical Director for the Metal Construction Association. In this position, he plans and directs technical support for the association and has become an industry advocate. Dealing with code bodies, national laboratories, and industry coalitions has allowed him to serve the MCA well in overcoming barriers to the use of metal in construction. He is also serving as the Chairman of the Cool Metal Roofing Coalition, and technical editor for ecostructure magazine.

Scott has 22 years of technical experience, both domestic and international, in the coated and prepainted steel sheet industry. He held numerous positions of responsibility on boards and committees for a number of professional organizations. Scott served as a member of the NCCA Board of Directors, Chair of the NCCA Prepainted Metal Roofing Task Force, Chair of the Cool Roof Rating Council's Test Farm Task Group, and Chair of the Zinc and Aluminum Coaters Association. His most recent position prior to joining MCA was Developmental Engineer in the Commercial Department of Bethlehem Steel Corporation. Scott holds BS and Masters degrees in Metallurgy and Materials Science Engineering from Lehigh University.