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Four Factors to Consider When Selecting Roof Edge Material for Your Green Roof System

The growing significance of green roofing

The construction industry's move toward sustainability and environmental friendliness is one of the most compelling and influential forces to impact the roofing community in decades. Now, more than ever, building owners are looking for ways to offset their buildings' energy costs, reduce their maintenance and life-cycle costs, and increase the value and aesthetics of their properties. In pursuit of this, they are increasingly looking to green roof systems as the answer. In a world that is focused on increased environmental awareness and energy reduction, green roofing is becoming the standard to which many of today's building owners aspire.

The increased popularity of green roof design has been driven by the acceptance of the Leadership in Energy and Environmental Design (LEED®) standards. First introduced by the United States Green Building Council (USGBC) in 1998, LEED has become the nationally accepted benchmark for the design, construction and operation of high-performance green buildings. This program outlines specific steps that can be taken to create an environmentally friendly building, and the roof system has been proven to play a significant role. With the continued acceptance of the LEED standards, the active promotion of green roofing has never been higher.

But what is green roofing? Most people associate green roofing with reflective membranes or vegetative rooftops, but it is so much more than that. While reflective materials and roof gardens definitely help enhance a rooftop's environmental friendliness through reduced energy costs and/or better air quality, there are other things to consider when creating a green roof. In addition to reflectivity and vegetation, we must also think of green roofing in terms of sustainability and maximized service life.

One common component of many green roofs, no matter what materials are used, is a quality edge metal system. While they are typically non-reflective and very seldom feature vegetation, edge metal products, such as fascia and coping, can have a significant impact on the overall sustainability of a roof system.

This document outlines four specific factors that building owners and architects should consider when selecting a quality metal edge system for their green roof project. Those four factors – performance, durability, recycled content and a company’s overall environmental commitment – are essential in selecting the most appropriate and sustainable material for the job.

Performance:

Statistics gathered from industry associations show that a quality roof edge will improve a roof system’s overall performance and extend its service life, resulting in dramatically lower life-cycle costs. Today’s highest-performing edge systems have one thing in common – they all feature ANSI/SPRI ES-1 certification. Adopted into the 2003 and 2006 International Building Code (IBC), the ANSI/SPRI ES-1 Wind Design Standard for Low-Sloped Roof Systems is the most comprehensive guide to designing and installing a dependable, long-lasting roof edge system.

A study conducted by the Roofing Industry Committee on Weather Issues (RICOWI) on 165 rooftops after the 2004 – 2005 Florida hurricane season confirmed the impact that ES-1 materials can have on the performance of a rooftop. Based on findings from its study, RICOWI reported that ES-1 compliant roof edges performed significantly better than non-conforming systems, attributing the failure of most roof systems to poor-performing edge systems.

David Roodvoets, former technical director for the Single-Ply Roofing Industry and RICOWI wind event coordinator, stated, “Failure of roofing systems was because of system failure at the perimeter, and punctures and tears from debris. The membrane attachment to the deck cannot resist the loads created when the perimeter securement fails, and this leads to progressive loss of membrane coverage.”

W.P. Hickman’s roof edge products have been independently tested and certified under all three ES-1 test protocols, meeting or exceeding all applicable standards. If installed properly, Hickman’s products are guaranteed to last for decades, which dramatically reduces the life-cycle costs of a roof system.

Hickman’s products also reduce the amount of waste that is generated when replacing damaged roof edge material. In many cases, W.P. Hickman’s products perform so well that they are frequently reused during a re-roofing project, whereas other edge metal systems may be torn off and thrown away when an existing roof system is replaced.

Durability:

Closely related to a product’s performance is its durability, another essential characteristic of any sustainable roof system. Durable materials help reduce the amount of maintenance required to

keep them in good working condition, which drastically reduces a building owner's operational costs.

W.P. Hickman coats its edge metal products with the industry's most proven performers – Kynar 500® and Hylar 5000®. These long-lasting polyvinylidene fluoride (PVDF) coatings, which are applied in a VOC-controlled environment, withstand the harshest elements and provide decades of unmatched protection. The longevity of these products helps reduce waste associated with the replacement of old, worn-out materials.

Hickman's products that are manufactured with these PVDF paints are warranted for 20 years, but with minimal care and maintenance they will last much longer. This long-term performance eliminates the need for edge metal replacement or repainting in the field, which releases unnecessary VOCs into the environment.

Recycled Material:

The most environmentally friendly roof edge systems are made from quality, recycled metals that maintain high levels of performance and durability. The use of recycled metals in the manufacturing process reduces the environmental impact of extracting, processing and transporting virgin materials for the production of roof edge products.

By utilizing aluminum and steel, two easily recycled metals, W.P. Hickman maintains a steadfast commitment to improving the environment through clean manufacturing. Hickman manufactures its products from an above-average percentage of recycled materials. Furthermore, every W.P. Hickman product is 100% recyclable.

Below is a table that describes both the products and the amount of recycled material that is typically used to produce them. These numbers are averages. Actual figures may vary from batch to batch.

Product	Percentage of Recycled Material
5052-H32 (Mill Aluminum Alloy Sheet)	20% or more
3000 Series (Mill Aluminum)	50% or more
Mill Galvanized	31.4% (21.7% post-consumer)
Pre-painted Galvanized	23% post-consumer - 7.3% post-industrial
3105 (Pre-painted aluminum)	43% post-consumer - 42% post-industrial

Company Commitment:

In a world where everyone seems to offer something green, it can be difficult for consumers to gauge how environmentally conscious a company truly behaves. Sometimes a company's true

commitment to the environment varies significantly from the statements it releases, which are merely marketing ploys to increase sales. An excellent measure of a company's true commitment to the environment is its day-to-day business practices.

W.P. Hickman operates a company-wide recycling program that helps to reduce the amount of waste that is created and distributed to area landfills. Through a program implemented long before the green construction wave took off, every W.P. Hickman employee, from office to production staff, makes a conscious effort to reduce the amount of waste they generate.

In 2001, Hickman also implemented lean manufacturing standards into its general business practices. Modeled after Toyota's successful program, this lean manufacturing has dramatically reduced the amount of scrap and waste that is generated at Hickman's production facility. The scrap that is created is either recycled back into the production process or donated to a local community college for its welding program.

For more than 60 years, Hickman has been manufacturing the most advanced and sustainable roof edge systems on the market. Their products have been proven to stand the test of time, and the company has continued to innovate, leading to better products that improve not only the building but also the environment. For more information, contact W.P. Hickman at 1.800.892.9173 or visit www.wph.com.