



Recycling programs keep roofing waste out of landfills, give a boost to the bottom line.

# Recyclable Sustaining

**E**PDm rubber is one of the world's most recyclable low-slope roofing products. Since 2006, almost six million square feet of EPDM have been removed, transported and recycled from buildings all across North America and Canada. This, of course, reduces solid waste and pollution. Beyond that, recycled EPDM can have significant impact on a company's bottom line: more than half of the EPDM recycled nationally has become either cost-neutral or yielded cost savings when compared to traditional landfill disposal. ERA, with the help of its recycling partners Firestone Building Products and Carlisle SynTec, has taken a lead in proving both the practicality and economic viability of recycling for roofing contractors and building owners.

Today, roofing contractors are doing most of the recycling work, with the reroofing market currently driving the low-slope roofing business for installers. This bodes well for EPDM recycling in the near term. Long-term, the new construction market will almost inevitably grow. Today, more and more architects are writ-

ing a recycling process into their new roof specifications, and with good reason. Specifiers and facilities managers with foresight see roof recycling as an absolute necessity in the years to come.

A recyclable roofing product specified today should pay big dividends down the road. The average EPDM roofing membrane installed on a facility in 2011 may be up for replacement in 20 to 30 years. By that time, roof recycling will most likely be a necessity, not an option, due to a growing number of codes that incorporate sustainability requirements. And the penalties property owners will pay for disposing of non-recyclable roofing materials three decades from now will likely be heavy indeed.

"We all have to be aware of the recycling potential of roofing materials," says Sanford P. Steinberg, AIA, CGP, principal of Steinberg Design Collaborative LLP in Houston, Texas. "If the initial cost premium is minimal, and there is a future incentive or rebate, yes—we would go with the recyclable materials."

Along with more stringent government penalties, a decline in available landfill space

in some parts of the country and rising disposal costs have contributed to the viability of recycling. According to the U.S. Environmental Protection Agency (EPA), 40 percent of total landfill waste comes from construction and demolition debris—one quarter of which is generated by roofing materials. While landfill space is plentiful nationally, areas such as the heavily populated East Coast are facing critical capacity issues and have seen disposal costs escalate.

In the last several years, the EPDM roofing community has made great strides in terms of recycling. The potential to streamline the process even further by the end of this decade is even more exciting.

Nationwide Foam Inc. (NFI) of Framingham, Mass., is one of the nation's largest recyclers of roofing waste and a member of the EPDM Roofing Association's (ERA's) Recycling Council. NFI brings more than 20 years of recycling experience to the roofing industry and is North America's largest EPDM and foam insulation board recycler. The demand for the company's EPDM recycling services has grown 200 percent per year since 2008. This rapid

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growth is primarily attributed to more end markets looking to purchase the products made from the recycled EPDM.

“EPDM is more economical for us to recycle and more functional as an end product than other roof membranes,” says Rod Pfannenstiel, vice president of sales for NFI. “Also, from a removal and handling standpoint, EPDM is less expensive and more viable, because the process is simpler.”

By the end of 2010, NFI expects to have recycled nearly two million pounds of EPDM, as well as to have kept more than six million pounds of roofing waste out of local landfills. Through its nationwide network, NFI has created an easy-to-use EPDM roof recycling program that has been used in 48 states in the U.S. and several provinces in southern Canada.

The program is available for low-slope ballasted and mechanically attached EPDM membrane tear-offs. NFI offers jobsite collection and transportation directly to a recycling center.

“The EPDM roofing industry has really put itself way out front in the recycling process,” observes Pfannenstiel. “ERA has created a huge opportunity to foster the growth of EPDM recycling.”

In addition, expectations for green building practices in all aspects of construction are much higher today.

“We are giving our end-market customers the opportunity to become better corporate citizens and reuse EPDM that would have taken up space in their local landfills.”

**AN UNPRECEDENTED INDUSTRY EFFORT**

### AN UNPRECEDENTED INDUSTRY EFFORT

Certainly, the efforts needed to make EPDM recycling practical from a financial and logistical perspective were unprecedented in the commercial roofing industry.

It all began in 2006, when ERA launched a recycling initiative to determine the possibilities of recycling used, in-place EPDM roof membranes.

Working closely with roofing manufacturers Firestone Building Products and Carlisle SynTec, several pilot projects were executed to help better understand the feasibility and logistical processes involved. By the end of 2007, approximately one million square feet of EPDM had been successfully removed, transported and recycled.

With the additional support of NFI and West Development Group (WDG)—the first two members of ERA’s Recycling Council—the program made significant progress in 2009 and 2010 in terms of national scope and cost efficiency.

The EPDM industry task force has already accomplished three of its primary goals:

1. To provide a recycling option for EPDM membranes currently reaching the end of their service lives, as well as for

excess EPDM materials from new construction jobsites.

2. To provide roof system designers motivation for specifying EPDM and procuring LEED points.

3. To determine potential for EPDM recycling and reuse.

“With the continued support of industry leaders and broader awareness among roofing professionals for the economical and environmental impact of EPDM recycling, we expect the rate of EPDM recycling to explode over the next two years,” said Greg Conigliaro, president of NFI.

### RECYCLING SUCCESS STORY

According to WDG, there are three key attributes that must be maintained to ensure EPDM recycling remains sustainable and environmentally responsible:

1. The process must be environmentally beneficial. For example, the recycling process

**RIGHT:** The finest EPDM particles are used to manufacture recycled EPDM polymers for roof coatings and other products. **BELOW:** Since 2006, almost six million square feet of EPDM membrane have been removed, transported and recycled from buildings all across the U.S. and Canada.

material is “green” but doesn’t offer the same waterproofing abilities as a normal roof, the benefits are lost.

3. The recycling process must be economically viable. Customers will pay “a little bit more for a sustainable product,” says West, but it must be nearly equivalent in price.

“In many cases, it costs our clients no more—or even saves them money—to ship the old EPDM to our facility instead of paying a dumping fee,” says West. “We are even starting to get calls from contractors who are being forced by local regulations to recycle their EPDM waste.”

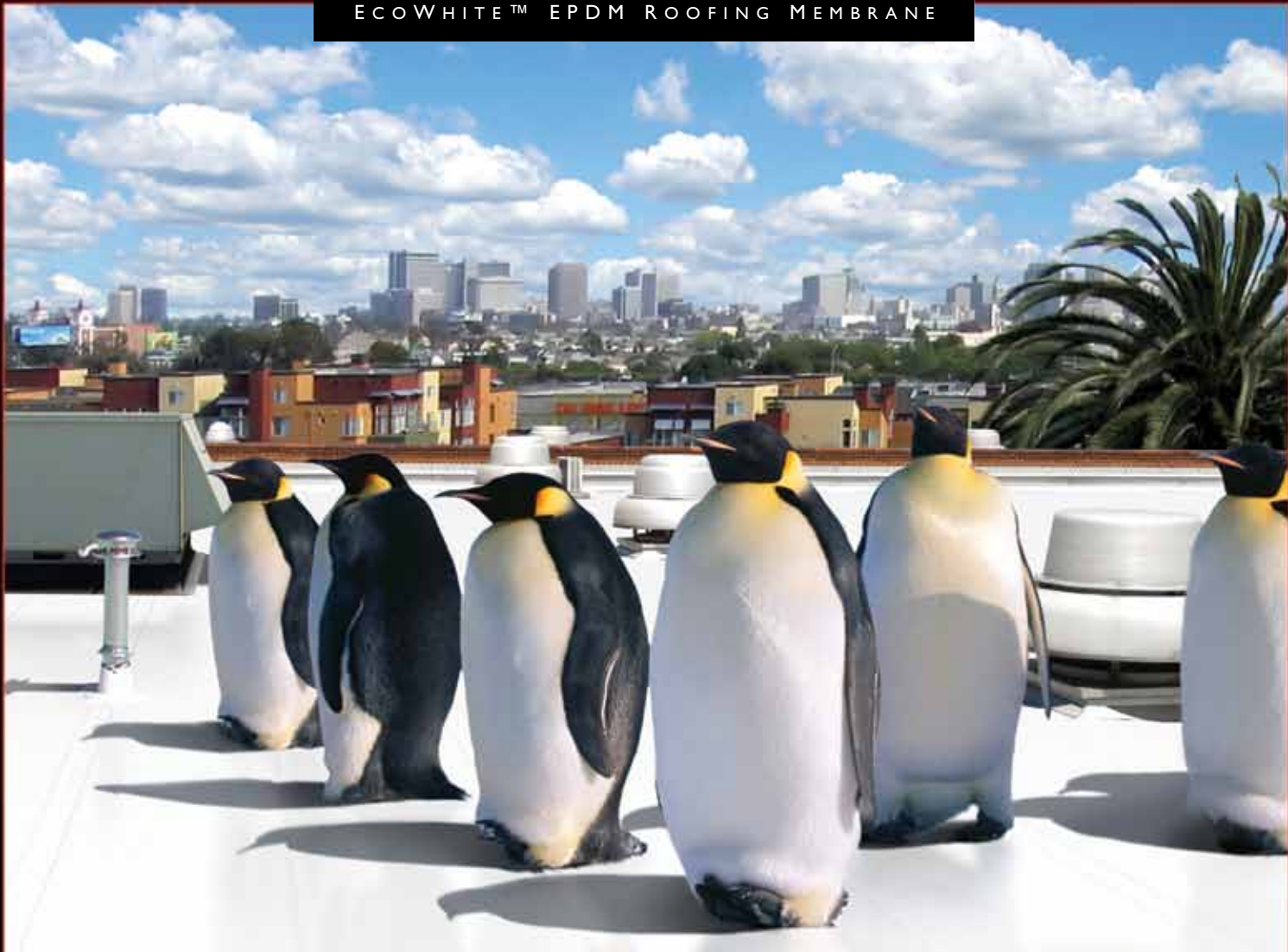
So far, WDG has collected and recycled more than two million square feet of EPDM.



process must not create a larger carbon footprint than what is being saved.

2. The recycled roof must be functionally equivalent to an EPDM membrane created from new materials. If the ma-

“Cost-effectively recycling EPDM and then using it for its original purpose as part of a new roofing membrane is the ultimate in recycling,” says West. “You can’t do much better than that.” e



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*— Bill Tippins, EPDM Marketing Manager*



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