



Leveling the Playing Field of Green Products

Ensuring innovative, but underfunded, new technologies get noticed—and used

In a 2010 survey of chief executive officers worldwide,¹ 93 percent of respondents cited sustainability as critical to the future success of their companies, with 91 percent saying their companies would employ new technologies, such as renewable energy and energy efficiency, to address sustainability issues in the ensuing five years. That is the good news. The bad news is that many promising new products and technologies are having a difficult time making it onto the radar of specifiers and purchasers.

Case in point: Recently, I had a client—"Manufacturer A"—who had developed a new roof coating. The client had paid for independent laboratory testing of the coating, which determined that:

- The coating's solar reflectance (albedo) and thermal emittance resulted in a solar-reflectance index (SRI) of 103. For low-sloped roofs, Sustainable Sites (SS) Credit 7.2, Heat Island Effect—Roof, of both Leadership in Energy and Environmental Design (LEED) 2009 for New Construction and Major Renovations and LEED 2009 for Existing Buildings: Operations & Maintenance requires a SRI greater than or equal to 78, while the 2012 International Green Construction Code requires a SRI greater than or equal to 60.

- The coating's volatile-organic-compound (VOC) content was low (70 grams per liter), well within the LEED 2009 for Existing Buildings: Operations & Maintenance Materials and Resources (MR) Prerequisite 1, Sustainable Purchasing Policy, and MR Credit 3, Sustainable Purchasing—Facility Alterations and Additions, requirement of less than 250 grams per liter.

Based on that test data, the roof coating appears to be a good candidate for use on LEED projects. Unfortunately, many consultants and contractors insist on Green Seal approval, which is cost-prohibitive for the manufacturer, who is a small, undercapitalized entrepreneur, to obtain.

At the other end of the spectrum is "Manufacturer B," part of a large global enterprise. Manufacturer B not only qualified its roof coating for Green Seal certification, it offers online self-study courses using company-branded materials.

Despite offering a less sustainable product—Table 1 compares physical properties of the two roof coatings—Manufacturer B holds a distinct marketing advantage. How can Manufacturer A compete? The obvious answer, unfortunately, is to "buy" market share by lowering its

profit margin. But is that fair?

Another example involves a unitized curtain-wall system employing an innovative thermal-break structure. The curtain wall has no exposed vinyl, is extremely resistant to air and water infiltration, and restricts virtually all of the heat gain to the glazing. Table 2 compares its properties (Product 1) with those of one of the "800-lb gorillas" (Product 2) in the industry. Note that both systems are high-velocity-hurricane-zone rated for small- and large-missile impact, which is critical in South Florida.

Cost of product notwithstanding, the clearly superior curtain-wall system is struggling to gain traction with architects and contractors, who, because of the manufacturer's small size and relative obscurity, do not know and trust the product enough to specify and utilize it.

Make no mistake, this is not a criticism of free-market economics. However, if we are to achieve the gains in sustainability envisioned by global business and societal leaders—and those of us working full time in the field—we must commit to fostering the use of new and innovative products and technologies. Perhaps rating organizations can offer innovation grants to qualify emerging products. Or perhaps LEED Innovation in Operations credits can be used to encourage designers and contractors to utilize promising new products.

To encourage use of its product on LEED for Existing Buildings: Operations & Maintenance projects, the roof-coating startup offers a package of incentives, including a price reduction (to at or near cost); the services of an experienced LEED accredited professional (AP) in uploading to LEED Online the information required for SS Credit 7.2; review—by a qualified LEED AP—of the information required for Energy and Atmosphere (EA) Prerequisite 1, Energy Efficiency Best Management

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to lecture on central-energy-plant optimization, metering/submetering, and advanced ventilation strategies.

Product	Solar reflectance, percent	Reflectance, measured	Near-normal emittance, calculated	SRI	R-value ¹	VOC, grams per liter
Manufacturer A	81.7	0.07	0.93	103	5	70
Manufacturer B	86	0.11	0.89	108	N/A	76

¹Two coats, 4-to-6-mil and 7-mil dry-film thickness, respectively.
 Note: Testing of Manufacturer A's product was conducted by an independent laboratory, while testing of Manufacturer B's product was conducted by Manufacturer B.

TABLE 1. Comparison of two manufacturers' roof coatings.

Practices—Planning, Documentation, and Opportunity Assessment, EA Credit 1, Optimize Energy Efficiency Performance, MR Prerequisite 1, and MR Credit 3; and assistance in pursuing an Innovation in Operations credit. To date, no one has taken the company up on its offer.

Many states, in an effort to stimulate the development of leading-edge high-technology companies, offer financial inducements in the form of tax incentives, grants, low-interest loans from special funds, etc.

If we are serious about making sustainability a national priority, now is the time to develop realistic strategies to

	STC ¹ rating (average)	Air infiltration, cfm per sq ft	Water infiltration, lb per ft	CRF ²	Thermal resistance, Btu-h per sq ft	OITC ³ rating
Product 1	43	0.01	20 to 100	81	0.33	0.33
Product 2	35	0.06	10 to 20	63	0.42 to 0.49	≥0.32

¹Sound-transmission class
²Condensation-resistance factor, frame only
³Outdoor-indoor transmission class

TABLE 2. Comparison of two manufacturers' curtain-wall systems.

help get qualified emerging green products and technologies used on projects.

Reference

1) *A new era of sustainability: UN Global Compact-Accenture CEO study 2010*. Retrieved from http://bit.ly/CEO_study

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