

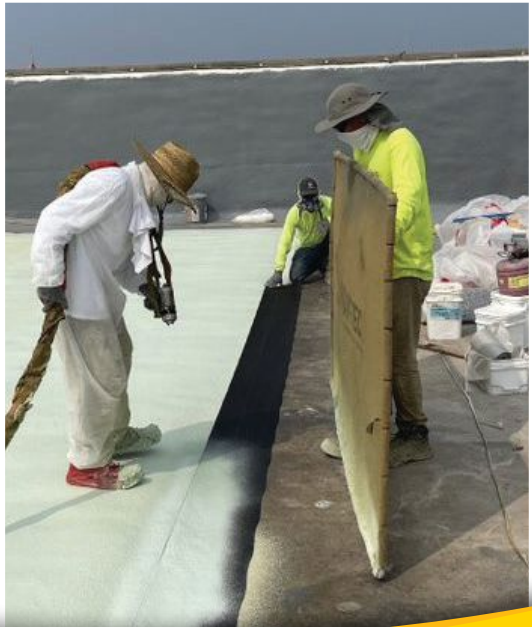
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Roof Coatings

S U P P L E M E N T

SUSTAINABLE ROOF SOLUTIONS



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Special Supplement to:
CoatingsPro
MAGAZINE

Very ‘Cool’: Why Sustainable Roof Coatings Are In Demand

By *Claire Trageser*

Photos courtesy of *Acrymax Technologies Inc., Castagra, Fluid Applied Roofing, Green Up Roofing LLC, and Spray-Tec Inc.*

Interest in sustainable roof coatings and cool-roof technologies is accelerating. Building codes and incentive programs are increasingly requiring or rewarding higher solar reflectivity and energy-performance metrics, while building owners are looking for ways to cut costs and extend the life of their roofs.

Valued at nearly \$25 billion in 2025, the U.S. roofing market is projected to reach more than \$33 billion by 2030. That growth is anticipated to be fueled in part by demand for energy-efficient, sustainable solutions.

Regulatory changes are helping to drive this trend. California’s Title 24 energy code established minimum energy standards in new and altered buildings for that state. It aims to decrease greenhouse gas (GHG) emissions, improve air quality, and reduce environmental impacts and energy costs by mandating the use of cool roofs for many new construction or replacement projects.

Meanwhile, the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 90.1 sets minimum aged solar reflectance and thermal-emittance standards for commercial buildings.

On top of that, the nonprofit Cool Roof Rating Council (CRRC), based in Portland, Ore., provides third-party verification of product performance and awards Leadership in Energy and Environmental Design (LEED) credits for reflective roofing materials that help reduce “heat islands,” which experience higher temperatures, particularly in urban areas. (LEED is a program of the U.S. Green Building Council.)

But the word “sustainable” when applied to roof coatings doesn’t mean the same thing to everyone. For some, it’s about extending the life of an existing roof through repeated restorations rather than full tear-offs. For others, it means lowering a building’s carbon footprint by reducing energy consumption, or layering in vegetation and installing solar panels to provide multifunctional benefits.

What Are Sustainable Coatings?

Sustainable roof coatings sound like a simple concept, but even the definition of “sustainable” can vary depending on who’s using the word and how it’s used. For Sonny Arwood, founder and CEO of Beaver Creek, Ohio-based Fluid Applied Roofing, it’s a system that can be put on an aged roof. “You could do it on a new one, too, of course, but typically an aged



At the end of a warranty term, most sustainable roof coating systems may be reinstalled without requiring significant changes to the existing substrate.

roof, that would maintain or preserve the roof in its current condition,” he said. “The idea is that you’re extending the life of what’s already there rather than starting over.”

What makes a coating system sustainable is at the end of the warranty term, the system can be reinstalled without having to make any significant changes to the existing substrate. “That’s what I would refer to as sustainable, meaning you can do it again and again and again without causing disruption,” Arwood said.

Sustainability is not so much an end goal, but a path, said Aaron Martin, sales/accounts manager at Spray-Tec, Inc., headquartered in Shelbyville, Ky. He defines sustainable roof coatings as a road that leads to sustainability. If a roof is maintained and treated at the right time, its life can be extended by as much as 30 years relative to doing a full tear-off.

“It comes down to how you take an existing roof and push its lifespan beyond what’s expected, so the initial investment lasts longer than the warranty,” he said. “There’s always a window for restorability, whether it’s coatings or polyurethane foam systems.”

Sustainable roof coatings can also mean cool roofs with surfaces that strongly reflect solar energy and emit heat that was absorbed, explained Audrey McFarrell, communications director with CRRC. She said that when a cool roof is properly installed, it can efficiently reflect sunlight and emit absorbed

heat. As a result, the roof stays cooler in the sun than it would if a more solar-absorptive material was used.

“This helps to lower outdoor air temperatures and reduce the solar heat gain of the building,” she said. “Cool roofing materials are commonly found in white or light colors, or in darker shades that are formulated with specialty pigments and components that reflect invisible infrared radiation.”

Cool roofs fit into the broader landscape of sustainable roofing, she said, because they have numerous benefits when it comes to reducing cooling energy use and enhancing resilience to heat. They work well in combination with other sustainable roofing practices, such as rooftop solar equipment, to increase efficiency and energy production.

What’s Driving Industry Demand?

Building codes, energy incentives, and sustainability standards are increasingly shaping the direction of the roof coatings market. Contractors and manufacturers say these external forces are not only accelerating their popularity, but they are redefining what qualifies as a high-performing roofing system.

“Cool roofs are really the name of the game right now,” Martin said. “Codes and rebate programs are pushing reflective systems, and in many regions, that’s not just optional, it’s mandatory.”

Reflective coatings reduce rooftop temperatures; cut heating, ventilation, and air-conditioning (HVAC) loads; and deliver measurable energy savings, thus helping building owners comply with ASHRAE standards and state energy codes.

Arwood noted that the regulatory environment is also influencing how the roofing sector frames its work. “The term ‘roof coatings’ is being replaced with ‘fluid-applied roofing,’”

Elizabeth Hart Morris is founder and president of Green Up Roofing LLC, a green-roof consulting firm.



Vegetated roofs often feature areas of grasses and other vegetation that provide environmental benefits to the entire building envelope.

he said. For example, the systems his company uses “are fiber-reinforced, maintainable, and designed for repeat applications without tear-off.”

That lifecycle approach aligns with waste diversion goals and green building frameworks that emphasize long-term asset performance. “The technology looks similar to coatings, but it’s different. We’re building systems that can be restored multiple times,” Arwood said.

Timing is another compliance driver. Martin explained that many conventional roofs fail to reach their full warranty term without ongoing maintenance. Restoration performed within the optimal service window — generally several years before a warranty’s expiration date — ensures eligibility for a sustainable re-coating rather than full replacement. “If you miss that sweet spot, you’re out of options and facing a tear-off,” he said.

Elizabeth Hart Morris, founder and president of Green Up Roofing LLC in Portland, touts the benefits of vegetated roofs — also known as “green roofs,” which often feature areas of grasses and other vegetation — as well as amenity roofs, which may also include gardens and serve other lifestyle-friendly functions. These depend on restorative coatings to meet durability requirements under codes and LEED standards.

“Hot rubberized asphalt waterproofing, for example, can be restored with an additional layer 20 to 30 years after installation,” she said. “That keeps assemblies in compliance and eliminates unnecessary tear-offs.”

Sustainable Roof Coatings



Roof coatings that reflect sunlight and reduce thermal load may help slow roof deterioration.

The combined effect of these pressures is also shifting buyer behavior. Large building owners are recognizing both the compliance and financial advantages of sustainable roofs and roof coatings.

Arwood pointed to a case study his company worked on with a major auto manufacturer. “Over five years, across 3.5 million square feet [~ 3.3 million m^2], we saved them nearly \$60 million versus conventional reroofing.”

Martin summed it up thusly: “Sustainability isn’t just a talking point anymore — it’s a path dictated by regulations. If you can’t align your systems with that path, you’ll be left behind.”

Key Sustainability Benefits

Sustainable roof coatings offer a wide range of benefits — both obvious and subtle — that make them increasingly important in today’s construction market. At the forefront is longevity. When properly formulated, specified, and applied,

Restoring existing roofs with coatings can effectively help keep millions of tons of material out of landfills annually.



high-performance coatings can dramatically extend the life of a roof.

Scott Bennung, president of Media, Pa.-based coatings manufacturer Acrymax Technologies Inc., points to a system installed at Pennsylvania’s Ursinus College more than 40 years ago that continues to perform today. He said that demonstrates how sustainability can be achieved through durable materials.

Recoatibility is a key feature of these systems, but it depends on the quality of the original installation. As Bennung noted, inferior materials cannot support long-term renewal, and longevity truly begins with the first coat.

Energy efficiency is another major advantage. Coatings that reflect sunlight and reduce thermal load help lower building cooling costs, and they can slow roof deterioration by reducing the strain from expansion and contraction over time.

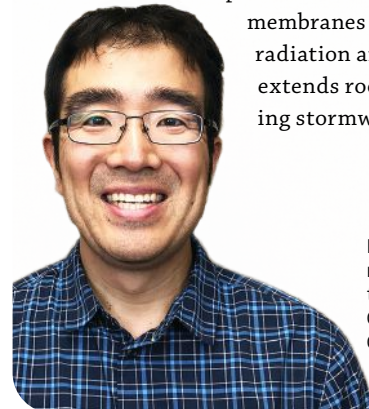
Sustainable coatings also minimize waste. By restoring existing roofs instead of tearing them off, contractors help keep millions of tons of material out of landfills each year. Tatsuya “Tats” Nakagawa, CEO of Reno, Nev.-based coatings manufacturer Castagra, said that extending roof lifespans by 10 to 30 years delays landfill disposal and reduces the need for new production, which eases both environmental and economic pressures.

Cool roof systems further enhance these benefits. By lowering rooftop temperatures, these systems slow material wear, cut energy costs, and improve building-occupant comfort.

McGarrell emphasized that cool roofs operate on multiple scales. They increase comfort and safety in individual buildings; reduce energy consumption and utility costs at the building level; and mitigate urban heat islands in cities, which can improve air quality and reduce peak energy demand.

On a global scale, widespread use of cool roofs contributes to GHG reduction by decreasing air conditioning demand and increasing the Earth’s overall albedo, which is the measure of the amount of sunlight reflected off its surface.

Coatings, when combined with vegetated roofs, can amplify sustainability benefits. Hart Morris explained that plants and soil shield waterproofing membranes from ultraviolet (UV) radiation and thermal cycling, which extends roof life while also providing stormwater management, energy



Roofing continued on page 8

Extending roof lifespans offers multiple benefits, according to Tatsuya “Tats” Nakagawa, CEO of coatings manufacturer Castagra.

Beyond Coatings: The Future of Reinforced Roofing is Here

It's time to clear up a common misconception in the roofing industry: A fluid applied roofing system is not just another roof coating. While coatings offer a fresh layer of UV protection, they lack the structural integrity required for long-term performance. A true roofing solution must be reinforced to provide lasting, waterproof protection for the valuable asset it covers. This is where The FAR System® distinguishes itself as an engineered solution, not merely a layer of coating.

At its core, The FAR System features the People's Choice award-winning* FiberSeal Base™ — a recognized, industry-trusted technology that integrates fiber reinforcement directly into the base layer. This innovative approach creates a durable, monolithic membrane in a single pass, eliminating the need for separate, labor-intensive fabrics or seam tapes. The result is a seamless, fully-adhered system that provides superior strength and flexibility, preventing cracks and leaks for years to come. For contractors, specifiers, and building owners who prioritize performance and peace of mind, the

choice is clear. Don't just coat a roof — reinforce it with a system designed for durability.

*Earned the People's Choice Award in the Coatings, Caulks, and Sealants category from the IRE's 2025 Innovative Product Showcase and Awards (IPSA).



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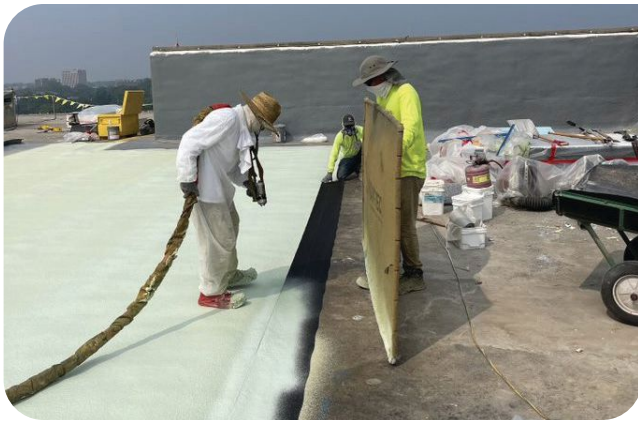
An advertisement for Fluid Applied Roofing. The background shows a construction worker in a blue shirt and black pants using a spray gun to apply a blue liquid to a flat roof. In the foreground, there is a white bucket of Fluid Applied Roofing FiberSeal Base sealant. A red award badge for "PEOPLE'S CHOICE 2025" is overlaid on the bucket. The text "DON'T JUST COAT IT. Reinforce It With FAR." is prominently displayed in white on a dark blue background. A "GET A QUOTE >" button and a QR code are also present. The Fluid Applied Roofing logo is in the top right corner of the image area.

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Sustainable Roof Coatings

Roofing continued from page 6



Roof coatings manufacturers, contractors, and organizations are aligning efforts with the intent of improving energy efficiency and green-building performance.



Along with lowering temperatures, cool roof systems also slow material wear, cut energy costs, and improve comfort for building occupants.

savings, and the mitigation of urban heat island effects.

While no roofing system is entirely green — manufacturing, installation, and disposal all have environmental impacts — designing roofs for durability, reusability, and efficiency makes a meaningful difference. As Hart Morris noted, even imperfect systems can achieve sustainability gains when the focus is on longevity and thoughtful design.

Supporting the Standards

Across the roof coatings industry, manufacturers, contractors, and organizations are aligning their work with the broader goals of improving energy efficiency, waste reduction, and green-building performance.

For Acrymax's Bennung, that mission began decades ago with the development of reflective coatings formulated with synthetic rubber — products that provided solar reflectance and thermal emissivity benefits — long before they became industry benchmarks.

In the late 1970s, his company shifted decisively to waterborne technologies to improve health and environmental outcomes — a move he described as “a commitment to healthier environments for both people and the planet.” Today, its CRRC-listed coatings include formulations with up to 40 percent recycled content, along with new products that incorporate biobased materials.

“The biobased portion is still modest,” Bennung acknowledged. “But we remain committed to expanding its use through ongoing research and innovation.”

Arwood has taken a different tack by designing fiber-infused, reinforced systems that go beyond traditional coatings. He explained that the technology was developed primarily to protect building owners' assets while extending roof life.

“It's not just a coating,” he said. “Our product makes the asset more sustainable, last longer, and protect better.” According to him, by eliminating the common risks of

damage to the underlying structure, the approach reduces the need for early replacement and diverts waste from landfills.

For Martin, restoration is the core strategy of sustainability. Spray-Tec prioritizes scanning, testing, and repairing damaged sections rather than replacing entire roofs. He said that approach conserves materials, reduces landfill waste, and supports compliance with LEED standards and other green building frameworks.

“We're not just saving roofs,” Martin said. “We're also supporting energy efficiency and contributing to green building practices.”

Hart Morris' business focuses on overburden systems such as vegetated roofs, rooftop solar, and paver assemblies, which have measurable impacts on energy use and the urban heat island effect. Roof membranes can reach temperatures of more than 180 °F (82 °C) on a hot day, but vegetated systems

Overburden systems such as vegetated roofs have been proven to have a significant impact on both energy use and the heat island effect.



stay far cooler thanks to shading and evaporation.

“There’s no other method to reverse the urban heat island effect other than reintroducing vegetation into urban areas,” she said. Beyond cooling benefits, these systems can reduce HVAC loads, improve insulation, and extend the life of underlying assemblies.

For Hart Morris, roof longevity is the first priority. “The longer a system stays in place, the more sustainable it is. Extraction, transport, installation, chemical use, disposal, and carbon footprint are all reduced.”

Industry organizations are also pushing sustainability forward. McGarrell highlights the importance of third-party product performance verification.

CRRC ratings provide credible data on solar reflectance and thermal performance, which then inform product selection and support compliance with energy codes — such as California Title 24 and the International Energy Conservation Code (IECC). Created in 2000 by the International Code Council, the building code established minimum energy efficiency design and construction requirements. It has since been adopted by multiple states and municipal governments throughout the United States. “These ratings show how products keep solar heat out of buildings and reduce cooling demand,” McGarrell said.

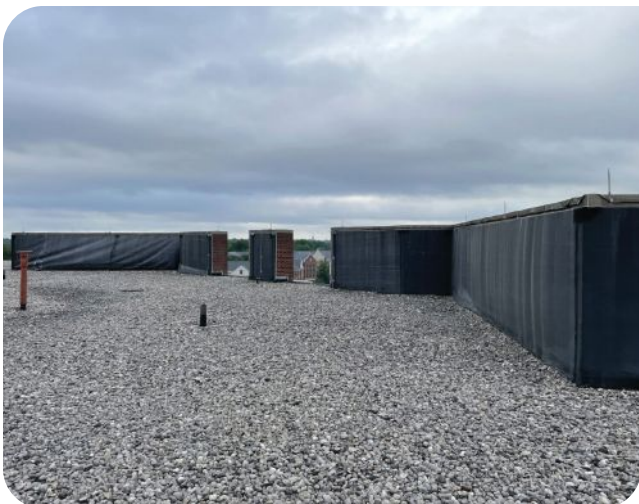
Together, these approaches — spanning material innovation, lifecycle extension, vegetation systems, and performance standards — illustrate how roof coatings professionals are embedding sustainability into both product development and day-to-day practice.

Shaping a Sustainable Future

As the roof coatings industry looks ahead, each advancement comes with its own set of challenges. But those challenges also create opportunities for innovation and improvement.

For Arwood, the future of sustainable roofing lies in

A roof is shown prior to receiving a coatings application.



On warm days, roof membranes can reach temperatures of more than 180 °F, but vegetated systems stay cooler due to shading and evaporation.

continually refining systems to better protect building owners’ assets. He said his company’s approach not only advances performance, but it speeds up installation. He notes that projects can be completed up to 10 times faster than with traditional methods — an advantage for contractors — but emphasizes that sustainability is ultimately about technology that improves building owners’ long-term experience.

Martin pointed to hybrid systems as a particularly promising development, such as pairing a urethane base coat with a silicone topcoat. These combinations extend roof life and create stronger, more durable systems that can be restored multiple times. He added that coatings are achieving higher solar reflectivity ratings, which is used to measure its

Coatings can successfully transform the overall look and functionality of a roof.



Sustainable Roof Coatings



Modern fiber-infused membranes are able to perform more like durable roof coating systems rather than surface treatments.

ability to reflect solar heat. Some products start with a high solar reflectance index (SRI) score of more than 100 and maintain ratings in the 90s even years later. In his opinion, those gains represent meaningful progress in cooling efficiency and energy savings.

Waterproofing technologies are also advancing. According to Hart Morris, liquid-applied membranes are especially exciting because they can extend roof lifespans from 10 to 15 years to 20 to 30 years or more. She pointed

According to Sonny Arwood, founder and CEO of Fluid Applied Roofing, sustainable roof coatings can be a viable solution for extending a roof's lifespan.



In warmer regions, cool roofing is widely recognized as a valuable tool that works to conserve energy.

to innovations in hot rubberized asphalt and overburden design that make roofs more resilient, even against hurricanes.

Increasingly, green roof systems are being designed with added functions like amenity spaces and rooftop water storage. "Blue" roofs can retain up to 100 percent of precipitation, but most green roofs just delay and gradually release stormwater.

Recycling remains a significant challenge in the roofing industry. Large-scale reuse of commercial roofing materials is limited, but that difficulty has sparked creative experimentation.

Hart Morris has even tested the potential of composting asphalt-based roofing waste using certain species of fungi. While digesting old roofing, they produce mushrooms with fire- and water-resistance. They also have insulating properties that can potentially be used on the roof as insulation. While those efforts are still in exploratory stages, she said the most sustainable approach is to keep existing roofs in place as long as possible, thereby reducing waste from tear-offs.

Education and awareness are also shaping the future of roof coatings. McGarrell noted that in hotter regions, cool roofing is already widely recognized as a tool to conserve energy. But in many other cities grappling with rising summer temperatures and worsening urban heat islands, the strategy remains underutilized.

In addition, product availability can be limited in markets without an established demand for cool roofing. At the same time, she pointed to encouraging work being done in materials science, including research into passive daytime radiative cooling materials — engineered surfaces designed to reach sub-ambient temperatures and further reduce

Roofing continued on page 12

Sustainable Roof Coatings

Roofing continued from page 10



Liquid-applied membranes can significantly extend roof lifespans by up to three decades or more.

building heat loads.

Nakagawa sees product adoption as another challenge. Contractors, he explained, can be hesitant to embrace

Contractors and other industry professionals embrace new roof coating systems that demonstrate long-term reliability.



unfamiliar solutions, often due to past experiences with unproven products. But he also forecasts change and believes it is already underway, with more industry players open to new technologies that demonstrate long-term reliability. “Contractors who prioritize longevity and sustainability play an important role in advocating for these products,” he said.

Key Challenges and Innovative Paths

Those in the industry who are able to stay on top of the advancements and adapt to evolving technologies will lead the pack and reap the most rewards.

“We try to lead from the front, and right now, I don’t see a lot of new movements in other companies with a real ‘wow factor,’” Arwood said. “There’s a lot of talk, but not much that’s actually pushing the industry forward.”

A challenge Martin and his team face is making sure “we don’t coat ourselves into a corner with products that are difficult to recoat later.... If you plan correctly on the front end, you can set up a roof for multiple future restorations instead of requiring a full tear-off,” he said.

Training and proper installation are also critical to success, he added. “If contractors cut corners or ignore conditions like moisture, temperature, or slope, it can lead to failures that hurt the reputation and adoption of sustainable systems.”

Innovations in technology are contributing to coating system longevity and expanding roof functionality as environmental and community assets.





As the roofing trade continues to transform, roof coatings are no longer considered a secondary option to traditional roofing materials.

Product compatibility is another big consideration, Hart Morris said, and how components work together. “There’s room for growth in understanding (the) compatibility of different systems and components,” she said. “There’s a need for updated third-party, non-proprietary assessments of which systems last longest and what has weaknesses to identify what actually works long term and what needs improvement.”

Keeping up with regulations poses its own challenges, Nakagawa said. “Unfortunately, innovation often moves faster than regulation, which can create obstacles for new solutions entering the market,” he said. “Despite these challenges, the industry is making steady progress. This process takes time, but it’s important for manufacturers, contractors, and regulators to work together to ensure the best ideas make it to the market.”

Emerging Trends and Challenges

The roof coatings industry is entering a period of rapid evolution with terminology, materials, and practices all shifting in ways that signal a broader transformation. One

change is the language used to describe the work. Arwood said that shift reflects a deeper technical distinction: the development of fiber-infused membranes that perform more like durable systems rather than surface treatments. His focus is on creating stronger, longer-lasting solutions that protect a building owner’s assets well beyond what traditional roof coatings were designed to do.

The push for higher performance is also evident in material trends. Martin pointed out that urethanes and polyureas are gaining traction for their resilience and ability to be restored over time. Because they maintain high reflectivity, these check multiple boxes for sustainability and longevity. He added that manufacturers are pushing products with recycled content and improved environmental performance — a direction he expects will grow as building designers and owners increasingly prioritize green building standards.

Advancements in liquid membranes are adding another dimension to this progress. Hart Morris noted that innovation happening above the membrane is broadening what sustainable roofs can deliver. These technologies contribute to longevity, she said, while expanding the functionality of roofs as environmental and community assets.

At the same time, the roofing trade itself is also transforming. Nakagawa observed that coatings are no longer treated as a sideline to traditional roofing. Many companies are now building dedicated crews for fluid-applied systems, opening up clearer career paths and signaling the maturity of the field. “Coatings are becoming a recognized specialty,” he said, “and I expect this growth and interest to continue in the future.” **CP**

Have you worked on a sustainable roofing project? Share the details with CoatingsPro Magazine. Email editor@coatingspromag.com.

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