Recovering Roofing: Best Practices and Smart Decisions

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Recovering a roof on an institutional or commercial facility is a far less intensive process than replacing a roof, and it is a logical starting point when considering roof work. With advances in roof coating materials and a host of new options on the market, building owners and managers might be increasingly inclined to look to a roof recover as a less expensive, less disruptive option than full replacement.

How can owners determine whether the roof is a good candidate to receive a roof coating, and, if it is, which coating is the most appropriate coating for the roof? Identifying and applying criteria for evaluating the existing assembly and selecting a roof rehabilitation approach allows owners and managers to make informed decisions about roofing options that will extend the roof's service life and improve performance.

Guidelines to help determine whether a roof is a good candidate for a roof coating and, if so, which coating is most appropriate

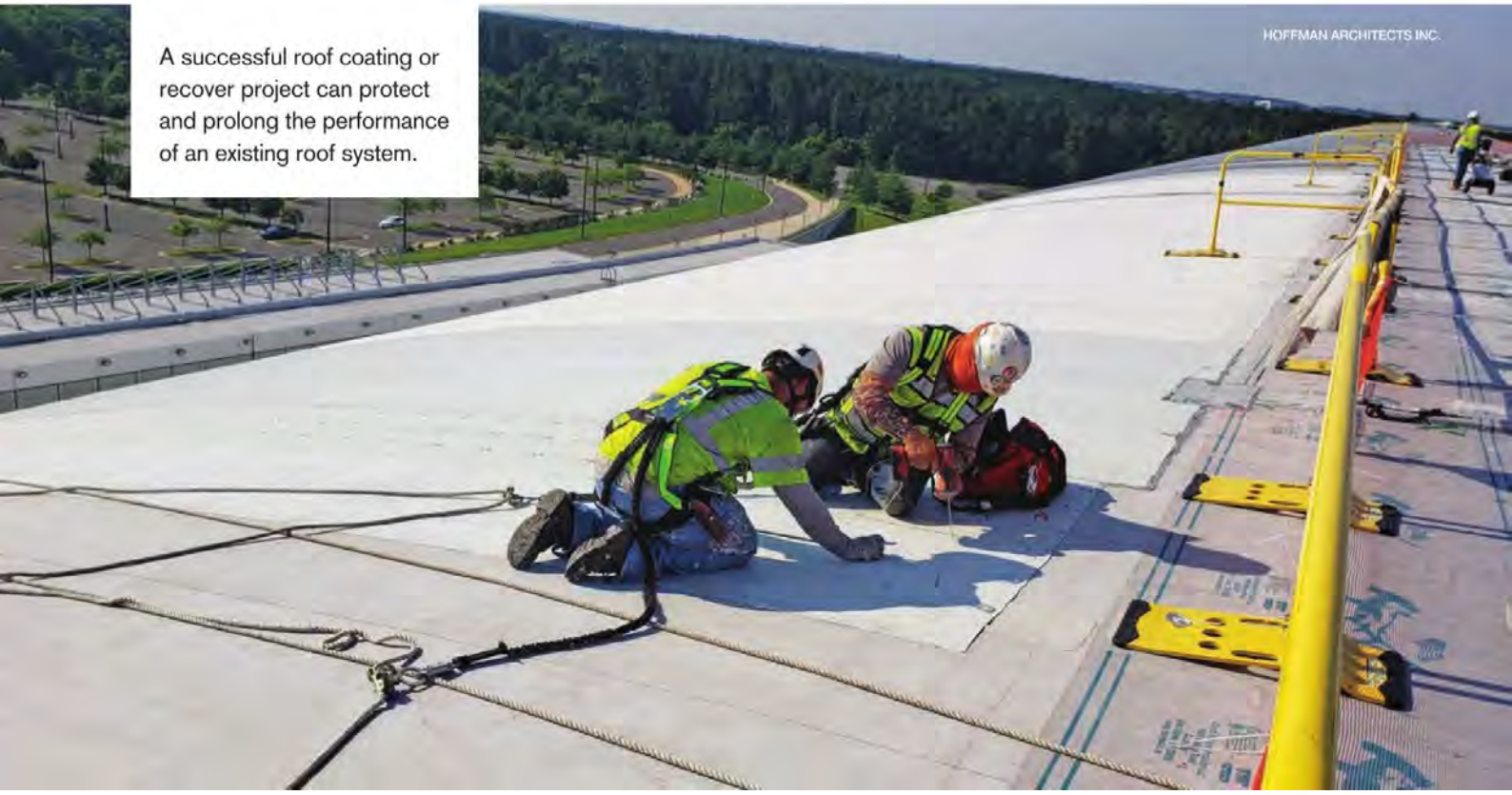
Roof assessment strategies

Existing roof systems that are most likely to be candidates for recover are those that have performed well and are approaching the end of the warranty period. Managers should view a roof coating as a means of prolonging the life of an existing roof membrane, not as equivalent to a new roof system.

Before moving forward with a roof recover project, managers should undertake an evaluation of the general field condition of the roof and the existing detailing and condition of roofing terminations. This process will confirm that the roof is a good recover candidate, and it will determine the extent of preparation and repair work required before the application of the new coating or membrane.

The installation of a roof coating will not correct existing roof detailing failures, and managers should not lean on it as a wholesale solution to roof water infiltration issues. A visual inspection can identify trouble spots where the existing detailing at areas like wall flashing, roof penetrations, and roof edges is not performing adequately and requires repair or replacement.

Infrared inspection, electronic field vector mapping, and other nondestructive testing are useful tools and should be considered as part of the design process. Nondestructive testing aids in identifying areas in the exist-



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A successful roof coating or recover project can protect and prolong the performance of an existing roof system.

ing roof membrane and insulation compromised by water infiltration that might not be observable through visual inspection. Replacing compromised insulation, repairing existing membrane failures, and ensuring that existing roof terminations are watertight are important prerequisites for recovering a roof.

Code considerations

When evaluating an existing roof system as a candidate for recover, owners and managers should consider these factors:

Building code. Is a roof recover permitted under the prevailing code requirements? The 2015 International Building Code (IBC) excludes the following conditions from receiving recover systems:

1. Where the existing roof or roof covering is water soaked or has deteriorated to the point that the existing roof or roof covering is not adequate as a base for additional roofing
2. Where the existing roof covering is slate, clay, cement, or asbestos-cement tile
3. Where the existing roof has two or more applications of any type of roof covering. (IBC 706.3)

Drainage. The rate at which a roof system moves water to drains and the capacity of those drains to allow water passage are critical to roof performance. Ponding water increases the exposure of weak points in roofing and can exacerbate leaks. At its worst, ponding water can create loading concerns for the building roof structure.

Existing membrane. As membranes age and are exposed to weather and ultraviolet (UV) radiation over time, the material loses elasticity and sectional thickness and might become brittle. An important consideration for recover projects is that a warranty for the coating material does not encompass the performance of the existing membrane. The recover system typically is only warrantied for its own properties and ability to adhere to the substrate.

Single-ply options

Provided the existing low-slope roof system meets the criteria for membrane integrity, drainage, and building code requirements, recover options offer various performance enhancements. A recover material can provide high solar reflectance, restore membrane mil thickness by providing a superficial top layer, and provide a new waterproofing surface.

While a recover coating or membrane might be marketed as a watertight system, it is highly advisable to repair the underlying membrane before applying recover materials. While manufacturers have pretested and cataloged acceptable membrane substrates for their coating products, an in-person site visit and field adhesion test by the manufacturer's representative to confirm project-specific conditions and compatibility for warranty eligibility is highly recommended.

Recover options are categorized by chemical composition and as a coating or a membrane. Acrylic, polyure-

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thane, and silicone coatings provide varying degrees of tensile, impact, and ponding water resistance, and they come in a range of price points.

Acrylic. Cost-effective, reflective, and easy to install, acrylic coatings are water-based, single-component compounds that arrive on site ready to apply. But they are not suited for ponding water or cold-weather application and will lose thickness more quickly than alternatives over time.

When to consider. Comparatively shorter-term roof coating projects with the objectives of changing roof color, increasing solar reflectance, and providing additional protection to the existing membrane from UV damage.

Silicone. Silicone coatings can withstand ponding water and weather wear and offer a more durable option than acrylics. A multi-component, moisture-cure material, silicone requires specialized application equipment. Other shortcomings include a tendency to hold dirt and a low tensile and puncture strength. These coatings are available in high- and low-solid options, which managers need to take into consideration when determining the number of applications and the target thickness of the coating.

When to consider. A low-odor option that can provide temporary remediation for ponding water issues and additional protection for the existing membrane against erosion and UV damage.

Polyurethane. With superior tensile strength, reflectivity, and durability, polyurethane is a versatile choice. There are two types of polyurethane coatings: aliphatic and aromatic. Aliphatic are UV stable, while aromatic are not. In two-coat systems, aromatics often are used as a low-cost base coat with an aliphatic topcoat. On the downside, polyurethane coatings create a strong odor during installation.