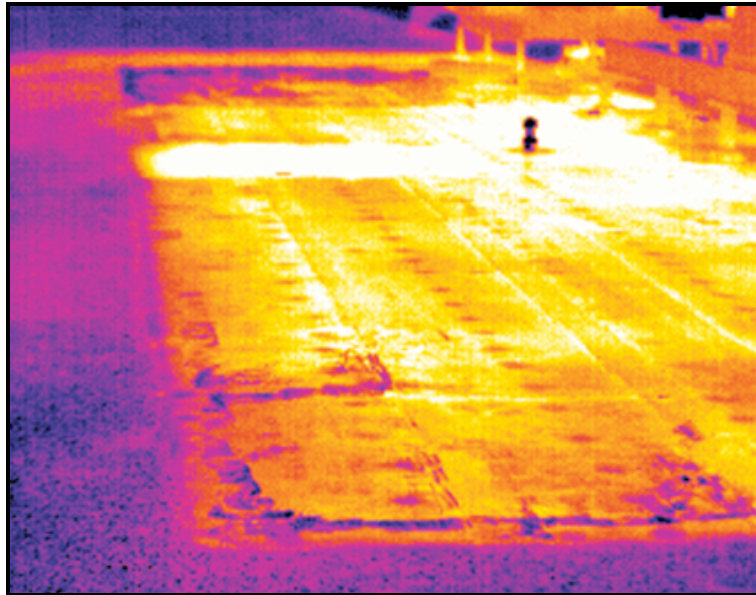


No Funds for Replacement? Consider Restoration.

By Tom Stuewe



When moisture penetration is suspected, analytical testing of a core sample may be required. This infrared scan reveals wet insulation that visual inspection alone could not detect.

Restoration can be a viable interim solution for prolonging the service life of building roofs. This is particularly true for roofs that have already been recovered one or more times since restorations add minimal weight, compared to installing a new roof on top of an existing one. Typically, building codes require a total tear-off and reroofing after a maximum of two layers of roofing.

In addition, since the federal government expects you to depreciate your commercial roofs over a 39-year period, it makes sound economic sense to do everything possible to extend roof life to meet that standard if at all possible. Unlike reroofing, restorations are financed through maintenance rather than capital budgets, offering financial advantages at tax time.

Fortunately, the roofing industry offers a number of cost-effective, highly proven solutions for restoring older, but still sound, roofs. Today's high-tech restoration coatings can add 10 to 15 years of service life to an existing roof system. The average cost for restoration is \$3-5 per square foot, compared to \$7 to \$12 per square foot for roof replacement, a figure that can rise substantially if continued neglect results in damage to the underlying deck.

[Restoration options](#) are available for virtually every type of roof system, including:

- Asphalt-based gravel-surfaced modified bitumen/built-up roofs
- Asphalt-based smooth or mineral surfaced modified bitumen/built-up roofs
- Coal-tar-based gravel-surfaced built-up roofs
- Single-ply roofs
- Metal roofs

Benefits Beyond the Obvious

Compared to roof replacement, restoration offers a host of benefits that add up to savings, including:

- **Tax credits and energy rebates** — Depending on geographic location, tax credits and other valuable financial incentives may be available for implementing solutions that can be independently verified (e.g., through ENERGY STAR®¹ qualification, LEED®² point contribution, etc.) to improve energy efficiency.
- **Maintenance vs. capital expense** — As a maintenance expense, restoration allows you to immediately expense your costs, as opposed to reroofing, which, as a capital expense, must be depreciated over the anticipated 39-year working life of the roof.
- **Sustainability** — Restoration temporarily eliminates the need for disposal to a landfill, thereby reducing short-term expense and adverse environmental impact. More importantly, restoration provides the most fundamental sustainability benefit of all – extended service life.
- **Insurance savings** — Depending on the system chosen, a restoration may upgrade your roof to a Class A fire rating, promoting safety and reducing insurance costs.
- **Less disruption** — Roof restoration is typically faster, cleaner, and less labor intensive than roof replacement, making it less disruptive to the buildings, properties, and people.

In addition, some restoration solutions incorporate highly reflective coatings, which can increase solar reflectivity by 70 to 90 percent, dramatically reducing interior cooling costs for the added benefit of energy savings.

Is Your Roof Right for Restoration?

There is a good reason why roofing professionals frequently prefer to recommend tear-off and replacement to restoration: analyzing a roof's viability as a candidate for restoration requires a high level of technical skill and training. First and foremost, the roof has to be well maintained and free of leaks and wet insulation. A thorough roof inspection should be performed, no more than six months before the restoration, to determine:

- Whether the roof has adequate slope
- A comprehensive history documenting the pattern of any roof leaks
- The condition of the insulation and underlying deck, as identified through core analysis
- The precise location of any water penetration, as identified through the use of scientific instrumentation, such as an infrared scan



¹ ENERGY STAR® is a registered trademark of the U.S. government. The ENERGY STAR Program represents a voluntary partnership between businesses and organizations and the federal government to promote energy efficiency and environmental activities.

² LEED® Buildings performance refers to the Leadership in Energy and Environmental Design® (LEED) Green Building Rating System®, which is a voluntary, consensus-building national standard that was initiated by the U.S. Green Building Council (USGBC) for developing high-performance sustainable buildings. LEED®, Leadership in Energy and Environmental Design®, and Green Building Rating System® are registered trademarks of The U.S. Green Building Council.

Written documentation of these findings should be accompanied by a formal recommendation of solutions, including a comparative ROI analysis and possibly an energy audit, evaluating the costs and benefits of restoration versus replacement.

Roof restorations are typically warranted for five to ten years (compared to 15 to 30 years for new roofs), although specific terms and conditions may vary. Be sure you understand what is covered, how to file a claim, and who may perform the warranty work.

Address Problems First

If restoration is a viable option for your roof, the first step is to resolve any existing roof problems. If your roof is fundamentally sound, most problems can be easily and cost-effectively addressed.

The majority of roof leaks occur at termination points and where penetrations occur. This includes areas such as flashings, edge details, perimeter details, scuppers, drains, and curbs. Prior to restoration, all termination and penetration points should be repaired or replaced, depending on their condition. It may also be advisable to add drainage crickets to areas prone to ponding, keeping in mind that roof surfaces vulnerable to ponding are not usually good candidates for restoration. In addition, masonry walls and other components must be repaired and/or treated with weatherproofing sealants. Protecting such areas with metal wall panels is frequently the best long-term solution.



Even roofs where moisture has partially penetrated the insulation may be candidates for restoration — if the damage is well confined. Such cases typically call for a dual strategy in which only the seriously damaged portions of the roof are replaced, after which the entire roof is restored.

Choosing the Right Technology

Today, a wide range of technologies are used for roof restorations. These include material solutions that are based on asphalt, coal-tar, urethane, polyurea, silicone, and acrylic technologies; solvent-based elastomeric technologies; emulsion technologies; and hybrid materials that combine one or more of these chemistries. At the higher end of the quality spectrum are coatings that provide exceptional waterproofing integrity while closely matching the original roof's appearance.

When identifying an appropriate restoration technology, there are many factors to consider.



These include, but are not limited to:

- Roof type, e.g., BUR, modified bitumen, single ply, or metal
- Surfacing type, e.g., flood and gravel, smooth, or mineral
- Performance requirements, such as greater reflectivity, improved fire rating, etc.
- Other factors such as the number of years a facility will be in service, macro (geographical) and micro (site conditions, facility use) environmental concerns, number of rooftop units, access to the roof, sensitivity to odor, degree of slope, time available for the job, etc.

Your professional roofing partner can help you analyze these factors and recommend a technology that is appropriate to the specific conditions of your roof, ensuring that your roof restoration meets or exceeds all specified performance requirements.

Conclusion

Restoration can be an efficient, cost-effective way to make a good roof better, significantly extending the interval between more costly roof replacements. Just as appealing, restoration offers the added benefits of reducing energy use, tax and insurance expenditures, adverse environmental impact, and facility downtime. Evaluating a roof to determine its viability for restoration, and analyzing the comparable efficacies of vying restoration technologies, requires a high level of roofing knowledge and competence. But in a challenging economy, timely restorations can be an effective and worthwhile method of extending the watertight performance of your facilities.

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