

# Spray Polyurethane Foam Roofing

The High Performance, Cost Effective, Weather Resistant Solution  
for Commercial, Industrial & Residential Structures



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SPF roof with photovoltaic panels at the Rodney Strong Vineyards in Healdsburg, CA.

IMAGE COURTESY OF CENTRAL COATINGS, MADERA, CA



Application of SPF over a metal roof followed by an acrylic coating.

IMAGE COURTESY OF CARLISLE ROOF FOAM AND COATINGS

## CHOOSE SPF ROOFING

Spray polyurethane foam (SPF) roofing is a widely utilized roofing solution proven to last and protect the structure. SPF roofing performs as an insulated roofing system that withstands extreme weather conditions such as hail, wind and rain. Yet the installed weight per square foot allows building owners, consultants and designers many more possibilities than heavier roofing systems. Most SPF roofing systems offer Class A fire performance. With durable, versatile SPF roofing, enjoy a roof lifespan exceeding 20 years with regular care and maintenance. Regular inspection and recoating can extend service life to as long as 40 years or more.

### Apply SPF roofing to:

- Office Facilities
- Retail Developments
- Mixed-use Properties
- Institutional Buildings (schools, colleges, government and military facilities)
- Industrial Facilities
- Agricultural Structures
- Homes
- Specialty Applications

## SUCCESSFUL ROOF SOLUTIONS

SPF roofing provides a seamless, continuous layer over the top of the structure. The roof system performs numerous functions: vapor retarder, weather-resistant barrier, air barrier and continuous thermal insulation. SPF forms a durable and rigid covering that provides resistance to impact from hail and foot traffic. SPF roofing systems may be applied as a new roof or over most existing roofs, providing a cost-effective retrofit solution.

SPF roofing can be used on nearly any building in any North American climate, providing distinct advantages over other roofing systems when:

- Additional roof insulation is needed for comfort, energy savings or code compliance
- Tapered application is required to enhance drainage
- Roof deck is an unusual configuration or shape
- Substrate includes many penetrations (such as solar panel supports)
- Roof fastening is limited by substrate material (concrete, etc.) or aesthetics of a visible roof deck
- Removal of existing roof covering is impractical due to cost or business interruption



SPF roof installed over an unusual roof design at Birkenstock headquarters in Novato, CA.

IMAGE COURTESY OF WEDGE ROOFING, PETALUMA, CA



SPF provides self-flashing around all deck-mounted equipment and penetrations for this industrial manufacturing facility.

IMAGE COURTESY OF WEDGE ROOFING, PETALUMA, CA

## HOW IT'S INSTALLED

The SPF roofing systems are installed by trained applicators who understand the spray equipment, the foam and coating materials, and industry roofing practices. After careful evaluation of the roof deck condition, the roof deck is prepared by removing debris and optional application of a primer to improve adhesion. A specified thickness of SPF is applied followed by a protective covering.

SPF roofing systems include a covering to ensure protection from the effects mechanical wear, UV exposure and other weathering processes. The SPF can be covered with a variety of cool roof elastomeric coatings or aggregate materials which can:

- Inhibit moisture vapor transmission
- Enhance aesthetics of the system
- Increase the impact, chemical, and abrasion resistance of the system
- Satisfy fire resistance criteria and code requirements

Elastomeric coatings are typically specified by the foam supplier as part of a SPF roof system and can include acrylic, silicone, butyl rubber, polyurethane and polyurea.



Application of SPF on a low-slope roof.

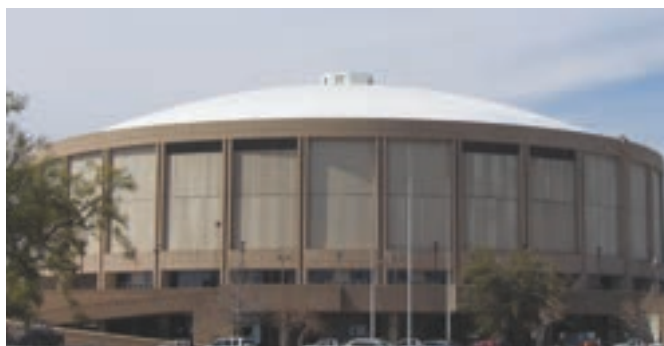


Application of SPF followed by an aggregate covering.



SPF roofing applied promotes enhanced drainage.

IMAGE COURTESY OF CENTRAL COATINGS, MADERA, CA



The SPF roof on the Biloxi (MS) Coliseum survived 12 hurricanes since 1979.

## BUILD FOR ENDURANCE: WEATHER & STORM RESISTANCE

Severe weather events can wreak serious damage to buildings. Independent post-hurricane surveys of roof systems by NIST<sup>1</sup> and RICOWI<sup>2</sup> found that SPF roofs perform extremely well. Researchers noted SPF's high performance in moisture prevention, keeping the roofs intact and providing protection from hail and debris.

SPF roofing systems tenaciously bond to a wide range of substrates, which greatly enhances its wind uplift resistance protecting buildings and contents during strong weather events. SPF roofing systems resist leaking from wind driven debris and hail due to its closed cell properties and any damaged areas can be quickly repaired.

<sup>1</sup> "Performance of Physical Structures in Hurricane Katrina and Hurricane Rita: A Reconnaissance Report", National Institute of Standards and Technology NIST Technical Note 1476. June 2006 (Section 3.2)  
[https://ws680.nist.gov/publication/get\\_pdf.cfm?pub\\_id=908281](https://ws680.nist.gov/publication/get_pdf.cfm?pub_id=908281)

<sup>2</sup> Various reports (2006-2017) on hurricane and hail damage to roofing systems by Roofing Industry Committee on Weather Issues, Inc. (RICOWI) and Oak Ridge National Laboratories (ORNL)  
<https://www.ricowi.com/reports>



## MAXIMIZE ENERGY PERFORMANCE & SAVINGS WITH AN EARTH-FRIENDLY ROOF

### Reducing Greenhouse Gas Emissions, While Saving in Energy Costs

Buildings are one of the most prolific greenhouse gas contributors. Builders, architects, and owners are looking for ways to reduce the environmental impacts of their structures. They also want to reduce energy costs. Energy efficiency solutions are the answer and SPF roofing is one of the most effective. Industry-level ISO-compliant Life Cycle Assessment (LCA) and Environmental Product Declarations (EPDs) are available here:

<http://www.sprayfoam.org/technical/spfa-research-projects>.

### SPF Roofing & Solar Panels: An Ideal Match

SPF roofing and solar panels are, more than ever, combined on the roof as an optimized energy solution. In high performance structures, energy is both saved and generated. SPF roofing provides a protective cover and enhances energy savings, while solar panels generate renewable clean energy. Together, the two systems dramatically reduce the building's dependence on non-renewable energy sources.

### Zero Net Energy Buildings

Zero Net Energy (ZNE) buildings are in demand. Because of their unparalleled ability to seal and insulate the building envelope, SPF roofing and insulation are common materials utilized to achieve zero net energy. SPF roofing and solar are an integral design element of any ZNE building.

More information on SPF and photovoltaic systems can be found in SPFA-150 Photo-Voltaic Systems and SPF Roof Systems. Guidance for all SPF applications can be downloaded from the SPFA TechDoc library at <http://www.sprayfoam.org/technical/spfa-technical-documents>.



### About the SPFA

Founded in 1987, the Spray Polyurethane Foam Alliance (SPFA) is the voice, and educational and technical resource for the spray polyurethane foam industry. The Alliance is a 501(c)6 trade association comprised of contractors, manufacturers, and distributors of polyurethane foam, related equipment, and protective coatings, inspections, surface preparations, and other services. The organization supports the best practices and the growth of the industry through a number of core initiatives, including: educational programs and events; a Professional Certification Program; technical services and publications; federal and state advocacy; and networking opportunities.

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SPF Roofing installed below roof-mounted photovoltaic panels (during panel installation) on the Rodney Strong Vineyards facility, Healdsburg, CA.

IMAGE COURTESY OF CENTRAL COATING COMPANY, MADERA, CA.

## EASILY MAINTAINED TO ENSURE EXCEPTIONAL LIFESPAN

With regular care and maintenance, a spray foam roof is expected to last 40 or more years. Best practices call for SPF roofs to be inspected bi-annually and after severe weather events.

For comprehensive guidance on SPF roof maintenance, see SPFA-127 Maintenance Manual for Spray Polyurethane Foam Roof Systems, available for download from the online SPFA TechDoc library at <http://www.sprayfoam.org/technical/spfa-technical-documents>.

## INSTALLING AN SPF ROOF? CERTIFICATION MATTERS

The SPFA recommends professional SPF installers are vetted properly before applying SPF on the roof and offers a Professional Certification Program for professionals to complete. The program promotes safety, optimal product performance, and the highest standards in the installation of spray polyurethane foam. Standards driven and ISO 17024 compliant, the certification establishes a set of criteria through which individuals can demonstrate their knowledge, skills and abilities in working safely, efficiently and professionally. For more information on the PCP or to start your own certification process, visit [www.sprayfoam.org/certification](http://www.sprayfoam.org/certification).