



PROJECT PROFILE

ELASTOSPRAY® Roofing System

reducing labor on a complicated roof

Robotic application solves roof detailing challenge for new performing arts center

Owner

Westlake City Schools, OH

Building

Westlake Performing Arts Center

Problem

Seven roof areas and elevations spread out over 40,000 square-feet, with difficult sloping/drainage patterns

Solution

Robotically-installed BASF ELASTOSPRAY® spray-applied polyurethane foam (SPF) roofing systems with ELASTOCOAT™ silicone coating (ENERGY STAR®-rated) and 3M™ granules

Advantages

- Reduced labor on complicated roof
- Environmental responsibility
- Conforms to irregular shapes
- Varying thickness of foam provides drainage
- Improved energy efficiency through R-value and reflective coating
- Long-life-expectancy with low-maintenance requirements
- Decades of leak-free performance
- Seamless, self-adhering application

The recently completed \$40 million Performing Arts Center for Westlake City Schools, Westlake, Ohio boasts a full-service television studio, 825-seat auditorium, rehearsal room and dressing rooms, as well as seven roof areas and elevations spread out over the 40,000-square-foot (3716-square-meter) building.

The big surprise? The roof is Spray Polyurethane Foam.

From the preliminary design phase, architectural firm Westlake, Reed, Leskosky Architects of Cleveland worked closely with Jack Moore, a civil engineer in charge of technical sales for West Roofing Systems.

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The Chemical Company

BASF Polyurethane
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“We had worked with Jack and his team on several other projects, so I contacted them during the preliminary design stage to discuss how they might ensure that the unique details that we were designing could be installed in the field, as well as perform long-term,” says George Regula, project architect.

Those unique details required a superior project application - a robotically-installed SPF roof system.



“Budget was a big factor on this project. All other systems would have required mechanically fastened tapered insulation board. Not only would the design and production of the layout been extremely difficult, but the labor involved to install the ‘jigsaw puzzle’ of tapered insulation would have been extremely intense,” says Moore. “From the environmental point-of-view, the roof is ENERGY STAR®-rated, renewable and a highly efficient insulator. This design firm is heavily involved in LEED™-certified construction means and methods, so that was an important consideration too.”

Moore says the design for the Performing Arts Center created an uncommon building footprint because many of the walls were curved or arced, creating unique sloping patterns to provide the 1/4-in-12 (1.2-degree) slope. Other walls did not provide 90-degree angles and were built on tangent angles, which created difficult drainage patterns. In order to turn the architect’s imagined design into a built reality, West Roofing installed 4 1/2-inch- (114-mm-) thick BASF ELASTOSPRAY® spray polyurethane foam roofing system using auto-slope robotic technology.

The specified SPF protective coating was BASF ELASTOCOAT™ 3-5000 silicone roof coating, and the total coating thickness was 40 mils (0.04 inches [1 mm]), installed in three layers, the top coat of white with 3M™ white ceramic granules providing the ENERGY STAR®-qualified roof surfacing.

Within the roofing industry, SPF has long been considered a retrofit solution. But increased interest from architects and specifiers has led to a growth in opportunities for SPF in new construction. According to most roof industry studies, SPF’s market share is still quite low compared to that of single-ply or built-up roofing (BUR), but its retrofit versus new construction ratio is in the area of 60/40, consistent with the retro/new split across the entire commercial roofing industry. So is it really unusual to see SPF specified for new construction?

“The word ‘unusual’ does not work,” says Moore. “SPF is possibly less common in new construction versus some of the other systems. But the Westlake Performing Arts Center is a high-profile project representing a huge investment for the school district, and therefore a big commitment for the architects. It proves that SPF roofing is a viable system for new construction.”

Seamless and self-flashing, SPF eliminates thermal bridging and adds its superior insulation properties for improved building energy efficiency and indoor environment.

SPF can be applied directly to the existing substrate in most retrofit cases, eliminating the cost of tear-off and reducing waste to landfill. And while traditional roofing systems must be removed at the end of their useful life, SPF can be re-coated and renewed for many more years of service.

BASF SPF roofing systems use ZONE3® zero-ozone-depleting blowing-agent technology. When combined with appropriate UV-resistant reflective coatings, some systems are ENERGY STAR® compliant.

The National Roofing Contractors Association describes SPF as one of the best roofing systems for flat, unusually shaped or low-slope roofs.

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