



When Only the Best Is Good Enough

Luxury Apartment Complex Uses Spray Foam to Maintain High Standards



@51 is a new, high-end apartment complex in downtown Phoenix, AZ. The building owner is very particular about maintaining high standards of environment and community for its residents, and only the best of everything will do.

Located within the burgeoning Uptown Phoenix area, @51 is modern living at its best. Built with expressed structural steel, solid masonry construction, and an expansive use of glass, @51 makes a dramatic first impression. The @51 complex included five residential buildings, a restaurant, and a parking garage with a rooftop lounge and a pool.

@51 is owned by the Smithfield Properties, LLC based out of Chicago, IL. The building is unlike any other in downtown Phoenix, so of course, Smithfield wanted only the best of everything. Thus, when it came to protecting the roof, Smithfield knew they needed a solution that would be better than traditional methods, such as single-ply sheet membranes. New construction can be known for having issues that need



A crane was used to bring the poly-iso boards up to the roof, where they were fastened down and covered with spray foam. The spray foam creates a monolithic seal to prevent thermal bridging from the fasteners.

to be resolved. However, by using spray foam from a quality contractor, Smithfield had peace of mind knowing that their roofs would be done right the first time with fewer issues that needed to be addressed later. The total roof area that needed protecting was approximately 78,500 sq. ft.

After consulting with several other contractors who offered more traditional roofing options, Smithfield contacted Arizona Foam & Spray (AFS) for a lasting solution. Smithfield had contracted AFS before, and they were familiar with the benefits of spray foam, all of which met Smithfield's high standards: high insulation value, superior water sealing, and low-maintenance.

One of the challenges posed by this project was that the roofs of the @51 complex consisted of three different types of substrates: plywood, metal decking, and concrete. Due to AFS's over 45 years of experience working with spray foam, they were able to value engineer a solution using a hybrid system of spray foam over poly-iso boards. This solution would work with all three substrates, maximize insulation values, and keep costs reasonable.

First, AFS installed 3.6 inch thick poly-iso boards over the substrates. The areas with plywood substrate had the poly-iso boards attached by metal fasteners. However, for aesthetic reasons, Smithfield did not want fasteners installed on the metal roof decking because it would show through the ceiling into the living areas. Smithfield wanted the exposed metal ceilings to lend an "industrial" look to the building, and they did not want anything to detract from the image they were trying to accomplish. The solution was to fasten the poly-iso boards to the metal using a polyurethane adhesive. The adhesive was also used to fasten the poly-iso boards to the concrete areas.

AFS used a crane to get the poly-iso boards onto the roof, but logistics was a challenge. Traffic during the day, as well as other construction vehicles being present, posed difficulties in getting everything where it needed to be. To help mitigate some of the logistical issues, AFS had to arrange with the building owner up to three days in advance to schedule parking areas for their trucks and equipment.

After the poly-iso boards had been installed, AFS applied Quik-Shield 1000, a neoprene based primer, over the metal



Due to the nature of spray foam and because they had a reputable contractor, Smithfield knew the job would be done right the first time.



The application crew used a wind screen wherever necessary to help prevent overspray.

fasteners that held down the poly-iso board. Then, AFS sprayed 1.5 inches of Quik-Shield 125 2.5 lb. roofing foam on top. This maintained the insulating advantage of using the poly-iso boards, but without the air infiltration and thermal bridging.

The slope of the roof itself presented a unique challenge, as well. The sides of the roof were high and sloped down toward the middle—the opposite of a typical roof. This was done for aesthetic reasons—mainly, to hide the HVAC units that were placed in the middle of the roof. The design specifications called for a 1/8" per 12" slope—which is fairly negligible to begin with. However, once the deck was built, there was hardly any slope at all and nowhere for water to drain off. AFS added an additional three inches of foam to the edges of the roof in order to get a slope high enough for rainwater to drain properly toward the center of the roof. The alternative would have been to build a custom cricket out of poly-iso board, which would have taken extra time and cost more money.

After the foam application, AFS coated

the foam with three gallons per 100 sq. ft. of Quik-Shield 1929F Acrylic coating. This coating protects the foam from weathering and UV light. The coating also has high solar reflectivity, which increases the building's resistance against solar rays in the hot, Arizona climate. In addition, they applied #8 Lone Star granules, which have been proven to extend the life of the acrylic coating by 20% or more.

Safety was, of course, a top priority on this project. Warning lines and flags were placed six feet from the edge of the



Because the spray foam is self-flashing, it is ideal for sealing the roof penetrations made by other trades when installing conduits, vents, and HVAC lines.

building. Anyone working beyond the warning lines had to be tied off, and a spotter was with them at all times.

Everything went very well, but a week after the spray foam was installed, the other trades had created penetrations in the roof from the equipment they had installed, including wires, dryer vents, and over two hundred HVAC units. This was where the self-flashing benefit of spray foam came in handy, as it is much easier to repair penetrations with spray foam than it would be on other roof types, such

as single-ply.

Smithfield was very pleased with the results. They now have a monolithic roofing system that is long-lasting, prevents leaks, is cost effective, and will help maintain the building's aesthetic appeal. AFS also provided a 10-year, no-leak warranty, so Smithfield has peace of mind that their new roof will last for years to come.



Since 1968, Arizona Foam & Spray has been committed to delivering high quality results. The quality and skill they bring to every job has won them recognition as the #1 award winning spray foam contractor in the Southwest. Their top performing value engineering team takes the time to learn about every project in-depth, and focus on the cost savings details.



The Quik-Shield brand is owned and operated by SWD Urethane (www.swdurethane.com) and represents over 40 years of spray foam experience in the construction industry. SWD Urethane is one of the most innovative system houses in the spray polyurethane/polyurea marketplace and is committed to developing meaningful solutions.



Aesthetics were extremely important to Smithfield, and the care taken by Arizona Foam & Spray added to the overall beauty of the rooftop pool and lounge.