Project Profile

Project
Data Center
Allen, Texas

Roofing Contractor
Chamberlin Roofing & Waterproofing
Dallas, Texas

Roofing Consultant
AMTECH Building Sciences, Inc.
Richardson, Texas

Architect
Corgan Associates, Inc.
Dallas, Texas

Roofing Systems
Adhered EnergySmart Roof® using 80 mil Sarnafil® G410 feltback membrane in white; adhered and loose-laid waterproofing system using 60 mil Sarnafil G476 membrane

Project Size
160,000 square feet

Completed
September 2010

Sika Sarnafil Offers Data Center Single Source for Double Protection

When a worldwide leader in networking was building a new data center in Allen, Texas, it wanted to make sure the roof was virtually indestructible. The building would house both office space and data equipment and would be in operation 24 hours per day and "it was the owner's intent to guard that data and protect their investment," explained Steve Alberico, project manager at AMTECH Building Sciences, Inc. of Allen, Texas, the roof consultants on the project. "They wanted a roof that was close to indestructible, could sustain winds of 120 mph, and had an R-value of 30."

Added Jorge Gonzalez of Corgan Associates, Inc. of Dallas, the architects for the building, "We were looking for a tested roofing system that would comply with the durability requirements for the facility, as well as the LEED® Low Albedo (low reflectivity) Data Center Hardened Facility requirement – which is basically a double roof system."

One-Stop Shopping for Two Systems

Alberico said they looked at some modified bitumen and hot asphalt systems but eventually decided to use the Sika Sarnafil roofing and waterproofing systems. "The fact that we could use one source for both roofing systems was very important to us," he stated. "I know from experience that Sika Sarnafil has a dynamite roofing system and a great waterproofing system and we wouldn't have to worry about compatibility between the two systems. It just seemed like a perfect fit."

Another advantage of the Sika Sarnafil system was that the light-color of the white EnergySmart Roof membrane reflects the sun's heat and keeps the building cooler, thereby reducing air-conditioning costs.

Waterproofing Installation Almost Stopped Cold

Chamberlin Roofing & Waterproofing of Dallas began the installation of the multiple roofs with the application of the seven-layer waterproofing system. This involved priming the concrete slab, installing the self-adhering Sika Sarnafil G476 waterproofing membrane and a felt protection layer. The Chamberlin crew then loose-laid a 60 mil PVC protection layer and heat-welded the seams.

Chamberlin did encounter a major snag during this process, according to Chad Morgan, estimator for Chamberlin. "This

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installation was done in the winter, so we were dealing with rain and temperatures between 25 and 45 degrees," he stated. "The self-adhering membrane was to be applied to the concrete surfaces with a water-solvent conditioner that required the surface to be dry and the ambient temperature to be above 40 degrees. However, the weather was not cooperating with us."

Morgan said that Chamberlin worked with some Sika Sarnafil representatives to find a primer and adhesive that could be used in colder weather without freezing. "The Sika Sarnafil representatives were very helpful in finding a solvent-based product that was completely compatible with the roofing systems," he said. "This resourcefulness is one reason I always enjoy working with Sika Sarnafil."

Once the waterproofing membrane was installed, an Electronic Field Vector Mapping test, which uses pulses of low voltage electricity to detect roof system breaches, was conducted to check for potential leaks. When that was successfully completed, a drainage mat, two inches of rigid insulation and another layer of felt were applied to protect the components from the concrete pour of the topping slab.

Roofing Installation Goes Smoothly

After the topping slab had cured, the installation of the roofing system began. This involved applying a primer to the new concrete topping slab, and adhering a single layer of two-inch polyisocyanurate insulation, ½ inch gypsum roof board and the Sika Sarnafil roofing membrane.

Morgan pointed out that quality control and the safety of the crew were both critical factors during the installation of the two systems. "Each team was assigned the responsibility of not only maintaining job safety and security but also ensuring that the quality of the installation met the contract and manufacturer's specifications," he explained. "Our company mantra of safety, quality and productivity was at the top of everyone's mind. Quality control reports were submitted to the general contractor for review at the end of each day, and the site was inspected weekly by Chamberlin's safety director to make sure that site was in compliance with both Chamberlin's and OSHA's safety standards."

Despite all these concerns and the problems with the weather, Chamberlin was able to complete the job on time and on budget. "The installation went pretty smoothly and Chamberlin did a good job." Alberico said. "I'm a happy guy."

Added Gonzalez, "Chamberlin worked diligently on the roof. They did a very good job of getting the building watertight every night and getting the roof done on time."

It was this professionalism and attention to detail that earned Chamberlin Roofing & Waterproofing Second Place in Sika Sarnafil's 2010 Contractor Project of the Year, Low Slope Category.

A Well Protected Roof

Today the data center roof is performing to expectation. "There are no problems with the roof, and I like how the waterproofing on the parapets was welded right to the roofing system," Gonzalez said. "I also like how the one-source manufacturer simplifies warranty issues. I would certainly use this system again."

"I would definitely use these systems again on data centers," Alberico stated. "Sika Sarnafil has been used on several data centers, and so are proven in this industry. That gives me a lot of confidence and peace of mind."

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