



St. Louis Gateway Arch Snow Melting

Delta-Therm's embedded snow melting system creates a heated walkway for visitors to safely access America's most visited man-made monument

CHALLENGE: How do you keep snow and ice from accumulating on 3,160 square feet of sloped walkways that are seasonally bombarded by freezing winds and frigid temperatures? That was the question faced by park engineers at the tallest and most visited man-made monument in the United States – the St. Louis Gateway Arch.

Sitting parallel to the mighty Mississippi River, its low-lying north and south side entrances had serious pedestrian safety issues during winter. In addition, the walkways also serve as a roof for the Arch's museum and theater below, so careful treatment was imperative.

SOLUTION: In the spring of 2005, the National Park Service, which owns and operates the Arch, turned to Delta-Therm Corporation based on its longstanding reputation for manufacturing reliable snow and ice melting systems? Delta-Therm was brought in to replace the existing failing snow melting system.



"I spoke very strongly about Delta-Therm and its 35 year history of designing snow melting systems," said sales representative Bill Strohmeier of Engineered Process Equipment, Inc. in St. Louis, who took the request for the cables.

The project began with the north side ramp. A total of 26 mineral insulated snow melting cable assemblies were installed. First the paving contractor laid down a waterproof membrane. Next, the crew spread a thick bed of mortar in which the cables would sit. Sachs Electric installed the snow melting cables. Another inch of mortar was then poured on top of them to hold them safely in place. Finally granite pavers were installed.

“We had to drill through existing concrete and seal those holes very tight so that no water could get in through the roof,” explained John Buback of Sachs Electric.

In December 2007 the south side ramp was fitted with the snow melting cables. Although the project is identical to the north side, each ramp is equipped with its own contactor panel and automatic control because weather conditions vary from side to side.

The system is controlled automatically. When three conditions are met - ambient temperature falls below 40°F, the slab temperature falls below 40°F, and moisture is present – the melting system turns on and stays on until the slab dries. Either the slab reaches 60°F, or the ambient temperature rises above 40°F, and the snow has melted.

Park engineers can choose to override the system manually using a remote switch, which is particularly useful if they know a storm is coming.

RESULTS: Pedestrians can enjoy a clear path to enter the St. Louis Gateway Arch, according to park engineer, Dave Caselli. “It’s a big load off. We don’t have to worry anymore about whether we have to close the entrance or try to clean it with shovels,” he said. “Clearing with shovels doesn’t work well because we’ll have melting and freezing and lines of build-up.”



Engineers at the park now have a reliable system. The former system was not operational due to damage and wear.

Basically we got to the point where the cables didn’t work at all,” said Caselli. The National Park Service had considered a hydronic snow melting system, but it wasn’t feasible. We went back to electrical. It was the simplest and most cost-effective solution.”



6711 Sands Rd Ste A Crystal Lake, IL 60014
www.delta-therm.com
(800) 526-7887