

A FLEXIBLE AIRPORT PAVEMENT REPAIR TAKES OFF IN ST. LOUIS



The TechCrete product enabled the crew to cut the time needed for the repair to one-third of the original estimate.

Considered the business aviation center of the Midwest, Spirit of St. Louis Airport (Spirit Airport), in St. Louis, Missouri, has been serving private and corporate aircraft owners for more than 50 years. Featuring a 7,485-foot all-weather runway and a 5,000-foot parallel runway, it is also the site of the Spirit of St. Louis Air Show and STEM Expo.

REPAIRING TAXIWAY DAMAGE

In 2021, Parking Lot Maintenance (PLM), a local asphalt maintenance contractor, was hired to repair deterioration on the taxiways at Spirit Airport. The concrete airport pavement was

exhibiting multiple modes of distress, including ASR cracking in the corner and joints. The airport was looking for a solution that would cost less than a complete replacement of the taxiway, which would have cost upwards of \$15 million.

The airport needed the repairs to be completed in time for the Spirit of St. Louis Air Show in June 2022. One of the main objectives of the project was to reduce the amount of foreign object debris (FOD) making its way onto the taxiway due to pavement deterioration. According to the Federal Aviation Administration (FAA), FOD is an ongoing issue at U.S. airports, because it “creates safety hazards and can ultimately impact safe operations by damaging aircraft.”

Success Story



Deterioration on taxiway prior to repair.



The taxiway after repair.



Repairs treated with TechCrete and more repairs being prepped for TechCrete.

The original plan was to complete repairs of 1,250 square feet of spalls starting in April 2022. “We started the spall repairs using a rigid repair material,” says Todd Bruening, president of PLM. “The issue with concrete epoxy like that, however, is that it dries super-fast and has the potential to cause the patch to crack again.”

After three days of working on the repairs, the crew was experiencing a failure of 15% with the original patch material. The amount of deterioration on the taxiway had significantly grown since the time the project was originally awarded in 2021. In order to repair as much of the pavement as possible while still meeting the original project deadline, a new item was added to cover 1,450 square feet of new repairs using Crafcro TechCrete™, a flexible patch material. In addition, the airport agreed to allow the use of TechCrete to replace the original patches that had failed at no cost.

THE BENEFITS OF A FLEXIBLE CONCRETE REPAIR SOLUTION

Crafcro TechCrete is a hot-applied repair mastic sealant that is very effective for use in a wide range of pavement distresses. It provides unsurpassed adhesion so it can resist delamination and cracking and remains flexible during the expansion and contraction of adjacent concrete surfaces in weather extremes.

Unlike epoxy and other materials that can shatter under heavy loads, TechCrete provides high compression resistance to resist the impact of the largest, heaviest aircraft like 747 airliners, even in extreme weather conditions. It also provides longevity. “TechCrete has the strength and flexibility to provide a maintenance-free, long-lasting repair that eliminates the need to repair spalls again years down the road,” says Bruening.



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Success Story



Completed repairs on taxiway using TechCrete.

AFTER THE SWITCH

Even though the customer more than doubled the project, the repairs were completed well before the Air Show.

With the addition of TechCrete, the allowance of milling the deteriorated pavement instead of saw-cutting and removing the distresses sped up the project. In fact, the TechCrete product enabled the PLM crew to cut the time needed for the repair to one-third of the original estimate. “By switching to TechCrete, we turned what originally looked like a 59-day project with a risk of not making our deadline to a 15-working-day project,” says Bruening. “And it promises to significantly increase the longevity of the repairs.”

“We will probably use 45,000 pounds of TechCrete by the time this project is finished,” says Bruening. “in the past, the maximum that was used had been 1,000 pounds.”

TECHCRETE SET TO TAKE OFF AT AIRPORTS

TechCrete has been proven for years for use in repairing road and highway asphalt distresses. “The DOT (Department of Transportation) crews are starting to use it because they can get a seamless, longer-lasting repair,” Bruening says.

Even though airport pavements experience much higher tire pressures (approximately 220psi for a commercial jet aircraft) compared to that experienced by road pavement (around 110psi), TechCrete is proving to be up to the challenge.

Bruening and his crew worked with Justin Ryder, airport engineer at Spirit Airport, and Barry Stolz, regional aviation lead at engineering firm Hanson Professional Services. Hanson now allows for TechCrete as an option for spall repairs at airfields across the country.

For more information, visit www.crafco.com.



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