

PROJECT

Dow Corning sealants have delivered a 20-year lifespan in some pavement sections of Mid-Continental Airport in Wichita, Kansas. The highly flexible silicone sealants resist extreme temperatures and numerous freeze-thaw cycles each year, absorbing stress from thermal movement and sealing out incompressible debris. The excellent adhesion in both materials helps to minimize foreign object debris and the associated hazards on runways and taxiways totaling approximately 1.7 million square yards of pavement.

PRODUCTS

Dow Corning® 888
Silicone Joint Sealant

Dow Corning® 890-SL Self-Leveling
Silicone Joint Sealant

KEY PARTICIPANTS

Dow Corning Corporation
(Midland, Michigan)
Mid-Continental Airport
(Wichita, Kansas)
Silicone Specialties, Inc.
(Tulsa, Oklahoma)
Cutco, Inc.
(Wyoming, Illinois)

Silicone sealants deliver key durability at Wichita Airport

Highly flexible silicone sealants have delivered a 20-year service life at Mid-Continental Airport in Wichita, Kansas, helping maintenance crews improve safety on runways and taxiways by minimizing foreign object damage and the hazards it can cause. The low-modulus silicones from Dow Corning resist numerous freeze-thaw cycles each year and withstand heavy equipment traffic from airplanes, maintenance vehicles and trucks to provide superior durability on a total of nearly 1.7 million square yards of airfield pavement.

“Some of these pavement joints were sealed with *Dow Corning*® brand materials back in the mid-80s,” said Doug Kempf, program manager for *Dow Corning* pavement products. “These products have exceeded expectations for an airport application, which is typically a very tough service environment for paving and sealing materials. The key properties for outstanding longevity are all-temperature



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Dow Corning® 888 Silicone Joint Sealant and Dow Corning® 890-SL Self-Leveling Silicone Joint Sealant provide outstanding durability on approximately 1.7 million square yards of pavement at Wichita's Mid-Continental Airport. [Photo courtesy of Silicone Specialties, Inc.]

adhesion and flexibility, which allow the sealant to repel debris and absorb stress from thermal expansion and contraction,” he added.

Improving safety

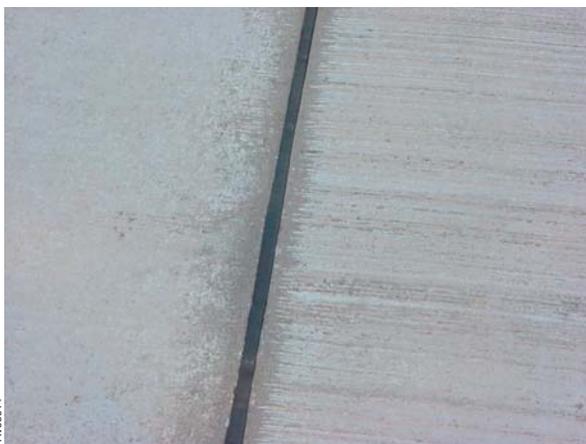
“Over time, some spalling of the concrete is inevitable, especially when you have heavy vehicles and snowplows taking their toll,” commented John Oswald, director of Airport Engineering

& Planning. “But a sealant with good adhesion helps prevent small chunks of concrete from breaking away and potentially becoming a safety hazard to the aircraft. It’s critical that we have the best pavement system we possibly can, to reduce equipment damage, accidents and liability,” he added.

Equally important to Oswald is a wide temperature range, with little or no loss of flexibility. “The typical winter in Kansas produces a large number of freeze-thaw cycles, and that can create problems with some sealants,” he continued. “The hot summers and intense UV exposure can also deteriorate many formulations. We need materials that maintain their physical properties under both temperature extremes to absorb thermal movement and deliver a long service life.”

Oswald reports that the airport has a long history using silicone sealants, and he specifies them exclusively on any new paving or remedial sealing projects. “We just completed a taxiway reconstruction and extension project that totaled about 88,000 square yards,” he said. “We used primarily *Dow Corning*® 888 Silicone Joint Sealant for that work, since it was almost all concrete-to-concrete.”

Contractors also installed *Dow Corning*® 890-SL Self-Leveling Silicone Joint Sealant in concrete-to-asphalt transition joints at the airport. Both formulations deliver excellent unprimed adhesion.



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Dow Corning sealants are used in concrete-to-concrete joints and concrete-to-asphalt transition joints. Both can withstand continuous movement of +100/-50% when installed in a clean, properly designed joint. [Photo courtesy of Silicone Specialties, Inc.]

From the distributor

“One of the sealant’s primary functions is to seal out moisture and incompressible debris,” observed Dale Baker from Silicone Specialties, Inc. (Tulsa, Oklahoma), distributor of *Dow Corning* materials. “Dirt, stones or ice can cause breakage of the concrete along the slab edge when they’re forced into the joint by heavy weight. But the adhesion and low modulus of these products give them a flexibility and service life that hot pour rubber sealants and urethanes can’t match,” he said.

SSI also provided the sealants and backer rod for a runway renovation in 2003 that included approximately 80,000 linear feet of concrete joints sealed with *Dow Corning* 888 Silicone Joint Sealant and about 20,000 feet of transition joints protected by *Dow Corning* 890-SL Self-Leveling Silicone

Joint Sealant. In addition to supplying the materials, SSI arranged installation training, conducted warranty testing and trained airport inspectors.

Installation

Joint sealing specialists from Cutco, Inc. (Wyoming, Illinois), have been working on new pavement and remedial projects at Mid-Continental Airport since 1997. “We’ve completed about 1/4 million linear feet of joints in the last two years,” estimated VP Hank Bowdoin. “*Dow Corning* sealants are very easy to install and tool, and they’ve shown exceptional durability in a very demanding application,” he said.

Cutco prepares the longitudinal and transverse joints by water blasting immediately after sawing, followed by sandblasting and then cleaning with compressed air. Once the closed-cell polyethylene foam backer rod is installed, the sealant is applied from 55-gallon drums using truck-mounted automated dispensing equipment. Both materials typically become tack-free in an hour or less, minimizing disruptions and delays in airport traffic.

FOR MORE INFORMATION

For more information about these and other *Dow Corning* materials for the construction industry, or for the name of the *Dow Corning* representative in your area, call toll-free 1-877-SEALANT (1-877-732-5268). Or visit our construction web site at www.dowcorning.com/construction.

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Printed in USA

AGP7265

Form No. 63-1039-01

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