

Sealing the Deal

Studies continue to learn merits of sealing pavement joints.

By: [Tom Bagsarian](#)



A worker prepares to seal a pavement joint on a test section of state Route 59 near Joliet, Ill.

Credit: SNS Research Committee

A group of highway contractors and manufacturers that is studying the merits of sealing concrete pavement joints reports significant progress.

Joint sealing is performed primarily for two reasons. First, it prevents infiltration and buildup of debris in the joint. Most importantly, though, it allows less water infiltration in the pavement sublayers. In the wake of tightening budgets and deficits, state departments of transportations said they were considering no longer sealing the joints to save money. This brought a backlash by some.

“We don’t believe the owners and agencies are educated enough or have enough answers to this issue to automatically eliminate joint sealing,” says Scott Eilken, owner of Quality Saw and Seal in Bridgeview, Ill., and co-chair of the Seal/No Seal Group (SNS). SNS is a clearinghouse for information and studies on the issue.

“The whole purpose of joint sealants is to stop water from getting into the pavements,” Eilken says. “If you start eliminating it across the country and in 20 years our pavements start failing, then we’re in

a lot of trouble.” If the state of Illinois spends \$1 million to unnecessarily seal its pavement joints, “they would rather use that \$1 million for new pavement elsewhere, which makes sense,” Eilken says. “Now, it’s a matter of the industry trying to prove or disprove that theory.

“The industry didn’t have a lot of information,” Eilken says. “Places across the country have done test sections, but one problem with looking at test sections is they never monitor them long enough to truly gauge the impact of whether [sealing] is a good thing or a bad thing.”

Various states treat the issue differently. Wisconsin does not seal its joints. “They’re not any different,” Eilken says. “But at what point do they become worse? What if maintenance costs increase? We want to show the owners so they can make an educated decision.”

Test details

Last fall, the Texas Transportation Institute (TTI), Austin, Texas, kicked off a study on the “Effect of Joint Sealant Condition on Moisture Infiltration and Erosion Potential.” The work by TTI is the most important to date because it will use modeling to predict future impacts and determine the wisdom of the practice.

The test is being conducted at a pavement drainage test track at the Riverside Campus of Texas A&M University in Bryan, Texas. Researchers will flood sections of the pavements to various depths and widths, then measure the moisture as it comes through the joints and collects in a series of catch buckets.

Researchers also will test the degree of sealing—completely sealed, partially sealed, and unsealed. TTI should report the results in about one year.

After initially expressing the desire to eliminate joint sealing, DOTs are “sitting tight,” Eilken says. The California Department of Transportation (Caltrans) announced it was changing its specification to not seal its pavement joints. Last fall, both sides agreed that SNS would provide some pavement test sections that Caltrans would monitor before the agency makes a final decision.

Separate from the TTI study, SNS is seeking information on other facets of pavement sealing, in an effort to evaluate the cost benefits of the three types of sealants: hot pour, silicone, and compression. Generally, hot pour lasts 7 to 10 years; silicone, 12 to 15 years; and compression, 20 to 25 years.

The group is working with material scientists to develop testing procedures to determine pavement cleanliness, dryness, and proper joint sealing adhesion. The industry does not have tools to measure if a joint is dry or clean enough to install sealants. Another area of study is looking into the impact of hazardous material spills on pavements with no joint seals.

The first study, the state Route 59 project near Joliet, Ill., has not yet yielded results. This project consists of 9 3/4-inch-thick dowelled portland cement concrete pavement placed on a 12-inch base, including building eight sealed and two unsealed sections. Joints are spaced 15 feet apart. Last fall, Walsh Construction, Chicago, conducted smoothness testing with a profilograph. “That gives us a base of how smooth the roadway was at the beginning, and then we will retest and monitor how it is progressing,” Eilken says.

Eilken realizes skeptics might wonder how objective SNS might be in reporting the results of these various tests. “There is no question about it. We are trying to protect our industry,” he says. “There are pros and cons on our website. We will not allow it to be a shaded opinion. We want the opportunity to bring the information to the table so owners can make an educated decision. Right now, that information is not there.”

For more information on the Seal/No Seal Group, visit www.sealnoseal.org. For more on the Texas Transportation Institute, visit <http://tti.tamu.edu>.