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New product helps keep rubber on the road

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It sounds like a miracle cure for this region's icy highways and bridges: An added layer of roadway traction that starts melting snow as the first flakes hit the pavement.

Minnesota mega-company Cargill Inc. says that's pretty much what SafeLane does. The company will test the new product in Superior this winter.

The overlay is about a half-inch thick and made up of epoxy glue and aggregate rock with limestone. The aggregate then retains de-icing chemicals, like liquid or melted rock salt, much longer than normal road surfaces.

"The beauty of this material is that it acts like a rigid sponge," said John Bray, Minnesota Department of Transportation spokesman. "You apply de-icer to it before an ice or snow event, and it stays there dormant until ice forms. Then it begins to work."

As a result, the road needs 75 percent less salting, Cargill says. That also reduces environmental problems and overtime costs for plow drivers.

As an added bonus, the glue acts as a sealant, preserving bridges and concrete from harsh chemicals and moisture, said Cargill and Minnesota and Wisconsin DOT officials.

SafeLane was recently installed on the on-ramp to the Blatnik Bridge from highways 2 and 53 in Superior.

WisDOT project engineer Anna Davey said about \$200,000 was spent to coat the Blatnik Bridge ramp. The DOT had about 20 snow- or ice-related accidents there in the past four years.

Davey was among those impressed after the product was first tested two years ago on a bridge in Crandon, in north-eastern Wisconsin. The number of annual accidents between November 2003 and this February dropped from an average of three or four to zero, she said.

"So, one benefit we hope for is to reduce the amount of crashes that we have there (in Superior) with this product," Davey said. "We'll have to wait to see what happens in October (when the first frost and snow occurs)."



Superior is one of several test sites Cargill is installing throughout the snow belt this summer, said Anthony Hensley, of Cargill's SafeLane business development team.

This summer, MnDOT will install it on the Mitchell Bridge on U.S. 169 in Hibbing, a curving bridge known for its share of accidents. It is the only place in Minnesota where the material will be tested for now, Bray said.

The product took a decade of lab work to develop at Michigan Technological University's Keweenaw Research Center in Houghton, Mich.

The project is licensed and distributed by Cargill, the Minnetonka, Minn.-based agricultural giant. Cargill is the largest supplier of rock salt in North America.

SafeLane is more expensive than other sealants. It costs \$9 and \$12 a square foot, compared to \$5 to \$7 a square foot for other epoxy overlays.

The surface also has a rougher feel for drivers. Researchers are still measuring the product's effects on noise levels and tire wear.

Cargill expects the cost to go down as it becomes more available and a large-scale applicator is developed.

Bray said the SafeLane product is a practical alternative to asphalt overlays.

"This stuff is truly cutting edge," said Bray. "It is the most exciting applied research I've seen in a long time. I could foresee it going everywhere."