

Soybean oil driving technology to improve roadways

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Engineering sealant technology developed by Purdue University protects and prolongs the life of new and existing concrete. Credit: Indiana Soybean Alliance

Holiday drivers who find that roadwork is driving them crazy may find

in future years that a Purdue University-affiliated startup can seal the deal for a merrier journey.

Environmental Concrete Products is a startup based on a Purdue innovation, with funding for the Indiana Soybean Alliance, which uses engineering sealant technology to protect and prolong the life of new and existing concrete to make a smoother ride for travelers and save costs for road upkeep and repairs.

"Our product is different from traditional sealants because it is sprayed on the roadway and actually soaks into the concrete to form a barrier against water," said Paul Imbrock, an alumnus of Purdue's College of Engineering and ISA contractor, who was part of the research team that created the bio-based hydrophobic sealant derived from soybeans. "This makes the sealant much more resistant to cracks and damage, plus it does not create a vulnerable chemical film on a road's surface that can lead to more issues."

The technology was developed by Purdue, tested with ISA soybean checkoff support and licensed by the Indiana Soybean Alliance. Environmental Concrete Products technically supports customers and licensees of the patent to gain commercial adoption.

The American Society of Civil Engineers reports that about one out of every five miles of highway pavement is in poor condition across the United States.

Imbrock and Indiana Soybean Alliance have been working with the Indiana Department of Transportation to use the sealant on roads in Indiana. It has been tested on U.S. 231 in Tippecanoe County and 126th Street in Hamilton County, and INDOT plans to start using it on road projects this spring.

Imbrock said the bio-based sealant is derived from [soybean](#) oil and is safe to handle and apply. Its [physical properties](#) also make it possible to be adapted for other potential uses, including a combination paint-and-sealing product. It's also a cost-effective alternative to common concrete sealants.

The [sealant](#) created at Purdue is being tested for a variety of applications. Imbrock said it can be used anywhere concrete is exposed to water, including driveways, sidewalks and pipes.

"I was incredibly fortunate to attend Purdue and be exposed to experts in engineering and entrepreneurship," Imbrock said. "This powerful combination helped me succeed as a student and set me on a path for a great future."

Provided by Purdue University

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