

County bridge first of its kind in Indiana

By **DOROTHY SCHNEIDER**

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Installation of a new kind of bridge is under way in Tippecanoe County.

Crews this week are putting in a deck made of fiber-reinforced polymer composite material — to replace the concrete deck for the 50-year-old span — which carries County Road 900 East over Sugar Creek near Colburn.

The bridge was closed on Oct. 5 and is expected to reopen in early December.

Composite material is strong, lightweight material designed in a laboratory. The project is part of a federal initiative that encourages the use of materials that speed construction and reduce the life-cycle cost of bridges.



Thomas Maxfield/Journal & Courier



By Michael Heinz/Journal & Courier

Workers with Harvey and Sons Inc. from Danville, Ind., place a fiber-reinforced polymer composite onto a bridge Wednesday on County Road 900 East.

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"It'll last virtually forever. It's not going to rust," said Opal Kuhl, the county's highway director.

Project engineer Mike Peterson, with H. Stewart Kline & Associates, said the life span of the

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THINGS TO DO

A celebration of "Twilight" will be held from 7 to 8:30 tonight at the Tippecanoe County Public

Library, 627 South St. The event is geared for ages 11 to 18.

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bridge should be at least 75 years. But since this type of bridge deck is fairly new, there are still many unknowns.

The bridge material was tested extensively through Purdue University's civil engineering school. Loads simulating truck wheels were applied to large-scale specimens at the Bowen Laboratory.

The project was funded with \$450,000 from the Federal Highway Administration's Innovative Bridge Research and Construction Program, roughly \$84,000 from the Indiana Department of Transportation and \$150,000 in county funds. Some of the money went toward the research done at Purdue on the bridge material.

It is the first bridge of its kind in Indiana. Kuhl said the Tippecanoe County location was chosen because officials wanted to do the

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**Dan Richards,
Zellcomp Inc.
president and CEO**

project near Purdue's research facilities.

Dan Richards, president and CEO of Zellcomp Inc., the North Carolina company that manufactured the bridge deck, said there are numerous bridges of this type in Ohio that have done well under similar weather conditions.

"They have the same thing—freeze, thaw, freeze, thaw," Richards said.

Drivers, he said, won't notice a difference when they're driving over the new bridge. Richards said a common misconception about the material is over its ability to withstand heat and other elements.

"People get confused, thinking it's like their kids'

toys that can melt just from sitting on top of the TV for too long," Richards said. "It's not like that. ... It's like the (composite material) used in aerospace."

Benefits of the prefabricated panels include: a speedy installation, which is expected to last only a few days instead of several weeks, and less weight, approximately one-third of the original deck.

Since the bridge weighs less with the new material, it should be able to withstand heavier loads, Peterson said.

There are challenges to using the material. Those include: a higher cost, limited experience, lack of standards and complications with adding details, such as guardrails.

Peterson said the composite bridge cost double or triple the amount it would to build a traditional concrete bridge deck. But if the material becomes more popular and is created by more companies, the price should come down, he said.