



## Updates from the States: Indiana (May 2010)

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The [Indiana Department of Transportation \(INDOT\) Research and Development \(R&D\) Division](#) is focused on a strategic plan with goals for safety, mobility, economic development, resource management, training, and customer service. Currently, many of the INDOT R&D research efforts focus on developing methods for reducing construction costs by optimizing design and construction procedures. Several ongoing research efforts include the following:

- Optimization of Mixture Proportions for Concrete Pavements
- Portland Cement Concrete Pavement Performance Relative to Permeability
- Using Recycled Concrete as Aggregate in Concrete Pavements to Reduce Materials Costs
- Investigation of Use of Slag Aggregates and Slag Cements in Concrete Pavements to Reduce the Maintenance Costs
- Development of Self-Curing Concrete for Increasing Service Life

Ongoing, recently completed, and needed research as identified by INDOT R&D can be linked to the CP Road Map.

### Self-Curing Concrete for Increasing Service Life

One example is a research effort on The Development of Self-Curing Concrete for Increasing Service Life, led by Purdue University Professor Jason Weiss under the [Joint Transportation Research Program \(JTRP\)](#).

The research work shows that pre-wetted lightweight aggregates are beneficial when the potential for increased evaporation rates is high and the water-to-cementitious material ratio is low. Initial evaluations of test matrices suggest that pre-wetted, lightweight aggregates release water into the paste, allowing it to cure from the inside and thereby reducing the potential for shrinkage cracking and settlement. This work is scheduled for completion in October 2010, at which time the CP Road Map E-News will highlight the results.

The Development of Self-Curing Concrete for Increasing Service Life project is an example of the type of work that fulfills research needs identified under [CP Road Map Track 1: Performance-Based Pavement Mix Design](#) and [Track 12: Advanced Concrete Pavement Materials](#).

For more information on this project, contact INDOT Research and Development Section Manager Tommy Nantung, [tnantung@indot.in.gov](mailto:tnantung@indot.in.gov), 765-463-1521, ext. 248.

### Saw-Cutting Guidelines for Concrete Pavements

In January 2009, Purdue University published *Saw-Cutting Guidelines for Concrete Pavements: Examining the Requirements for Timing and Depth of Saw-Cutting*. The corresponding research work was performed by Kambiz Raoufi, Tony Thier, W. Jason Weiss, Jan Olek, and Tommy E. Nantung under the JTRP for INDOT R&D.

The purpose for the research was to develop procedures specific to Indiana for determining the ideal construction window for sawcutting and the optimal sawcut depth in order to minimize the potential for microcracking. Guidelines and recommendations documented within the report are intended to assist

contractors in establishing improved field operations.

The research and publication of the final report *Saw-Cutting Guidelines for Concrete Pavements: Examining the requirements for Timing and Depth of Saw-Cutting* is an example of work related to [CP Road Map Track 6: Innovative Concrete Pavement Design, Materials, and Construction](#) and [Track 10: Concrete Pavement Performance](#).

[Click here to view the report.](#)

## About the CP Road Map E-News

The **CP Road Map E-News** is the newsletter of the [Long-Term Plan for Concrete Pavement Research and Technology \(CP Road Map\)](#), a national research plan developed and jointly implemented by the concrete pavement stakeholder community. To find out more about the CP Road Map, or to get involved, contact Dale Harrington, dharrington@snyder-associates.com, 515-964-2020.

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