



CP Road Map E-News October 2010

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.

New Moving Advancements into Practice (MAP) Brief

Moving Advancements into Practice (MAP) Briefs describe promising technologies that can be used now to enhance concrete paving practices.

[MAP Brief 5-1: Stringless Concrete Paving](#) has recently been published under [CP Road Map Track 5: Concrete Pavement Equipment Automation and Advancements](#). This MAP Brief describes the benefits of stringless concrete paving and provides information from two stringless paving research projects in Iowa.

[Download MAP Brief 5-1](#) (849 kb pdf).



News from the Road

News from the Road highlights research around the country that is helping the concrete pavement community meet the research objectives outlined in the CP Road Map.

CPTP publishes tech brief on performance of sealed and unsealed concrete pavement joints

A 2009 technical brief from the [Concrete Pavement Technology Program \(CPTP\)](#) summarizes an FHWA-sponsored research project that investigated the performance of jointed plain concrete pavements with sealed and unsealed joints. The tech brief

- discusses the effectiveness of sealants compared to the presence of dowel bars,
- identifies a statistical relationship between the presence of various sealant types and the occurrence of faulting and/or spalling, and
- describes the correlation of temperature gradients to slab support in pavements with and without sealants.

[Click here to read the tech brief.](#)

This project is contributing to research objectives identified in [CP Road Map Track 6: Innovative Concrete Pavement Joint Design, Materials, and Construction](#). As a source of technology transfer, the tech brief can be categorized under [CP Road Map Track 11: Concrete Pavement Business Systems and Economics](#).

Iowa research investigates the freezing-thawing durability of low-permeability concrete

A recent project in Iowa investigated the effects of air entraining admixtures (AEAs) on concrete properties and the ability of AEAs to

provide freeze-thaw protection in low-permeability concrete. The researchers found that low-permeability concrete without AEA can still be durable in freeze-thaw conditions. They also found that the air-void system plays a greater role than cement type in determining durability when an AEA is used. The results of this project can help States that experience freeze-thaw conditions and use supplementary cementitious materials in their concrete mixtures.



[Click here to read the full report.](#)

Work on this project is meeting a need identified under [CP Road Map Track 1: Performance-Based Concrete Pavement Mix Design System](#).

Louisiana research evaluates the durability of titanium dioxide photocatalyst coating for concrete pavement

A collaborative research effort in Louisiana investigated the potential durability of pavements coated with a titanium oxide slurry. The use of titanium-dioxide to coat concrete pavements is intended to help decrease harmful air pollutants caused by vehicles in areas of high traffic. Because this technology is new to pavement applications, the goal of this research was to determine whether titanium dioxide slurry could potentially withstand real traffic loads and abrasion.

Based on microscopic evaluations and simulated traffic conditions in a laboratory, the researchers concluded that titanium oxide coating has the potential to perform well on pavements.

[Click here to read the results of this research, published in *Construction and Building Materials* in August 2010.](#)

This project is contributing to research needs outlined in [CP Road Map Track 12: Advanced Concrete Pavement Materials](#) and [Track 13: Concrete Pavement Sustainability](#).

Quebec research documents three-year performance of continuously reinforced concrete pavement with glass fiber reinforced polymer bars

An ongoing project in Quebec is investigating and comparing the field performance of continuously reinforced concrete pavements (CRCP) with glass fiber reinforced polymer bars (GFRP) to the field performance of CRCP with typical deformed steel bar reinforcement. This research project is one of the first of its kind (a second project is ongoing in West Virginia), and is halfway through a six-year monitoring period. A recent paper accepted at the International Symposium on Concrete Roads documented the results of this research, to date.



[For more information on this paper, click here to contact conference personnel.](#)

This project is also highlighted in the CPTP tech brief *Evaluating the Use of Fiber-Reinforced Polymer Bars in Continuously Reinforced Concrete Pavements*. [Click here to download the tech brief.](#)

This work is contributing to [CP Road Map Track 12: Advanced Concrete Pavement Materials](#).

Updates from the States: Pennsylvania

When it comes to highway research in Pennsylvania, there is a process that must be followed. That process, clearly defined by the Pennsylvania Department of Transportation (PennDOT) Bureau of Planning and Research (BPR), includes the following four steps:

1. Program development
2. Project development
3. Project management
4. Implementation



Current research in Pennsylvania includes the following projects:

- Establishing inputs for the new rigid component of the Mechanistic-Empirical Pavement Design Guide
- Preventing premature deterioration of jointed plain concrete pavements
- Implementing the concrete overlay field application program

[Read on for more details on Pennsylvania's research efforts.](#)

Newsletter staff

- [Dale Harrington](#), Snyder and Associates, Program Manager
- [Rob Rasmussen](#), The Transtec Group, Program Specialist
- [Sabrina Garber](#), The Transtec Group, Program Specialist
- [Sabrina Shields-Cook](#), National Concrete Pavement Technology Center, Editor

Newsletter archives

- [September 2010](#)
- [August 2010](#)
- [July 2010](#)
- [June 2010](#)
- [May 2010](#)
- [April 2010](#)

The [National Concrete Pavement Technology Center](#) at [Iowa State University](#) provides operations support services to the CP Road Map program.
CP Tech Center
2711 S. Loop Drive, Suite 4700
Ames, IA 50010
Phone: 515-294-5798
Fax: 515-294-0467
Email: [Program Management](#) ~ [Communications](#) ~ [Webmaster](#)
Site Design Copyright © 2007–2020, [Iowa State University](#). All rights reserved.