CP Road Map E-News April 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.

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.

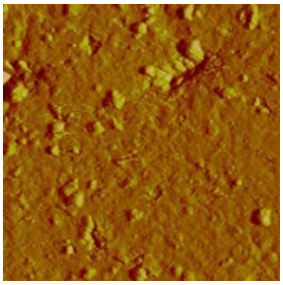
MAP Brief 4-1: Diamond Grinding to Reduce Tire-Pavement Noise in Concrete Pavements has recently been published under Track 4: Optimized Surface Characteristics for Safe, Quiet, and Smooth Concrete Pavements. This MAP Brief examines the affects of diamond grinding on friction and noise and outlines techniques for optimizing diamond grinding.

Download MAP Brief 4-1 (560 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.

Virginia Transportation Research Council studies benefits of nanomaterials



The use of nanomaterials (particles less than a nanometer in size) in concrete mixtures is receiving increased interest around the nation. A recent study by the Virginia Transportation Research Council demonstrated some of the potential benefits of using nanomaterials in concrete mixtures, including improved strength, density, and permeability.

Download the full report (493 kb pdf).

Studies on the use of innovative materials such as nanosilica can contribute to research objectives of Track 1: Performance-Based Concrete Pavement Mix Design System and Track 12: Advanced Concrete Pavement Materials.

Texas Transportation Institute evaluates effectiveness of curing techniques

Protecting young concrete from moisture loss is considered paramount to good paving practice. The method most commonly used is the application of a liquid curing membrane shortly after placement. Most State DOTs currently evaluate the quality of these membranes via test results of properties known to correlate to performance. However, the Texas Transportation Institute has recently explored the next logical step: a

performance-based evaluation of the effectiveness of curing techniques in preventing moisture loss in concrete pavements.

Download the full report (6.2 MB pdf).

This work is helping to meet research objectives outlined in Track 3: High-Speed Nondestructive Testing and Intelligent Construction Systems.

Minnesota Department of Transportation examines effects of pavement drainage on joint behavior

It is well accepted that, all else being equal, the presence of moisture in and around a pavement structure can lead to poor performance. An example of this fact has recently been reported by the Minnesota Department of Transportation as part of an ongoing study to evaluate the effect of pavement drainage on joint behavior.

Download a MnROAD technical brief on this important topic (439 kb pdf).

Understanding the effects of pavement drainage on joint behavior will help meet the research objectives of Track 6: Innovative Concrete Pavement Joint Design, Materials, and Construction. Revisions to pavement design that might emerge from this work would fall under Track 2: Performance-Based Design Guide for New and Rehabilitated Concrete Pavements.

Upcoming Events

- **First International Conference in North America on Nanotechnology in Cement and Concrete**
  May 5-7, 2010
  Irvine, CA
  http://www.trb.org/Conferences/2010/Nanotech
- **International Conference on Sustainable Concrete Pavement Technologies**
  September 15-17, 2010
  Sacramento, CA
  http://www.fhwa.dot.gov/pavement/concrete/2010acptpconf.cfm

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