

RECENT PUBLICATIONS

This document highlights the CP Tech Center's most recent (primarily produced since 2011) technology transfer publications: manuals, technical reports and summaries, technical briefs, guide specifications, and related spreadsheet tools.

Publications marked "Map Brief" are, in general, overviews of current best practices or technology applications that have been published by the CP Tech Center under the umbrella of the CP Road Map program.

The publications are loosely categorized; some are listed in more than one category.

This document, with links to electronic versions of the publications, is available on CP Tech Center's homepage, www.cptechcenter.org/. Additional (generally, older) documents can be found using the search function at www.cptechcenter.org/technical-library/library-search/.

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JOINTS

Manuals / Guides

[Preservation and Rehabilitation of Urban Concrete Pavements Using Thin Concrete Overlays: Solutions for Joint Deterioration in Cold Weather States](#) (September 2014)

[Guide for Optimum Joint Performance of Concrete Pavements](#) (July 2012)

[Guide to Dowel Load Transfer Systems for Jointed Concrete Roadway Pavements](#) (September 2011)

Reports / Technical Summaries

[Concrete Pavement Joint Deterioration: Recent Findings to Reduce the Potential for Damage](#) (June 2015) (Map Brief)

[Constructing Concrete Pavements with Durable Joints](#) (June 2014) (Map Brief)

[Investigation of Deterioration of Joints in Concrete Pavements](#) (August 2012)

[Recommendations for Standardized Dowel Load Transfer Systems for Jointed Concrete Roadway Pavements](#) (September 2011) (Tech Brief)

[Preventing Joint Deterioration in Concrete Pavements: A Summary of Current Knowledge](#) (April 2011) (Map Brief)

MATERIALS / MIXTURES

Manuals / Guides

[The Use of Ternary Mixtures in Concrete](#) (May 2014)

[Integrated Materials and Construction Optimization: A State-of-the-Practice Manual \(IMCP Manual\)](#) (October 2007)

Reports / Technical Summaries

[Blended Aggregates for Concrete Mixture Optimization](#) (July 2015) (Tech Brief from Best Practices for Jointed Concrete Pavements project) (FHWA website)

[Materials-Related Distress: Hardened Cement Paste](#) (June 2015) (Tech Brief from Best Practices for Jointed Concrete Pavements project) (FHWA website)

MATERIALS / MIXTURES, continued

Reports / Technical Summaries, continued

[Materials-Related Distress: Aggregates](#) (May 2015)
(Tech Brief from Best Practices for Jointed Concrete Pavements project) (FHWA website)

[Aggregate Gradations for Concrete Pavement Mixtures](#) (October 2014) (Map Brief)

[Mixture Design and Proportioning for Concrete Pavements](#) (March 2014) (Map Brief)

[Mixture Design and Analysis \(MDA\): An Innovative Approach to Proportioning Concrete Mixtures](#) (March 2015); ***Proportioning Spreadsheet*** (scroll to “Download Spreadsheet”)

[Mixture Design and Analysis \(MDA\): Development and Evaluation of Vibrating Kelly Ball Test \(*VKelly test*\) for the Workability of Concrete](#) (March 2015)

[Mixture Design and Analysis \(MDA\): Evaluation of Foam Drainage Test to Measure Air Void Stability in Concrete](#) (March 2015)

[Mixture Design and Analysis \(MDA\): Evaluation of the Fresh and Hardened Properties of Concrete Mixtures Containing Hydrophilic and Hydrophobic Types of Permeability-Reducing Admixtures to Develop a Standard Testing Protocol \(Waterproofing\)](#) (November 2014)

[Mixture Design and Analysis \(MDA\): Factors Influencing Drying Shrinkage](#) (October 2014)

[Mixture Design and Analysis \(MDA\): Comparison of Setting Time Measured Using Ultrasonic Wave Propagation with Saw-Cutting Times on Pavements in Iowa \(ultrasonic pulse velocity—UPV\)](#) (January 2014)

[Mixture Design and Analysis \(MDA\): Concrete Pavement Mixture Design and Analysis Guide Specification for Highway Concrete Pavements](#) (October 2012)

[Mixture Design and Analysis \(MDA\): Concrete Pavement Mixture Design and Analysis Guide Specification for Highway Concrete Pavements Commentary](#) (October 2012)

[Mixture Design and Analysis \(MDA\): Effect of Paste Quality on Fresh and Hardened Properties of Ternary Mixtures](#) (July 2012)

[Mixture Design and Analysis \(MDA\): Effect of Aggregate Systems on Concrete Mixture Properties](#) (July 2012)

[Mixture Design and Analysis \(MDA\): Assessment of Air Void System Requirements for Durable Concrete](#) (June 2012)

[Mixture Design and Analysis \(MDA\): Application of a Portable X-Ray Fluorescence \(XRF\) Technique to Assess Concrete Mix Proportions](#) (March 2012)

[Development of Performance Properties of Ternary Mixtures: Field Demonstrations and Project Summary](#) (July 2012)

[Development of Performance Properties of Ternary Mixtures: Laboratory Study on Concrete](#) (March 2011)

[An Integrated Study of Pervious Concrete Mixture Design for Wearing Course Applications](#) (October 2011) (with Tech Transfer Summary)

[Deicing Salts and Concrete Pavements](#) (August 2014) (Map Brief)

[Deicer Scaling Resistance of Concrete Mixtures Containing Slag Cement: Phase 3, Final Report](#) (January 2014)

[Deicer Scaling Resistance of Concrete Mixtures Containing Slag Cement: Phase 2, Evaluation of Different Laboratory Scaling Testing Methods](#) (July 2012)

[De-Icing Agent Performance Evaluation](#) (May 2013)

[Deleterious Chemical Effects of Deicing Solutions on Concrete Pavements](#) (November 2010) (Map Brief)

[Use of Chemical Admixtures in Roller-Compacted Concrete for Pavements](#) (May 2013)

[Optimizing Cementitious Content in Concrete Mixtures for Required Performance](#) (February 2012) (with Tech Transfer Summary)

[Potential Materials Incompatibilities in Concrete Pavements](#) (July 2011) (Map Brief)

[Fly Ash as a Supplementary Cementitious Material in Concrete Mixtures](#) (March 2011) (Map Brief)

[Job-Specific Optimization of Paving Concrete with COMPASS](#) (May 2010) (Map Brief)

OVERLAYS

Manuals / Guides

[Preservation and Rehabilitation of Urban Concrete Pavements Using Thin Concrete Overlays: Solutions for Joint Deterioration in Cold Weather States](#) (September 2014)

[Guide to Concrete Overlays: Sustainable Solutions for Resurfacing and Rehabilitating Existing Pavements \(3rd edition\)](#) (May 2014); this is “the” **overlay manual**

See also, [Spanish version](#)

[Guide to the Design of Concrete Overlays Using Existing Methodologies](#) (October 2012)

[Guide to Concrete Overlays of Asphalt Parking Lots](#) (October 2012) (for purchase from NRMCA)

History Brief

[Performance History of Concrete Overlays in the United States](#) (November 2014)

Reports / Technical Summaries

[Spirit of St. Louis Airport Concrete Overlay](#) (August 2015) (Map Brief)

[Multi-Year Concrete Overlays Program: What We Have Accomplished and Learned](#) (June 2012) (Map Brief)

Guide Specifications

[Guide Specifications for Concrete Overlays](#) (September 2015)

PRESERVATION

Manuals / Guides

[Concrete Pavement Preservation Guide \(2nd edition\)](#) (September 2014)

[Guide for Partial-Depth Repair of Concrete Pavements](#) (April 2012)

Reports / Technical Summaries

[Full-Depth Repairs for Concrete Pavements](#) (February 2012) (Map Brief)

[Full-Depth Reclamation of Asphalt Pavements with Cement](#) (August 2011) (Map Brief)

[Partial-Depth Repair for Concrete Pavements](#) (May 2011) (Map Brief)

QUALITY / PERFORMANCE

Manuals / Guides

[Field Reference Manual for Quality Concrete Pavements](#) (September 2012) FHWA publication; Peter Taylor is one author

Reports / Technical Summaries

[Concrete Pavement Curling and Warping: Observations and Mitigation](#) (April 2015) (Map Brief)

[Demonstration of Technologies for Concrete Pavement Quality Monitoring](#) (June 2013)

[Producing Freeze-Thaw Durable Concrete](#) (January 2015) (Map Brief)

[Relating Transport Properties to Performance in Concrete Pavements](#) (December 2014) (Map Brief)

[Long-Life Concrete: How Long Will My Concrete Last?](#) (October 2013)

ROLLER COMPACTED CONCRETE

Manuals / Guides

[Guide for Roller-Compacted Concrete \(RCC\) Pavements](#) (August 2011) (for purchase only from the PCA)

Reports / Technical Summaries

[Use of Chemical Admixtures in Roller-Compacted Concrete for Pavements](#) (May 2013)

[Roller-Compacted Concrete Pavements](#) (September 2010) (Map Brief)

SURFACE CHARACTERISTICS

Manuals / Guides

[How to Reduce Tire-Pavement Noise: Better Practices for Constructing and Texturing Concrete Pavement Surfaces](#) (August 2012)

Reports / Technical Summaries

[Concrete Pavement Surface Characteristics: Key Findings and Guide Specifications](#) (August 2012)

SURFACE CHARACTERISTICS, continued

Reports / Technical Summaries, continued

[Diamond Grinding to Reduce Tire-Pavement Noise in Concrete Pavements](#) (October 2009) (Map Brief)

Guide Specifications

[Accepting New Concrete Pavement Surfaces for Tire/Pavement Noise \(recommended practices\)](#) (March 2011)

[Texturing Concrete Pavement for Reduced Tire/Pavement Noise using Artificial Turf Drag](#) (March 2011)

[Texturing Concrete Pavement for Reduced Tire/Pavement Noise using Diamond Grinding](#) (March 2011)

[Texturing Concrete Pavement for Reduced Tire/Pavement Noise using Longitudinal Tining](#) (March 2011)

[Texturing Concrete Pavement for Reduced Tire/Pavement Noise using Transverse Tining](#) (March 2011)

SUSTAINABILITY

Manuals / Guides

[Sustainable Concrete Pavements: A Manual of Practice](#) (January 2012)

Reports / Technical Summaries

[Concrete Pavement Sustainability: State-of-the-Practice](#) (April 2012) (Map Brief)

MISCELLANEOUS SOLUTIONS

Manuals / Guides

[Implementation Manual—3D Engineered Models for Highway Construction: The Iowa Experience](#) (on State of Iowa site)

[Epub version](#) (facilitates viewing on mobile devices) with [documentation](#) (Note: Clicking on the Epub link may initiate download, depending on browser)

[Guide to Cement-Based Integrated Pavement Solutions](#) (October 2014) (PCA website)

[Guidance for Improving Foundation Layers to Increase Pavement Performance on Local Roads](#) (November 2014)

[Integrated Materials and Construction Optimization: A State-of-the-Practice Manual](#) (October 2007) (**IMCP manual**)

Reports / Technical Summaries

[Self-Consolidating Concrete—Applications for Slip Form Paving, Phase 2](#) (May 2012)

[A Feasibility Study of Embedded Micro-Electromechanical Sensors and Systems \(MEMS\) for Monitoring Highway Structures](#) (June 2011) (with Tech Transfer Summary)

[Precast Concrete Pavements](#) (December 2011) (Map Brief)

[Intelligent Compaction for Concrete Pavement Bases and Subbases](#) (February 2011) (Map Brief)

[Smart Cure: An Integral Part of an Intelligent Construction System](#) (January 2011) (Map Brief)

[Stringless Concrete Paving](#) (October 2010) (Map Brief)

[Two-Lift Concrete Paving](#) (August 2010) (Map Brief)

[Use of Nonwoven Geotextiles as Interlayers in Concrete Pavement Systems](#) (May 2009) (Map Brief)

About the National Concrete Pavement Technology Center

The mission of the National Concrete Pavement Technology Center (CPTech Center) is to unite key transportation stakeholders around the central goal of advancing concrete pavement technology through research, tech transfer, and technology implementation.

Neither the CPTech Center, the authors, nor sponsors of documents referenced herein are responsible for the accuracy of the information presented or the conclusions expressed therein.

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