



INTERNATIONAL SOCIETY FOR CONCRETE PAVEMENTS

ISCP e-NEWSLETTER
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ORGANIZATIONAL MEMBERS & MAJOR EVENT SPONSORS:



INDUSTRY NEWS & RESOURCES

Experience in Uruguay, South America: Whitetopping Rehabilitation Project

República Oriental del Uruguay
wikimedia.org



ISCP Member, Wirtgen Slipform Paver "Wirtgen SP500"



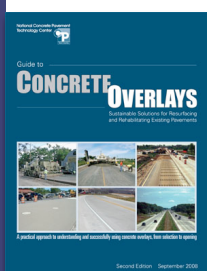
Burlap dragging to provide texture pavement



Truck on new pavement and newly jointed slabs

A pavement project consisting of 21.6 km (13 mi) of fiber-reinforced bonded concrete overlay on asphalt (BCOA) was constructed in western Uruguay - Ruta 24, near Fray Bentos City. The project construction began in May 2011. An inauguration ceremony was held on July 11, 2013 to announce the opening of the rehabilitation work: "Guyunusa stretch of Route 24 between Route 2 and Route 20". Mr. Sergio Diaz Michelena, project manager, said, "With our partners, we have formed a great team, who have closely followed all the details of commissioning work, each contributing their part to obtain a final result of excellence."

The concrete overlay was built on a route subjected to heavy loads, generated mainly by trucks that carry wood for a large pulp cellulose factory (1 million metric tons of pulp per year). The overall traffic is intense, reaching approximately 14 million equivalent single axle loads. The 150 mm (5.9-in) thickness concrete overlay was designed to be built over a 140 mm (5.5-in) existing asphalt pavement. The slabs are 1.8 by 1.8 meters (9 x 9 ft). In order to reduce the risk of reflective crack propagation and improve the overall pavement crack resistance, a fiber-reinforced concrete mix was specified, with a modulus of rupture equal to 5 MPa (725 psi).



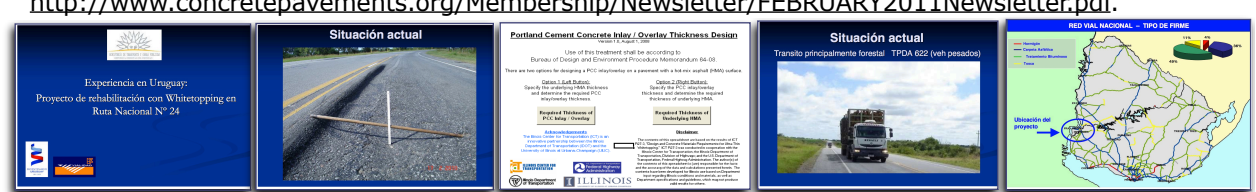
Training classes were held during the project's initial stages, beginning in 2010, conducted by ISCP Board Directors Dr. Jeffrey Roesler and Dr. Jamshid Armaghani for the Ministry of Public Works, cement industry, and paving contractors. Mr. Michelena said, "Many of the project's achievements and successes would not have been possible without the training courses that you gave or without the *Portland Cement Concrete Inlay/Overlay Thickness Design Method* Guide. The local perception about concrete pavements has dramatically improved over the last 4 years in Uruguay, where asphalt was previously a considered the only material to be used on pavements."

Michelena said, "After nearly two years of having built the first sections (August 2011), the pavement has not had any type of failure, not even a single slab crack. Our client, El Ministerio de Transporte y Obras Publicas (The Ministry of Transport and Public Works), is pleased with the work that has been done and looking forward to repeat this experience in other locations of the national road network. So much so that we extended the contract and we are already running another 10 kms (6.2 mi) on the same route to the north of the section already built. The work has been a magnet for engineers and contractors in the region, as we have received numerous technical visits from Uruguay, Argentina, Bolivia, Brazil and Chile who are interested in this technology and future BCOA projects in other countries in the region."

The presentation by the company and the team of collaborators was awarded FIRST PRIZE by Instituto Argentino Portland Cement at the XVI Argentine Congress of Roads and Traffic, held in Cordoba, Argentina, in October 2012. To view the presentation (PDF) by Mrs. Magdalena Pastorini of the National Highways in the PIARC - Buenos Aires, 2011 (in Spanish and some English), please go to: http://www.icpa.org.ar/publico/seminario_piarc/sesiones/icpa/Technical%20Session%20V/Pastorini.pdf.

To view the **VIDEO** by Hormigones Artigas on the work (Spanish), please go to: <http://www.youtube.com/watch?v=2z9P7qbeFig>.

"To read the February 2011 ISCP Newsletter pre-construction article on this project from, please go to: <http://www.concretepavements.org/Membership/Newsletter/FEBRUARY2011Newsletter.pdf>.



Images of the (PDF) Presentation of "The Guyunusa stretch of Route 24 between Route 2 and Route 20"

"Thinning Up" Concrete Overlays for Pavement Preservation, USA



Concrete overlays for asphalt and concrete pavements are thin, and getting thinner. Today, about 60 percent (60%) of concrete overlays are placed on asphalt pavements, compared to the early days when they were almost all on concrete. "There were an estimated 350 concrete overlays placed between 1910 and 1990 in the United States, but it wasn't until the late 1990s that overlays became more prevalent," said Gerald F. Voigt, P.E., *President and CEO of the American Concrete Pavement Association (ACPA)*.

The focus among ACPA's agency partners went beyond overlays on concrete to include overlays on asphalt pavements. "Some of the early groundwork in concrete overlays of asphalt pavements date to the early 1980s. We learned a lot from Iowa, including useful information about thinner concrete overlays," Voigt said.

"Iowa and certain other states started constructing concrete overlays about 30 years ago to meet the mid-range needs of agencies. They turned out to be a long-term serviceability solution for county roads and state highways in Iowa, and for many years, this was our standard approach to overlays," said Dale Harrington, P.E., *Senior Project Engineer, Snyder & Associates, representing the National Concrete Pavement Technology Center at Iowa State University [CP Tech Center]*.

About 60% of concrete overlays are placed on asphalt pavements, compared to the early days when they were almost all on concrete.

ACPA staff posed the question, "Why can't the concrete pavement industry do a 50 mm (2-in) mill-and-fill?" Things began to change in 1991 when the first reported "ultrathin" concrete overlay was placed on asphalt at a landfill in Louisville, Kentucky. "This innovation is illustrative of the benefits that occur when industries compete," Voigt said.

Changing Dynamics Concrete overlays have evolved into a time-tested technology, and increased acceptance has led to increased use. Many factors have led to the increased use of overlays, including the current competitive dynamics of paving media. "Asphalt costs more in the new millennium, so concrete now provides a solution that offers a very competitive first cost. Agencies will get comparable costs and performance to what they will get from an asphalt overlay," Voigt said. With current technology, 100- 125- or 150-mm (4-, 5- or 6-in) concrete overlays may be placed, but 150-mm (6-in) overlays are more common," Voigt said.

Yet the quest for thinner concrete overlays continues, and Voigt is quick to add that solid research, technology transfer and implementation are a major part of this effort. "This is a need-based effort - agencies are starting to apply concrete overlays in preservation solutions," Voigt said.

Engineering Thinner Overlays Voigt attributes the evolution to thinner concrete overlays a result of better understanding of bonding between layers, shorter joint spacing, reliable design methodologies, and improved fiber additive technology. "Concrete overlays have gotten thin enough through science and technology that they are really a resurfacing alternative, and not just a structural overlay consideration only," Voigt said. We pushed for shorter joint spacing to facilitate thinner slabs which removed one of the key failure criteria, so the science has led us to doing shorter panels in the range of 1.5-, 1.8- or 2.1-m (5-, 6- or 7-ft), depending on the configuration. With the 1.5 to 2.1-m (5- to 7-ft) panels, you have only one load per slab, and a very effective pavement."

ACPA has added concrete overlay designs to its newest generation of pavement design software, *StreetPave 12*. The software can be used for all six types:

bonded on asphalt

unbonded on concrete

unbonded on asphalt

bonded on composite

bonded on concrete

unbonded on composite

Voigt said, "Synthetic fibers, and more specifically, macro synthetic fibers, have made a difference for overlays, especially as they get thinner. They provide toughness, are a means of reducing plastic shrinkage cracking potential, and help control differential slab movement. They extend the fatigue factor of the concrete, because the fibers hold cracks, and they contribute to the preservation benefit we are looking for with thinner and thinner pavements."

Technology transfer and Implementation A number of resources have played a significant role in developing thin concrete overlays. The first edition of the *Guide to Concrete Overlays* was produced in 2007 - the product of many public, private and academic experts - who shared their overlay experience and expertise. A second, and broader, edition distribution was completed in 2008. A third edition of the publication is scheduled for later in 2013, Harrington said. ACPA's *National Concrete Overlay Explorer* (<http://apps.acpa.org/apps/Overlaypass.html>) has also been a useful tool in gaining acceptance and use of concrete overlays.

Future of Thin Concrete Overlays Although the current state of the technology is 100- to 150-mm (4- to 6-in) concrete overlays, Voigt said the concrete pavement industry will continue working on the goal to advance the technology to create thinner preservation overlays, as well as to advance thicker structural overlays. "We aim to meet agencies' needs for resurfacing and pavement preservation solutions," Voigt said. "Concrete overlays provide an alternative, therefore agencies can instill competition in their area which leads to improved unit costs. Agencies can do more with the same budget, and the taxpayer wins. It's also helpful for the concrete and asphalt industries to compete. This is one reason we have the range of concrete overlay products we have today ... and will have in the future."

"... the quest for thinner concrete overlays continues"

by Bill Davenport, *Vice President, Communications, ACPA*. Adapted with permission from the Summer 2013 issue of *Pavement Preservation Journal*, <http://fp2.org>.

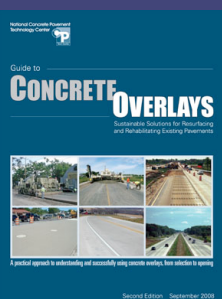
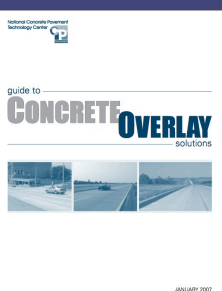
To read the entire *Pavement Preservation Journal* article, please go to: <http://www.nxtbook.com/naylor/FPPQ/FPPQ0213/index.php?startid=9>.



Photos: ACPA
1. 100-mm (4-in) concrete with 1.2-m x 1.2-m (4-ft x 4-ft) joint spacing for a total length of 6.4 km (4 miles). Overlay placed over Illinois Old US66. Designed using latest Illinois DOT design information for whitetopping & ultrathin whitetopping.

2. Workers finish 50-mm (2-in) bonded concrete-on-concrete overlay on the I-35 at the I-435 interchange in Lenexa, Kansas

3. Section of 50 mm (2-in) concrete overlay in Iowa.



ACPA Continues 2 Free On-line Concrete Pavement Courses on Safety & Stringless Paving

The American Concrete Pavement Association (ACPA) continues to offer two (2), FREE, 90-minute web-based instructional modules presented by the ACPA and the U.S. Federal Highway Administration (US-FHWA). These courses provide professional training for paving contractors, agency personnel, consulting engineers, those involved in construction management, project delivery, highway and heavy construction, rehabilitation and preservation.

- Round the clock
- 365 days per year
- FREE
- PDH Credits

Safety on concrete pavement construction sites . . . for those who work on site or visit concrete pavement construction sites.

Proper use of stringless paving technology . . . in the response to the growing interest in stringless paving technology for concrete pavement projects.

To read the full article, featured in the ISCP June 2013 Newsletter, please go to:
<http://www.concretepavements.org/Membership/Newsletter/ISCPJUNE13Newsletter.pdf>.
To register and participate in the courses, please go to: <http://acpa.scholarlab.com/>.
After registering, enter the coupon code: **pavement1** (pavement and the number one).



MIT Report Reviews Role of Roughness in LCA

LCA Research Brief - Uncertainty in IRI incorporated into LCA

The Concrete Sustainability Hub at Massachusetts Institute of Technology (MIT) recently released the research brief "Uncertainty in International Roughness Index (IRI) Incorporated into Life-Cycle Analyses (LCA)." The brief discusses the need of including variations in the IRI predictions from Mechanistic-Empirical Pavement Design Guide (MEPDG) to increase the robustness of LCAs.

The environmental impact of pavement vehicle interaction (PVI) within the entire pavement life cycle can be significant, especially for high-volume roadways. One of the major sources of PVI-based emissions is roughness. There is significant variation in the prediction of IRI evolution, stemming from the uncertainty in the structural and mechanical performance of pavements. The amount by which this uncertainty affects the variation in the estimation of environmental impact can be different, not only for different pavement types, but also for different materials and design features.

Incorporating uncertainty in IRI predictions from MEPDG into LCA models improves the characterization of uncertainty in comparative LCAs, and increases the robustness of conclusions regarding the environmental impact of different pavement alternatives under different scenarios.

MIT reviewed the predictions of IRI evolution throughout time by extracting outputs of PAVEMENTME software, which implements the calculations specified by MEPDG. These curves are used to calibrate a probabilistic model for roughness evolution, which is in turn used to generate trajectories of roughness evolution for different levels of reliability. This model is then incorporated in the LCA to propagate the uncertainty in IRI prediction and calculate the global warming potential (GWP).

The research reported on the IRI-induced GWP for specific jointed plain concrete pavement designs in two different climate scenarios, corresponding to urban interstate highways in dry freeze and dry no freeze climatic regions. For each case, the evolution of IRI-induced GWP within the analysis period are estimated based on 50% and 95% reliability levels in IRI prediction.

To read the entire report, please go to:
<http://web.mit.edu/cshub/news/pdf/CSHub%20June%202013%20LCA.pdf>.

To view additional MIT Research briefs, please go to:
web.mit.edu/cshub.



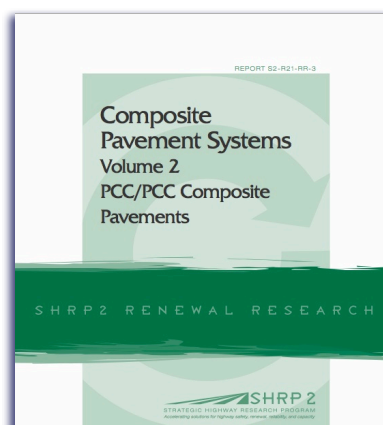
INDUSTRY PUBLICATIONS

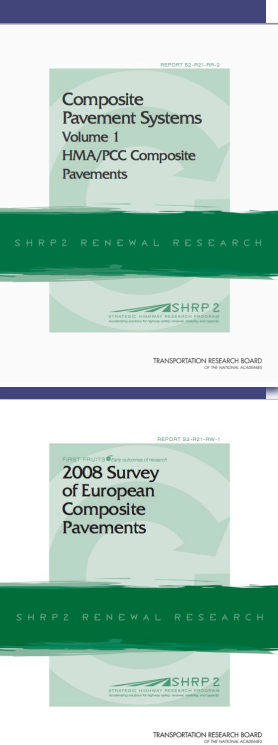
SHRP2 Publication Released: Composite Pavement Systems: Volume 2: PCC/PCC Composite Pavements



A survey of U.S. and international highway agencies conducted under the Strategic Highway Research Program 2 (SHRP 2) R21 project revealed considerable interest in both Hot-Mix Asphalt (HMA)/Portland Cement Concrete (PCC) and PCC/PCC Composite Pavements. Volumes 1 and 2 of the R21 project present the state of the practice and guidelines for designing and constructing new composite pavements. Both volumes detail performance data on existing composite pavement systems and provide step-by-step guidance on the design of composite pavements using mechanistic-empirical design methods for both types of new composite pavements. Both types of composite pavements have strong technical, economical, and sustainable merit in fulfilling the key goals of the SHRP 2 program: long-lived pavements, rapid renewal, and sustainable pavements.

TRB's SHRP 2 Report S2-R21-RR-3: *Composite Pavement Systems, Volume 2, PCC/PCC Composite Pavements* investigates the structural and functional performance of placing a relatively thin, high-quality PCC surface atop a thicker PCC layer. Volume 2 provides guidance on the design and construction of these two-layer, wet-on-wet PCC pavements where the upper





layer is a thin high-quality layer (hard non-polishing aggregate, higher cement content, higher quality binder) and excellent surface characteristics with the lower layer containing a higher percentage of local aggregates and recycled materials. Two composite pavement design strategies were determined to provide both excellent surface characteristics (low noise, very smooth, non-polishing aggregates and durability) that can be rapidly renewed, and long-lasting structural capacity for any level of truck traffic. These two composite pavement design strategies were determined to reflect the SHRP 2 Renewal philosophy of "get in, get out, stay out."

The objectives of this research were to investigate the design and construction of new composite pavement systems. The previous technology for the design and construction of new composite pavements was limited and the structural and functional performances were not well understood or documented. There were no existing mechanistic-empirical (M-E) performance models of these pavement systems, and they need to be developed or improved for use in design, pavement management, and life-cycle cost analysis (LCCA). In addition, the current construction techniques, guidelines and specifications were insufficient to construct composite pavements properly. These types of composite pavements essentially exhibit the advantages of conventional HMA and PCC pavements while minimizing their disadvantages. The research under this study, which was conducted from 2007 to 2011, accomplished the following key goals:

- Objective 1. Determine the behavior, material properties, design factors, and performance parameters for each type of composite pavement.
- Objective 2. Develop and validate M-E-based performance prediction models and design procedures that are consistent with the Mechanistic-Empirical Pavement Design Guide (MEPDG).
- Objective 3. Develop recommendations for construction specifications, techniques, and quality management procedures for adoption by the transportation community.

The paper covers:

Introduction and Background	PCC/PCC Test Sections	PCC/PCC Analysis and Performance Modeling
PCC/PCC Design Guidelines	PCC Construction Guidelines	PCC/PCC Conclusions and Recommendations for Future Research

Both of these new composite pavement systems have shown great promise for providing strong, durable, safe, smooth and quiet pavements that need minimal maintenance.

To read TRB's entire SHRP 2 Report: *S2-R21-RR-3: Composite Pavement Systems, Volume 2, PCC/PCC Composite Pavements* publication and download the PDF, please go to: http://onlinepubs.trb.org/onlinepubs/shrp2/SHRP2_S2-R21-RR-3.pdf.

To read the first report in the series: *Composite Pavement Systems Volume 1: HMA/PCC Pavements*, please go to: <http://www.trb.org/Main/Blurbs/168145.aspx>.

To read the SHRP2 Report S2-R21-RW-1: *2008 Survey of European Composite Pavements*, the project that produced this report, please go to: <http://www.trb.org/Publications/Blurbs/163693.aspx>.

To download the PDF of the appendices to the two-volume report - which provide additional detail, understanding and history on HMA/PCC and PCC/PCC pavements, please go to: <http://onlinepubs.trb.org/onlinepubs/shrp2/SHRP2prepubR21Appendices.pdf>.

BRITPAVE Road & Airfield Pavement Publications Available for Purchase



The British Cementitious Paving Association (BRITPAVE), an independent body established to develop and forward concrete solutions for transport infrastructure, offers road and

airport pavement publications for purchase as hardcopy and as PDF downloads.

Road Pavements:

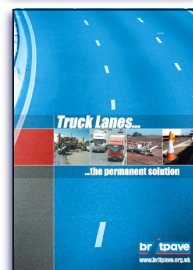
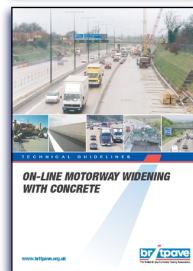
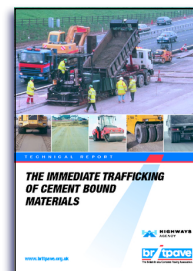
- 1 *Concreting Pavements in Winter*
- 2 *Immediate Trafficking of Cement Bound Materials*
- 3 *Concrete Hardstanding - Design Handbook (2nd Edition)*
- 4 *On-line Motorway Widening with Concrete*
- 5 *Truck Lanes - The Permanent Solution*

To purchase the hard copy or the PDF download of the road pavements publications, please go to: <http://www.britpave.org.uk/shop.ink?CategoryID=122&SubcategoryID=566&club=>.

Airfield Pavements - Guidance Notes:

- 1 *Concrete Joints and Joint Sealing*
- 2 *Design and Evaluation Methods*
- 3 *Principles of Design and Assessment*
- 4 *Surface Finish, Regularity and Texture*
- 5 *Rigid Airfield Pavements* - Provides advice to designers and constructors on the use of keys to provide load transfer at longitudinal joints in concrete airfield pavements.
- 6 *Rigid Airfield Pavements* - Provides the background to the materials used in the design and production of Pavement Quality Concrete.

To purchase the hard copy or the PDF download of the airfields pavements publications, please go to: <http://www.britpave.org.uk/shop.ink?CategoryID=122&SubcategoryID=562&club=>.



CONFERENCE NEWS

BRITPAVE Industry Seminar & Awards Dinner 2013

The British Cementitious Paving Association (BRITPAVE) is holding its Annual Industry Seminar and Awards Dinner 2013 on Thursday, September 26, 2013 at the Staverton Park Hotel, Daventry, Northamptonshire, England. The Seminar theme is 'Invest in Infrastructure'. The seminar is the key industry event for the British transport infrastructure sector providing the opportunity for delegates and guests to be informed of the latest infrastructure issues and developments, and to network with colleagues and industry figures.

The 2013 Britpave Infrastructure Awards Dinner

19:00 Drinks, 20:00 Dinner 21:30 Awards

Invest in Infrastructure Seminar Speakers

Key industry figures will examine the economic and social need to invest in roads, rail, ports and airports. They will discuss the barriers to investment and how these could be overcome and will look at a range of cementitious products that offer long-term, cost-effective and sustainable solutions. Presentations will be on a range of topics relating to Britain's transport infrastructure investment:

Why the UK's transport infrastructure requires increased investment

Andrew Price, *Chief Economist, Halcrow*

Planning for infrastructure – a platform for economic growth?

Keith Mitchell, *Chairman, Peter Brett Asso.; Board Chairman,*

National Infrastructure Planning Asso.

Delivering a better strategic road network – cost effectively

Graham Dalton, *Chief Executive, Highways Agency*

Getting to grips with longitudinal diamond grinding: The long-term frictional performance of longitudinal diamond grinding

Peter Sanders, *Researcher, TRL*

HS2 – An Update

Colin Stewart, *Director, Arup*

Performance of ballastless tracks – perspective of Deutsche Bahn

Dr. Burchard Ripke, *Head of Department, Deutsche Bahn AG*

Developing soil stabilization practice with industry focussed research

Paul Beetham, *Researcher, Loughborough University*

The Awards

The Awards celebrate outstanding United Kingdom (UK) infrastructure projects. There are five (5) specific categories to showcase the achievements of Britpave members in developing and delivering UK infrastructure solutions that are innovative, cost effective, sustainable and with high levels of performance and quality:

1 Major project **2** Minor project **3** Most innovative project **4** Most sustainable **5** Long-term performance

The winning projects will be featured in the *2013 BRITPAVE/New Civil Engineer Insitu Engineering Special Report*. It promises to be a night of surprises and celebration! For all information on the awards:

Rules of Entry, Judging, Directions for Entry and Entry Form, please go to:

<http://www.britpave.org.uk/Uploads/Documents/Originals/21901-Britpave-Awards-Ceremony.pdf>.

Exhibits and Sponsorship

There are a number of exhibition and sponsorship opportunities during the Seminar and Dinner for those companies wishing to use the event as a means to raise their business profile. Exhibition and sponsorship opportunities are available on a first-come first-served basis. For further exhibition and sponsorship details, please contact: The BRITPAVE office: Phone: 0118 402 8915.

For Conference details, please go to:

http://www.britpave.org.uk/uploads/documents/originals/Britpave_Annual_Seminar_2013.pdf?randNo=4699+.

For details and booking form now available, please go to: <http://www.britpave.org.uk/annualSeminar.ink>.

For more information on BRITPAVE, please go to: www.britpave.org.uk.



THESIS ABSTRACT

A NEW PROTOCOL FOR EVALUATING CONCRETE CURING EFFECTIVENESS

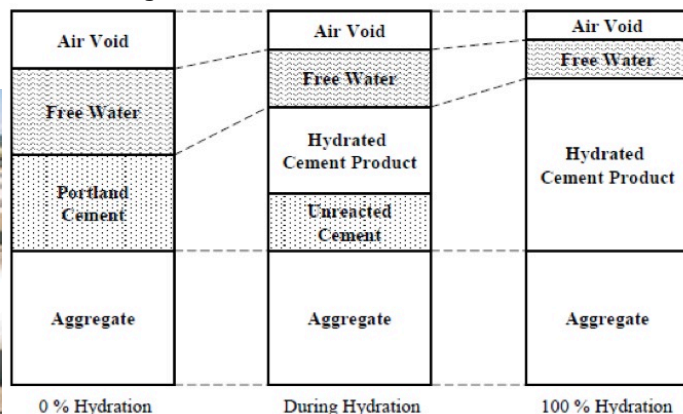
A Thesis by PEIZHI SUN

Chair of Committee: Dan Zollinger;
Committee Members: Robert L. Lytton and Mohammed Haque; *Head of Department:* Robin Autenrieth
August 2013

Excessive early-age concrete surface moisture evaporation causes many problems of concrete pavements, such as plastic shrinkage cracking and delamination; the use of liquid membrane-forming curing compounds is one of the most prevalent methods to mitigate the issues. However, the present standard test, ASTM C 156-98, "Standard Test Method of Water Retention by Concrete Curing Materials" has some inherent limitations in assessing the curing effectiveness of concrete. To better apply curing practices and qualify the curing compound, a new evaluation protocol is introduced in this study.

The new protocol consists of using measured relative humidity and temperature to calculate an effectiveness index (EI) which serves as an indicator of the effectiveness of curing. Moisture loss and surface abrasion resistance measurements were made on concrete specimen, and were found to have significant correlation with EI, where higher EI were associated with lower moisture loss and higher surface abrasion resistance. EI was also found to be sensitive to ambient wind condition, types of curing compound and the application rate of the curing compound. Dielectric constant (DC) measurements were also made on concrete specimens indicating the free moisture content on the surface concrete. The DC measurements were also found to differentiate the quality of curing under different ambient conditions, with various types of the curing compounds and the w/c of the concrete mixture. The utility of using the new protocol to assess concrete curing compound effectiveness was also evaluated under the field condition. Both EI and DC measurements showed potentials to distinguish the curing quality for concrete pavement construction. 5





Call for Papers & Abstracts Digest

August 1, 2013 Due date for papers for the 93rd Annual Transportation Research Board (TRB) to be held January 12-16, 2014 in Washington, DC. To submit a paper by August 1, 2013, please send paper to: <http://pressamp.trb.org/submissions/default.asp?event=756>.



February 1, 2014 Due date for abstracts for the 8th International DUT-Workshop on Research and Innovations for Design of Sustainable and Durable Concrete Pavements to be held September 20-21, 2014 in Prague, Czech Republic. To submit an abstract by February 1, 2014, please send abstract to: Lambert Houben, *Chairman, Delft University of Technology (The Netherlands)*, E-mail: l.j.m.houben@tudelft.nl.



UPCOMING EVENTS

AUGUST 2013

International Symposium of Climatic Effects on Pavement and Geotechnical Infrastructure (ISCEPGI)

August 4-7, 2013 in Fairbanks, Alaska, USA, <https://sites.google.com/site/iscepgiuaf/>.

ASCP Concrete Pavements Conference 2013

August 12, 2013 in Sydney, NSW, Australia
 Conference Brochure and Call for Papers:
<http://www.concretepavements.org/ASCP%20Conference%20Announcement.pdf>.

35th Summer Winter Integrated Field Technologies (SWIFT) Conference (CAPTG)

September 9-12, 2013 in Ottawa, Ontario, Canada
<http://www.swiftconference.org/Benefits.html>.

"Betonstraßentagung 2013": Concrete Pavement Conference 2013

September 19-20, 2013 in Karlsruhe, Germany
www.fgsv.de and English version of the Conference website (through Google Translate):
<http://translate.google.com/translate?hl=&sl=auto&tl=en&u=http%3A%2F%2Fwww.fgsv.de%2F>.

7th International Conference on Concrete under Severe Conditions Environment and Loading (CONSEC'13)

September 23-25, 2013 in Nanjing, China
<http://www.consec13.com>.

Innovative World of Concrete ICI-IWC 2013 and World of Concrete India 2013

October 23-26, 2013 in Hyderabad, Andhra Pradesh, India
<http://www.ici-iwc2013.com/>.

ACPA's 50th Annual Meeting

December 2-6, 2013 in Rio Grande, Puerto Rico
 For additional information, call 847.966.2272.

International Journal of Pavements Conference

December 9-10, 2013 in São Paulo, Brazil
<http://www.ijpavement.com/>.

For events taking place in 2014 and beyond, please go to:
<http://www.concretepavements.org/calendar.htm>.



<https://www.facebook.com/pages/International-Society-for-Concrete-Pavements/127114450634305?ref=ts&fref=ts>



<http://www.linkedin.com/home>

Questions? Please contact moderator Jeff Roesler: jroesler@illinois.edu



The ISCP Newsletter is produced monthly by:
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ISCP invites ISCP members and friends to submit articles and calendar items to the Editor-in-Chief for future issues.

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 Secretary/Treasurer: Neeraj Buch, Ph.D. secretary-treasurer@concretepavements.org

Please visit the ISCP Website at www.concretepavements.org for more information about ISCP.