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ORGANIZATIONAL MEMBERS & MAJOR EVENT SPONSORS:



ISCP NEWS

ISCP Sponsors a 3-Day Seminar in Chile



A 3-day seminar "How to Construct Good Concrete Pavements and Why" was held the first week of September in Viña del Mar, Chile. Organized by The Chilean Ministry of Public Works, The Chilean Cement Institute, and TCPavements, this seminar was sponsored by ISCP and the Chilean Chamber of Construction. The key speakers and presentations were:

- Mark Snyder, *ISCP President*: Construction Procedures
- Thomas Van Dam, *NCE*: Mixture Design, Specifications, and Sustainability
- Nigel Parks, *PNA*: Load Transfer Systems for Thin Pavements
- Victor Roco, *Chief of the National Laboratory*: Innovation in Chilean Contracts
- Mauricio Salgado, *ICH*: Good and Bad Concrete Pavement Practices in Chile
- Erwin Kohler, *Dynatest*: Pavement Performance Measurements
- Juan Pablo Covarrubias, *TCPavements*: Built-in Curl
The Most Recent Version of "OptiPave 2™"

The sixteen (16) sponsor companies had the opportunity to speak about their innovative products in a technology transfer session during the seminar. The attendance was about 170 people mainly from the ministry and contracting community.

There was a site visit to a project near the coast of Chile on the final day. The project was a U-TCP, short panel 1.8 x 1.8 m (6 x 6 ft) fiber-reinforced concrete pavement design, 10-cm (4-in) thick placed directly over the existing gravel road. The cost of the bid was similar to a project with a double asphalt surface treatment. During the visit all the innovations were shown and explained to those in attendance.



INDUSTRY NEWS

200+ Attended German Concrete Pavement Conference

"Betonstraßentagung 2013" (Concrete Pavement Conference 2013) was held September 19-20 in Karlsruhe, Germany. This was one of the best-attended German Concrete Pavement Conferences in recent history - there were more than 230 participants and a dozen exhibitors. While this conference has been held bi-annually for many years, this was the first bi-lingual version of the conference, with simultaneous translation of presentations and discussions in both German and English, which undoubtedly increased international participation in the event.

The conference, which was organized and hosted by FGSV (Die Forschungsgesellschaft für Straßen- und Verkehrswesen – the German Association for Roads and Transportation), included presentations on a wide range of concrete pavement-related topics. Some of the topics, along with many others, included:

- Acoustic Optimization of Concrete Surface Texture from Diamond Grinding
- Long-Term Performance of Concrete Pavements
- End Section Treatments for Longitudinal Expansion of Concrete Pavements
- Concrete Pavement Construction from the Concessionaires Point of View
- Quality Assurance in Construction
- Modular Precast Concrete Repairs
- Recent Developments in Equipment



Stephan Villaret, ISCP Member



Rupert Springenschmid, ISCP Honorary Member & Rolf Brietenbuch, ISCP Member

Mark Snyder, ISCP President delivered a welcome address and introduction to ISCP to attendees, and ISCP Members Rolf Breitenbucher and Stephan Villaret were among the many panelists and presenters. Other ISCP Members in attendance included Luc Rens, Anne Beeldens, John Roberts and ISCP Honorary Member Rupert Springenschmid.

This event is expected to take place next in 2015 at a location that is to be determined.

INDUSTRY PUBLICATIONS

New Guide to Roller-Compacted Concrete Pavements by ERMCO

Roller-Compacted Concrete Pavements (RCC), being a sustainable construction solution, are becoming more popular in many countries worldwide. The European Ready Mixed Concrete Organization (ERMCO), European Concrete Paving Association (EUPAVE) Member, has recently published a brochure entitled "ERMCO Guide to Roller Compacted Concrete for Pavements".

This guide provides an introduction to RCC pavements & a model specification for use in Europe.

RCC is a cement or cement plus type II addition hydraulically-bound material used for constructing pavements and other applications. RCC pavements are a sustainable construction solution. The material is placed with asphalt paving equipment, but needs further compaction by rollers. The surface may be left exposed for low speed or heavy-duty applications, or a thin wearing surface may be applied where improved high speed skid resistance is required. RCC provides a cost effective solution for pavements where rapid construction is needed and reduced maintenance is required.

RCCs are concretes that are capable of being compacted immediately after placing by dead-weight or vibrating rollers. The constituents are the same as for conventional concretes, but the mix proportions differ in that the aggregate grading and content has to be such that the RCC can immediately take load. RCC may be used to provide the base and wearing layers of a pavement.

This Guide provides an introduction to RCC pavements and a model specification for use in Europe. It is not intended to be 'chapter and verse' on RCC, but an introduction to the subject and sufficient information to get started.

To read and download a PDF of the brochure, please go to: <http://www.eupave.eu/documents/technical-information/inventory-of-documents/inventory-of-documents/ermco/ermco-guide-rcc.pdf>.



New TRB Publication: "Durability of Concrete"

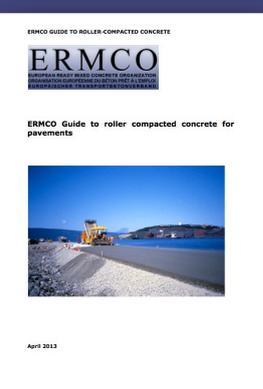
TRB Transportation Research Circular E-C171: "Durability of Concrete: Second Edition" provides information on producing durable concrete for transportation structures and pavements. This circular is an update to Transportation Research Circular 494: "Durability of Concrete", published in 1999. This publication is intended to provide the latest information for consideration by practitioners on producing durable concrete for transportation structures and pavements. Considering the number of facilities that have required repairs and reconstruction before reaching their intended service life, as well as the cost of the rehabilitation and the inconveniences to the traveling public, the importance of constructing long-lasting bridges and pavements continues to capture national attention and remains a high-priority item.

This document is divided into sections introducing each topic and discussing the production of durable concrete through materials selection, proportioning, construction practices, specifications, and testing.

Also included is a section of case studies, providing examples of problems encountered in the field that involve concrete pavement and bridges, along with the proposed solutions by the authors of the studies.

Special appreciation is expressed to Peter Taylor, ISCP Member for overall editing;

... the importance of constructing long-lasting bridges & pavements continues to capture national attention & remains a high-priority item ...



RCC Pavement in Norway

Tattershall Quarry Haul Road, UK
A private, heavy duty access road where RCC was preferred due to the speed of construction. Heavy duty machinery can traffic the road almost immediately after construction. (photo: courtesy of CEMEX UK Materials)

RCC being placed at Tilbury Cocks, London, England.
(photo: courtesy of Aggregate Industries)



Paul Tennis for work in preparing the Introduction, Materials Selection, Proportioning, and Testing sections; Karthik Obla for work in developing the Specifications portion; Prashant Ram for work in preparing the Construction Practices section; Thomas Van Dam, *ISCP Member* for work on the Case Studies section; Heather Dylla for work in updating the References; and many committee members and friends of the committee who have an interest in the subject and experience in the field who made significant contributions. The Durability of Concrete Committee welcomes suggestions from readers and practitioners for future updating of the information.

To download the pdf of "Durability of Concrete", please go to:
<http://onlinepubs.trb.org/onlinepubs/circulars/ec171.pdf>.

MDOT Publication: "Improved Performance of JPCP Overlays"

Will Hansen, *Principal Investigator* and Zhichao Liu, *Graduate Research Assistant*
 Department of Civil & Environmental Engineering University of Michigan
 July 2013

The Michigan Department of Transportation (MDOT) has released a report that assesses the causes of premature distress of recent jointed plain concrete pavement overlay projects in order to restore distressed concrete pavement.

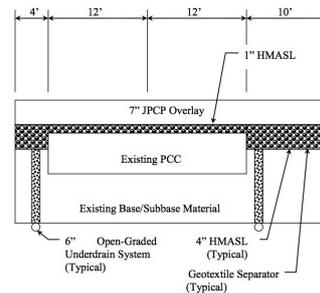


Figure 5.1 New Overlay Drainage System: Thickened Shoulder Design with Open-Graded Underdrains (depending on soil conditions).

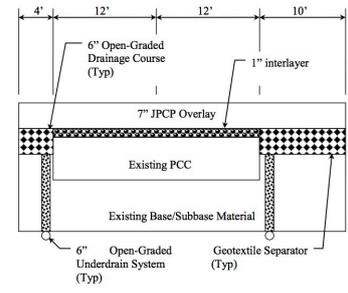


Figure 5.2 New Overlay Drainage System: OGDC Shoulder Design

The overall performance of Michigan concrete overlays has been good. However, some recent jointed plain concrete pavement (JPCP) overlay projects have developed premature distress with signs of pumping. It is suspected that lack of drainage was the main cause for the distresses ranging from corner breaks to longitudinal slab cracking originating at the joint. A joint University of Michigan-Michigan Department of Transportation (UM-MDOT) forensic investigation was initiated in December 2009 to determine the causes for these distresses.

The forensic investigation confirmed that pumping, which is the rapid movement of trapped water from a moving truck axle across a joint, is the major cause of distress, and a result of inadequate drainage. Inadequate drainage was associated with construction related issues ranging from blocking water to reach the drainage trench, to omitting the drainage system. Improved drainage solutions were developed jointly.

Finite element analysis (EverFE) predicts that concrete overlays are more sensitive to developing top-down longitudinal slab cracking from loss of joint support, due to the stiffer slab support condition that exists as compared to JPCP on aggregate bases.

Pavement roughness as measured by International Roughness Index (IRI) complemented forensic investigation results that support the pumping mechanism. Two distinctly different performance stages were identified from IRI results. Initially the percentage of good IRI (IRI < 1.5 m/km) (IRI < 95 in/mi) for a project length is constant and nearly 100%. This is the period where pumping erosion has little, if any structural level effect, but is developing at the sub-structural level. This period is much shorter if drainage is ineffective.

Implementing the findings from this study will enable MDOT to consistently extend the anticipated service life of concrete overlays.

To download the PDF of the entire Michigan Department of Transportation report, please go to:
http://www.michigan.gov/documents/mdot/RC-1574_428433_7.pdf.

Washington State DOT Releases New Publication: "Concrete Pavement Noise"



I-90 Spokane, I-90 Easton, I-5 Federal Way, I-82 Sunnyside, and I-5 Northgate

The Washington State Department of Transportation (WSDOT) has been evaluating new types of pavement and texturing processes with the potential to reduce the amount of freeway noise generated from the interaction of tires rolling across pavement. Other state DOT's have successfully used rubber modified Open Graded Friction Course (OGFC) hot mix asphalt pavements to reduce tire/pavement noise. The American Concrete Paving Association (ACPA) and International Grooving and Grinding Association (IGGA) have supported the development and implementation of a new grinding process for concrete pavements called the Next Generation Concrete Surface (NGCS) which has also been shown to reduce tire/pavement noise. Both of these options have been used on trial installations in Washington between 2006 and 2010. Three OGFC projects were constructed on high volume roadways in the Seattle urban area between 2006 and 2009. A section of NGCS was installed on I-82 near Sunnyside, Washington in October 2010.

The ACPA & IGGA have supported the development & implementation of a new grinding process for concrete pavements: "the Next Generation Concrete Surface (NGCS)" shown to reduce tire/pavement noise.

On-Board Sound Intensity (OBSI) equipment was acquired in early 2006 for the evaluation of these potentially quieter pavements. The OBSI method isolates tire-pavement noise by measuring sound levels just 7.6 cm (3 inches) above where the tire meets the pavement. Three measurements were collected within each test section and results for each date are the average of these three measurements. To evaluate performance for the full

Concrete Pavement Noise
 I-90 Spokane, I-90 Easton, I-5 Federal Way, I-82 Sunnyside, and I-5 Northgate

WA-82 B141 July 2013

With Authors: Tom Searles, Jeff Skovron, Mark Russell, and Benji

WSDOT Research Report

test section, unique locations were measured during each collection period, instead of repeating measurements at the same location within the section. This method is a likely contributor to the variability in the results.

The three hot-mix asphalt OGFC sections were unsuccessful in maintaining noise levels that were audibly quieter than conventional dense graded hot-mix asphalt pavements (report links in Reference section). This document reports the noise results from the NGCS trial section and other concrete pavement projects with carpet drag, transverse tining, longitudinal tining, and conventional diamond ground textures. The results are organized by roadway/location. A summary of the observations and conclusions are provided at the end of the document.

To download the pdf of the publication "Concrete Pavement Noise", please go to:
<http://www.wsdot.wa.gov/research/reports/fullreports/814.1.pdf>.

CONFERENCE NEWS

BENTONWEGENDAG 2013 to be Held October 10 in the Netherlands



The Bentonwegendag Conference will take place October 10, 2013 in Brabantallen 's-Hertogenbosch, Netherlands. The location is at the 1931 Congress of the Brabantallen in 's-Hertogenbosch.

Located in southern Netherlands, it is an historical conference and event venue, on the list of national monuments, that blends modern comfort with authentic character. The

theme of the conference is "**Knowledge from the Source**". After the success of the first conference, it was decided that a Bentonwegendag would be organized every two years.

There are still prejudices about the use of concrete as a paving material in some parts of the world. But continuous new developments, new technologies, various appealing and sound examples of concrete have proven the necessity and function of concrete pavement. The workshops of this Bentonwegendag will have sample projects of a variety of concrete applications. This is a great opportunity for attendees to learn about applications of concrete - from concrete roads to bike paths and roundabouts, bus stops and storage areas for containers.

"**Surface Characteristics**" of concrete pavements is a special topic of one of the Workshops at this year's Bentonwegendag. Pavement characteristics of concrete roads in particular, including texture, skid resistance, rolling resistance, noise reduction and the influential factors and interdependence of these properties.

Exhibitors: Bentonwegendag has a limited number of exhibitors booths. The exhibit hall will be located in the reception room that will be for breaks, lunch and the networking reception. If you'd like this great opportunity to be an exhibitor, please send an e-mail to: wimkramer@cementenbeton.nl, or go online for an application form to: http://translate.googleusercontent.com/translate_c?depth=1&hl=en&rurl=translate.google.com&sl=nl&tl=en&u=http://www.betonwegendag.nl/aanvraagformulier/view/form&usg=ALkJrhgvvv2P3XbmyY7gmFyFuRmiQvhrJQ.

For more information, please go to: <http://translate.google.com/translate?hl=en&sl=nl&tl=en&u=http%3A%2F%2Fwww.betonwegendag.nl%2F>.

For information on the 1931 's-Hertogenbosch complex, please go to: <http://www.1931.nl>.

ACPA 50th Annual Meeting to be Held in Puerto Rico, December 3-6



The American Concrete Pavement Association (ACPA) will hold its Annual Meeting and 50th Anniversary Celebration December 3-6, 2013 at the Wyndham Rio Mar Beach Resort & Spa, Rio Grande, Puerto Rico. This four-day event will celebrate 50 years in the concrete pavement industry, and will look back on the past five decades, but equally important, the meeting will focus on the present and future. The theme is "**Retrospectives and Prospectives**" and conveys an equal balance of celebrating the past; commemorating the present; and looking to the future. The program is crafted with that end in mind!

ACPA Members, nonmembers, affiliated chapter-state employees and government officials will celebrate and recognize industry excellence and commitment through the "Excellence in Concrete Pavement" and "Distinguished Service" Awards. The program includes working meetings and a thought-provoking agenda, including ACPA's time-honored "Concrete Pavement University" (CPU). Several CPU forums will provide for open dialogue on future equipment and materials - topics that have a direct impact on all of our businesses.

To register for the meeting, please go to: <http://events.acpa.org/register/>.

To view the schedule and activities, please go to the Annual Meeting website at: <http://events.acpa.org>.



CONCRETE
PAVEMENT
UNIVERSITY

Earn PDH credits while learning about the latest trends and best practices through these sessions and forums.

ISCP e-NEWSLETTER
VOLUME 10 • NUMBER 9
SEPTEMBER 2013

12th ISCR to be Held in Prague, Czech Republic, September 2014



The European Concrete Paving Association (EUPAVE) and the Czech Research Institute of Binding Materials Prague, in collaboration with the World Road Association (PIARC), are pleased to host the 12th International Symposium on Concrete Roads (ISCR) to be held in Prague, Czech Republic on September 24-26, 2014. The theme of the Symposium is **"Innovative Solutions-Benefitting Society"**.

The innovations not only refer to new developments of materials and concrete mixes, but also to the shift from traditional motorways and trunk roads to infrastructure for other transport modes: rail, tram, bus, bicycles and pedestrians. The use of concrete in public spaces is becoming more and more popular, both in traditional and contemporary styles. Modern long-life pavements are characterized by low environmental impact, low life-cycle cost and durable high-quality surfaces. Light colored surfaces and rigid structures contribute to tackling global warming through the positive aspects of albedo and reduced fuel consumption. Concrete roads are turned into invaluable assets in terms of sustainability, benefiting society.

This Symposium is held every four (4) years and will once again be a top event, gathering experts from industry and government, engineers, infrastructure managers, researchers and other interested participants. Preparations have started in order to offer a mixed program of academic sessions, site visits, daily tours and social activities.

The Welcome Cocktail and the Closing Cocktail, to be held at the *Clarion Congress Hotel Prague*, will provide the opportunity to meet colleagues in a convivial atmosphere.

The Farewell Dinner will be held in the Municipal House (Obecni dum), Prague's foremost Art Nouveau building, and one of the finest in the whole of Europe. During the banquet guests will have a once-in-a-lifetime opportunity to walk through the famous historical halls, magnificent complex of multi-functional rooms, glorious concert hall, and explore the mastery of the most significant Czech painters and sculptors. The historic proclamation of the independent state of Czechoslovakia took place in the palace.

For the official Symposium website, please go to: www.concreteroads2014.org. EUPAVE, the Czech Research Institute of Binding Materials Prague, and PIARC are looking forward to hosting this Symposium in Prague!

CALL FOR ABSTRACTS

Announcement & Call for Abstracts for the International Concrete Sustainability Conference, Boston Massachusetts, USA to be Held May 12-15, 2014

The National Ready Mixed Concrete Association (NRMCA), Ready Mix Concrete (RMC) Research & Education Foundation and the Portland Cement Association (PCA) announce the Call for Abstracts for the 2014 *International Concrete Sustainability Conference, Boston, Massachusetts*, to be held May 12-15, 2014, at the Hyatt Regency in Cambridge. **Abstracts are due November 30, 2013.**

The 9th annual conference will provide learning and networking opportunities on the latest advances, technical knowledge, continuing research, tools and solutions for sustainable concrete manufacturing and construction. Researchers, academics, students, engineers, architects, contractors, concrete producers, public works officials, material suppliers and concrete industry professionals are invited to present and attend the conference. Suggested topics include the latest developments related to design, specifying, manufacturing, testing, construction, maintenance and research of concrete as they relate to sustainability:

- LIFE CYCLE ASSESSMENT - Assessing carbon footprint, embodied energy and other environmental impacts for buildings, infrastructure, and cement and concrete production.
- LOW IMPACT DEVELOPMENT - Pervious pavements and erosion control structures. Urban heat island reduction, light colored pavements, green roofs and cool communities.
- GREEN CONCRETE - Recycled and alternative materials including aggregates, water, cementitious materials, and fuels. Beneficial use of byproducts for cement and concrete production.
- NEW CONCRETE TECHNOLOGY - Durability, extended service life models and validation, performance based specifications to foster sustainability. Innovative concrete production methods.
- SUSTAINABILITY INITIATIVES - Green building codes and standards adopted by building owners, designers, contractors and product manufacturers. Economic incentives and legislation.
- FUNCTIONAL RESILIENCE - High performance concrete applications in buildings and infrastructure, fortified building codes, and community initiatives focusing on disaster resistance and adaptive reuse.

To submit an abstract online by November 30, 2013, please go to: www.concretesustainabilityconference.org.

For questions, please contact: Lionel Lemay | E-mail: llemay@nrmca.org.



The Massachusetts Institute of Technology (MIT) Concrete Sustainability Hub Showcase will be held in conjunction with *The 2014 International Concrete Sustainability Conference* on May 15, 2014.

For the conference website, please go to: <http://www.concretesustainabilityconference.org/>.



Attendees of the 2014 International Concrete Sustainability Conference are eligible to receive up to 18 professional development hours (PDH's), depending on the number of sessions attended.



Optional Walk for Sustainability (additional fee required)

The RMC Research & Education Foundation is hosting the 4th annual Walk for Sustainability Charity Event May 14, 6:30-7:30 AM. This event raises money for the foundation to help meet its goal of helping further the concrete industry through research and education.

Participants are asked to gather pledges for walking on specific route, starting and ending at the Hyatt Regency Cambridge. This event requires an additional fee. Registration information will be on the website soon.

Call for Papers & Abstracts Digest



November 30, 2013 Due date for abstracts for the *2014 International Concrete Sustainability Conference, Boston Massachusetts* to be held May 12-15, 2014, at the Hyatt Regency in Cambridge, Massachusetts. To submit an abstract by November 30, 2013, please go to: www.concretesustainabilityconference.org.

January, 2014 Due date for final papers for *12th International International Symposium on Concrete Roads* to be held September 23-26, 2014 in Prague, Czech Republic. To submit final approved papers, please e-mail: info@eupave.eu. For the website, please go to: <http://www.concreteroads2014.org>.



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 contact: Lambert Houben, *Chairman, Delft University of Technology (The Netherlands)*, E-mail: l.j.m.houben@tudelft.nl.



UPCOMING EVENTS

OCTOBER
2013

Dutch Concrete Road Symposium's-Hertogenbosch

October 10, 2013 in The Netherlands

www.betonwegendag.nl

English: <http://translate.google.com/translate?hl=en&sl=nl&tl=en&u=http%3A%2F%2Fwww.betonwegendag.nl%2F>

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/>

DECEMBER
2013

ACPA's 50th Annual Meeting

December 2-6, 2013 in Rio Grande, Puerto Rico

To register: <http://events.acpa.org/register/>

For additional information, call 847.966.2272

International Journal of Pavements Conference

December 9-10, 2013 in São Paulo, Brazil

<http://www.ijpavement.com/>

JANUARY
2014

93rd Annual Meeting of Transportation Research Board (TRB)

January 12-16, 2014 in Washington, D.C., USA

<http://www.trb.org/AnnualMeeting/AnnualMeeting.aspx>

FEBRUARY
2014

14th International Winter Road Congress

February 4-7, 2014 in Andorra

<http://www.aipcrandorra2014.org/?lang=en>

International Concrete Sustainability Conference, Latin America 2014

February 6-7, 2014 in Medellin, Colombia

<http://www.sustainabilityconf.org/>

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



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ISCP would like to thank **Juan Pablo Covarrubias V - TCPavements** and **Tom Van Dam - CTL Group** for contributions to this newsletter.

ISCP invites ISCP members and friends to submit articles and calendar items to the Editor-in-Chief for future issues.

ISCP President: **Mark B. Snyder, Ph.D., P.E.** president@concretepavements.org

Vice-President: **José T. Balbo, Ph.D.** vice-president@concretepavements.org

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

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

Gavel illustration, page 1: www.ncsl.org | Maps, globes: commons.wikimedia.org
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All additional sources noted on perspective pages.

