



International Society for Concrete Pavements

What's New at ISCP

ISCP e-Newsletter
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President's Message



While January and February are often slow months for many businesses, it has been a busy time for ISCP!

In addition to the recent annual membership meeting (described in another portion of the newsletter), the development of the 9th International Conference has been proceeding rapidly with the development of workshop activities and the submittal and review of papers and presentations. The workshop topics are listed in the registration brochure; anyone who would like to make a contribution to a particular workshop should contact Dr. Jamshid Armaghani (Workshop Chair) at jamshid@bellsouth.net.

Over the past few weeks we have also been working on filling the new committees that have been added to the Society organization. We haven't had many volunteers for the new positions so we plan to start recruiting members for these positions -- first via email and then following up with a formal letter. Each ISCP Board member is expected to either chair or be an active participant on at least one committee, and regular members are needed for these committees as well!

The executive committee is also seeking a number of local/regional coordinators to promote ISCP activities in various regions around the world. The successes of the recently completed international workshops in China, Brazil and South Africa proved that there is a high level of interest in the Society and a desire within the concrete pavement community worldwide to interact with and assist ISCP in transferring concrete pavement technology. Anyone interested in serving ISCP as a local/regional coordinator should contact me directly.

I look forward to seeing as many of you as possible at the 9th Conference in San Francisco in August. Don't forget to register early for the lowest rates!

Dan Zollinger

EUPAVE Collaborates with ISCP

Mr. Carlos Jofré (IECA, SPAIN) attended the January Membership and Board meeting on behalf of the recently formed EUPAVE organization. He made a presentation to the membership describing EUPAVE and the possibility of future collaborations between ISCP and EUPAVE.

EUPAVE is a nonprofit association based in Brussels, BELGIUM and comprising companies and corporations representing cement producers, concrete paving associations, ready-mix producers, equipment and machinery producers and others. Most (but not all) EUPAVE members are based in Europe. The objective of EUPAVE is to study and promote all aspects of cement and concrete contributions to the transport infrastructure, including (but not limited to):

- concrete pavements for roads, airports, ports and railways
- soil stabilization
- cement-treated bases and subbases
- concrete barriers



EUPAVE will also be organizing the International Symposium on Concrete Roads that has previously been organized by Cembureau every four years. The 11th International Symposium will be held in Seville, SPAIN in 2010. These symposia complement ISCP's own International Conferences on Concrete Pavements (also held every four years between the symposia).

There appear to be many opportunities for collaborations between EUPAVE and ISCP, with possible common activities including the production of state-of-the-art documents collecting information from around the world, and the organization and hosting of technical events.

For more information on EUPAVE, please visit their website at www.eupave.eu (under construction).

ISCP Annual Meeting Highlights

The Society held its annual membership and Board meeting on January 12, 2008 at the Marriott Wardman Park Hotel in Washington, D.C. Highlights of the meeting included:

- A report on the results of the August 2007 Strategic Planning Meeting held in South Africa.
- Recognition of new organizational members Fugro Consultants, Inc. and SaLUT, Inc.
- Solicitation of volunteers for various committees (particularly the Activities Committee and Technology Transfer Committee) and liaisons with external organizations.
- The induction of new honorary members Professor Willy Wilk (Swiss Federal Institute of Technology, SWITZERLAND) and Dr. L.R. Kadiyali (L.R. Kadiyali and Associates, Inc., INDIA).
- Presentation and approval of the 2008 Operating Budget.
- A presentation by Mr. Carlos Jofré (IECA, SPAIN) on the recently formed EUPAVE and their activities and goals, as well as their intent for cooperative interaction with ISCP.
- A technical presentation on "Mechanistic Modeling and Full-Scale Tests" by Edward Guo (SRA International, Inc., USA). This presentation was made to document the need for using both mechanistic and full-scale test data in analyses and was also used to announce/promote a new student paper competition (with significant prize money from a cooperating donor foundation). Details concerning the competition will be announced soon and will be described in the next ISCP newsletter.



ISCP President Dan Zollinger (USA), new Honorary Member Professor Willy Wilk (SWITZERLAND), and ISCP Board Member José Balbo (BRAZIL)

An informal group dinner was attended by more than 30 ISCP members and guests after the meeting.

The minutes of the January meeting are available (along with minutes of all other ISCP meetings) on the ISCP website at www.concretepavements.org.

9th Conference Paper Deadline Extended

The deadline for paper submissions for the 9th International Conference on Concrete Pavements is extended to 5pm Eastern Standard Time on February 29th, 2008. The extension was necessary to accommodate difficulties with respect to academic and research cycles in some countries for posting by the February 1st deadline. If you plan to submit a paper by the new deadline, please email Nona Schaler and send the paper to iscp9th@verizon.net.

Call for Abstracts for 2nd Advanced Workshop

The International Society for Concrete Pavements is sponsoring a workshop on “Advanced Characterization, Modeling, and Design of Concrete Pavements” to be held on August 13-15, 2008, in Richmond, California, USA. This workshop will be the second in a series of fundamental workshops sponsored by ISCP. The first in this series of workshops was held at Copper Mountain, Colorado, USA in August 2005. In addition to ISCP, this workshop is being co-sponsored by the following organizations:

- Federal Aviation Administration
- FAA Center for Excellence for Airport Technology at the University of Illinois
- Illinois Center for Transportation at the University of Illinois
- Michigan Tech Transportation Institute at Michigan Technological University
- Pavement Research Institute at the University of Minnesota
- University of California Pavement Research Center

This workshop aims to bring together experts in concrete materials characterization, mechanics, modeling, and design to critically discuss and develop concepts to address existing limitations, lack of knowledge, and future direction for improvement of concrete pavement analysis, design, and construction.

To take part, each participant must submit a short abstract by **March 1, 2008** to workshop organizers [Jeff Roesler](#) or [Lev Khazanovich](#). Full papers are optional, but must be submitted by May 31, 2008 for peer review. Accepted papers will be reviewed and considered for publication in the International Journal of Pavement Engineering (IJPE). Each participant will make a 10-minute presentation and lead a subsequent 10-minute group discussion on the topic. There will also be one brainstorming/problem-solving session dealing with the interpretation of field data and modeling of concrete pavements. Each participant will take an active role in brainstorming sessions and should bring a laptop, references, or other tools that may help in the analysis of this problem.

More information on this workshop can be found online at:

<http://www.concretepavements.org/2ndworkshop/>

Research News

Concrete Pavements Improve Fuel Efficiency

The Pavement Fuel Efficiency Study - Phase III, developed by The Centre for Surface Transportation Technology (CSTT) in Canada provided an independent third-party evaluation to quantify the potential fuel consumption differences when vehicles are driven over three distinct types of pavements: asphalt, concrete and composite (asphalt top-coat over concrete). A highway tractor and tridem van semi-trailer were tested in three loading conditions, at five distinct seasonal conditions (winter, summer day [hot], summer night[cool], fall and spring) and over all three pavement types.

CSTT's conclusions, stemming from the tractor and van semi-trailer fuel consumption testing and subsequent statistical models, show that at 105 km/h (65 mph), on smooth roads, fuel consumption reductions were realized on all concrete roads when compared to asphalt. The savings ranged from 0.40 L/km (0.170 gal/mile) to 0.70 L/km (0.297 gal/mile) when compared to asphalt roads, for both empty and fully loaded vehicle conditions for four of the five seasons. Only the savings during the fifth season, Summer Night, were found to be not statistically significant. These trends were similar for lower speeds 60 km/h (37 mph) when comparing concrete to asphalt, ranging from 0.40 L/km (0.170 gal/mile) to 0.50 L/km (0.213 gal/mile) in favor of concrete.

When comparing concrete roads to composite roads at 105 km/h (65 mph), the results showed that fuel consumption savings ranged from 0.20 L/km (0.085 gal/mile) to 1.48 L/km (0.628 gal/mile) in favor of concrete for most seasonal conditions. The exception was Summer Day, where less fuel was consumed on the composite roads, as compared to concrete.

The report from this study entitled *“Effects of Pavement Structure on Vehicle Fuel Consumption - Phase III and Additional Analysis of the Effect of Pavement Structure on Truck Fuel Consumption”*, by G.W. Taylor and J.D. Patten can be found on the Cement Association of Canada website at:

<http://www.cement.ca/cement.nsf/e/D67E74081BC287DB852572B400627093?OpenDocument>

New TRB Paving Materials and the Urban Climate Subcommittee

Pavements typically comprise 30 to 45 percent of the land area in major cities and contribute significantly to the urban heat island (UHI) effect, through low reflection of solar radiation and high levels of thermal storage. The Transportation Research Board (TRB) Design and Construction Group has established a Paving Materials and the Urban Climate Subcommittee to address the influence of pavements in the formation and mitigation of the UHI and to examine the relationship of pavements to broader climate concerns. The subcommittee's scope includes modeling, design practices, testing, standards development, and planning and policy considerations.

For more information or to become more involved in this new subcommittee AF000(2), please contact Kamil Kaloush at kaloush@asu.edu.

Industry Notes

Maturity Method – Are we there yet?

The maturity method, which correlates the heat of hydration to the strength gain of concrete, provides a simple and reliable method for estimating the in-place concrete strength development. It has been nearly 60 years since this method was developed. Advances in technology now enable quick and efficient placement of recorders during construction and easy-to-use handheld readouts that calculate strength estimates in the field from 30 minutes after placement to 28-day strength. The temperature-strength relationship is unique for each mix so preliminary work on each specific mix is a necessary input.

Despite the ease and non-destructive nature of this valuable information, in-situ maturity measurements are still rare. A recent survey indicated that more than half the agencies in the U.S. do not use this technology at all, and less than 10 percent use this method with any regularity for determining early strength. Problems inhibiting full implementation ranged from lack of understanding the benefits to equipment difficulties, especially with older technology.

To find out more about this and other topics see the newly published NCHRP Synthesis 372, *Emerging Technologies for Construction Delivery, A Synthesis of Highway Practice* at

http://www.trb.org/news/blurb_detail.asp?id=8659

Bryan Perrie Promoted to Managing Director of C&CI

Board member Bryan Perrie is being promoted this May to the Managing Director of the Cement and Concrete Institute in South Africa. Bryan holds a BSc and a MSc from the University of the Witwatersrand and has worked for the Institute for the past 16 years, including several years as C&CI's Technical Manager. He has specialized in all aspects of concrete pavement design and construction and co-authored "*Concrete Industrial Floors on the Ground*", a handbook written specifically for South African conditions. He is also the author of *Low Volume Concrete Roads*.



Visit the Cement and Concrete Institute for more information <http://cnci.org.za/>

Editor-in-Chief receives ASTM Award



Congratulations to our new ISCP Editor-in-Chief, Amanda Bordelon, who was recently received the 2007 Katharine and Bryant Mather Scholarship sponsored by the ASTM International Committee C09, Concrete and Concrete Aggregates. The scholarship is presented each year to an undergraduate or graduate student who is pursuing degrees specializing in cement or concrete materials technology, or concrete construction. As a Ph.D. candidate and graduate research assistant at the University of Illinois at Urbana-Champaign, Amanda has researched fiber-reinforced concrete, fracture mechanics, ultra-thin whitetopping, and multi-functional graded concrete pavement design.

See the article on the award in the *Standardization News* http://www.astm.org/cgi-bin/SoftCart.exe/SNEWS/SEPTEMBER_2007/intl_sep07.html?L+mystore+wptl9782+1203548391

Featured Thesis Abstract

PERFORMANCE OF RIGID PAVEMENTS CONTAINING RECYCLED CONCRETE AGGREGATES

Mr. Jeffrey R. Sturtevant
Master of Science in Civil Engineering (2007)
Department of Civil Engineering
University of New Hampshire, Durham, New Hampshire, USA
Advisor: Professor David L. Gress

With the rising cost and dwindling supply of conventional concrete aggregates, recycled concrete aggregate (RCA) is becoming a more viable alternative in concrete. For almost 40 years, states around the US have paved test sections of roads with RCA concrete, but there have been few studies done to investigate the performance and durability of these RCA pavements.

In 1994, a study of RCA pavements was performed by Dr. Mark Snyder of the University of Minnesota. Nine different RCA pavement sections in 5 states with ages ranging from 6-14 years old were surveyed and cored for laboratory testing.

A second study was performed in the summer of 2006. In addition to revisiting the nine 1994 RCA pavement study sections, two new RCA pavement sections were analyzed. The purpose of the 2006 study was to reevaluate the performance of these aging and highly traveled RCA pavements, as well as their material properties. Similar to 1994, a pavement survey was performed and cores were shipped back to the University of New Hampshire for laboratory testing. Principal tests on the cores included strength testing and multiple tests for Alkali Silicate Reactivity (ASR).

Such factors as ASR and lack of aggregate interlock over undoweled transverse joints did adversely affect some pavement's performance. On the other hand, multiple pavements were rehabilitated since the 1994 study with diamond grinding and retrofitting of dowel bars for load transfer, which had a positive effect on performance. Recycled pavements ranged in age from 18 years to 30 years and all had a Present Serviceability Rating (PSR) of 2.8 or greater.

Overall, 7 different states built acceptable recycled concrete pavements that performed similar to conventional pavements.

Upcoming Events

8th Global Cement Conference

March 3-4, 2008 in Moscow, Russia
<http://www.EuropeanCement.com>

2nd International Symposium on Ultra High Performance Concrete

March 5-7, 2008 in Kassel, Germany
<http://www.uhpc-symposium.de>

ACI Spring Convention: "Design and Construction Compatibility"

March 30 - April 3, 2008 in Los Angeles, California, USA
<http://www.concrete.org/>

First International Symposium on Transportation and Development Innovative Practices

April 24-26, 2008 in Beijing, China
<http://www.jttx.net.cn/tdibp>

11th International Conference on Durability of Building Materials

May 11-14, 2008 in Istanbul, Turkey
<http://www.11dbmc.org>

Symposium on Mechanics of Pavements and Paving Materials

During the inaugural International Conference of the Engineering Mechanics Institute (EM08)

May 18-21, 2008 in Minneapolis, Minnesota, USA

<http://www.ce.umn.edu/em08>

10th International Conference on Application of Advanced Technologies in Transportation - AATT 2008

May 27-31, 2008 in Athens, Greece

<http://www.civil.ntua.gr/aatt>

6th RILEM International Conference on Pavement Cracking

June 16-18, 2008 in Chicago, Illinois, USA

<http://www.ict.uiuc.edu/RILEM>

13th International Conference on Alkali-Aggregate Reaction in Concrete 2008 (ICAAR)

June 16-19, 2008 in Trondheim, Norway

<http://www.icaar2008.org>

2nd International Conference on "Advances in Concrete and Structures"

June 19-21, 2008 in Changsha, China

<http://cipres.hnu.cn/>

6th International Conference on Road and Airfield Pavement Technology

July 20-23, 2008 in Sapporo, Japan

<http://www.jsce.or.jp/committee/pavement/icpt2008.html>



2nd Workshop on Advanced Characterization, Modeling, and Design of Concrete Pavements

August 13-15, 2008 in Richmond, California, USA

<http://www.concretepavements.org/9thiccp/>



9th International Conference on Concrete Pavements

Organized by ISCP

August 17-21, 2008 in San Francisco, California, USA

<http://www.concretepavements.org/9thiccp/>

8th International Conference on Creep, Shrinkage, and Durability of Concrete and Concrete Structures (CONCREEP 8)

September 30 - October 2, 2008 in Ise-Shima, Japan

<http://concrete-lab.civil.nagoya-u.ac.jp/concreep8/>

3rd International Conference on Accelerated Pavement Testing

October 1-3, 2008 in Madrid, Spain

<http://www.cedex.es/apt2008/>

ASCE TD&I Pavement Conference

October 15-18, 2008 in Seattle, Washington, USA

<http://content.asce.org/conferences/pavements2008/>



International Conference on Concrete Pavement Design, Construction, and Rehabilitation

May 25-29, 2009 in Xi'an, China

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

Eighth International Conference on the Bearing Capacity of Roads, Railways and Airfields

June 29 - July 2, 2009 in Champaign, Illinois, USA

<http://www.BCR2A.org>



10th International Conference on Concrete Pavements

Organized by ISCP

Tentatively scheduled for August 2012 in Province of Quebec, Canada

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

If you wish to submit an announcement and/or link for an upcoming conference, meeting, or call for papers for the next ISCP e-newsletter, please contact us at newsletter@concretepavements.org.

The ISCP Newsletter is maintained by Editor-in-Chief, Amanda Bordelon, Associate Editor, Dr. Jake Hiller, and Assistant Editors: Cristian Gaedicke and Nancy Whiting. Suggestions for future e-newsletters are welcomed at newsletter@concretepavements.org.

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