



# The ISAP Reporter

International Society for  
Asphalt Pavements

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10th  
International  
Conference  
Québec 2006

A rendezvous you  
simply can't miss



## ISAP Chairman's Report—Gerald Huber



### The Language of Rocks

The world is made up of many different cultures. People speak different languages. Customs differ. What is socially acceptable in one country is an insult in another. The world traveler knows this. The world traveler changes behavior depending on the country being visited.

It is sometimes said that the asphalt technical community is small and specialized. In some professions it would be unusual to know someone from a foreign country. In the asphalt research community, leading names are well known in many countries. And the language they speak is the same. Air voids, VMA, density, gradation, stiffness are all common terms.

Rocks speak their own language! Rocks (aggregate for the technically correct) make hot mix asphalt that works the same regardless of the country of origin. North America or Europe, Asia or South America, Russia or South Africa asphalt pavements work the same..

The International Society of Asphalt Pavements speaks the language of rocks. These experts from around the world speak the same language. They have the same vocabulary. They have a shared knowledge. Rutting, cracking, raveling and methods to prevent them is the same regardless of the country.

Hot mix asphalt is such a simple material to make. Take some rocks of different sizes, mix with a sticky glue and compact. Nothing could be simpler. Since the 1850s when the first hot mix pavements were built the concept has not changed. But today, we apply modern theories of material mechanics to understand HMA behavior. We find that the composite material made of rock, viscoelastic liquid and air is very complicated. We know more than we once did but we have much to learn.

ISAP seeks to improve asphalt pavements by discovering new truths about an old material. Leading researchers present the latest of their findings. Practitioners and researchers discuss ideas and theories seeking an understanding of the material. The 10<sup>th</sup> international conference on asphalt pavements will be held in Quebec this August. Over 200 papers will be published in the Society's journal. Seven hundred delegates will gather to hear the papers presented.

At the International Society of Asphalt Pavements we speak the same language. Whether Chinese or Canadian, whether French or Farsi, whether American or African, we all speak the language of hot mix asphalt.

**2006 ISAP Conference—Quebec August 12-17, 2006*****10th International Conference on the Asphalt Pavements of Québec  
August 12<sup>th</sup> to 17<sup>th</sup>, 2006***

**A memorable experience awaits you!**



Québec City takes great pleasure in welcoming the 10th International Conference on Asphalt Pavements. The meeting, which will be held in Canada for the first time, will take place in Québec City from August 12<sup>th</sup> – 17<sup>th</sup>, 2006. The Université Laval and the ministère des Transports du Québec will join the International Society for Asphalt Pavements in offering an exceptional visit and an enriching experience for all the delegates and their companions!

A perfect occasion for exchange, the conference will provide a wonderful opportunity to share experience and knowledge, and leading international transportation specialists will have a forum for discussing the most recent technological advances in the pavement domain. The organizing committee is offering a full programme on the scientific as well as the social level, so we're sure you'll have a great time with us in Québec!

**Technical Programme and Exhibition**

contd

**2006 ISAP Conference—Quebec August 12-17,2006**

The technical programme will deal with current concerns and issues: the advances in paving materials, the structural design of new and existing pavements, the long-term performance of pavement, the analysis of pavement and highway operations. The exhibition will distinguish the conference with the number and quality of its exhibitors: consultants, manufacturers, suppliers, technical associations, and government agencies dealing with asphalt pavement will share the floor. You will be able to establish valuable relationships for your organization. Many social activities, such as the gala, cocktail parties, and receptions of all kinds will enhance the time you spend in the marvellous environs of this historic capital city. A variety of industrial visits will also be offered in conjunction with the conference, such as a trip to James Bay that promises to be unforgettable!

***A Meeting not to be Missed!***

More than 700 engineers, specialists, and policy-makers from the public and private sector from all over the world will meet at the Québec City Convention Centre, just two steps from the Hilton Québec hotel, the official conference host. Québec City is unique: you will be seduced by its European charm and its completely North-American hospitality! Join the four million visitors who come to Québec City every year to enjoy safely strolling its picturesque lanes and discovering its magical historical sites, its culture, its restaurants and cafés, its boutiques, its art galleries and museums. The city is a jewel on UNESCO's World Heritage List, and you will discover the charm of this cradle of French civilization in North America! A memorable visit awaits you!

**Dates to Remember**

Preferred-rate registration	<b>April 1, 2006</b>
Hotel reservation	<b>June 1, 2006</b>
Cancellation of registration	<b>June 1, 2006</b>

For more information on the conference, please visit the website at [www.icap2006.fsg.ulaval.ca](http://www.icap2006.fsg.ulaval.ca) or write to us at [icap2006@agoracom.qc.ca](mailto:icap2006@agoracom.qc.ca).

An Informational meeting on ISAP membership will be held on Tuesday, August 15, 2006 from 5:00-6:00 pm at the 10th ISAP Conference.

## News from the South African Bitumen Association (SABA)

### Roads Pavement Forum Task Group on Pavement Design

The Roads Pavement Forum (RPF) adopted a resolution at the RPF meeting of May 2005 to establish a task group to revise the design methods currently used in South Africa for pavement design with specific emphasis on the South African Mechanistic Empirical Design Method. The aim of the task team is to develop a research and development (R&D) framework and a detailed plan that will guide the process of developing a design method for southern Africa. This plan would allow for a range of design applications of varying levels of importance, and would cater for a user group with different levels of design experience. The R&D framework and plan will form the final output from the task team, and will be submitted to the Road Pavement Research Advisory Committee (RPRAC) for execution under the auspices of the RPRAC.

The task group has had two meetings to date, spent mostly on obtaining input on what the latest design developments are in South Africa and gaining different perspectives on the problem and the nature of the required solution. Although initial discussions at first appeared to be completely divergent, a common understanding of what is required is emerging from the process.



### National Asphalt Pavement Association News

FHWA and NAPA will co-host a National Workshop on Percent Within Limit Specifications on November 1 and 2, 2006 at the Adams Mark Hotel in Indianapolis, IN. The Workshop will be focused on the current status of PWL in the U.S., proper development of specifications, and implementation guidelines. It will be open to both industry and agencies that have an interest in Percent Within Limit Specifications. Registration information will be available soon at [www.hotmix.org](http://www.hotmix.org).

NAPA celebrates the 50<sup>th</sup> Anniversary of the Interstate Highway System by releasing a book on the history of Hot Mix Asphalt. NAPA's new 304-page coffee-table book is great for anyone involved in the transportation industry. *Paving the Way: Asphalt in America* is a lavishly illustrated book written by Dan McNichol, author of *The Big Dig* and *The Roads That Built America*.





## ISAP Membership News

The ISAP Board of Directors and some members met on January 21, 2006 in Washington D.C. The Board of Directors and Executive Committee listed on the first page of this newsletter were elected. The membership list shows three patron members, one supporting member, 24 student members, 137 members that are both ISAP and AAPT members and 42 Voting members. Eight organizations are corporate members that have various numbers of members depending on their level of corporate membership. There are also three Association members. In 2005 the Association Membership category was established. All members will have the benefits of ISAP membership including membership registration fees for all conferences and symposia. The Association Member will also have an Ex Officio membership on the Board of Directors. The three Associations are; The U.S. National Asphalt Pavement Association, the Japanese Asphalt Pavement Association and the South African Bituminous Association.

Dr. Gerhard Kennepohl presented the ISAP website annual report prepared by he and Rob Lockhart of Rampant Lion Communications. There were 102,221 hits in 2005. This is up significantly over 65,099 hits in 2004 because of the 10th Conference. The Distinguished Lectures continue to be popular downloads. There have been a total of 30,518 downloads of the Brown lecture and 19,289 of the Haas Lecture. Per Ullidtz' lecture presented at the 9th Conference has been downloaded 27,090 times.

The fifth Distinguished lecture was presented by Carl Monismith at the International Symposium in Design and Construction of Long Lasting Asphalt Pavements in June 2004. Professor Monismith's lecture is now on the website as well. The sixth lecture will be presented by Professor Reynaldo Roque at the 10th ISAP Conference in Quebec August 2006. The subject will relate to low temperature effects on HMA pavements. The University of Waterloo has converted all of the Conference Proceedings to CD format. The following CD's have been published. And are currently available for purchase. The 7th, 8th and 9th Conference CDs are \$25 for members and \$100 for non-members. The 1st-2nd, 3rd-4th and 5th-6th CDs are \$35 each or \$100 for all three.

9<sup>th</sup> Conference – Copenhagen

5th and 6th Conf. – Delft & Ann Arbor

8<sup>th</sup> Conference – Seattle

3rd and 4th Conf.- London & Ann Arbor

7<sup>th</sup> Conference – Nottingham

1st and 2nd- Ann Arbor

The ISAP Technical Committee held an International Workshop on Moisture Induced Damage in Asphalt Mixes in Delft, The Netherlands in November 2005. The Workshop aimed at bringing together a group of experts in asphalt research. There was a consensus that moisture induced damage is a complex problem that cannot be solved individually by any one group. Interdisciplinary work is necessary to progress the research in the field, develop fundamental insight into the various processes involved and demonstrate the implications of the research to the pavement engineering community. The main conclusion of the Workshop was that the semi-empirical research is no longer adequate and can only lead to case-dependent solution. To obtain a generic solution to the problem it will be necessary to perform fundamental research on a micro-scale including fundamental physical, chemical and mechanical processes. A CD of the Workshop is available from the Technical Committee website at a cost of 55 Euros. Revenue from the CD sales will be used to promote the activities of the Technical Committee.



## ISAP Membership News, contd

The ISAP Technical Committee is holding an International conference entitled “**Advanced Characterization of Pavement and Soil Engineering Materials**” on June 20-22, 2007 in Athens, Greece. To get more information, go to the Conference website at: [www.3dfem.org](http://www.3dfem.org)

2nd European Asphalt Technology Association (EATA) Meeting is planned for May 3-4, 2006 in Meriden, Coventry, U.K. EATA is an organization that was established in 2003 with similar aims and structure to the well-established U.S. Association of Asphalt Paving Technologists (AAPT)/ EATA aims to provide a forum on a European scale for regular biennial technical meeting combined with refereed publication of high quality fundamental and applied research on asphalt technology. For further information on the conference and EATA, go to the following website: [www.nottingham.ac.uk/eata](http://www.nottingham.ac.uk/eata)

A conference on **Asphalt Pavements and Environment** will be held on August 18-20, 2008 in Zurich Switzerland. Dr. Manfred Partl has been designated the contact for the Conference. The topic was chosen in order to show and discuss where asphalt pavements can more actively contribute to an environmentally friendly, sustainable development and a more harmonic, resource preserving way of life where roads will continue to play a major role in fulfilling human mobility needs. The symposium is addressed to students, researchers, practitioners and decision makers who have a need and interest to learn and discuss the state of the art as well as the latest environment-related developments and future ideas in asphalt pavement technology. The symposium intends to provide a platform for international networking, identification of synergies and coordinate research efforts. It will also form the basis for a possible formation of a new ISAP technical committee on the environment. Contact the following website for more information: [www.empa.ch/ISAP2008](http://www.empa.ch/ISAP2008)

ISAP Honorary Membership—Dr. Gerhard Kennepohl and Dr. Stephen Brown were elected to ISAP Honorary Membership in 2005. Dr. Kennepohl was presented a plaque commemorating the award. Dr. Brown will be awarded his plaque at the 10th International Conference in Quebec in August.



For further information on ISAP, please visit the ISAP website at: [www.asphalt.org](http://www.asphalt.org)

## **Australian Asphalt Pavement Association (AAPA) National Technology Program Review**

In early 2005 a major review was undertaken to ensure that AAPA's National Technology programs reflected the needs of members, particularly at State level where direct customer focus is an imperative.

To achieve the necessary outcomes AAPA held a National Technology Forum to identify and prioritise National and State technical issues and develop an action plan which provides maximum value to members.

The Technology Forum outcomes also required consideration of future structure and roles of the National and State technical committees.

### **2005 AAPA Program Review Outcomes**

The high priority National technical issues identified at the Forum were:

- The need for a review of a current provisional national asphalt mix design method and performance prediction testing, which was developed through Austroads, the national association of Australian State Road Authorities;
- A national specification framework to achieve longer term consistency across Australia and New Zealand;
- The application of best practice in the development of Stone Mastic Asphalt (SMA) through the review of a current AAPA publication, titled SMA Implementation Guide;
- Precision testing for asphalt test methods to improve competencies in the Industry and provide purchasers with greater confidence in Industry produced test results;
- Further research in association with Austroads, to maximize the quality of Polymer Modified Binders, particularly related to transport and storage.

The loss of technical expertise across industry and State Road Authorities was also identified as a major issue, together with the process for effective Industry interaction with Austroads.

### **Revised Structure and Role of AAPA National Technology Committee**

Having defined a set of more targeted and focused National technical issues, the National Technology Committee is to effectively develop and implement the future Technology program.

Current actions of the new Committee are focused on developing a Technology Program limited to the high priority issues/projects defined at the Technology Forum.



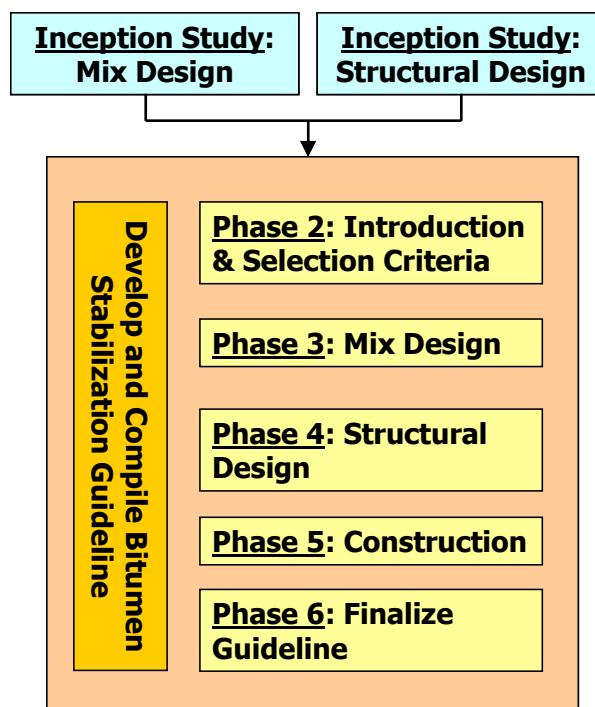
## Updating of the Bituminous Stabilized Materials Guideline for Foamed and Emulsified Bitumen Treated Materials

Emulsified bitumen treated materials have been successfully used in South Africa for many years. Foamed bitumen is a newer technology which has not been as widely used as emulsified bitumen treated materials, but is gaining acceptance as a practical alternative in many design situations. Over the years, several guidelines and design methods were published for these two technologies (examples are Sabita's Manual 14: GEMS – the design and use of granular emulsion mixes, Manual 21: ETB – the design and use of emulsion treated bases, and the Asphalt Academy's Technical Guideline (TG2): Interim Technical Guidelines – The design and use of foamed bitumen treated materials).

A project - jointly funded by Gauteng department of transport and Sabita - is currently underway to revise and improve the guidelines for emulsion and foam treated materials. This project is striving to use the latest information gained from accelerated testing on, as well as observed long term field performance of, pavements that incorporate emulsion and foam treated materials. The general objectives of this project are to update and revise the content of the existing guidelines for emulsion and foam treated materials, and to develop a single guideline that is practical, reliable and that reflects actual observed pavement performance trends. The project will specifically focus on improving the modules relating to materials design (or mix design) and structural design.

This study will comprise several phases, as shown in Figure 1. The inception phase is currently underway and will seek to identify and obtain all available long term performance data as well as accelerated test data on the applicable pavement types. Once this information is collated and analyzed, the project team will identify deficiencies in the available data, which will then be addressed during later stages of the project. The inception phase of the study will be completed in January, 2006. The remaining project phases and updated guideline document is expected to be completed in September, 2006.

**Figure 1: Outline of the Project**





## Association of Asphalt Paving Technologists (AAPT) Update

The 2006 AAPT Annual Meeting and Technical Sessions were held on March 27-29, 2006 at the Hyatt Regency Savannah hotel in Savannah, Georgia. There were 23 papers presented as well as a Government-Industry Forum (titled "Building Better Quality HMA Pavements" and a Symposium (titled "Asphalt Concrete Quality Management with PWL"). The papers, including discussions, as well as the presentations and pictures from the meeting will be included in the Volume 75 hard copy book and CD.

### The following is a summary of the 2006 Symposium:

With declining personnel and the shifting of more responsibility from agency to contractor, many agencies are now using contractor Quality Control (QC) test results with their Quality Assurance (QA) measurements in pay factor determinations. PWL is one concept that has been utilized to encourage uniformity in construction. Charles S. Hughes set the table with "*What in the World is PWL?*". He discussed the various basic concepts of sampling product population and statistical estimates of quality measures and promoted the idea of balancing the risk between agency and contractor. Second, Matthew R. Corrigan provided the federal agency perspective in "*Percent Within Limits as Part of Federal Highway Administration's Quality Initiatives*". He described their promotional efforts which encourage but do not require PWL; he discussed the necessity and benefits for all of using larger independent sample sizes for better estimates and summarized their ongoing QA Field Reviews with the state agencies.

Third, Gale C. Page described the efforts of a state agency in "*Development and Refinement of the Florida Department of Transportation's Percent Within Limits Hot Mix Asphalt Specification*". The PWL specification was implemented in 2002, along with using contractors QC results and FLDOT verification, and the process was reassessed in 2004. As a result, slight modifications were made to the tolerances (limits) on air voids and roadway density of fine-graded mixtures and the small quantity pay factor table.

Fourth, Carl L. Monismith described an alternative approach to pay factor determination in "*Performance Specifications without Percent within Limits (PWLs); a Counter Point of View*". He discussed using relative performance (RP) modeling for both fatigue and rutting to establish the impact on predicted service life in terms of traffic and a cost model to estimate the consequences of a change in the rehabilitation schedule and then compared these results with experience-based Caltrans PWL results on specific projects.

Fifth, James L. Schmidt discussed the use of PWL specifications in "*Experience with PWL on Warranty Projects*". For projects in Missouri and Virginia, he described the quality data, use, analysis, and administration of PWL specifications and demonstrated both the success and limitations within the context of long term expectations as required by 15 and 20 year pavement performance warranties. Sixth, Adam J. T. Hand illustrated the advantages and disadvantages of instituting QA specifications and offered some philosophical challenges in "*A Contractor's Perspective on the PWL Challenge*". He described various issues, such as borrowing specifications from another agency, refining limits based on perception only, achieving AASHTO accreditation in all labs, and the economic impacts of gearing up for increased testing responsibility in terms of rate of return on investment.

After these presentations, we heard prepared discussions from Charles S. Hughes and Richard E. Root, along with responses from the appropriate authors. Finally, the session closed with a lively audience question and answer segment that included a debate on independent sampling, verification testing, and the costs of implementation.

The 2007 Annual Meeting is planned for March 12-14, 2007 at the Crowne Plaza in San Antonio, Texas. AAPT will be accepting paper offers for this meeting starting May 1, 2006. Check the AAPT website below for the 2007 Call for Papers and the link to the site to download the paper offers.

The Proceedings of the 2005 AAPT Annual Meeting and Technical Sessions, Volume 74 is now available. Each AAPT member receives one free copy of the volume. The cost of the volume to others is \$90.00.

Also, AAPT currently has 10 CDs which contain the proceedings from 1949-1998. Each CD contains 5 volumes and the cost for members is \$25 and non-members is \$100. Contact the AAPT office or website for further information.

Membership applications for AAPT are also available on the AAPT website:

[www.asphalttechnology.org](http://www.asphalttechnology.org)

## Upcoming Events

### 2006

Apr 30-May 3	Airfield & Highway Pavements <a href="http://www.asce.org/conferences/pavements2006">www.asce.org/conferences/pavements2006</a>	Atlanta, GA
August 12-17	10th ISAP International Conference on Asphalt Pavements <a href="http://www.icap2006.fsg.ulaval.ca">www.icap2006.fsg.ulaval.ca</a>	Quebec, Canada
Sept 13-15	International Conference on Perpetual Pavement <a href="http://www.ent.ohiou.edu/ce/orite/icpp/icpp.html">www.ent.ohiou.edu/ce/orite/icpp/icpp.html</a>	Columbus, OH
Nov. 5-8	Canadian Technical Asphalt Association <a href="http://www.ctaa.ca">www.ctaa.ca</a>	Charlottetown, Prince Edward Island

### 2007

Jan 21-25	TRB 86th Annual Meeting <a href="http://www.trb.org">www.trb.org</a>	Washington D.C.
Feb 18-22	NAPA 52nd Annual Convention <a href="http://www.hotmix.org">www.hotmix.org</a>	San Francisco
Mar 12-14	AAPT Annual Meeting and Technical Sessions <a href="http://www.asphalttechnology.org">www.asphalttechnology.org</a>	San Antonio, TX
Mar 20-22	World of Asphalt <a href="http://www.worldofasphalt.com">www.worldofasphalt.com</a>	College Park, GA
June 20-22	Advanced Characterization of Pavement & Soil Engineering <a href="http://www.3dfem.org">www.3dfem.org</a>	Athens, Greece

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