

## PCCAS Asphalt Paving Committee Minutes – October 26 & 27, 2004

Co-Chair Brad Neitzke began the meeting by requesting that each attendee make their own introductions. Bob Staugaard stated that the most current Conference/Committee email list had been lost due to a computer problem and requested that each member review and update their email. Co-Chair Rick Holmgren stated that the Paving Asphalt Committee and the Mixture Committee had been combined into the Paving Asphalt Committee by direction of the Conference at the last meeting in Seattle. The Paving Asphalt Committee will now be responsible for both binder and mixture work.

John D'Angelo provided an update on the Binder Expert Task Group's meeting held in September.

For modified systems, he stated that it has become clear to the ETG that some of the same grades have been indicated for use in what would appear to be significant climates, for example a PG 58-22 being shown for both Idaho and Florida. In order better understand the difference between these applications; the ETG has begun to look at temperature frequency and pavement damage versus temperature. A new PG map based on damage has been produced and can be found at <http://tppbind.com> for down loading. The ETG is also looking at the grade ranking of modified and non-modified binders. It has been determined that while these binders may carry the same grade designation, rutting devices such as the APA and the Hamburg have shown there is a difference in stress sensitivity of the materials. In trying to discover a performance-based specification, there has been some investigation into non-recoverable compliance and creep compliance at multiple stress levels. He indicated that the DSR was the equipment being used for both investigations.

On the topic of fatigue, there was a review of the torsional sand mixture test. There appear to be edge effect problems and there is discussion on whether this is a binder or mixture test. There is a significant difference on important parameters of the test that might not be resolved. There is a consensus that an intermediate temperature should be kept in the specifications and while the current parameter does not predict fatigue, it may predict a potential for cracking.

John D'Angelo also provided a brief update of the Mixture Expert Task Group that also met in conjunction with the Binder ETG.

Differences in the current gyratory compactors are current being discussed. There appears to be significant differences in the air voids as produced by different compactors. This has prompted the development of the Dynamic Angle Validator (DAV) for measuring the internal angle of the compactor. Also the Rapid Angle Measurement device (RAM) and the Hot Mix Simulator (HMS) are under review. Also under consideration is the frame stiffness and compliance as sources of the problem.

Another issue of the Mixture ETG is aggregate imaging. Imaging is accomplished using a digital camera as input for computer modeling. Thus far, the procedure has been

promising for shape, surface texture, and angularity. Indications are that surface texture may be a more important factor in performance than angularity. The FHWA trailer is performing the initial work.

The following NCHRP review was presented:

- 9-29 Simple Performance Tester for Superpave Mix Design  
The evaluation is complete and the equipment might be purchased via a pooled fund. The project is due to end November 2005.
- 9-27 Relationships of HMA In-Place Air Voids, Lift Thickness and Permeability  
This project was performed by NCAT and is completed.
- 9-33 A Mix Design Manual for Hot Mix Asphalt  
This project will incorporate the information from the last 10 years into the current Superpave Manual and will include the simple performance tester. An update to the Asphalt Institute's SP-02 publication is also expected. This project is due for completion in August 2006.
- 9-39 Determining the Mixing and Compaction Temperatures of Superpave Asphalt in HMA  
The Request for Proposals is expected in December, 20004.
- 1-40 Facilitating Implementation of Empirical/Mechanistic Design Guide  
This work is being lead by the FHWA and includes a review of the Mechanistic-Empirical Design guide. The guide and the software is till being updated, but the current version is available online. The online version requires that the program be run online and cannot be down loaded for use on individual computers. It is compatible with Superpave and links structural design with materials. Plans are to have a Lead States program on the implementation of the Design Guide. There are also plans for an RFP on the development of a short course.
- 9-36 Laboratory Aging Test  
This project is to evaluate new tests for short term aging in the laboratory and may replace the RTFOT.

The following Task Groups reported:

Asphalt Rubber Task Group – George Way

Two papers prepared at Arizona State University on Asphalt Rubber will be presented at the Transportation Research Board meeting in Washington in December 2005. The papers will address life cycle cost analysis for asphalt rubber and distress assessment of conventional and asphalt rubber pavements. There is work currently being performed by Mactec to refine the procedure for asphalt rubber gap graded mixture design. Two new

ASTM Standards for open graded mixes have been accepted for 2005 publication. They are designated as “Standard Practice for Open-Graded Friction Course” and “Standard Guide for Materials and Construction of OGFC Plant Mixtures”. Round robin testing is expected this winter looking into DSR results for use in as asphalt rubber specification and will use the plate and plate configuration. There was also mention of the relationship between quite pavements and the role of asphalt rubber. The last item was the recognition of the international use of asphalt rubber. Countries currently using asphalt rubber were Canada, Portugal, Spain, South Korea and China.

#### Direct Tension Task Group – Brad Neitzke

The group was asked if there were any known developments in the Direct Tension test. Dave Jones indicated that it was his belief that the required use of the direct tension would probably not happen. John D’Angelo agreed that the test would probably not develop into an accepted specification, but felt that the test should be considered useful.

#### Round Robin Task Group – Shauna Teclemariam

A short introduction stating that the purpose of the group was to increase precision of the tests. Phase III will be a pilot study based on revised test methods, which include improved procedures for improved repeatability and reproducibility. Initial work includes the use of four laboratories and four binders. ANOVA significance that was mild or yes will be corrected and tested against the four labs. If the correction fixes the problems, then twenty laboratories will be used.

#### Discussion on Committee Direction – Rick Holmgren

Non-Recoverable Compliance for identifying modification contribution to high temperature performance could be reviewed by the committee. John D’Angelo will provide the current protocol under consideration.

Review and understand the need for Superpave “Plus” specifications and procedures

Follow closely the mixing and compaction temperature study by NCHRP

Follow progress of the implementation of the mechanistic-empirical design process

Gather agency specifications for paving grades - Bob Staugaard agreed to be the focal point for assembling the specifications.

A motion was made by Shauna Teclemariam and seconded to abandon the current website and initiate a new active website. Motion carried - Bob Staugaard will Chair and Brad Neitzke will be contact for Paving Asphalt Committee.

## PCCAS Cost Proposal – Don Goss

A presentation was made on the current thinking concerning payment of dues and cost of holding committee meetings. Feedback was requested on the statement presented.

## Caltrans Superpave Meeting – Don Powell

Caltrans held a meeting at the Richmond Field Station to obtain the thought and concerns associated with the implementation of Superpave specifications. The following were listed:

- 1) Minimize the number of PG grades
- 2) Uniform use of the specifications
- 3) Indication of location of where grades will be used
- 4) Certification of laboratories
- 5) Discussion of completion of current PG evaluation

Another meeting will be scheduled for January 2005.

## AASHTO Issues – Brad Neitzke

Issues to be considered in the balloting process will be the DSR plate diameter (measure plates to +/- 0.02), Rotational Viscometer (allow sample to equilibrate) and the change in M320 to reflect a Table I and Table II binder eliminating MP-1A. Additionally, load cells in the bending beam have been changed in the Cannon and it is expected that the specification will be changed to allow the use of the new load cells.

## Committee Meetings – Brad Neitzke

A discussion of the needed frequency of committee meetings was held. Consensus of the group was that under current conditions two meetings a year should be sufficient. The next two meeting dates were tentatively set for:

May 17-18, 2005 in Richmond

October 25-26, 2005 at a location to be announced.

Meeting was adjourned Tuesday, October 26, 2005 at approximately 4:30 PM.