

Paving Asphalt Committee Report **May 18-19, 2004**

The Paving Asphalt Committee has met numerous times during the past two years since the last conference held in May 2002. The meetings were held in conjunction with the Mixture Committee.

At the 2002 Conference, three charges were provided to the Paving Asphalt Committee to provide direction for the committee work. These charges are as follows:

- Identify the state of the practice for specifying polymer-modified binders within the framework of the PG specification.
- Continue the evaluation of modifications to the PG Specification.
- All Task Groups continue work on specified charges.

From these three charges the committee directed work efforts through task groups. The task groups in operation over the past two years were Round Robin, Asphalt Rubber, and Direct Tension. A fourth task group on Polymer Modification completed work on methods to specify polymer-modified binders within the PG framework. Each task group developed action items and reported progress to the committee.

The Polymer-Modification task group, led by Michael Dunn (Nevada DOT), completed two phases of testing to determine the applicability of various test methods to identify desirable enhancements provided through modification. The direction of this task force was to review methods within the PG framework in order to eliminate the proliferation of “plus” specifications. After completion of the testing and reviewing the data, the results were inconclusive regarding the use of G^* and δ as parameters. At this point, the task group had completed work on the specific charge and was discontinued. However, the Nevada Department of Transportation is continuing to review data and information obtained from construction projects.

The Round Robin task group, led by Shauna-May TecleMariam (U.S. Oil), provided a detailed report on the results of the first round robin at the 2002 Conference. This report, which was copyrighted by the PCCAS, provided the background information needed to suggest improvements to the test methods. The task group review the various test methods included in the PG binder specification and provided corrections to these methods to members of the binder ETG as well as the ASTM for inclusion in a new published version. To date, neither AASHTO nor ASTM has made substantial changes to the test methods based on the work and results provided by the PCCAS. However, the task group will proceed with a second round robin using modified test methods to verify improvement in the precision and bias of these methods. For this second round robin, numerous asphalts were collected from construction project during the 2003 construction season. This group of asphalts contains every grade specified in the PCCAS as well as some duplicates that contain both modified and non-modified asphalts of the same grade.

The next step for this task group is to perform the second round robin in 2004 utilizing the modified methods and provide a draft report to the Paving Asphalt Committee for review in Spring 2005. Recommendations for test method improvement and precision and bias statements will be forwarded to the appropriate entity for inclusion in the latest publication of the standard method.

The Asphalt Rubber task group, led by George Way (Arizona DOT), is monitoring many activities relating to the performance and specifications of asphalt rubber mixtures. These activities include the following:

- 1) Research at Arizona State University to characterize asphalt rubber mixes using fatigue life, indirect tensile for cold temperature performance, and triaxial type tests for rutting.
- 2) ASTM committee in charge of developing standard practice guide and mix design procedure for mixes with asphalt rubber.
- 3) Arizona DOT research to develop performance based asphalt rubber specification.
- 4) FHWA / Turner Fairbank Highway Research Center evaluating asphalt rubber mixes as part of an ALF study.

Additionally, the Asphalt Rubber task group has worked with the Round Robin task group in evaluation of the DSR test method (cup and plate) to evaluate asphalt rubber. Limited testing has been completed. Additional work with more laboratories and different materials would be necessary to develop test methodology and appropriate precision and bias statements.

The Direct Tension Task Group continues to gather information on the equipment and the progress of the use of this test as part of a specification. The task group, led by Gaylon Baumgardner, is gathering information from round robin testing performed by others in the country. They are also in contact with the FHWA to stay informed as to the current status of the equipment and the test method.

In addition, the Committee is working jointly with the Mixture Committee to examine the influence of a range of binder types on the fatigue response of pavement structures of various thicknesses in representative environmental regions encompassed by the PCCAS. The purpose of this pooled fund study of the PCCAS is to develop information on the relationship between asphalt binder properties and pavement fatigue performance. Determining this relationship will ultimately lead to an appropriate parameter describing the contribution of the asphalt binder to the fatigue resistance of a pavement.

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