

PCCAS
Paving Asphalt Committee Minutes
November 15 – Room 109, UNR, Reno, NV

1) The meeting was called to order at approximately 8:30. Introductions were provided by the attendees.

2) Asphalt Rubber Task Group Update – Sallie Houston

The task group will be looking at an abbreviated round robin with 4 labs to look at RTFO process and address the issue of material coming out of the bottles.

Committee in Caltrans developing specifications regarding coarse ground rubber. The data that came from the most recent PCCAS round robin is being used to develop field blended specifications. Specifications are for binder used in chipseals and for HMA. 3mm gap will be used for all of the DSR testing. This is a draft specification as a starting point. The round robin testing helped Caltrans to look at a performance type specification. Some pilot projects have been constructed by Caltrans using a similar specification. See attached specification for additional details.

Potential for another round robin study to test binders using 30 mesh materials and using plate-on-plate technology.

Still waiting on a finalized report/decisions from the research at UC Davis on the asphalt rubber research. Zia has left the university and it is not clear who will be leading the effort.

3) PAV / DSR Research and Other ETG Items – Mike Anderson

Mike provided an overview of most recent agenda of the Binder ETG. Two items noted below were presented in greater detail.

- *DSR-PAV Test Improvement* – Work is being done by Pavel Kris. Improvements in the method are being driven by the high variability in the test. 17 labs participated in a round robin study and the study included a broad spectrum of DSR and manufacturers. Stage 1 – looking at time for thermal equilibrium. Finding is that cooling to temperature is relatively quick and occurs prior to 10 minutes. Hardening is not a major factor and that the 10 minutes is appropriate for conditioning to equilibrium. Stage 2 – Testing an effect of strain and plate size on variability. No improvement by lowering the strain level. Variability seems to be in the measurement of the modulus and not the phase angle. See presentation for complete conclusions.

Generally, variability cannot be improved by changing strain level or changing plate diameter.

- *Cup and Bob Geometry*. A draft provisional AASHTO standard is being reviewed by a task group. Focusing on high temperature testing and characterization. Goal is to have to have it to AASHTO by 2018 for ballot and to publication in 2019.

Mass loss on -34 and -40 binders have exceeded 1.0%. Task force looking at this issue.

AASHTO T 313, T 315, T 316, T 350. Improved precision and bias statements coming from AASHTO re:source.

All presentation from the most recent Binder ETG meeting can be found at the following link: www.asphaltetgs.org.

4) DSR Time and Testing Study – Scott Sension

Scott provided information regarding the time required to reach stable temperature. This time may vary depending on vendor, condition of the heating unit, and the Peltier elements in the heating unit.

Where the unit operates within the torque range of the machine may have an impact on the variability of the data obtained.

Test data collection will be standard with any equipment manufacturer. Sometimes the PC (especially if it is old) that is collecting the data may not receive the data as fast as the DSR is sending the data. This may mean that although the test is completed, the time delay in obtaining the results is related to PC receiving the data.

To get reliable results it is important to have a well maintained and calibrated device. The trimming procedure also has an influence on the reproducibility.

See presentation for additional information.

Item 4b (added) - Mini Round Robin from Asphalt Institute – Bob Humer

The purpose of the round robin was to determine accuracy of lab testing and compare how the binders (4 different PG76-22 binders) would be graded in the M320 and M332 specifications. All laboratories determined that the binders met M320 specification for PG 76-22. Percent Jnr difference was an issue and would prohibit the binders from meeting the M332 specification. A general conclusion was made that this parameter is a barrier to the implementation of M332 by agencies.

WSDOT is implementing M332 but will exclude Jnr difference from specification compliance and will have this as a report only.

See presentation for additional information.

5) CIR Research at UNR – Peter Sebaaly

A mix design methodology for CIR mixtures has been developed using the gyratory compactor. The method incorporates evaluation at different emulsion rates, water contents, and lime. From the data, an optimum emulsion content can be selected. The mix design methodology used AASHTO T 283 for evaluating for moisture sensitivity. A torque test is also included to determine when the mixture is stable for opening to traffic and raveling test to ensure appropriate cohesive properties. A method was also developed using Hveem compacted specimens.

Rutting model, fatigue model, and reflective cracking testing are the current activities. The goal is ultimately to obtain appropriate mixture values to use in the ME Design process for structural design purposes.

In-place density methods were also evaluated. The study used sand cone, water balloon, and NCAT permeameter to evaluate in-place density immediately after construction. Cores were obtained 14-days after construction (on laboratory compacted) and tested using parafilm and corelok. Sand cone and water balloon values didn't directly correlate parafilm and corelok values. Shift factors and confidence intervals were developed to correlate in-place as constructed density with cores taken 14-days after construction. Sand cone method with parafilm had relatively good correlation on data obtained from field constructed project.

See presentation for additional details.

6) High Binder Replacement Projects in WSDOT – Steve Landers

Steve presented work being done by WSDOT on high binder replacement projects. For these projects, RAP is tested every 1000 tons and RAS every 100 tons for asphalt content and gradation. The maximum binder replacement is 40% of the total binder requirement with a maximum of 20% binder replacement from RAS.

Perform extraction and recovery of recycled binder. Extractions and recovery are performed to obtain a sample of the recovered binder for the purpose of determining the binder grade. From this value, the percent recycling agent and/or binder grade of virgin material is selected to obtain the appropriate grade for the project. The final grade of the binder must meet the performance grade selected for the project.

See presentation for additional details.

7) RTFO Discussion – Shauna Teclemariam

Shauna presented information on variability in Jnr values based on how RTFO residue was obtained for performing the test. Discussion followed on variations that are allowed within the RTFO method.

See presentation for information and data presented.

8) Performance Related Specifications – Richard Duval

Richard presented information on performance specifications development effort that is occurring in FHWA through SHRP. Performance specifications are a continuation of QA specifications – correlate performance to fundamental engineering properties. These specifications will compare design expectations to what was constructed and pay accordingly.

See presentation for discussion on framework and structure for the performance related specification work being done as part of the national initiative.

9) Updates from other PCCAS Committees – Charlie Pan and Andy Clayton

Charlie Pan provided an update on Recycling Committee.

See website for committee minutes.

Andy Clayton provided an update on Emulsion Committee.

See website for committee minutes.

Next meeting dates – April 25, 2018 and November 14, 2018.

Meeting was adjourned at 4:15 PM.

Respectfully submitted – Shauna Teclemariam and Brad Neitzke