

**AASHTO SUBCOMMITTEE ON MATERIALS (SOM)**

**TECHNICAL SECTION (TS) 2c  
ASPHALT-AGGREGATE MIXTURES**

**Mid-Year Web Meeting  
Thursday, March 20, 2014  
1:00 p.m. EDT**

**MEETING AGENDA and MINUTES**

**Action Items are in Red**

1. Call to Order/Opening Remarks/General Business
  
2. Roster –

Attendee	Organization	Attendee	Organization
Allen Myers	Kentucky	Steve Davis	Washington
Tim Ramirez	Pennsylvania	David Kaulfers	Virginia
Georgene Geary	Georgia	John Giannini	Connecticut
Becca Lane	Ontario	Jack Cowser	North Carolina
Heather Beattie	Ontario	Reynolds Toney	Oklahoma
Jim Trepanier	Illinois	Stephanie Horton	Vermont
Cole Mullis	Oregon	Mark Woods	Tennessee
Mike Santi	Idaho	Jesse Oakley III	North Dakota
Oak Metcalfe	Montana	Ron Horner	North Dakota
Jason Davis	Louisiana	Lyndi Blackburn	Alabama
Chris Abadie	Louisiana	Frank Chavez Jr.	California
Francisco Gudiel	Louisiana	Ed Harrigan	NCHRP
Jeff Withee	FHWA	Amir Hanna	NCHRP
Nelson Gibson	FHWA	Mario Paredes	AASHTO
Eric Weaver	FHWA	Haleh Azari	AASHTO
Mike Voth	FHWA	Maria Knake	AASHTO
Mike Rafalowski	FHWA	Bob Lutz	AASHTO
Matt Corrigan	FHWA	Katheryn Malusky	AASHTO
John Bukowski	FHWA	Russell Dabbs	AASHTO
Jack Youtcheff	FHWA	Evan Rothblatt	AASHTO
Cliff Selkinghaus	South Carolina	Brian Johnson	AASHTO
Travis Walbeck	West Virginia	Brian Korschgen	AASHTO
John Crane	West Virginia		

3. Approval of 2013 TS 2c Minutes

There is a motion to approve minutes by Oak Metcalfe (MT). The motion is seconded by Cole Mullis (OR). Motion passes.

#### 4. Old Business

##### 4.1 Review of 2013 SOM Ballot (November-December 2013)

4.1.1 AASHTO R 47, Reducing Samples of Hot Mix Asphalt (HMA) to Testing Size – 46 affirmative/0 negative/7 not returned  
No discussion at this time.

4.1.2 AASHTO T 30, Mechanical Analysis of Extracted Aggregate – 46 affirmative/0 negative/7 not returned

Editorial comments from Kentucky and Missouri.

The appropriate comments will be incorporated into the standard.

Comments from Pennsylvania:

*Section 4.8 will allow producers to question our test results. If AMRL performed a study that indicated the amount of degradation was insignificant, then why do we need the language in Note 2?*

Haleh Azari (AAPRL): A study was done to see if there was a difference between using a mechanical washing device and hand washing. Although there was a statistically significant difference in the results, the differences were still below what is allowable (d2s) by the standard. The aggregates tested have primarily been durable aggregates. She thinks the note should remain because the study did not address other types of aggregates. She has a new method to determine if the loss amount is significant. Tim Ramirez (PA) agrees to move ahead with the standard as published and will work together with Haleh Azari and Allen Myers (KY) to work on this issue.

**Action Item: Tim Ramirez (PA), Haleh Azari (AAPRL), and Allen Myers (KY) will work on getting correct wording into the standard.**

4.1.3 AASHTO T 164, Quantitative Extraction of Asphalt Binder from Hot Mix Asphalt (HMA) – 46 affirmative/0 negative/7 not returned

Editorial comments from Kentucky, Pennsylvania, and South Dakota.

The appropriate comments will be incorporated into the standard.

Comments from South Carolina:

*Calibration of flask with only solvent seems like it could give inaccurate results - does the volume change when the specific gravity of the binder is above 1.000 (usually 1.030-1.040)?*

After discussion with AMRL and Merrill Zwanka (SC), it was decided that no action needs to be taken.

- 4.1.4 AASHTO T 269, Percent Air Voids in Compacted Dense and Open Asphalt Mixtures – 46 affirmative/0 negative/  
7 not returned

Editorial comments from Kentucky.

The appropriate comments will be incorporated into the standard.

- 4.1.5 AASHTO T 287, Asphalt Binder Content of Asphalt Mixtures by the Nuclear Method – 46 affirmative/0 negative/  
7 not returned

- 4.1.6 AASHTO T 305, Determination of Draindown Characteristics in Uncompacted Asphalt Mixtures – 46 affirmative/  
0 negative/7 not returned

Editorial comments from Kentucky and Mississippi.

The appropriate comments will be incorporated into the standard.

- 4.1.7 AASHTO T 319, Quantitative Extraction and Recovery of Asphalt Binder from Asphalt Mixtures – 46 affirmative/  
0 negative/7 not returned

Editorial comments from Kentucky.

The appropriate comments will be incorporated into the standard.

Comments from Arkansas:

*"no mass" is undefined. Because of the use of a M231 G2 balance, readable to 0.1 g, it could be considered understood that the successive masses be identical; however defining the allowed difference such as "masses differ by no more than 0.1 g" would be a clearer approach.*

Comments from Georgia:

*To rewrite 13.1.2.1.*

*Dry the centrifuge bottles, in-line filter, and opened vessel (including inserts) to constant mass in an oven at  $110 \pm 5^\circ \text{C}$ , until no mass loss would be more than 0.1% (over 10 minutes).*

Comments from Pennsylvania:

*In Section 13.1.2.1, revise from proposed to read "in an oven at  $110 \pm 5^\circ \text{C}$ . Before determining mass, allow bottles, in-line filter, and opened vessel to cool to room*

*temperature. Determine constant mass when two consecutive mass readings taken 10 minutes apart are the same."*

WAQTC defined it further and Allen Meyers (KY) allowed the subcommittee a chance to view the proposed change. Allen agreed with the change, but thinks the change is going to be more than editorial. He proposes the standard be published as balloted, and the changes be balloted in the fall. Oak Metcalfe (MT) has no issue, and Cole Mullis (OR) also likes the proposed language. Jack Cowsert (NC) says there is no current definition for constant mass that applies to all AASHTO standards.

**Action Item: The standard will be turned back over to the WAQTC to develop the appropriate wording for the fall ballot.**

4.1.8 AASHTO T 324, Hamburg Wheel-Track Testing of Compacted Hot Mix Asphalt (HMA) – 44 affirmative/2 negative/  
7 not returned

Editorial comments from Arizona, FHWA, and Missouri.

The appropriate comments will be incorporated into the standard.

Negative from Georgia:

*Showing wrong version. Current version is 324-11.*

Negative from Pennsylvania:

*The version shown in the minutes is not the most recent version. The version of T 324 in the minutes is from 2010. The most recent version is 2011. The proposed changes were not identified in the minutes. The most recent version was not in the minutes, which is why we are responding with a negative vote.*

The correct changes were made to the 2011 version. The fact that the draft indicated 2010 was a typographical error. A summary of the changes were sent to GA and they withdrew their negative vote. PA also withdraws their negative vote. T324 will be published as balloted.

## 4.2 Task Forces

4.2.1 Task Force 2c-2008-02 – The members of this group are Kansas (Rick Kreider) and FHWA (Tom Harman and Mike Rafalowski). This task force was requested to provide a recommendation for the appropriate requirements, namely amplitude and frequency, for mechanical agitation devices in AASHTO T 209, *Theoretical Maximum Specific Gravity (Gmm) and Density of Hot Mix Asphalt (HMA)*. The original

charge of this group is being addressed through research conducted by the AASHTO Advanced Pavement Research Laboratory (AAPRL). ***Maria Knake (AMRL) to arrange webinar with Haleh Azari (AAPRL) to discuss AAPRL research findings concerning amplitude, frequency, and duration of vibration on table.***

A webinar was planned, but did not occur. It will be arranged in the spring before the meeting. Haleh Azari will work with Maria Knake to schedule the webinar.

4.2.2 Task Force 2c-2008-06 – Representatives from Georgia (Georgene Geary), Illinois, Indiana (Ron Walker), Maine (Rick Bradbury), and New Mexico (Bryce Simons) comprise this group, formed to consider the inclusion of additional options for the quartering procedure in AASHTO R 47, *Reducing Samples of Hot Mix Asphalt (HMA) to Testing Size*. Mr. Bradbury will serve as the chair. ***Work continues in Maine. Experimental plan developed by Ron Walker (Indiana) to evaluate riffle splitting. Task force extended.***

No comments or updates at this time.

4.2.3 Task Force 2c-2010-01 – TS 2c established this task force to address AASHTO TP 82, *Bulk Specific Gravity of Compacted Bituminous Mixtures Using Water Displacement Measured by Pressure Sensor*. Representatives from AASHTO (Haleh Azari), FHWA (Matt Corrigan), the Gilson Company (Jim Bibler), and Washington constitute this group. Task Force 2c-2010-01 was charged to generally improve the procedure and incorporate the comments from the 2009 SOM ballot into TP 82 as appropriate. Specifically, more details are needed on the water displacement measurement equipment. This group will also evaluate the precision of this provisional test method and compare the values to existing equipment utilized to measure  $G_{mb}$ . ***Matt Corrigan (FHWA) reports that data continue to be collected. Ask Chairman Baker about status.***

Tom Baker was the chair, so a new chair will need to be appointed. Matt Corrigan has one of the devices and they are collecting data through the FHWA mobile trailer. He has no data that is ready to report.

4.2.4 Task Force 2c-2010-02 – This task force involves AASHTO T 166, *Bulk Specific Gravity ( $G_{mb}$ ) of Compacted Hot Mix Asphalt (HMA) Using Saturated Surface-Dry Specimens*, and T 331, *Bulk Specific Gravity ( $G_{mb}$ ) and Density of Compacted Hot Mix Asphalt (HMA) Using Automatic Vacuum Sealing Method*. The FHWA Asphalt Mixture Expert Task Group

(ETG) evaluated AASHTO T 166 and compared it to other procedures for measuring  $G_{mb}$ . The ETG recommended the expanded use of the vacuum sealing procedure, AASHTO T 331. Task Force 2c-2010-02 will consider the report on these items and the resulting effect on the applicable TS 2c standards. This group includes representatives from the consulting industry (John D'Angelo), FHWA (John Bukowski), Georgia (Georgene Geary), Idaho (Mike Santi), Indiana (Ron Walker), Virginia (Bill Bailey), and Washington. Ms. Geary serves as the chair for this task force. *Pennsylvania and Indiana report significant differences between procedures, paraffin sealing and vacuum sealing. Ron Walker (Indiana) reported extensive testing that revealed a difference of approximately 3 percent. Major issue is recommendation to use vacuum sealing when water absorption exceeds 1 percent.*

*Georgene Geary (Georgia) plans to raise subject at September meeting of Mix ETG. John Bukowski (FHWA) responds that issue has been discussed at length within ETG. Discussion of FHWA Tech Brief. Work of task force continues to identify standards affected by recommendations in Tech Brief and modify those standards for future ballot.*

Georgene will have a “recommendation for direction” ready for the summer meeting.

- 4.2.5 Task Force 2c-2012-01 – TS 2c established this task force to address the negative votes and comments for AASHTO T 324, *Hamburg Wheel-Track Testing of Compacted Hot Mix Asphalt (HMA)*, as received on the 2010 SOM ballot. Additionally, the group proposed general improvements to the method and considered accommodations for the APA Jr. Representatives from Colorado, FHWA (Matt Corrigan), Illinois, Louisiana (Chris Abadie), Montana, Pennsylvania (Tim Ramirez), Texas (Darren Hazlett), and Utah (Scott Andrus) constitute this task force. Mr. Andrus serves as the chair for this group. *Ron Collins from Pavement Technology inquired about development of calculations for Stripping Inflection Point (SIP). Revised T 324 as updated by task force to address previous negative votes and comments to be presented on 2013 concurrent SOM ballot. Not all issues were resolved. Scott Andrus (Utah) recommends another task force to consider inclusion of APA, Jr. Insufficient data exist to fully address APA, Jr. Pennsylvania uses APA, Jr. and supports its inclusion in T 324. Standard was developed for single device, but more options are now available. Haleh Azari*

*(AAPRL) is completing research project developing precision and bias statement. Report will contain additional recommendations for sample preparation and handling. Matt Corrigan (FHWA) to develop NCHRP research statement comparing different types of loaded wheel testers.*

Incorporating the APA Jr. into the standard is a bigger task than anticipated. Matt Corrigan (FHWA) states that the equipment requirements and the specimen fabrication are the major issues. A 20-7 proposal has been written and accepted to attempt to tackle the equipment issues. Most states are represented and most equipment manufacturers are also represented. The task force will have to handle the issue of the specimen fabrication. The 20-7 will take approximately 12-15 months. The task force will be preserved, but the focus should be changed to specimen fabrication.

## 5. New Business

- 5.1 NCHRP Issues – An NCHRP 20-7 proposal, *Hamburg Wheel Track Test Equipment Requirements and Improvements to AASHTO T 324*, was submitted in October 2013.

This item was discussed during task force 2c-2012-01 discussion.

### 5.2 Proposed New Standards

- 5.2.1 T 2014-01 – The Western Alliance for Quality Transportation Construction (WAQTC) has proposed two new test procedures. The first method is *In-Place Density of Bituminous Mixes by Nuclear Methods*.

- 5.2.2 T 2014-02 – The second standard developed by WAQTC is *Sampling Hot-Mix Asphalt (HMA) After Compaction (Obtaining Cores)*.

Cole Mullis (OR): WAQTC has been using these standards (T 2014-01 and T 2014-02) for years and wants to see them made into AASHTO versions. Allen Myers (KY) asks if the standards are ready for a full committee ballot for the fall.

**Action Items: The standards will be put on the concurrent ballot in the fall.**

- 5.2.3 TP 2014-03 – Two new standards were developed from the NCHRP 9-40 project, *Optimization of Tack Coat for HMA Placement*, as conducted by the Louisiana Transportation Research Center (LTRC). The first standard originating from NCHRP 9-40 is a test for determining the interlayer shear strength of asphalt pavement layers. LTRC developed the Louisiana Interlayer Shear Strength Tester to characterize the interface shear strength of cylindrical specimens.



5.2.4 TP 2014-04 – The second method concerning tack materials is a test for determining the tack coat quality of asphalt pavement in the field or laboratory. The procedure involves desiccating a tacked surface, adjusting the temperature of the surface to the specified value, and applying a compressive load to the tacked pavement surface. The maximum tensile strength is measured to determine the quality of the material.

Allen Myers (KY) wants to know if there is still interest from the committee on these two standards. Matt Corrigan points out that these were the product of an NCHRP product and were originally intended to be an AASHTO standard.

**Action Items: Ed Harrigan (NCHRP) will send digital copies to Allen Myers (KY). They will be sent to the tech section ballot in the spring.**

5.3 Standard Requiring Reconfirmation – AASHTO T 308-10, *Determining the Asphalt Binder Content of Hot Mix Asphalt (HMA) by the Ignition Method*, requires reconfirmation this year.

This will go on the tech section ballot in the spring. Project 9-56 is beginning and will be ready sometime in 2016.

5.4 Provisional Standards Requiring Extension

5.4.1 AASHTO TP 72-08 (2012), *Quantitative Determination of the Percentage of Lime in Hot Mix Asphalt (HMA)*, is due for a one-year extension in 2014.

This will be put on the ballot for the fall for a 1-year extension.

5.4.2 AASHTO TP 82-10 (2012), *Bulk Specific Gravity of Compacted Bituminous Mixtures Using Water Displacement Measured by Pressure Sensor*, is due for a two-year extension in 2014. The extension may be accomplished by voice vote during the web meeting.

A motion is made to continue as a provisional standard by (FL?). The motion is seconded by Ron Horner (ND). Motion passes. TP82 will be extended for two years.

5.5 TS 2c Research Liaison – Any volunteers?

Contact Allen Myers (KY) if you are interested.

5.6 Other Items

Brian Johnson (AASHTO) points out that a vice-chair is needed. Allen Myers (KY) has a few possibilities in the works.

Becca Lane and Heather Beattie (Ontario Ministry of Transportation) asked about solvent extraction exposure limits. The exposure limit for



1-Bromopropane is being changed. They want to know if anyone is aware of the change. The exposure limit is going from 10 ppm to 0.1 ppm. They have done exposure studies at their facility and have found that the exposure has been below 10 ppm, but above 0.1 ppm. Chris Abadie (LA) says that they have done similar studies at his facility with the same conclusions. Matt Corrigan (FHWA) asked if the change was specific to that solvent or if it was for all solvents? They are not sure. Oak Metcalfe (MT) is looking on the CDC website and verified the change to 1-Bromopropane. The change is not for all solvents. They ask that if anyone is aware of the implications of the change to contact them. Allen Myers (KY) asks if the solvent is permitted by T164? 1-Bromopropane is equivalent to N-propyl-bromide. Brian Johnson (AASHTO) suggests terpene extracts, and will send out information to the group.

6. Adjourn

There is a motion to adjourn by Chris Abadie (LA). The motion is seconded by Georgene Geary (GA). Meeting adjourned.

TS 2c Meeting Summary

<b>Meeting Date:</b>	March 20, 2014	
<b>Items approved by the TS for Subcommittee Ballot:</b>		
<b>Standard Designation</b>	<b>Summary of Proposed Changes</b>	<b>Subcommittee Only or Concurrent?</b>
T 319	<ul style="list-style-type: none"> <li>• WAQTC will ballot “constant mass”</li> </ul>	SOM
T 308-10	<ul style="list-style-type: none"> <li>• Needs to be balloted for reapproval</li> </ul>	SOM
TP 72	<ul style="list-style-type: none"> <li>• Needs a one-year extension</li> </ul>	SOM
<i>TP 82-10 (2012)</i>	<ul style="list-style-type: none"> <li>• Reapproved at the meeting for 2 years (not sure if anything else needs to be done)</li> </ul>	n/a
<i>T xxx-14</i>	<ul style="list-style-type: none"> <li>• WAQTC has proposed an In-Place Density of Bituminous Mixes by Nuclear Method</li> </ul>	concurrent
<i>T xxx-14</i>	<ul style="list-style-type: none"> <li>• Sampling Hot-Mix Asphalt (HMA) After Compaction (Obtaining Cores)</li> </ul>	concurrent
<i>TP xxx-14</i>	<ul style="list-style-type: none"> <li>• Test for determining the interlayer shear strength of asphalt pavement layers</li> </ul>	Tech Section
<i>TP xxx-14</i>	<ul style="list-style-type: none"> <li>• Test for determining the tack coat quality of asphalt pavement in the field or laboratory</li> </ul>	Tech Section
<b>New Task Forces Formed</b>		
<b>Task Force Name</b>	<b>Summary of Task</b>	<b>Names of TF Members</b>
	<ul style="list-style-type: none"> <li>•</li> </ul>	

#### Other Action Items

- T 30: Tim Ramirez (PA), Haleh Azari (AAPRL), and Allen Myers (KY) will work on getting correct wording about the use of mechanical washers into the standard.
- T 319: WAQTC will look at “constant mass” and come up with language that is similar to other standards in the TS.
- Task Force 2c-2008-02 on T 209: webinar needs to be scheduled by Haleh Azari (AAPRL)
- Task Force 2c-2008-06 on R 47: work continues – task force extended
- Task Force 2c-2010-01 on TP 82: data continues to be collected. The task force needs a chair – Matt Corrigan (FHWA)?
- Task Force 2c-2010-02 on bulk specific gravity differences: FHWA recommends using the vacuum sealing method, but there continue to be questions. Georgene Geary (GA) plans to have a recommendation for the next meeting.
- Task Force 2c-2010-02 on T 324: APA Jr. and others need to be incorporated into T 324. FHWA put out a NCHRP 20-7 proposal to tackle the equipment issues.
- Ed Harrigan (NCHRP) will send digital copies of the two provisional standards that resulted from NCHRP 9-40 to Allen Myers for TS ballot this year.
- Brian Johnson (AASHTO) needs to send information about different solvents used in T 164. That was already done.