

Technical Section 2a Webinar

Emulsified Asphalts

Agenda

March 18, 2014

Attendees: Katheryn Malusky (AASHTO), Jesse Oakley (NV), Charlie Pan (NV), Georgene Geary (GA), Eric Biehl (OH), Al Vasquez (CA), Oak Metcalfe (MT), Cliff Selkinghaus (SC), Todd Whittington (NC), Dawn Richards (AR), Mike Santi (ID), Mike Voth (FHWA), Tanya Nash (FL), Brian Johnson (AASHTO), Troy Lehigh (PA), Chris Peoples (NC), Eileen Sheehy (NJ), Jason Davis (LA), Russell Dabbs (AASHTO), Colin Franco (RI), Timothy Ramirez (PA), Scott Seiter (OK), Brian Korschgen (AASHTO), Bill Bailey (VA), Tracy Barnhart (AASHTO), Robert Lutz (AASHTO), Matthew Campbell (WV), Angela Cable (VA), Maria Knake (AASHTO), Steve Davis (WA), David Webb (FL), Mario Paredes (FL/AASHTO), Allen Myers (KY), Tamara Bumgardner (KY), Lyndi Blackburn (AL), Angela Beyke (VA), Christopher Dirga (CT), Evan Rothblatt (AASHTO), Ron Horner (ND), Doug Greenwood (AL), Howard Anderson, Raffaele Donata (CT), Sharon Taylor (ND), Tracey Hall (CA)

Roll Call:

- Present States on the call: NV, GA, OH, CA, MT, SC, NC, AR, ID, FHWA, FL, PA, NC, NJ, LA, RI, OK, VA, WV, WA, KY, ND, AL, CT
 - o Majority would be 18 for voting purposes during this call.

North Carolina Motions to approve minutes from Stateline, Nevada on August 8, 2013. FHWA seconded the motion and the motion passed.

A. Update on provisional standards by Colin Franco, Rhode Island

- This task force is moving along. 6 standards have been submitted. This task force has an experts group and a friends group. The expert group is divided into several different categories. Any issues that come up are sent to these expert groups for review. Dr. Andrew Hans from University of WI went over the 6 provisional standards. Colin hasn't received anything back from these subcommittees (expert groups) with these 6 standards. The responses were supposed to be received by January; hopefully, responses will be received within the next couple weeks. They are working on a design spec and practice for microsurfacing and chipseals and on a "Best practices" for these two products. About 15 other products to proceed on after these two are done. Colin will have something for the committee by May. **Colin will send Ron information concerning the discussions had at the subcommittee level.**

B. Reconfirmed Standards that will be published in the 2014 34th Edition

All standards were approved by Technical Section ballot in July 2013

Affirmative 12 of 16, Negative 0 of 16, No vote 4 of 16

M 208 Cationic Emulsified Asphalt

T 50 Float Test for Bituminous Materials

T 302 Polymer Content of Polymer-Modified Emulsified Asphalt Residue and Asphalt Binders

T 78 Distillation of Cutback Asphalt

-These 4 standards will move forward.

Provisional Standards

Provisional standards were unanimously approved by voice ballot at the August 2013 SOM meeting in State Line Nevada. The standards will be extended for two years.

PP 71 Certifying Suppliers of Emulsified Asphalt

PP 72 Recovering Residues from Emulsified Asphalt Using Low-Temperature Evaporative Techniques

TP 91 Determining Asphalt Binder Bond Strength by Means of the Asphalt Bond Strength (ABS) Test

TP 91 will be balloted this spring. Prior comments and questions were addressed by Andrew Hanz, University of Wisconsin

- These standards have been approved for a 2 year extension.

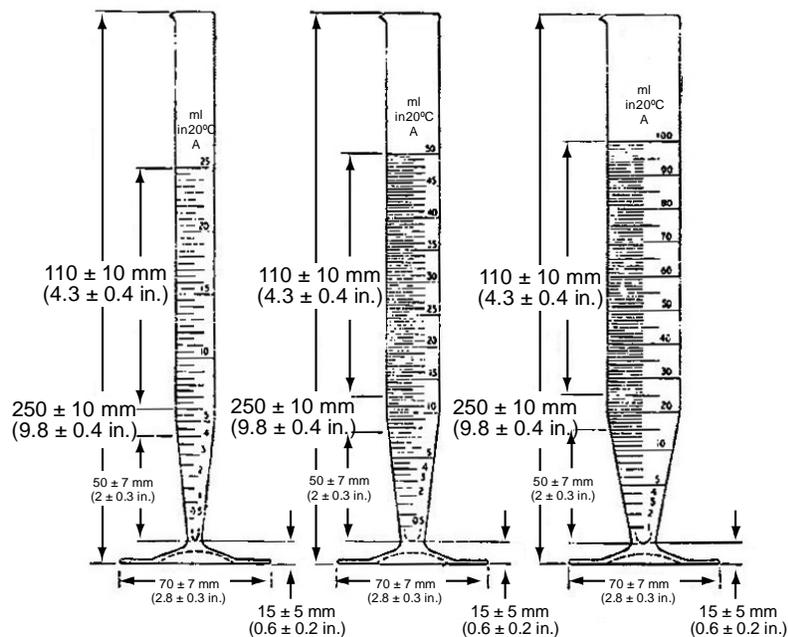
T 78, Distillation of Cutback Asphalt - Figure 4 – Crow Receivers

Background – T 78 was reconfirmed in July 2013 by tech section ballot and balloted changes included removing British references.

Excerpt from Standard

5.7 *Receiver*—A standard 100-mL (3.4-oz) graduated cylinder conforming to the dimensions of ASTM E 133, or a 100 mL (3.4-oz) Crow receiver as shown in Figure 4.

- - For this test method, the crow receivers are still in the standard. Are states using these or are just using a graduated cylinder? NJ is using a graduated cylinder. There weren't any states on the call that use crow receivers. Both the graduated cylinders and crow receivers will be included in the standard.



Note—All dimensions are in millimeters (inches).

Figure 1—Crow Receivers of 25-mL (0.8-oz), 50-mL (1.7-oz), and 100-mL (3.4-oz) Capacity

Figure 4 currently shows only Crow Receivers with numerous measurements including tolerances. Since the reference to the British standard is no longer listed should this figure should be replaced with a graduated cylinder or remove the measurements and tolerances and leave, but also include a diagram of allowed cylinders?

C. T 59 Emulsified Asphalts

T 59 was voted on by SOM Ballot in the fall of 2013.

45 Affirmative of 53

1 Negative of 53

7 No-Vote

T 59 received numerous comments including a negative vote from Arkansas. Due to the amount of comments and questions received it was decided to republish the 2013 version in the 2014 publication.

T 59 will be balloted by a tech section ballot and SOM ballot in 2014.

Numerous editorial comments were also received and will be incorporated.

T 59 Comments received – (with AMRL response)

Kentucky Transportation Cabinet (Allen H Myers) (allen.myers@ky.gov)

Section 4, Sample Conditioning for Testing, could be confusing to new users of this method. This section should clarify that these instructions apply to heating or cooling samples for which a specific starting temperature is required. For example, this type of conditioning does not apply to distillation tests. This section could be easily misinterpreted to mean all RS-2 samples require a starting temperature of 50°C. Section 4 should be referenced in the applicable succeeding portions of AASHTO T 59.

Scope and Significance and Use statements were added to the conditioning practice. Conditioning should apply to all tests. I think the point is to get the emulsified product in its optimal condition for determining its properties. Conditioning helps homogenize the product and maintain its structure.

4. SAMPLE CONDITIONING FOR TESTING

4.1. Scope:

4.1.1. This practice describes how to prepare the emulsified asphalt samples for testing.

4.2. Significance and Use:

4.2.1. Before performing the tests listed in this standard, the test samples must be conditioned to ensure that the emulsified asphalt is in its optimal state for determining its true properties. Failure to condition the test samples according to the requirements of this standard will result in a nonconforming test situation.

- Brian Johnson (AMRL) has included the editorial changes in the standard that was sent back to Ron.

Change the current Section "4.3" to be Section "4.2.1".
Change the current Section "4.3.1" to be Section "4.2.1.1".
Change the current Section "4.3.2" to be Section "4.2.1.2".
Change the current Section "4.3.3" to be Section "4.2.1.3".
Change the current Section "4.3.4" to be Section "4.2.1.4".

This has been fixed.

In Section 7.3.5, change "...a wire mesh screen..." to "...A wire mesh screen...".

This has been fixed.

In the first sentence of Section 7.4.1, change "...a glass rod (and screen if used) to the nearest..." to "...a glass rod and screen (if used) to the nearest...".

This has been fixed.

In the definition for "*Mbr*" below Equation 4 below Section 7.5.1, change "...the beaker, rod, (and screen if used), g." to "...the beaker, rod, and screen (if used), g.".

This has been fixed.

In Note 13 below Section 8.3.7.1, add a space between "ASTM E" and "563".

This has been fixed for consistency sake although ASTM does not insert that space like AASHTO does. Is there any chance that AASHTO might think about removing the space as well?

In Section 9.3.4, place the phrase "Water bath" at the beginning of the sentence in italics. Also in Section 9.3.4, change "...a water bath capable..." to "...A water bath capable...". Only one water bath is specified in Section 9.3.4, and this device maintains a temperature of 25°C. How is the sample heated to 51.4°C as required in Section 9.6.2.

Editorial remarks have been addressed. Text was added to the conditioning statement in 9.6.2:

"Bring the temperature of the emulsified asphalt to $51.4 \pm 0.3^{\circ}\text{C}$ ($124.5 \pm 0.5^{\circ}\text{F}$) in accordance with Section 4."

Section 4 is the conditioning section. The reason why a water bath is specified in this test for 25°C testing is that there is a special addition to the conditioning procedure in the viscosity test where you place the test sample in a bottle and invert it several times while it is in the water bath for 30 minutes. This is not mentioned in the 50°C test where you stir the sample in the viscometer.

In Section 9.3.5, place the phrase "Withdrawal Tube" in italics. Also in Section 9.3.5, change

"...pipette or other suitable..." to "...Pipette or other suitable...".

In Section 9.3.6, change "...capable of holding a thermometer..." to "...Capable of holding a thermometer...".

This has been fixed.

In the heading for the third column in Table 3 below Section 9.3.7.1, change "Range, °C (°F)" to "Temperature Range, °C (°F)". In the first row of the first column in Table 3 below Section 9.3.7.1, change "25.0 (77)" to "25 (77)". In the second row of the first column in Table 3 below Section 9.3.7.1, change "50.0 (122)" to "50 (122)".

This has been fixed.

In Section 9.3.9, place the phrase "Receiving Flask," in italics.

This has been fixed.

In the second sentence of Section 9.3.11.1, change "118-mL" to "118 mL". Also in second sentence of Section 9.3.11.1, change "(4-oz)" to "(4 oz)". Add a period at the end of the second sentence of Section 9.3.11.1.

This has been fixed.

In Section 9.3.11.2, add "(8.5 oz)" between "250 mL" and "shall be used.".

This has been fixed.

The equation number is incorrect for the equation identified as Equation "(1)" below Section 9.5.3. This equation is not the first in this method.

This has been fixed. The number (1) has been removed.

In the second sentence of Section 9.6.1, change "30 minutes" to "30 min,".

This has been fixed.

In the third sentence of Section 9.6.2, add a comma after "upright".

I don't think we need the comma because the second phrase does not include a subject – just another verb.

"Hold the sample transfer container upright and slowly stir the emulsified asphalt with a wide circular motion using the thermometer to obtain uniform temperature distribution."

Delete the paragraph number "9.6.3" below Section 9.6.2. The wording associated with this label is actually Note 19.

This has been fixed.

In Note 19 below Section 9.6.2, change "25 seconds," to "25 s,". Also in Note 19 below Section 9.6.2, change "20 seconds." to "20 s."

This has been fixed.

In the first sentence of Section 18.5.2, change "with" to "including".

This has been fixed, but instead of following the recommendation, the sentence has been reorganized:

"Pour 50 ± 0.1 g of each sample into separate 1000-mL beakers; the mass of each beaker along with a 6-mm (1/4-in.) diameter by 178-mm (7-in.) glass rod shall previously have been determined."

In the first sentence of Section 27.6.4, add a comma after "(122 to 158°F)".

I don't think we need the comma because the second phrase does not include a subject – just another verb.

"Wash the sand with at least 400 mL of hot distilled water, 50 to 70°C (122 to 158°F) and stir for approximately 1 min."

Missouri Department of Transportation (David D Ahlvers and Brett Steven Trautman) (david.ahlvers@modot.mo.gov and brett.trautman@modot.mo.gov)

Recommend affirmative vote with the following comments.
In Section 2.1 , delete reference to T72,Saybolt Viscosity.

This has been fixed.

There is a discrepancy in the oven temperature tolerance for the 163C oven throughout the method. It's 163 ± 3 in Section 7 & 10 and $163 \pm$ in Section 12, 13, & 18.

This has been fixed so that all oven ranges match the majority of the instances in this standard of $163 \pm 3^\circ\text{C}$ ($325 \pm 5^\circ\text{F}$).

Review Section 12.3.7.1 to add the following "or 3450cm²/g(1685 ft²/lb) as measured by the Blaine air permeability apparatus T153." Very few labs are running Wagner, most all are doing Blaine test method for cement fineness.

This has been fixed. Also, references to T 98 (Wagner) and T 153 (Blaine) have been added in the referenced documents section.

Tennessee Department of Transportation (Gary D. Head) (Gary.Head@tn.gov)

The correction factor procedure & new table/calculations that come with it (6.4.5 & table 1) should be addressed in the section for calculation (6.5.1)

This has been fixed.

M_{pr} = mass of the distillation pot, accessories, and residue after the test (+ 1.5 g or other appropriate correction factor identified in Table 2 of Section 6.4.5), g

Why is Saybolt Viscosity included in T59 if the test has its own method spec (T72)? this may have been addressed at the meeting and I just missed it.

T 59 has always had its own procedure for determining Saybolt Viscosity, but it would refer to certain sections of T 72 in the procedure, which made the standard very difficult to follow. In the end, the group decided that the best way to improve T 59 is to take the applicable sections of T 72 and insert them directly into the T 59 standard so the user could just follow one procedure.

-The pertinent information was removed from T 72 and put in T 59 (Brian Johnson, AMRL). The intent is for this to be a standalone standard.

Pennsylvania Department of Transportation (Robert D Horwhat) (rhorwhat@pa.gov)

In some sections, 'minutes' is being changed to 'min' and in other sections no change was made. We concur with the basic revisions but would prefer to remain with 'minutes' and 'hours' rather than a combination of this and abbreviations, ie 'min' and 'h'.

The changes were made to make everything min, h, and s. We can reverse that if it suits the SOM though.

-AASHTO's standard will follow on this.

Arkansas State Highway and Transportation Department (Michael Benson) (michael.benson@arkansashighways.com) **Negative**

□□ While this evaluator agrees with the need to allow for thermometers other than those specified by ASTM E1, it would seem that AASHTO needs to develop a consistent pattern for specification. Inclusion of the multiple appropriate criteria at every location that a thermometer is required in this method creates verbosity and inconsistency. Perhaps development of a standalone standard for thermometers would be appropriate. See Sections 4.1.1, 6.3.4.1, 6.3.4.2., 6.3.4.3., 8.3.7.1., 8.3.7.2., 8.3.7.3., 8.3.7.4., 9.3.7.1., 9.3.7.1., .9.3.7.2, 9.3.7.3, 17.3.6., 27.3.8.1, 27.3.8.2., and 27.3.8.3.

Consistency across all standards is something that we aim for, but can we allow the balloted changes in this standard to keep moving forward even though we know that we need to work on this for all standards? Situation-appropriate mercury thermometer alternatives are being identified in each section. The fact that they are not all written the same way seems more of an editorial issue than a technical one.

This standard is very difficult to manage because it includes so many separate test methods. We might want to consider breaking it up like ASTM did so that we don't continue to struggle to change this standard.

□□ In Sections 4.3.2. and 4.3.4. references are made to "cooling the sample to the appropriate conditioning temperature specified in the test method;" however, the same references are not indicated in Section 4.3.1. nor 4.3.3. when the sample is required to be heated. Additionally, the "appropriate conditioning temperature specified in the test method" is unclear in multiple locations throughout T59, leaving the analyst without clear direction as to what temperature the sample should be at when proceeding with the tests in T59. Finally, the Section appears to indicate that the maximum temperature that either material may be heated is governed by the bath or oven specified as not to exceed 74°C (165°F). Is the intent to allow the material to be heated to the maximum temperature during conditioning? Recommendations are that either a temperature range for each test be included in the method or a range be published in this Section with "unless noted otherwise" included.

The reason for the inconsistency is that 4.4.1 and 4.4.3 are written to address samples that come in cold. 4.4.2 and 4.4.4 address samples that come in hot from the production facility. There is no need to heat the already hot samples. Before the standard was only written to address samples that come in cold. This was intended to be an improvement area that would better control conditioning.

The ambiguity regarding test temperatures was intentional because Section 4 is intended to provide conditioning for all tests, and not all tests have the same criteria for test temperatures. Would the SOM like us to issue a table with every test temperature in Section 4? We could always try that for the 2016 version.

-The hot and cold conditioning temperatures are not in sync. There needs to be consistent.
(Dawn Richards)

-When you do the particle charge at room temperature, this case would be different but if the table is referred to, this may take care of the issue (Brian Johnson)

-There are several instances where the temperature would not align. A conditioning table would help. (Dawn Richards)

-Action Item: Brian Johnson will put together this table. ND DOT will assist Brian.

The intent is to bring the sample to the test temperature rather than allowing the sample to overheat. I believe that T 59's conditioning criteria has been to heat the samples in a bath or oven that is warmer than the requirements for the sample to expedite the conditioning.

□□ The Technical Section documentation did not include Figure 2. It was hoped that this was intentional as the one given in the figure does not correlate to the information given in Section 6.3.1. This figure needs to be updated or deleted. Reference to Figure 4 would be better.

The height is supposed to be approximately 240 mm and the inner diameter is supposed to be approximately 95 mm according to Section 6.3.1. Figure 2 shows a height of 241.3 mm and an inner diameter of 95.2 mm. That seems to correlate reasonably well given the word approximately is used in Section 6.3.1, but they are not exactly the same.

☐☐ The Metric Equivalents table included with Figure 2 appears to be out of place. Possibly the intent of this table was for information concerning one of the other tables; however, its removal would be appropriate.

This has been fixed. The table has been removed.

☐☐ In Section 6.3.4., the depth of immersion is given as at 6 mm (1/4 in.) and 159 mm (6 ¼ in.) from the bottom of the still while in Section 6.4.3. and Figure 4 indications are that these are approximates with the larger thermometer height being listed as "approximately 165 mm (6 ½ in.)" from the bottom of the distillation pot. These should be consistent and inclusion of approximate especially for the higher thermometer is highly appropriate considering its use in the method.

This has been fixed. The following sentence in Section 6.3.4 now reads:

"The depth of immersion must be such that the bottoms of the two thermometers or probes must be 6 mm (1/4 in.) and approximately 165 mm (6 ½ in.) from the bottom of the still."

☐☐ In Section 6.4.5, the inclusion of the "alternative distillation temperature ranges as specified by the manufacturer" would seem to be problematic. This evaluator would prefer that purchaser set the distillation temperature rather than the manufacturer. It would seem that it would be more appropriate for States to include exceptions to a method in their individual specifications rather than a standard test method. Or would inclusion in an appendix which would allow it as non-mandatory information be appropriate? This facility has been testing modified samples for years using the method as written even though manufacturers have requested otherwise.

-Brian Johnson: This revision was a collaboration between manufacturers and state DOTs. The intent is to perform the test on modified materials which may not distill properly at the higher temperature ranges.

-Dawn Richards: The purchaser should be the one driving this, not the manufacturer.

-Ron Horner: This is something that will need to be looked at further.

☐☐ In Note 10 additional methods to achieving cooling should be allowed; whether removal of heat, immersion in cold water, or placement of a cold rag on the still. Recommendation that verbiage be changed to indicate that alternative cooling methods be allowed.

This has been fixed. The words "or by other means" has been added to this note.

☐☐ Although it is agreed that in Section 6.4.7. sieving the material is very difficult (especially for a modified material) this step should not be removed to allow for sieving in cases where pieces of the cork used in the distillation setup break off.

This has been fixed. The sentence has been reinstated with an addition whereby only residue that is going to be used for testing needs to be sieved:

“If there is foreign matter in the residue, and the residue will be used for further testing, the material shall be poured through a 300- μ m (No. 50) sieve prior to pouring it into the test molds and containers.”

☐☐ In Section 7.3.2. the glass rods are required to be 180mm (7 in.) in length which barely reaches the top of the an ASTM E960 low form beaker, specified to 160 mm (6.3 in.) maximum height. Stating this as a minimum length would allow for longer rods making it easier to stir the material.

This has been fixed. The requirement is now that they are “..and at least 180 mm (7 in.) in length.”

☐☐ In Section 7.3.5 consideration of any type of "splatter" screen should be allowed as long as the surface is perforated and stable under the test temperature.

This has been fixed. The words “perforated sheet” might suffice, but I was struggling with finding a suitable word. Section 7.3.5 now reads:

Screen (optional)—A wire mesh screen such as window screen or other suitable perforated sheet that can be placed on top of the beaker to reduce sample loss from splatter.

☐☐ In Section 7.4.1, it is requested that the requirement for test be modified to allow for the mass determination of two beakers rather than four beakers. Additional beakers could be used to fulfill the needs of the residue testing without requiring the mass determination. This facility has found that when testing some materials the residue from four beakers is insufficient. Reference to four beakers would need to be changed in Section 7.5.1 also.

This is new business.

-Two beakers meets the testing requirements for residue by evaporation. (Dawn Richards) OH DOT agrees with this. This will be included in the next tech section ballot.

☐☐ This facility is unaware of research that supports the elimination in Note 12 of the allowed procedure for preliminary hot plate heating in cases where the residue will be used for additional testing. Has this been determined?

Brian Johnson- The group felt that heating on a hot plate should not preferred to oven heating and that the residue resulting from samples heated on the hot plate should not be used for further testing. Instead, “For samples that will not be used for testing of residue properties” was added before the information about heating on a hot plate.

-MT, FL- in the process of trying to figure out whether or not to continue to use the hot plate on residue testing.

- FL DOT- in the middle of overhauling their emulsion specification. Tanya Nash is in charge of this plan. FL is trying to have their producers help them with the research. **Tanya will send SOM an update as to what FL is doing.** A comparison study is being done, differences have not been noticed.

☐☐ As written it is confusing as to the length of time that the material must be at 163°C when bringing the oven and sample to a temperature of 163°C together per Note 12. Is the required time 1 h, allowed when preliminary heating on a hot plate is done, or 3 h as defined in Section 7.4.1.?

This is new business.

☐☐ Removal of the entire former Section 6.4.2. eliminates directions as to preparation of the residue for additional tests. While it is agreed that removal of the sieve requirement is needed, it would seem appropriate to leave the preparation of the residue for additional tests per Section 21 and 26.

-Brian Johnson: This has been fixed, but it seems like the SOM would have to agree to this. Here is the text that was deleted:

When tests on the residue from the emulsified asphalt are required, replace the beakers in the oven until the asphalt residue is sufficiently fluid to pass through a 0.300-mm (No. 50) sieve (usually requiring 15 to 30 minutes). Pour the residue through the 0.300-mm (No. 50) sieve into suitable containers and molds for performing such tests as desired, as described in Sections 20 to 25.

Reinstated language in this draft:

When tests on the residue from the emulsified asphalt are required, replace the beakers in the oven until the asphalt residue is sufficiently fluid to pour (usually requiring 15 to 30 minutes). Pour the residue into suitable containers and molds for performing such tests as desired.

-A tech section ballot will be put together to include several of these changes. If anyone has any comments regarding these changes, please notify Ron Horner.

-Motion to adjourn- RI, seconded by NC.

The remainder of the agenda was not discussed during the webinar:

☐☐ Section 9.3.3 specifically states several appropriate bath media for testing. It is recommended that this sentence be modified to allow for any appropriate bath media applicable for the desired test temperature. The Department has used several different bath media over the years and has found that the viscosity of the bath media at the set test temperature can impact the circulation in the bath resulting in a temperature differential.

The current language states:

"The bath medium shall be a high- temperature heat transfer oil, silicone oil, white mineral oil, or other manufacturer -recommended fluid."

In an attempt to address this additional clarification, the proposed language states:

"The bath medium shall be a high- temperature heat transfer oil, silicone oil, white mineral oil, or other fluid with an appropriate viscosity at test temperature to facilitate effective circulation and minimize temperature differentials."

☐☐ Section 9.3.11.1. references a "bottle" and a "lid". It is recommended that this reference be changed to "a sealed container of a 118-mL (4-oz) minimum capacity."

This seems like new business, but it would be easy to add if the SOM agrees.

☐☐ The point of Section 9.4.1 is to have a clean dry viscometer and receiving flask. Recommended including verbiage that the receiving flasks may be cleaned in a glass-cleaning oven followed by a rinse with water with a final rinse of a residue free solvent or drying in an oven.

This seems like new business, but it would be easy to add if the SOM agrees.

☐☐ Recommend that the statements in Section 9.4.2. be included in Section 9.3.3. rather than as a separate Section.

This has been fixed. The location of the viscometer and bath is now in the apparatus section.

☐☐ Section 9.4.4. is unnecessary as it has been stated that the viscometer bath shall be filled in Section 9.3.3.

There is a distinction. 9.3.3 states:

"The bath must be capable of maintaining the bath medium at least 6 mm (0.25 in.) above the overflow rim."

9.4.4 states:

"Fill the bath to at least 6 mm (1/4 in.) above the overflow rim of the viscometer with an appropriate bath medium."

☐☐ Section 9.5.1. indicates a temperature for calibration at 50°C (122°F). With some of the older viscometers adjustment of the temperature is difficult. Rather than adjust the temperature a viscosity reference standard certified at that temperature should be allowed. Recommended that the temperature at either 25°C (77°F) or 50°C (122°F) be allowed. This would require the references to Section 9.6.2. be modified to include testing at 25°C (77°F) and the calculation in Section 9.5.3 to include the additional temperature.

This should be new business. This was taken directly from T 72.

☐☐ In Section 9.6.1. reference to 118-mL "bottle" should be changed to "container" with reference to sealing the container.

This will carry over if the other recommendation is agreed upon by the SOM.

☐☐☐ Conditioning the sample according to Section 4 is bit well defined (see earlier comments on Section 4.

Section 4 if referenced so that samples which are brought to the lab hotter than the test temperature can be cooled to test temperature without having to rewrite the Section 4 language in this section as well. Here is the sentence in question:

“Bring the temperature of the emulsified asphalt to $51.4 \pm 0.3^{\circ}\text{C}$ ($124.5 \pm 0.5^{\circ}\text{F}$) in accordance with Section 4.”

☐☐☐ Conditioning the sample of emulsified asphalt in the 400-mL glass beaker (now sample transfer container) in the water bath in T59-13 allowed for the temperature of the emulsified asphalt to be heated to "not greater than 53°C (127.4°F). Recommend that this continued to be allowed rather than $51.4 \pm 0.3^{\circ}\text{C}$ ($124.5 \pm 0.5^{\circ}\text{F}$). This change was made in the 2012 version.

This should not be necessary if you follow Section 4 and go right into stirring and pouring into the viscometer for temperature equilibration. Section 4 states:

“For emulsified asphalt with viscosity requirements at of 50°C (122°F) received at a temperature below 50°C (122°F), heat the sample to at least $50 \pm 3^{\circ}\text{C}$ ($122 \pm 5^{\circ}\text{F}$) in the original sample container in a water bath or oven with a temperature that does not exceed 74°C (165°F). Stir the sample after it has attained a temperature of at least water bath or oven. The container should be vented to relieve pressure. 50°C (122°F).”

☐☐☐ Section 10.3.4. requires use of a 50-mL glass buret. Recommend that the method allow for alternative devices as long as the indicated amount can be added appropriately.

This is new business. This is demulsibility.

☐☐☐ Section 10.4.1. and 10.5.1 specifically require the demulsibility to be expressed as a % of the "mass of residue by distillation." This should be modified to include mass by evaporation

This is new business.

☐☐☐ Would recommend that the required three samples for demulsibility in Section 10.4.3. be changed to allow fewer samples with two being sufficient and one being desirable.

This is new business.

☐☐☐ Section 10.4.3. indicates that the emulsified asphalt and the reagent be brought to $25 \pm 0.5^{\circ}\text{C}$ ($77 \pm 1.0^{\circ}\text{F}$). Would not ambient temperature be sufficient for this testing or is it truly highly temperature dependent?

This is new business.

☐☐ In Section 10.4.5. reference to CaCl_2 solution should be changed to include dioctyl sodium sulfosuccinate solution €" possibly use term "proper reagent."

This is new business.

☐☐ In Section 12.4.1. it would be helpful to include a calculation for determining the water necessary to dilute the emulsified asphalt to a residue of 55 percent; % Water = $100 - [(55 / \% \text{ Residue}) \times 100]$

This is new business.

☐☐ In Section 12.4.3. the stir rate is given as 60 r/pm. Correction to rpm.

This has been fixed.

☐☐ The changes to Sections 13.3.3. and 13.3.4. are unclear although the verbiage in Section 13.4.2. However, what process is used if determining if anionic or nonionic emulsion break on the sieve when using distilled water? Visual?

Can the SOM vote on this change or maybe we should just leave it off this version and still continue with the rest?

☐☐ Note 22 should also be noted in Section 18.4.1.

It would seem cleaner to combine Section 11, Settlement, and Section 18, Storage Stability with the definition of each in one section.

This has been fixed. Note 30 has been added, and the rest of the notes have been renumbered. The notion about combining Settlement and Storage Stability should be addressed as new business.

"Note 30—Cylinders with side arms may be used so that samples can be withdrawn without the use of pipets."

D. Upcoming Ballot Items

T 59 – Emulsified Asphalts

T 72 – Saybolt Viscosity

TP 91 - Determining Asphalt Binder Bond Strength by Means of the Asphalt Bond Strength (ABS) Test