

# WAQTC QAC COMMITTEE MEETING MINUTES

**LEADER:** Garth Newman, ITD  
**RECORDER:** Desna Bergold

**DATE:** January 31 - February 4, 2011  
**LOCATION:** Henderson, Nevada

**MEMBERS PRESENT:**

Garth Newman, ITD  
Sean Parker, ODOT  
Amy Rico, UDOT  
Linda Hughes, WSDOT  
Ryan Hixson, WFL-HD  
Greg Christensen, AKDOT & PF  
Alan Hotchkiss, CDOT

**MEMBERS ABSENT:**

Joanne Nakamura, HDOT  
Brian Legan, NMDOT  
Misty Miner, MDT

**MEETING OBJECTIVES:**

1. T 99, T 180 and T 272  
Section on how to use the answer from T 224 i.e. T 224 will increase your max density to be used for density standard
2. AASHTO T 248  
Selection of Method section for wet fine/coarse samples
3. T 272 **Tabled**  
Discussion on revising T 272 to include how to build a family of curves and the use of T 272 with T 180.
4. T 166 and T 209 and T 275  
Add  $G_{mb}$  to T 166 and  $G_{mm}$  to T 209
5. T99/180 - back side of the curve  
AASHTO allows the test to end when there is a decrease in wet mass. Two points are needed and addressed in WAQTC  
- should we attempt to update AASHTO
6. AASHTO T 255 from July **tabled**  
"Request AASHTO to add statement 'overnight is sufficient drying for most materials' language from T 265"
7. AASHTO T 308 from July  
Step 10, 'aggregate correction factor' should be 'asphalt binder factor'. AASHTO reads the same way.
8. Asphalt Volumetric Module **tabled**
9. New Exams **tabled**
10. New Aggregate Presentation **tabled**
11. Where to meet in July Group
12. Other items: T 312 section 8 – Garth, T 166 and the removal of surface trapped air and is 3 to 5 minutes sufficient – Sean **tabled**

ISSUE	DISCUSSION / DECISION	ACTION REQUIRED BY:
Organization and assignments	<p>Garth Newman, chair is concerned about follow through on assignments. He suggests the group implement task schedules and will need to develop a process.</p> <p>Greg Christensen, AKDOT suggests tasks should have clearer objectives and possibly be in smaller 'bites.'</p> <p>These are thing to keep in mind when making assignments.</p>	
Manuals and updating	<p>Discussion on Manuals and updating them.</p> <p>Should the instructor and student manuals be done away with and just use the short forms? Perhaps the instructor notes should be in the PowerPoint notes.</p> <p>Much discussion on which direction to go:</p> <p>Could pictures and notes be electronically 'embedded' in the short forms?</p> <p>Could there be 'in class' exercises developed by WAQTC instead of each individual instructor/state such as a workbook or workbook section with calculation examples and practice? This concept could remove the bulk of the calculation examples and open up the option for each state to use their own forms (example: this could really clean up the FOP for T 27/T 11).</p> <p>Could the review section be expanded to address this?</p> <p>Should there be an 'examples workbook'?</p> <p><i>Decision: Agenda item for July</i></p>	Group
	<p>Amy Rico, UDOT, asked a question that had been asked of her: Is there a point where a technician would remain qualified without testing?</p> <p>No, FHWA requires periodic written and performance exams for qualification; 5 year period is the maximum.</p>	
Asphalt II	<p>Executive Committee (EC) expects the QAC to produce an 'Asphalt II' module containing an asphalt volumetrics manual as an extension of the Asphalt module. Many states already have programs that cover this section; the various pieces need to be brought together.</p> <p>Ryan Hixson, WFL-HD, asked if there was a due date associated with this assignment:</p>	Group

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	there is not, the EC just wants it done.	
EC meeting minutes	Garth asked if everyone had a chance to see the Executive Committee meeting minutes, most had not. At this time the minutes are not distributed to the QAC members but are posted on the website. Desna will begin distributing the minutes when they are approved.	Desna Bergold
T 209 report at AASHTO SOM	Discussion of report from AASHTO concerning AMRL study presented to AASHTO Subcommittee on Materials (SOM) in August. Presentation on ‘optimum frequency and amplitude for $G_{mm}$ measurements’ study found that there can be significant stripping while performing T 209. Garth will obtain and distribute the study if he can get it. (Presented by Haleh Azeri of AMRL to TS 2c.)	Garth Newman
T 310 changes at SOM	Discussion of the changed language from T 310. WAQTC presented a change to T 310 at 2010 SOM meeting and the language was changed before the change went to ballot. Desna was assigned to follow up on this issue by the EC. Sean Parker felt that if there are requirements for calibration a method for calibration should be referenced or included. It was mentioned that Troxler has a procedure and some states use this procedure.	Desna
Email from Larry Lockett of SOM	Task force 10-03 for T 99, T 180, and T 272 – “charged with reviewing, updating the tolerance of the molds and how it affects T 272. Also charged with adding verbiage to the text of T 99 and T 180 related to scalped material and how T 224 should be utilized perhaps in the calculation section.” Jeff Miles assigned the QAC to work up a rough draft of changes.  Discussion of T 310 and how it relates to T 272, T 224, T 99, and T 180. T 272 does not address the scalped rock.  Discussion continued in item <i>T 224 and T 99/T 180</i> below.	
T 99/T 180 T 272 T 224 T 310 And how it all related	Earlier proposed changes to T 99 and T 180:  Address mold assembly, mold sizes, and delete all instances of factors and remove the option of using molds out of tolerances.  Change scale to a G5 to be able to be consistent with proficiency sample requirements.	

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	<p>AASHTO has already agreed to fix the illustrations.</p> <p>Current proposed changes to T 99 and T 180:</p> <p style="padding-left: 40px;">Add step 5.1 - ‘Determine the mass of the mold and base plate.’</p> <p style="padding-left: 40px;">Only include calculations that use the mold volume.</p> <p style="padding-left: 40px;">Update reporting section.</p> <p style="padding-left: 40px;">Add “Calibration of Measure” section to 3.1.1 and 3.1.2 in both.</p> <p style="padding-left: 40px;">Need to determine how to seal the measure to determine volume according to T 19.</p> <p style="padding-left: 40px;">(All changes have been made in copies of the procedures, maintained by Garth Newman)</p> <p>How to bring all the pieces together for density standards and in-place density?</p> <p>Discussion continued in item <i>T 224 and T 99/T 180</i> below.</p>	
T 310	<p>T 310 – in-place density compared to a density standard (percent compaction) Which density standard to use? Oversize, one point, etc.</p> <p>Confusion and issues with 10.2.2 and 10.2.3, most of the information is stated in 4.1.3 and 4.1.4.</p> <p><i>Decision: Add T 272 to T 310 10.2.1 to reduce ambiguity. Remove reference to ASTM D 4718 in 10.2.1 as it refers to D 698 and D 1557. Move Section 10.2.2. to section 9.5 and remove 10.2.3 as it is covered in 4.1.3.</i></p> <p>FOP for T 310 step 11 states ‘The material tested by direct transmission can be approximated by a cylinder of soil approximately 300 mm (12 in.) in diameter directly beneath the centerline of the radioactive source and detector.’ Interpretation of ‘under the probe’ would mean that the material between the gauge and the depth of the probe would be discarded. Also ‘The material tested by direct transmission can be approximated by a cylinder of soil approximately 300 mm (12 in.) in diameter directly beneath the centerline of the radioactive source and detector.’ Will need to be changed to underneath the footprint of the gauge.</p>	

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	<p><i>Decision: Added section 9.6 ‘If representative samples of material are to be taken for purposes of water content and or percent density the sample shall be taken from directly underneath the gauge. For the Backscatter method remove the material to a depth of approximately 75 mm (3 in.). For Direct Transmission method remove the material to approximately the depth of measurement.’</i></p> <p><i>Updated reference list, remove D 2488, D 2487. Replace D 2216 with T 265.</i></p> <p>Discussion of Annexes to T 310</p> <p>Linda Hughes, WsDOT, would like to see the Annex (calibration) be removed from the Test Method. After an email inquiry to Tom Baker (WsDOT) about current AASHTO process Tom responded to inquiry that the process now is to leave the calibrations in the test procedure.</p>	
<p>T 99 and T 180 Moisture density curve</p>	<p>T 99 and T 180 state “Continue this series of determinations until there is either a decrease or no change in the wet unit mass, <math>W_1</math>, per cubic meter (cubic foot) of the compacted soil” for all methods this generally does not provide adequate data points for the “wet side” of the moisture density curve. Also the procedure states “Thoroughly mix the selected representative sample with sufficient water to dampen it to approximately four percentage points below optimum moisture content” in sample prep, this may not provide enough data points for the ‘dry side’.</p> <p><i>Decision: Added ‘four to eight percent’ to sample prep in Methods A and C of T 99 and T 180.</i></p> <p><i>Changed the language in 5.5 to “When the series of determinations indicate a decrease or no change in the wet unit mass, <math>W_1</math>, per cubic meter (cubic foot) of the compacted soil (Note 8) perform one more determination such that there is a minimum of two determinations over optimum moisture” in Methods A and C of T 99 and T 180.</i></p> <p>Need to modify FOP for T 99 and T 180 with the same language, discuss in July meeting.</p>	<p>Group</p>

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T 224 and T 99/T 180	<p>Discussion:</p> <p>Field-to-lab and lab-to-field corrections - Mathematically including the oversize rock in the maximum dry density and mathematically removing the oversize in the in-place density. Delete field result modifications.</p> <p>Proposed changes:</p> <p>Remove ASTM E29 and reference. Remove 4.2 and revamped Scope and update values. Remove Section 3.3. Section was redundant and removal is consistent with 4.2 deletions</p> <p>Change <math>G_m</math> to <math>G_{sb}</math> in outline and calculations to match current naming convention.</p> <p>Add <math>MC_f</math> to 4.1.2</p> <p>Remove the statement ‘The moisture content of the oversize material retained on the sieve can be assumed to be 2 percent for most construction applications.’ from 4.1.2. (Sean objected) as it is not applicable to all geographic areas.</p> <p>Changed ‘if’ to ‘when’ in 4.1.2.</p> <p>Remove ‘Calculate the moisture contents according to the calculations specified in T 265’ to allow calculations to be driven by test procedure used.</p> <p>Change ‘If’ to ‘When’ in Note 1 (now 4.3.). Much discussion of assumptions and language of Note 1.</p> <p>Rework hierarchy and sections for consistency with standard test method layout. Standardize use of ‘oversize particles.’</p> <p>Delete Appendix as it seemed odd and pointless.</p> <p>Add ‘Report’ section for consistency with other AASHTO standards.</p> <p>Change the title of T 224 to conform to current methods. (There is no soil compaction test method, etc.)</p> <p>Much discussion of how to determine percent of coarse and fine and how to dry it. Determined the test procedure is applicable to T 99, T 180 and T 272. Change language in T 99 and T 180 procedures ‘Scope’, remove: ‘and the test specimen used for field density compaction control’ and ‘to compare the total field density with the compacted</p>	

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	<p>specimen.’ To require the corrections be performed whenever oversize material is encountered. Need to correct ‘Discard the coarse material, if any, retained on the 4.75-mm (No. 4) sieve.’ in methods A and C in T 99 and T 180.</p> <p>T 272 sample section for each method needs to be fixed. Recommended T 224 be an Annex to T 99 and T 180. Mike recommends running with it.</p> <p><i>Decision: Put together a white paper and PowerPoint to tech section work group of proposed changes to T 99, T 180, T 224, and T 272, with the possibility of completely re-working T 224 with the option of adding as an appendix to T 99 and T 180.</i></p> <p><i>Decision: T 310 - should remove reference to T 224, current references to T 99 and T 180 will take care of it.</i></p> <p>FOP does not reference T 85. FOP does not address adjusted moisture reporting. Discuss in July meeting.</p>	
T 248	<p>How to split combination of coarse and fine aggregate when wet?</p> <p>T 248 states that coarse and fine combinations should be reduced using the ‘mechanical splitter’. This causes a problem with material adhering to the splitter and in some cases this device has been used to reduce extremely wet (slurry-like) material. Linda proposed that the method address this situation differently.</p> <p><i>Decision: Separate the ‘Mixtures of Fine and Coarse Aggregates’ into 5.3. ‘Combined Coarse and Fine Aggregate.’ Much discussion on language, final language:</i></p> <p><i>Combined Coarse and Fine Aggregate-</i> Samples that are in a dry condition may be reduced in size by either Method A or Method B. Samples having free moisture on the particle surfaces may be reduced in size by quartering according to Method B. When Method A is desired and the sample is damp or shows free water, dry it until it becomes friable (Note 2). Dry the entire sample to this condition, using temperatures that do not exceed those specified for any of the tests contemplated, and then reduce the sample. The miniature stockpile Method C is not permitted for combined aggregates.</p> <p><i>Eliminate the ASTM designation.</i></p>	<p>Greg and Garth</p> <p>Garth and Desna</p>

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	<p><i>Include Figure 1 from FOP and attendant language to provide methodology for section 4.3.</i></p> <p>Figure 1 from the FOP will be included as a .tiff file by the end of February. After Garth will insert the file into the AASHTO test method and update the Figure numbers (2 and 3).</p> <p>QAC would like to eliminate Method C, request EC to follow up with AMRL to evaluate the accuracy of the method.</p>	
T 255	<p>Garth recommends tabling the proposed changes to T 255 (including ‘overnight’ language) for this year. Revise this method at the next QAC AASHTO work meeting and include constant mass definition revision.</p> <p>Remind EC that nothing has been done to standardize nomenclature for the constant mass and moisture calculation formulas. This will need to be addressed by AASHTO consultant.</p>	Group Garth
T 308	<p>Section A2.8.2. refers to aggregate correction factor’ this should be ‘asphalt binder factor’</p> <p><i>Decision: Correct A2.8.2. to read ‘asphalt binder correction factor’.</i></p>	
T 209	<p>This method does not use the current standard nomenclature of <math>G_{mm}</math> for the maximum specific gravity of the mix.</p> <p><i>Decision: Put <math>G_{mm}</math> in the title and scope with a definition in scope. Change the reporting section and in all equations for consistency with standard practice R 35.</i></p>	
T 166 and T 275	<p>These methods do not use the current standard nomenclature of <math>G_{mb}</math> for the bulk specific gravity of the mix.</p> <p><i>Decision: Put <math>G_{mb}</math> in the title and scope with a definition in scope. Change the reporting section and in all equations for consistency with standard practice R 35.</i></p> <p>Sean’s item ‘removal of surface trapped air and is 3 to 5 minutes sufficient in T 166’ has been tabled until next year.</p>	



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T 312	<p>This method addresses laboratory mixed samples in depth but does not adequately discuss plant produced samples.</p> <p><i>Decision: Fix the hierarchy issues: Section 8 is HMA Mixture Preparation, 8.1 is 'Laboratory Prepared samples' and section 8.2 is Plant produced with sub-steps in each section for preparation. Add heating the molds to the plant produced preparation.</i></p>	
	<p>For general information as a point of interest Greg provided the following link:  <a href="http://rane.com/par-greek.html">http://rane.com/par-greek.html</a> - website of Greek letters and their uses.</p> <p>Homework assignment - back to Desna by the end of next week: What would it cost to get to Billings?</p> <p>Next meeting July 18<sup>th</sup> at beginning at 1:00 p.m.</p> <p>Notes from Misty:</p> <p style="padding-left: 40px;">Billings Crowne Plaza for July 18-22 2011 Rooms \$70 + taxes nightly for governmental rates.</p> <p style="padding-left: 40px;">Free Airport Shuttle service.</p> <p style="padding-left: 40px;">Hotel has bar and revolving restaurant on the 22nd floor Meeting room \$150.00 daily w/o drinks and food W/ drinks and food add about \$6 person I blocked it for a tentative meeting time and can cancel later if needed.</p>	