Section 39 STG Meeting

Sacramento

Group Memory

January 23, 2015

Next Meeting dates

February 19, San Diego

March 18, Sacramento

April 9, San Diego

May 21, Sacramento

June 25, San Diego

Desire outcome for next meeting:

Continue to work, resolve issues.

Critique from this meeting: No critique done.

What went well	What Needs Improvement

NOTE: ITEMS IN BLUE have been cleared

1. **Purpose:**
   1. 1. Close out issues from last meeting.
   1. 2. Look at the list of items Industry wants to discuss.
   1. 3. Update on the spec.

2. **Spec update**
   2. 1. The spec was posted on April 18th. It was sent out to industry.
   2. 2. (Comment From 6/20/2014) Latest update of spec is from May 30, 2014.
   2. 3. There are a few issues that fell through the cracks.
   2. 4. Automatic sampling issue: There was an oversight in that this was not taken out, but this will be changed. The contractors will need to RFI the RE to request a no-cost CCO to remove the "automatic sampling device at the plant" requirement.

2. 5. If you find anything we agreed to that is not in the spec, please tell Kee or Joe about it.
2. 6. The Spec that governs is the spec that is in effect on the day the job advertises.
2. 7. (Comment From 6/20/2014) Joe will send the change to section 39 to remove the "automatic sampling device from the plant" and replace with "plant."
2. 8. (Comment From 7/23/2014) Need clarification on Safety, RAP/RAS, section 39 and environmental issues - will they still be allowed?
    2. 8. 1. (Comment from 8/13/2014) The 2015's will be published at the end of the year.
2. 9. (Comment From 7/23/2014) CT needs to respond: Per Jun e 19 meeting industry understanding is that automatic sampling will be changed to mechanical sampling for trucks.
2. 10. (Comment From 7/23/2014) **CT (Chuck) will provide a write-up on the timeline and the opportunity to revise specs.** Opportunity to address specs: By end of July we are supposed to have version 5 of the final spec done. This means approval by all internal stakeholders / spec owners by end of September – an electronic version of 2015 spec should be available by end of December. Next step is to have State Printing Office to print the spec, which should be available by April 1, 2015. Districts can use the 2015 specs beginning April 2015. CT has not solidified the date when 2015 specs will be mandatory. Revisions will be worked on starting after the first of the year, but nothing would be published until July.
2. 11. (Comment from 8/13/2014) This is being reviewed by Office Engineer.
2. 12. (Comment from 9/25/2014) Section 39 Version 5 should be done by (target date) the end of October. It is being reviewed for technical content fatal flaws. Electronic version should be out in early 2015. Printed version target date is 2015. It should be in contracts in August 2015 (target date).
2. 13. (Comment from 10/21/2014) The 2015 spec will be out before the end of 2015.
2. 14. (Comment from 12/17/2014) No change
2. 15. (Comment from 01/23/2015) Spec is at OE for review. Latest arrival date is July 2015 for e version, printed version in January 2016.

3. **Issue 1 from industry concerns of 5/20/2014: Aggregate temperature**
3. 1. Caltrans is not able to make an instantaneous decision about the final value for aggregate temperature.
3. 2. Industry concern is that 375 degrees mix at the plant will not produce hot enough mix.
3. 3. Caltrans needs data from industry on what other DOT's do, who follow 25% RAP, 40% binder replacement. The sooner CT gets the data, the sooner they can make a decision.
3. 4. Phil Stolarski sent out questions – CT is looking at issues including heating temperatures for aggregate when mixing HMA and RAP.
3. 5. CT is waiting for information to be compiled from other states, then CT will look at it and determine the issue and share with industry for discussion and consensus.
3. 6. (Comment From 6/20/2014) Caltrans will review and report back based on the survey data presented today at the next meeting.
3. 7. (Comment From 6/20/2014) Industry concern: Binder content and gradation are the tools available to make changes. They need to know right away what the gradation is. Delays caused by testing turn-around time can be a problem. CT Comment: We are willing to do post-plant gradation. Industry Comment: How does this address turnaround time?
3. 8. (Comment From 7/23/2014) Industry concern is that with Caltrans specifying a max temperature, they cannot recycle asphalt. Industry has been doing this for fifteen years without any issues. Now CT has a max temperature because they are concerned about aggregate breakup. Everyone has performance data to show and there has not been a failure.
3. 9. (Comment From 7/23/2014) CT and Rita will check with City of Los Angeles on this issue and report back at the next meeting.
    3. 9. 1. (Comment from 8/13/2014) Rita shared an FHWA report showing a tem requirement for RAP (a chart) from a NAPA publication – Nothing new – still says you need to have temperature of virgin aggregate needs to be at an elevated temperature when using various quantities of RAP. This is necessary to hit the temperature at the end of the drum…
    3. 9. 2. (Comment from 9/25/2014)
3. 10. (Comment From 7/23/2014) Tony L will do a literature search on the subject and report back at the next meeting.

3. 10. 1. (Comment from 8/13/2014) No information available – Tony will continue to look.

3. 11. (Comment From 7/23/2014) CT proposes a small working group to look at the issue of aggregate temperature – Tony L, Phil R, Hongbin Xie, Don, Kee, Pascal, Mike C AND Joe. Is there a test or something that we can run so we can take care of this problem? Kee Foo will set this meeting up.

3. 11. 1. (Comment from 8/13/2014) Industry does not have consensus on this issue – they are split on the proposal back to industry from Kee Foo to either go to post-plant gradation or form a small working group to determine the method to define or measure the aggregate breakdown as it goes through the drum.

3. 11. 2. (Comment from 8/13/2014) CT will not move away from gradation at the current time in mix design or acceptance testing–they will look at it either pre- or post-production. CT says there is not enough data at this time to drop gradation. CT will be developing a QC/QA spec. There may be an opportunity at that time to look at this again.

3. 11. 3. (Comment from 8/13/2014) CT says it is not a singular quality item that makes or breaks a mix design- many things come into play. Therefore CT wants to continue with the testing to assure a quality mix.

3. 11. 4. (Comment from 8/13/2014) Industry Comment: None of these things has been tied to performance.

3. 12. (Comment from 9/25/2014) CT wants consensus from industry on this before they will move ahead on it. CT awaits a proposal from industry. CT position is that the aggregate will break down slightly. **Industry will meet and discuss to see if there is an alternate proposal.**

3. 13. (Comment from 10/21/2014) No report

3. 14. (Comment from 11/14/2014) Industry perspective: Follow up from question to Joe on post plant gradation – is that going away? CT Response: We would still do MPQP on the plant, but no front end testing other than testing for aggregate quality. CT 384 and anything to do with gradation for RAP would disappear. You still have to qualify the RAP pile. Max temperature on virgin aggregate would no longer apply. CT Comment: MPQP modification is not on the table at this time.

3. 15. (Comment from 11/14/2014) CT will draft up language that will allow the contractor to do a split. We will review at the next meeting. You can do multiple lifts, but you cannot move away from aggregate size required for the total pavement thickness shown. If a contractor splits pavement into multiple lifts, testing will be required on each lift before the next lift is placed.

3. 16. 12/11/14 CT No Change

3. 17. (comment from 12/17/2014) Still no industry consensus to move to post plant. CT proposal: all industry people feeling for or against need to provide technical comments on why this would or would not work. **CT needs details. .By 12-18-2014 CT will formally request detailed technical comments back by January 15th on why or why not we should go to post plant gradation. Taking the comments under advisement, CT will make a decision. Caltrans says to please note that values may change in the spec a little on each side. The intent on all comments are received is to form a small working group both pro and con of the process and determine how best to proceed.**

3. 18. (Comment from 01/23/2015) CT has received a couple of comments. Kee will talk to Joe and Chuck S and provide an update at next meeting

4. **Additional issue: Windrow length**

4. 1. Industry: A 150 foot windrow impede production – Windrow length should be dependent on ambient temperature.

4. 2. We can get this on the list of issues to discuss – length of windrows vs. Temperature. This is an additional bullet for the Section 39 scope of work.

4. 3. (Comment From 6/20/2014) Industry concern: Temperature checked on the surface with a gun are producing different results than the older method of checking with a thermometer probe at mid-depth.

4. 4. (Comment From 6/20/2014) CT: We will check with Construction to see if the method for measuring temperature can be addressed in the construction manual. CT (JOE) will come up with a procedure to address the method for measuring pavement temperature.

4. 5. (Comment From 7/23/2014) Joe is working on it. Check back at next meeting

4. 6. (Comment From 7/23/2014) Industry will bring back a proposal for temperature vs. windrow length for method specs.

4. 7. (Comment from 8/13/2014) Phil provided a proposal.
4. 8. (Comment From 7/23/2014) Industry concern: For end result compaction projects there should be no windrow length requirement. CT will consider this.
4. 9. Why is CT concerned about windrow length? Why is this a requirement?
4. 10. (Comment from 8/13/2014) Caltrans says we need to have a number we can agree on – now the windrow length is 250 feet. It is easier to enforce the length than the temperature.
4. 11. (Comment from 8/13/2014) Caltrans will review the proposal for method spec and general paving. Kee and Joe will review and report back.
~~4. 12.~~ (Comment from 9/25/2014) Result of CT review: Caltrans will stay with 250 feet. Industry still has concerns related to safety – especially on a two-lane road. CT says they would have to do a study on this if the windrow length is taken out. This may result in a different restriction such as paving speed in feet per minute~~. CT will report back at the next meeting. If it is determined to be a safety issue, they will propose something else. CT proposal: Use an MTV on all projects in lieu of a windrow max length. Industry co-chairs need to report back to the Caltrans co-chairs on this.~~
4. 13. (Comment from 10/21/2014) CT is trying to keep the windrow length reasonable. CT needs to make sure they maintain temperature. Industry would like to have CT take into consideration a 15 minute windrow, which would be on the order of 450 feet. ~~CT will go to 350 feet. Industry co-chairs will take this back to their colleagues. They must come back with a solution. If this is a safety issue, industry must provide specific information on the safety aspect. CT would like to get the industry resolution and close this discussion out at the NEXT MEETING. Shawn and Al are requested to attend the next meeting in SACRAMENTO.~~
4. 14. (Comment from 11/14/2014) Industry Comment: 350 feet is OK by industry. This is no longer a safety issue. We would prefer not have a length requirement at all, but 350 feet is OK. This is better than 150, and maybe down the road we can revisit this. CT Comment: The time to revisit this would be when we work on the QC/QA spec.
4. 15. **(Comment from 11/14/2014) Industry requests an annual MPQP without a contract number – CT response": This is a policy issue for Caltrans. CT will be telling all districts that only project direct charges will be allowed. There will not be an overhead expenditure authorization. CT cannot MPQP a plant without a contract number. Industry response: Industry will elevate this item to the ATG co-chairs.**
4. 16. **(Comment from 11/14/2014) CT: We will check with Construction to see if the method for measuring temperature can be addressed in the construction manual. CT (JOE) will come up with a procedure to address the method for measuring pavement temperature.**
4. 17. (Comment from Joe, edited on12/17/2014) Procedure for temperature would have to be addressed in a test method. This way it would become contractually required, and could be sited in the construction manual as a California test method. Proposed language below:

    From the windrow:

    Measure 1.5 (+/- 3inches) foot up the angled face of the windrow.

    With a shovel remove approximately 6 inches of material from the angled face of the windrow producing a 90 degree face in the horizontal and vertical directions.

    Insert a probe thermometer calibrated to an NIST traceable thermometer. A digital or analog probe thermometer may be used. Insert the probe into the intersection of the vertical and horizontal faces. The thermometer probe must be inserted a minimum of 4 inches into the windrow.

    Accomplish all testing within 5 minutes of removing material from angled face of windrow.
4. 18. (Comment from 12/17/2014) Industry has concern about the type of thermometers used when checking temperature of the mat. What type of sensor is best? This is an ongoing discussion. **CT will come up with a procedure to check temperature at the mat and will review at the January 2015 meeting.**
4. 19. (Comment from 01/23/2015) Procedure is in CTM 125 -. **CT will come up with a procedure to check temperature at the mat and will review at the Feb 19 2015 meeting**.

5. **Additional issue: CTM 125**
5. 1. Industry concern: Height of windrow may need to be redefined.
5. 2. Industry will provide Caltrans with actual windrow dimensions based on actual field conditions.

5. 3. (Comment From 6/20/2014) CT: Joe will look at the dimensions and revise CTM 125 accordingly – probably a range to allow a little latitude.

5. 4. (Comment From 7/23/2014) Joe is working on it. Check back at next meeting

5. 5. (Comment from 8/13/2014) Joe still working on it

5. 6. (Comment from 9/25/2014) Joe still working on this.

5. 7. ~~**(Comment from 10/21/2014) There is agreement on CT 125 changes proposed by Joe and reviewed today. CT will post this by the end of October.**~~

5. 8. (Comment from 11/14/2014) Industry concern: Sampling, blending reducing of sample is not being done correctly. Should there be stronger proscriptive language to require any size sample to be properly be reduced down? CT response: We can take CT 125 down to whatever level we want to go. CT will incorporate portions of AASHTO R47 into CT 125 generals for sample taking. Turn blue at next meeting.

5. 9. **(Comment from 12/17/2014) CTM 125 revised**

5. 10. (Comment from 12/17/2014) CT will modify the practical portion of the certification process for CT125 to include replicating splitting of a large HMA sample. Turn blue at next meeting.

5. 11. **(Comment from 01/23/2015) CT will be modify 125, produce a draft copy outlining specifically the splitting methodology that should be used for HMA, and will send that out for comments – estimated about the second week of Feb. 2015.**

6. **Additional issue: Cure time for plant samples (May be for any sample)**

6. 1. Industry concern: When samples are taken early in the production process at the plant, cure time should be taken into account.

6. 2. CT Response: CT agrees. CT and contractor must be doing the exact same thing. CT and industry should revisit cure time required for plant produced samples.

6. 3. (Comment From 6/20/2014) CT Comment: We are directing the laboratories to do exactly what the contractors are doing. Industry Comment: The spec does not require the district to do what the contractor does. This needs to be specified. Exactly what temperature should the oven be when the sample is placed inside? How long should the sample be in the oven? What temperature should the sample be (what is "cold" ??) when it is placed in the oven?

6. 4. (Comment From 6/20/2014) (revisited - here is the Comment from 9/25/2014) **Joe and Kee will draft up something related to temperature and time. It needs to be simple, clear and enforceable on both sides. Need to provide language for a two hour cure (NOT reheat) for plant-sampled material. Per AASHTO R 30**

6. 5. (Comment from 8/13/2014) (revisited 10/21/2014 and 11/14/2014) - here is the Comment from 9/25/2014) **Joe will do a lab instruction to all DME's on the process to be followed for a standard two hour cure. Use the compaction temperature.**

6. 6. (Comment From 7/23/2014) Joe is working on it. Check back at next meeting

6. 7. (Comment from 8/13/2014) CT says the sample should be in the oven for 2-4 hours.

6. 8. (Comment from 8/13/2014) Industry concern: There is considerable variability among districts on how they handle cure time and temperature.

6. 9. (Comment from 9/25/2014) See 6.4 and 6.5

6. 10. (Comment from 10/21/2014) See Comment 6.5 above.

6. 11. (Comment from 11/14/2014) Industry suggests that we have a footnote in the area of the spec where the testing part is? CT Response: We are done with this. We need this only in one spot. We would need a foot note on each table, and all tables related to this would need the footnote. The way we are doing it in section 39 applies to everything.

6. 12. **CT will add language to limit oven time and number of reheats - "two hourts" into 39-1.01D(9)(a) General section: *Prior to compaction or testing, all at the plant sample must be conditioned according to the first and second sentence of Section 7.1.2, Section 7.1.3 and Section 7.1.4 of AASHTO R 30.***

6. 13. **(comment from 12/17/2014)** Industry would like to limit the number of reheats to one. CT concern is that this would lengthen test turn-around time. **CT will draft up a procedure that takes this from receiving the asphalt sample up to the point where the sample is ready for the test. Premise is that there are no more than two re-heat cycles per samples. Point is to limit the number of boxes in the oven over night or over the weekend, etc. This will be presented in the January meeting.**

6. 14. (Comment from 01/23/2015) No progress on this.

7. **Additional issue: Lab vs. Field data on Hamburg**
   7. 1. Industry Comment: Hamburg and T283 lab vs. field testing. There is a need to collect lab data for Hamburg.
   7. 2. CT is tracking data on all projects. The results are available but the specific projects are not tied to the data. The data will tell us what results were obtained, but not which project or which contractor was involved. Those attributes are treated as confidential.
   7. 3. CT Note to industry: Separate submittal of Hamburg and T 283 data on CEM requires prior approval from the RE. Be sure and get this (documented) approval prior to submitting CEM form without TSR and HWT data. \
   7. 4. (Comment from 6/20/2014) CT Comment: It would be nice to have a contact person identified for every job when you send data to CT.
   7. 5. (Comment From 7/23/2014) CT (Audrie) has communicated to industry a request to identify a contact person for each job to gather information.
   7. 6. (Comment from 8/13/2014) Still on-going
   7. 7. (Comment from 9/25/2014) CT showed samples of asphalt for HWT that passed and that failed. A small group of CT and Industry will work on the HWT improvements. Tony will provide the names of industry representatives to participate in the discussion. Tony L will provide names to Joe P. Integrate this discussion with the suggestion related to the RSP below.
   7. 8. (Comment from 9/25/2014) Suggestion: A round robin could produce some good information for everyone, working on the same material. Joe will request this for the next Reference Sample Program which will likely be late 2015 construction season.

8. **Additional issue: WMA and requirement for foaming test – LP 12**
   8. 1. Issue: No labs are interested in doing this test.
   8. 2. CT: We need to look at this issue. CT will have a discussion and bring back an opinion. Concern is that binder suppliers will add anti—foaming agents to the binder.
   8. 3. (Comment From 6/20/2014) No progress on this issue since last meeting. Kee and Joe need to discuss what is appropriate. Report in July.
   8. 4. (Comment From 7/23/2014) CT will reconsider elimination of this requirement.
   8. 5. (Comment From 7/23/2014) CT needs assurance that the binder does not contain anti-foaming agent and will actually foamed. Exploring the possibility that as part of the COC program asphalt supplier will include some sort of certification that binder does not contain anti foaming agent. Bring up this issue to asphalt binder supplier this week. However, there is still no indication of how well the certified anti-foaming free binder will foam.
   8. 6. (Comment From 7/23/2014) Industry does not see that this has ever been an issue.
   8. 7. (Comment from 8/13/2014) CT will be setting up a check-box for the binder supplier to declare anti-foaming chemicals added or not, effective September 1. Caltrans will put information on the COC Website as to who is adding anti-foaming agents. For the 2015 spec, LP-12 will be included, pending what the suppliers declare.
   8. 8. (Comment from 9/25/2014) The requirement has been eliminated, and the check box is in place. **Validate completion in October. CT will report progress.**
   8. 9. (Comment from 10/21/2014) This is completed

New Issues brought on 6/19/2014:

9. **Explore possibility of reducing D 2172 Solvent Extractions for RAP production/LP-9**

Would it make sense to use the RAP production samples as LP-9 samples? From a technical perspective is there anything that would prevent that?

   9. 1. (Comment From 6/20/2014) CT needs to review to ensure consistency between the mix design and the specification QC requirement.
   9. 2. (Comment From 7/23/2014) CT: You can use the RAP production samples for a LP-9 samples provided the stockpile has not been augmented.

9. 3. (Comment from 8/13/2014) CT says if you have control of the stockpile and do not augment it, (use of the static pile) then D2172 results from mix design will be basis for acceptance testing – no D2172 will be required in production. May finalize this at next meeting.
9. 4. (Comment from 9/25/2014) Industry would like to get away from the solvent usage. Burn-off would be much more efficient.
9. 5. (Comment from 9/25/2014) Clarification: Take 6 samples from the static stockpile. For three samples, run LP 9 (three solvent, three ignition). For the remaining three samples, run ignition oven. There are nine test results: Six are ignition and three are solvents. The average of the three solvent extraction tests will be used for mix design. For augmented stockpile: one sample per augmentation of 500 tons running chemical extraction. If the results fall within the 2% or .06, your stockpile will be considered static again. If you are outside of this you must submit a new JMF. RAP from the stockpile could be used up to the point of augmentation, then the production would have to stop. **Check after the next RSS post.**
9. 6. (Comment from 10/21/2014) This is in the 10/17 version of the spec.

10. **Additional issue Mix design 39-1.01 D(2)**

When you have a failed JMF you should be able to make the same adjustment in mix design as adjusting the non-verified mix design for RHMA.

10. 1. (Comment From 6/20/2014) CT: Concern is that allowing the gyrations that vary then for all failed mix designs will be dropped to the minimum binder content, and the gyrations adjusted accordingly. CT will discuss this and report back.
10. 2. (Comment From 7/23/2014) CT: Can adjust binder content and/or gradation. Do not adjust number of gyrations.
10. 3. (Comment from 7/23/2014) Kee will check on this again and report back to the group.
10. 4. (Comment from 8/13/2014) CT now sees no need to adjust the pressure or the number of gyrations, HOWEVER, they will go back to review the data again to see if that makes sense.
10. 5. (Comment from 9/25/2014)
10. 6. (Comment from 10/21/2014) CT does not have sufficient data to justify any changes to the gyrations at this time. This is not allowed in HMA. When you submit a design, you have a certain air void spec. Air void verification must be done at the same number of gyrations as used by the contractor. It is important that you not use a laboratory prepared binder for the mix design – you should use field materials. There is agreement that adjustment in the mass will be made for the height compliance.
10. 7. (Comment from 11/14/2014) CT: No data available at this time to justify adjusting gyrations after the fact.
10. 8. **(Comment from 11/14/2014) CT now sees no need to adjust the pressure or the number of gyrations, HOWEVER, they will go back to review the data again to see if that makes sense. Report back at next meeting. Get data from Phil.**
10. 9. (Comment FROM 12/17/2014) CT position not changed if verification fails then adjustments to binder and grading are allowed. In addition adjustments to mass of sample can be adjusted as long as specimen height is 110mm +/-5 mm It is the designers responsibility to insure that if the rubberized binder is laboratory prepared, the gradation and nature of the CRM is the same as what would be utilized during production. In addition the degree of digestion (not length of time) in the lab should replicate what will occur during production.
10. 10. (Comment FROM 12/17/2014) CT will discuss this internally and will look at methodology – If your mix design fails you can adjust either pressure (825 max) and gyrations, or you adjust the binder content but not both. Caltrans position will be presented to industry in January meeting.
10. 11. **(Comment from 01/23/2015) Caltrans will not make any changes. – "No" to the adjustments. CT will send an e mail to Tony and Pascal with the reasoning for their position.**

Industry Questions, Comments, concerns July 23, 2014

11. **A Question has been raised by members of Industry regarding the density requirements for a Type A mix utilizing a 1-inch aggregate grading.**

11. 1. (Comment From 7/23/2014) CT will revisit the density requirement for less than 0.15
11. 2. (Comment From 7/23/2014) INDUSTRY REQUESTS: Table needs to state "allow" rather than "require" (Comment from 8/13/2014) This is a spec language issue and has to go before OE for approval. (Comment from 9/25/2014) This is denied. (See discussion under agenda item # 30.6)

11. 3. (Comment From 7/23/2014) Section 39-2.02D(2) Aggregate Gradation table: Need to correct 0.30 to 0.25. Add "Shown" in the first cell.

11. 4. (Comment from 8/13/2014) Industry Comment: "lift" and "layer" should be defined. Are they the same? Lift, pavement thickness and layer need to be defined. Are they different?

11. 5. Comment from 8/13/2014) CT will resolve the different terms, "Lift" "Layer" and thickness…

11. 6. (Comment from 9/25/2014) CT denies the following INDUSTRY REQUESTS: "Table needs to state "allow" rather than "require".

11. 7. (Comment from 9/25/2014) CT is still working on the definitions of lift, layer, total pavement thickness, and placement thickness.

11. 8. (Comment from 10/21/2014) "Lift" and Layer terms and definitions get confusing. The CT proposal in the 10-17 version of the RSS is

TERM	DEFINITION
HMA thickness	Total pavement thickness made up of one or more Pavement Thickness Shown
Pavement Thickness Shown	Pavement thickness (for each mix type) shown in the plan
Lift Thickness	Pavement thickness that Contractor chose to lay down and compacted for each paving process. Contractor paves one or more lifts to achieve *pavement thickness shown*.

11. 9. ~~**(Comment from 10/21/2014, added again to the notes for 11/14/2014) Industry will review and propose terms and definitions at the next meeting. Industry will meet and discuss before December 17th, and get back to CT at the next meeting.**~~

11. 10. (Comment From 7/23/2014) CT: Since the Aggregate Gradation Requirements table ensures that the correct aggregate size is used, the paragraph will be deleted:

11. 11. (Comment from 12/17/2014) Industry would prefer to have the ability to use whatever aggregate size is appropriate. CT position is that they do not agree. They do understand there are some anomalies. Industry has concerns that resource limitations should not over-rule engineering. Industry comment is that they do not see that this would result in a giant increase in the number if mix designs submitted. **CT proposal: If multiple lifts are requested by contractors, one aggregate size will be selected for all lifts. The aggregate size selected will meet the three-to-one criteria. CT will create an SSP for designers who want a specific aggregate size. CT reserves the right to remove this passage if they start to see lifts being split to utilize overly fine aggregate. CT will present the language in February meeting.**

11. 12. (Comment from 11/14/2014) **CT will draft up language that will allow the contractor to do a split. We will review at the next meeting. You can do multiple lifts, but you cannot move away from aggregate size required for the total pavement thickness shown. If a contractor splits pavement into multiple lifts, testing will be required on each lift before the next lift is placed.**

11. 13. (Comment from 12/17/2014) Comment from issue 11 moved to issue 10.

11. 14. (Comment from 12/17/2014) CT comment: Each lift stands on its own.

11. 15. (Comment from 01/23/2015) See next item.

~~The Department determines the percent of maximum theoretical density from density cores if any of the following applies:~~

~~1. 1/2-inch, 3/8-inch, or no. 4 aggregate gradation is used and the specified total paved thickness is greater than 0.15 foot and any layer is less than 0.15 foot.~~

~~2. 3/4-inch aggregate gradation is used and the specified total paved thickness is greater than 0.20 foot and any layer is less than 0.20 foot.~~

Section **39-1.01D(9)(b) In-Place Density** (below) does not appear to address density requirement's for a mix utilizing a 1-inch aggregate grading. Is there a density requirement for a 1-inch gradation mix?

39-1.01D(9)(b) In-Place Density

The Engineer tests the density core you take from each 250 tons of HMA. The Engineer determines the percent of theoretical maximum density for each density core by determining the density core's density and dividing by the theoretical maximum density.

The Department determines the percent of maximum theoretical density from density cores if any of the following applies:

1. 1/2-inch, 3/8-inch, or no. 4 aggregate gradation is used and the specified total paved thickness is greater than 0.15 foot and any layer is less than 0.15 foot.
2. 3/4-inch aggregate gradation is used and the specified total paved thickness is greater than 0.20 foot and any layer is less than 0.20 foot.

Density cores must be taken from the final layer, cored to the specified total paved thickness.

If the percent of theoretical maximum density does not comply with the specifications, the Engineer may accept the HMA and take a payment deduction.

For acceptance of a completed tapered notched wedge joint, the Engineer determines density from cores based on:

1. Field compaction by measuring the bulk specific gravity of the cores under AASHTO T 275, Method A
2. Percent compaction as the ratio of the average of the bulk specific gravity of the core for each day's production to the maximum density test value.

12. **Questions have been raised by members of Industry regarding the gradation requirements in Section 39. Are the gradation requirements based on the total lift thickness or the actual lift thickness selected by the contractor? If based on actual lift thickness recommend the word "lift" is added to table.**

12. 1. (Comment from 8/13/2014) The word "Shown" has been added to the table.

1) Assuming a 4" lift is allowed can you use a ¾ inch gradation for a pavement lift of 0.34 foot?
2) What is the significance of the terminology "and" greater VS "or" greater in the Table?

12. 2. (Comment from 7/23/2014)CT Response:

The following changes are already in the pipeline:

1. Type A HMA pavement thickness --- Type A HMA pavement thickness as shown (in OE lingo "as shown" means as shown in the plan)

2. 0.30 foot or greater --- 0.25 foot and greater (0.30 was an error, the correct value is 0.25 per Type C specs and 3:1 ratio rule of thumb)

As to the question whether 4" lift is allowed or not, the specs is silent on it. However if the HMA pavement thickness as shown is 4", the specs allows you to use ¾" grading or 1" grading. You must meet compaction (density) requirement specified for Type A HMA pavement thickness as shown.

39-2.02D(2) Aggregate Gradations

The aggregate gradations for Type A HMA must comply with the requirements shown in the following table:

Aggregate Gradation Requirements

Type A HMA pavement thickness	Gradation
0.10 foot	3/8 inch
Greater than 0.10 to less than 0.20 foot	1/2 inch
0.20 foot and less than 0.30 foot (Comment from 9/25/2014)	3/4 inch
0.30 foot or greater	1 inch

12. 3. (Comment from 8/13/2014) CT: Need to change the table to say

0.30 foot or greater	¾ inch or 1 inch

12. 4. (Comment from 9/25/2014) The changes above (See discussion under agenda item # 12.2 and 12.3) are in the pipeline.

12. 5. (Comment from 9/25/2014) CT will look into industry concern re: being able to down-size aggregate to split total pavement thickness into lift thicknesses that would allow for a potentially smoother pavement and report back.

12. 6. (Comment from 10/21/2014) CT Comment is that anything below 0.15 thickness triggers a method spec. ~~**CT will draft up language that will allow the contractor to do a split. We will review at the next meeting.**~~

12. 7. (Comment from 11/14/2014) **CT will draft up language that will allow the contractor to do a split. We will review at the next meeting. You can do multiple lifts, but you cannot move away from aggregate size required for the total pavement thickness shown. If a contractor splits pavement into multiple lifts, testing will be required on each lift before the next lift is placed.**

12. 8. **(Comment from 12/17/2014) Same as issue "**Industry regarding the density requirements for a Type A mix utilizing a 1-inch aggregate grading" (right now that is the item # 11 above…) **now. This issue is tabled and resolution will be tied to issue 11 above. Will turn blue when issue 11 is resolved.**

12. 9. **Blue next meeting (Comment from 01/23/2015) Revision needs to read: CT to make edit to the spec. 39-2.02D(2)** To read now: "**Each lift must be evaluated and accepted individually. A tack coat must be applied before placing the second lift."**

12. 10. (Comment from 01/23/2015) **Also, same section should read as follows: "You may place Type A HMA in multiple lifts for any total pavement thickness shown which is equal to or greater than 0.30 foot. However, no individual lift placed may be less than 0.15ft in thickness. The gradation for Type A HMA placed in any lift must comply with the requirements shown in the following table:**

Aggregate Gradation Requirements

Type A HMA lift thickness	Gradation
0.15 to less than 0.20 foot	1/2 inch
0.20 foot to less than 0.25 foot	3/4 inch
0.25 foot or greater	3/4 inch or 1 inch

12. 11. (Comment from 01/23/2015) District 8 and District 11 have SSP to opt out for mix greater than one inch.

13. **There are some concerns with HWT test results being reported for HMA mix verification in at least two Districts. Neither District is shown as being AMRL accredited. Can CT HQ assist in getting these services shifted to accredited laboratories?**

13. 1. (Comment from 7/23/2014) CT laboratories performing verification tests on the mix design must be AMRL accredited, as is required of the Contractor. Non accredited CT laboratories my perform testing, however if a verification sample fails it must be retested by a CT AMRL accredited. Laboratory. Please note this

requirement is for JMF verification only. There is no accreditation requirement for production QA testing at this point. A note has been sent to DME's stating this.

13. 2. (Comment From 7/23/2014) CT and industry will explore the possibility of having all QC and QA testing performed by an AMRL accredited laboratory.

13. 3. (Comment from 8/13/2014) CT: For verification: There was some confusion in a couple of contracts where not all testing was done by an AMRL certified lab and some tests failed. Districts have been told that all things associated with a failed test must be sent to an AMRL certified lab. (Comment from 9/25/2014 edit) Only an AMRL certified lab test can be used to re-test a sample that failed verification.

13. 4. (Comment from 9/25/2014) Industry issue is that all acceptance testing should be done by AMRL certified labs. How do we deal with the satellite labs? CT response: Comment noted. **CT is working to get all the district/regional labs accredited by the end of the year.**

13. 5. (Comment from 10/21/2014) No new Comment today.

13. 6. **(Comment from 11/14/2014) Industry continues to have concerns about accreditation for all district labs - CT will provide a list of labs that are currently accredited and those that are in process – Also will reiterate the instruction that they must send raw material to an AMRL-accredited lab for testing.**

13. 7. (Comment from 12/17/2014) The following Caltrans labs are currently AMRL Accredited:

    13. 7. 1. D-1, D-2, D-3, D-4, D-6, SRL (D-7, D-8 & D-12)

    13. 7. 2. D-5, D-10 labs will be accredited early part of next year.

    13. 7. 3. D-9, D-11labs will be accredited by end of next year

13. 8. (Comment from 12/17/2014) Districts are under a mandate to become AMRL certified.

13. 9. (Comment from 01/23/2015) District 5, 10 and 9 Labs have gone through their AMRL assessments –and are addressing their deficiencies.

New Issues brought on 8/13/2014:

14. **Mix verifications – are they subject to dispute resolutions?**

14. 1. (Comment from 8/13/2014) Industry concern: When test results for mix verification from an accredited lab do not agree with contractor test results can a contractor then use dispute resolution and an independent laboratory to resolve the issue?

14. 2. (Comment from 8/13/2014) Caltrans: This is a gray area. Do we treat the verification as a test with sub components? CT position is that the mix design needs to be verified in its entirety, and you can't just test a sub-component in the mix design verification. You must redo the entire battery of tests.

14. 3. (Comment from 9/25/2014) You have to do all the tests again – not just the sub component or subsection that failed. Caltrans does not want material on the ground that does not pass. All the tests are inter-related. Industry concern: Why focus on all the components? Industry continues to be concerned with this approach.

14. 4. (Comment from 10/21/2014) CT position has not changed. Note that you are not in formal dispute resolution when you are still working with the district laboratory.

14. 5. (Comment from 11/14/2014) CT position has not changed. Contractors are encouraged to work with Caltrans (RE and District Lab personnel) on specific elements of verification that are not in compliance prior to initiating a formal dispute. This informal approach to resolve issues would preclude the requirement to re-test ALL components of mix verification, which is mandatory in dispute resolution.

14. 6. (Comment from 12/17/2014) Caltrans position has not changed. CT will issue an informal instruction to district labs on what they should do when a test fails: retest, work with the contractor, etc. **CT HQ cannot guarantee that the districts will adhere to this informal instruction. CT will present this at the January meeting.**

14. 7. (Comment from 01/23/2015) CT still working on this internally – Intent is to encourage disputes to be resolved early on and at the lowest possible level.

Section 39 Subtask Group New Industry items September 25, 2014

15. **Industry item: CTM 384 (September 25, 2014) There appears to be a math error on page 6**

15. 1. (Comment from 9/25/2014) CT will look into this.

15. 2. (Comment from 10/21/2014) Will be resolved this month.

16. **Industry item: Selection of aggregate size (September 25, 2014)**

The aggregate gradations for Type A HMA must comply with the requirements shown in the following table:

Aggregate Gradation Requirements

Type A HMA pavement thickness	Gradation
0.10 foot	3/8 inch
Greater than 0.10 to less than 0.20 foot	1/2 inch
0.20 foot and greater	3/4 inch
0.30 foot or greater	1 inch

Table 39-2.02D(2) Aggregate Gradations specifies aggregates size allowed for specific pavement layer thicknesses as shown on the plans. There does not appear to be any direction to the contractor regarding allowable aggregate gradation and lifts thickness. For example:

If the plans show a 0.25 layer for Type A HMA can the contractor place this layer in two lifts of his choosing?

If yes, he might have two 0.125 lifts using a ¾" aggregate per the table because the layer thickness is greater than 0.20. This would exceed the 3:1 NMAS vs lift thickness criteria.

If the intent of the table is to not address the aggregate size for lift thickness then maybe there should be language addressing aggregate size vs layer thickness? (See below).

The aggregate gradations for Type A HMA must comply with the requirements shown in the following table:

Aggregate Gradation Requirements VS Lift Thickness

Type A HMA pavement lift thickness	Gradation
0.10 foot	3/8 inch
Greater than 0.10 to less than 0.20 foot	1/2 inch
0.20 foot or greater	3/4 inch
0.25 foot or greater	1 inch

If we are still allowing the contractor to construct an asphalt pavement layer with aggregates and lifts that do not meet the 3:1 NMAS vs lift thickness to create additional opportunities to meet smoothness then we would probably the old language regarding the density requirements.

Maybe it would read: You are allowed to select a lift thickness and aggregate gradation. When selecting aggregate size and a lift thickness not meeting the requirements (reference above table) density will be required by measuring density for both layers… (use old language here)

16. 1. (Comment from 10/21/2014) CT will not allow splitting a 0.25 foot layer.

17. **Industry item: Revisit RAP Question CEM 3512 (September 25, 2014)**

17. 1. On the CEM 3512 form Page 1, how has Caltrans addressed the use of 2 RAP products (only one column to put data into). Is it their intent that this column would include the "mathematically" combined RAP? (Comment from 9/25/2014) CT: Each stockpile stands on its own if you are augmenting the stockpiles. If the pile is not static, each stockpile will be treated as an individual. For mix design, the contractor may do a combined

sample for CT 384 or the contractor may treat each stockpile as an individual and mathematically combine the results for CT 384.

Scenario #1 - 2 RAP products in a mix

(Comment From 7/23/2014) CT: Contractor is using multiple piles either course/fine or fine/fine, course/course etc.: Contractor will be required to designate the percentage use in the mix for each RAP product. Each RAP fraction will have its own Page 4 of the CEM 3512, and a combined RAP pile page 4. Grading factors will only be required for the combined sample. If more than one RAP pile is used at the same time, each RAP product will require its own feed and will have to meet MPQP requirements.

17. 2. (Comment from 9/25/2014) Will the 3512 now have 2 page 4's? (1 page for each for CT 384) (Comment from 9/25/2014) CT: No it will not.
17. 3. (Comment from 9/25/2014) Where does the contractor show the blending sheet for the mathematically combined RAP gradation? (Comment from 9/25/2014) CT: The contractor needs to develop an independent worksheet until Caltrans standardizes a form for this purpose.
17. 4. (Comment from 9/25/2014) Where does the contractor show the blending sheet for the mathematically combined correction factors? (Comment from 9/25/2014) CT comment: This will be on the backup sheet to Page 4.
17. 5. (Comment from 10/21/2014) CT working on this.
17. 6. Comment from 11/14/2014) Still working on it.
17. 7. (Comment from 12/17/2014) Caltrans still working on it. This will be an RSS.
17. 8. Industry wants to make sure this is now addressing RAS as well as multiple RAP.
17. 9. (Comment from 01/23/2015) CT is working through a set of batch sheets – there are also proposed changes to 3512 which will be reviewed here in the Feb mtg.

18. **Industry item: LAS Amine Requirement (September 25, 2014)**

CEM 3511? Requires a minimum amine value for LAS. If the contractor is using an approved WMA additive and it acts as a LAS does the product need to meet the amine requirement?

18. 1. (Comment from 10/21/2014) CT: Yes, it does.

19. **Industry item: Supplemental Fine Aggregate (September 25, 2014) (Turned black again to be revisited on 01/23/2015)**

19. 1. (Comment from 9/25/2014) What are the limitations for Supplemental Fine aggregate? For the sake of clarity should the specifications reference ASTM D 242?
19. 2. (Comment from 10/21/2014) CT does not want fly ash included as a supplemental fine aggregate. It is within the authority of an RE to request an RFI from a contractor identifying what they are wanting to use as a supplemental fine aggregate.
19. 3. (Comment from 01/23/2015) Industry comment: We need to strengthen the AASHTO language to prevent future contract delays. Industry has no problem listing the Supplemental Fine Aggregate material description, gradation and proposed -quantity on HMA submittal CT Response: If you are going to use a filler it must be defined in the JMF. CT would like to get a recommendation from industry. Fly ash or rice hull ash is not on the table at this time. **Industry will discuss the elimination of fly ash and other items in ASTM D242 and report back.**

Section 39 wording: Supplemental fine aggregate: Aggregate passing the no. 30 sieve, including hydrated lime, portland cement, and fines from dust collectors.

ASTM D242 Mineral Filler For Bituminous Paving Mixtures

General Description

3.1 Mineral filler shall consist of finely divided mineral matter such as rock dust, slag dust, hydrated lime, hydraulic cement, fly ash, loess, or other suitable mineral matter. At the time of use, it shall be sufficiently dry to flow freely and essentially free from agglomerations.

20. **Industry item: Approval of District Specifications (September 25, 2014)**

20. 1. (Comment from 9/25/2014) Industry has an understanding that SSP's will not be changed without the owner's approval in Sacramento. Is this correct? Did HQ approve the following addendum?

11-Imp-7-0.0/1.2
11-238404
Project ID 1100020348
ACNHP-P007(01O)E

In the Special Provisions, Section 39-2.02, "Materials," is replaced as follows:

"39-2.02 MATERIALS

The aggregate gradations for Type A HMA must comply with the gradation requirements shown in the following table:

Aggregate Gradation Requirments

Type A HMA pavement thickness	Gradation
0.08 to less than 0.10 foot	3/8 inch
0.10 to less than 0.20 foot	1/2 inch
0.20 foot or qreater	1 1/2 inch

This project also included a 1 ½" SP Mix Design

20. 2. (Comment from 9/25/2014) 1 ½" SP Mix Design is being specified by addendum. Did the SP STG discuss this design and associated requirements? If not, does this circumvent the RPC process?

20. 3. (Comment from 10/21/2014) CT: This is the same NSSP that we have been using for ten years, and can be approved on a project-by- project basis.

20. 4. (Comment from 11/14/2014) CT is unaware of any issues around the 1" mix. We will keep this on our watch list.

20. 5. (Comment from 12/17/2014) continue to watch

20. 6. (Comment from 01/23/2015) Continue to watch, see if anything comes up.

21. **Industry item: Binder Set Point at Mix Verification - - JMF Binder Content Adjustment**

21. 1. Footnote 1 on CEM 3511 states "(JMF) adjustments may include a change in the asphalt binder target value up to ±0.2 percent.." Can this adjustment be made at time of the initial submittal?

Superpave Training Slide:

- Plant Set Point
- Use OBC specified on CEM-3512, ± 0.2%
- For mix with RAP, binder set point must be the OBC specified on the CEM-3512, ± 0.2% minus the percent RAP multiplied by the combined average binder content of the processed fractionated RAP stockpile(s).

1) In the attached Section 39 STG meeting notes of 11-14-2013 Issue number 92 "Requirement for Binder Set Point at OBC for Mix Verification" states the following: **(11-14-2013): Industry says this is a fatal flaw both in superpave and in Section 39. Caltrans says they are willing to go +/- .2 on the set point.** That language is not included in the current specifications. There is language regarding an allowance to adjust the binder OBC Target value by 0.2± after a failed mix verification but this is something different.

Should we add language allowing adjustment prior to verification?

You may submit an adjusted, binder content by 0.2±, aggregate gradation TV on a Contractor Job Mix Formula Proposal form before verification testing. Aggregate gradation TV must be within the TV limits specified.

21. 2. (Comment from 9/25/2014) Caltrans response: This change is in the pipeline. The production set point at the plant must be within +/- 0.2 from the asphalt binder percentage target value described in your contractor JMF proposal form.
21. 3. (Comment from 11/14/2014) Caltrans has made the change.

22. **Industry item: CEM Form numbers (September 25, 2014)**

22. 1. Can we add the CEM Form No.'s to this section for clarification? Some Districts are asking for something different.
22. 2. (Comment from 11/14/2014) Caltrans style guide does not allow form numbers to be called out by number; rather, only the title of the form.-

Section 39-1.01C(2)(c) Job Mix Formula Modification

For an authorized JMF, submit a modified JMF if you change any of the following:

1. Asphalt binder supplier
2. Liquid antistrip producer
3. Liquid antistrip dosage

You may change any of the above items only once during the Contract.

Submit your modified JMF request a minimum of 15 days before production. Each modified JMF submittal must consist of:

1. Proposed modified JMF on Contractor Job Mix Formula Proposal form, marked *Modified*. (CEM 3511)
2. Mix design records on Contractor Hot Mix Asphalt Design Data form for the authorized JMF to be modified. (CEM 3512)
3. JMF verification on Hot Mix Asphalt Verification form for the authorized JMF to be modified. (CEM 3513)
4. Test results for the modified JMF in compliance with the mix design specifications. Perform tests at the mix design OBC as shown on the Contractor Asphalt Mix Design Data form. (Provide new CEM 3512 using new binder)

With an accepted modified JMF submittal, the Engineer verifies each modified JMF within 10 days of receiving all verification samples.

23. **Industry item: Sample Box Sizes (September 25, 2014)**

23. 1. (Comment from 9/25/2014) We need to discuss sample size boxes at the next meeting. The May 2014 test method limits sampling to 8inx8inx3in (16 boxes) and 81/2inx81/2"x41/2in (10 boxes). Sampling of Superpave mixes requires large sample sizes of HMA (250 #) for each split. The CTM 125 note says "Cardboard box size is limited to provide for uniform heating". This could be a potential for huge variability as it implies that any of the sample boxes could be used for testing. This topic deserves further discussion.
23. 2. **(Comment from 11/14/2014) CT: District labs do not want to handle bigger boxes. Because of the volume of the work done in district labs, they need to stay with the box size. Al will send box vendor information to industry co chairs.**
~~23. 3. Caltrans will modify Ct 125 to allow use of 8x8x4 box~~

24. **Industry item: CEM 3513 Verification Date (September 25, 2014)**

24. 1. (Comment from 9/25/2014) Is the date that the RE signs the mix verification form the date that starts the one year clock?

24. 2. (Comment from 11/14/2014) Yes, per Caltrans.

25. **Industry item: Mix Design for 2nd binder Supplier (September 25, 2014)**

At District 4 SP meeting it is understood that for an additional $2,600, contractors can submit another binder supplier with a mix design. The contractor will provide a duplicate of the initial mix design with the 2nd binder supplier and run a 2nd mix verification.

Will the 5 day review be waived for the 2nd binder if submitted with the initial 3511.

25. 1. (Comment from 9/25/2014) Can we get a clarification on this?

25. 2. (Comment from 11/14/2014) CT: No

26. **Industry item: Lime treatment Coarse/Fine fraction (September 25, 2014)**

26. 1. (Comment from 9/25/2014) It is my understanding that there is some ambiguity in the spec with regard to lime treatment, specifically the requirement to treat BOTH coarse and fine aggregate. Currently, the spec asks the material producer to note the dosage rate for the coarse and fine aggregate, suggesting that BOTH must be treated. Is it not unreasonable to assume that only one portion of the aggregate might be treated, or that treating only one portion is more cost effective? For example, if the total dosage rate of 1.5% is effective by treating the coarse aggregate and achieve passing T283 or T324 test results, could one not say that the dosage rate for the coarse and fine aggregate is 1.5% and 0.0%, respectively?

26. 2. (Comment from 11/14/2014) CT response: Contractor must state the lime on coarse and fine – zero for one fraction is allowable. You have to meet the specification.

I've spoken with Joe Peterson about this and he suggested that enforcement might be problematic but was receptive to discussing it.

27. **Industry item: Bonded Wearing Course (September 25, 2014)**

Gradation Requirements

As per the plans and specifications for this project the BWC, Type HMA-O, is to be placed at .08' thickness.

Section 39-5.01A(1) of the RSS included with the special provisions states that "BWC using…HMA-O must comply with the specifications for …HMA-O"

Section 39-4.02D(2) of the RSS included with the special provisions includes a table that specifies the gradation for HMA-O for "Greater than .10 to less than .15 foot" and "0.15 foot and greater". There is no gradation specified for lifts placed less than 0.1 foot.

27. 1. (Comment from 9/25/2014) What gradation is to be used on this project since no gradation is specified? Typically a 3/8" gradation would be used to place BWC at this thickness but there is no 3/8" HMA-O or OGFC aggregate gradation provided in the current RSS.

27. 2. (Comment from 10/21/2014) CT response: We are not allowing placement for less than 0.1 foot of HM OGFC and RHMA-O friction course. Revision 10-17 says "0.1 HMA OGFC or greater." CT reports that placement less than 0.1 HMA OGFC RHMA-O has created problems in that section thickness varies in the roadway where we end up with thin spots where we have an excess of emulsion or binder, or drag rock.

27. 3. (Comment from 11/14/2014) However, Caltrans answer to the lift thickness issues with BWC (only placing it at 0.10[1] or greater going forward) is not what I would consider an acceptable answer. BWC started off in 2002 with Caltrans (1998 with LA County) as being placed at 1 1/2 - 2 times lift thickness to aggregate size ratio. This allowed for BWC to be placed at 3/4[2]-1[2] for most aggregates with success throughout the state. This provides a thin lift treatment that does not delaminate and wears well due to the aggregate requirements and mix design criteria. The BWC tack membrane adds to the success of the system. Now, with no data at all, Caltrans is opting to take a specification that is working well throughout the state and force thicker lifts thereby raising cost and reducing the cost effectiveness of the system. Since BWC is placed using a shuttle buggy, there is next to no thermal segregation and the mix is only rolled for minimal compaction and seating. I believe this response is not warranted and challenge the rational behind this decision. Can

Caltrans show any applications of BWC where there was delamination or issues that were not attributed to mix design or design issues (like Hwy 80 where a non- Alpine mix was placed at high altitude resulting in premature wear)? If so, I would ask them to bring these projects to the group for consideration before changing a specification that has been successful for 12 years. Many other states that use super pave still use BWC at thin lifts to extend their maintenance dollars. Scott Dmytrow

27. 4. (Comment from 11/14/2014) Scott raises some good points. Another reason to NOT use the 0.10' (1 1/4") minimum thickness is the fact that larger (unacceptable?) drop-offs would result at manholes and gutter lips in street environments. ROGER SMITH

27. 1. (Comment from 11/14/2014) Industry: Based on past experience, lift thickness less than 0.1 performed well. CT response: Lift thicknesses under 0.1 are impossible to repair due to lift thickness. Industry still concerned about this and will look for more discussion.

~~27. 2. **(Comment from 11/14/2014) CT recommends that industry work with ATC co-chairs to take this forward as an item for Rock Products for scoping document.**~~

27. 3. (Comment from 12/17/2014) CT no change in position.

27. 4. (Comment from 12/17/2014) CT still holding if you are using any HMA, you must have minimum of 1/10th . All supporting data CT has at this point are anecdotal. You would be allowed to use .08 when a BWC-G is specified. All other BWC must use a minimum of 0.10 thickness of HMA specified. **Industry will check to see if this is still in need of a scoping document.**

27. 5. **(Comment from 01/23/2015) CT: Data has been submitted by districts in support of thinner lifts. METS is evaluating the data. Will report back next meeting.**

28. **Emulsion Requirements**

Section 39-5.01 A and B

In both portions of the specification, there are Asphalt Emulsion Membrane tables which are identical. Both have “Tests on residue from evaporation”. The issue is with the “Penetration at 25°C” “AASHTO T49”

They specify a

PG76-22M with a pen value of 50-70

PG 64-28M with a pen value of 150-200.

Previous BWC Emulsion specifications since the inception of the specification were:

PG 76-22M with a pen value of 50-150

PG 64-28M with a pen value of 70-200

28. 1. (Comment from 9/25/2014) The ranges currently in the specification, most especially the 150-200 on the 64-28, M are not physically possible nor would you want them if they could be manufactured. The material would have to be so soft as soon as the road got warm the emulsion would soften and the entire BWC would begin to slide and move. Please correct.

28. 2. (Comment from 10/21/2014) CT Response: This has been corrected in the 10/17 version. There will be one emulsion specified for the tack coat. Contracts with the old language – Contractors should go through the RFI process first. If that does not correct it, please send a note to Kee and Joe.

28. 3. (Industry Comments 11/14/2014)The correction on the emulsion penetration is fine. Thank you.

29. **Industry item: HWT Variability (September 25, 2014)**

29. 1. As I have noted earlier, I am compiling a list of concerns on behalf of industry regarding the variability of the HWT test. Below is new Comment I received today from another Section 39 stakeholder. The purpose of this message is to give you a heads up in regards to seriousness of these concerns.

29. 2. Comment from 10/21/2014) CT has done the request for the data from HWT on the next RSP in late 2015. A small task group has been established to look at variability in the HWT. Meeting is scheduled Oct. 22.

29. 3. (Comment from 11/14/2014) Small group working on this. Next meeting is Nov. 21 .

29. 4. (Comment from 12/17/2014) Continuing to work.

29. 5. (Comment from 01/23/2015) Small group continuing to work on this. Will report back.

Joe, Kee,

As I have noted earlier, I am compiling a list of concerns on behalf of industry regarding the variability of the HWT test. Below is new Comment I received today from another Section 39 stakeholder. The purpose of this message is to give you a heads up in regards to seriousness of these concerns. As noted above there are a number of concerns, this just being one of many. I hope to get you a complete compilation of the concerns received to date soon so that you and members of the Section 39 STG can begin thinking about possible resolutions for these concerns where warranted.

"Hi Tony….just wanted to chip in and give you some of the concerns we've noticed on our end when it comes to Hamburg testing…..

We are seeing HUGE variability in testing results on samples taken from the same testing sublots/boxes. There appears to be no real rhyme or reason as to why we're seeing these large fluctuations, so it's a real cause for concern on our end. We can split test samples out from the same boxes of materials brought into our lab, and we can have failing inflection points on one set of briquettes – and no inflection point on another set of briquettes. We've run into some of the same issues when it comes to rut depth also. Some samples will have little to no rut depth, while another sample from the same set of materials will fail badly.

I've had conversations with the folks at UCPRC and UNR, and they both have mentioned that the HWT test has the potential for ***enormous*** variability that is sometimes unexplainable (the enormous variability they're talking about is in the THOUSANDS of cycles between like-for-like samples). Our issue is that we have no real idea what constitutes a borderline result at this point. If we pass an inflection point, but we are only a couple thousand cycles over the failure threshold, what kind of confidence do we have that our next test isn't going to fail badly knowing how large the variability in test results can be on like-for-like materials.

What I can tell you is that we have noticed that averaging 4 test specimens is giving us the potential for more accurate and believable test results. Thanks and let me know if you have any questions."

Hi Tony,

What Hongbin and the guys have observed is that mixes are either greatly exceeding the requirement or failing miserably. So, big swings suggesting big sensitivity for the design criteria allowed. This not only raises questions about HWT but whether or not the design criteria and limits that are in place now are appropriate for the testing regime that we now have. I suspect that with greater latitude in design we might possibly see a more normalized set of results.

Thanks,

Mike

Just as an FYI

I am having all the HWT data (rutting and inflection) we have plotted, to kind of develop a process band for the HWT. I hope to have it out to all a couple of days before our meeting for all to review. As I have stated many times we are data driven. If the data and apples to apples studies show we need to modify what or how we report, than that is the direction we will go.

As with any data driven process we have to be aware of outliers, or hotspots, and make sure they are accounted for but that they don't drive the process, but rather the data drives the direction. JP

30. **This specifcation is in District 8 (11/14/2014)**

Moisture susceptibility (tensile strength ratio)	*AASHTO T 283*	*70*
Surface Abrasion Loss (max, (g/cm^2)^h	*California Test 360*	*0.4*

^{h}If the project elevation is greater than 1500 feet

30. 1. (Comment from 11/14/2014) CT: These will become a 2015 SSP. These are only on specific routes where this is required. Information can be found in the SSP hidden language. CT will continue to gather and analyze data.

31. **(Comment from 11/14/2014) The text in the draft specifications printed in the color purple are Standard Special Provisions (SSP). These provisions will not be part of the 2015 Standard Specifications. These SSP's are reserved for specific Caltrans Districts and counties.**

31. 1. (Comment from 11/14/2014) NSSP's Now showing up in Districts 7 ~~and 8~~ Which districts does this apply to?

31. 2. (Comment from 11/14/2014) CT response: If you see bid packages with what appears to be erroneous requirements for testing you should submit an RFI. Be very specific in your request in identifying the issue you see. Provide references.

31. 3. The following SSP's are reserved for use in District 2 specifications.

Add to the table in the 6th paragraph of section 39-1.02B(1):

Tensile strength ratio	*AASHTO T 283*	*80*
Surface Abrasion Loss not to exceed (g/cm^2)^f	*California Test 360*	*Loss not to exceed 0.4 g/cm^2*

^{f}If the project elevation is greater than 1500 feet

User for a project with an aggregate source from Modoc, Siskiyou, or Shasta County.

Sodium sulfate soundness (% max loss)	*AASHTO T 104*	*25*

The following SSP's are reserved for use in Districts 2 and 6.

Add to the table in the 2nd paragraph of section 39-1.02D(1):

Coarse durability index (D_c, min)	AASHTO T 210	65
Fine durability index (D_f, min).	AASHTO T 210	50

2.Use for a project in District 2.

The requirement for the Los Angeles Rattler test, loss at 500 revolutions must be 25 percent maximum.

31. 1. (Comment from 12/17/2014) Industry comment: We have concerns about uniformity of specifications statewide.

31. 2. (Comment from 01/23/2015) CT: AADD delegation allows district office engineers to put the bid package together. Sometimes this results in lack of uniformity. CT is working on this. Industry is still concerned with the lack of consistency in specification use.

32. **Warm Mix SSP's**

The following SSP language applies to HMA, RHMA-G and OGFC. These SSP's are problematic in that they are not assigned to any specific District or County.

You must produce HMA using an authorized warm mix asphalt technology, except the water injection technology is not allowed.

Caltrans: The use of this provision will remain limit to special projects that the Districts believe require the use of WMA.

Now in ALL District 1 projects. Also being used in Districts 7 for RHMA and HMA. 07-2656U4.

INDEX FOR 2010 SSPs Updated date 10-17-14

39-2	PM	A 10-17-14		Use to specify the following for Type A HMA: 1. Warm mix asphalt additive technology requirement 2. Grade of asphalt binder 3. Requirements for a District 1, 2, or 6 project
39-3	PM	A 10-17-14	--	Use to specify the following for RHMA-G: 1. Warm mix asphalt additive technology requirement 2. Grade of asphalt binder 3. Requirements for a District 1, 2, 6, or 11 project
39-4	PM	A 04-18-14	--	Use to specify the following for OGFC: 1. Warm mix asphalt additive technology requirement 2. Grade of asphalt binder 3. Requirements for a District 2 or 6 project

32. 1. (Comment from 11/14/2014) WHAT IS THE SIGNIFICANCE OF THESE CHANGES?

32. 2. (Comment from 11/14/2014) CT response: Nothing has changed.

33. **(Comment from 11/14/2014) Industry concern: When you have specification that does not allow you to place a warm mix, the contractor is not able to take advantage of the ability to get proper density after a long haul and low ambient conditions.**

33. 1. (Comment from 11/14/2014) CT: Industry should meet and develop a proposal for Caltrans.

33. 2. **(Comment from 11/14/2014) Industry will get together in a small work group to make a proposal to CT on WMA temperatures.**

33. 3. (Comment from 12/17/2014) Small group is working on this.

33. 4. (Comment from 01/23/2015) Still working on this.

34. **(Comment from 11/14/2014) For lime treated aggregate, the HMA plant must be equipped with a bag-house dust system. Material collected in the dust system must be returned to the mix.**

34. 1. (Comment from 11/14/2014) Industry concern: How do we separate the lime in the fines when metering bag house fines? **CT: Submit RFI if you have a job this in it. Be specific. Joe will carry this back and revisit with Basil.**

34. 2. (Comment from 12/17/2014) We will temporarily open the DP up from 0.6-1.3 to 0.6-1.5 for aggregates that are lime treated. This would not be an issue if we did post production gradation.

34. 3. **(Comment from 12/17/2014) Industry will look to see of 1.5 is a good number. CT: Joe and Kee will carry this back and revisit with Basil.**

34. 4. (Comment from 01/23/2015) This specification has been revised and the requirement for 100% baghouse dust for lime treated aggregate has been removed.

35. **(Comment from 11/14/2014) Industry continues to be concerned about the impact of lime marination on the DP.**

35. 1. **(Comment from 11/14/2014) Joe and KEE will revisit and report back.**

35. 2. See comment 34

35. 3. (Comment from 01/23/2015) For lime treated aggregate, the DP went up to 1.3 to 1.5

Added 12-17-2014

36. **Issue: Option for density cores, calibrated back to wax cores**

36. 1. (Comment from 12/17/2014) CT: You can use any equipment. An expedited scoping document should be done on this, and the issue should be resolved fairly quickly – the correction factors need to be set. **Industry will do a scoping document**.

36. 2. (Comment from 01/23/2015) Scoping document has been submitted to ATG co-chairs.

Added 1/23/2015

37. **The Samples section 39-1.01C(9) below was added to Section 39 and I'm not sure why?**

37. 1. **(Comment from 01/23/2015) Caltrans will review industry comments and report in February.**

The first sentence is already referenced in 39-1.01D(2) Verification.

The second sentence used to be under submittals. Also this is a QA test so why are we pulling it?

Section **39-1.01D(9)(a) General** states: **"**The Engineer's sampling and testing is independent of your QC sampling and testing."

The third sentence needs clarification, it can be read as we are to split every 750 ton QC sample and submit 3 parts to the engineer. I am definitely not OK with that! I am getting the feeling that Caltrans is trying to get us to pull all of their samples.

39-1.01C(9) Samples

For the samples taken for JMF verification, submit 3 parts to the Engineer and use 1 part for your testing.

At production start-up and within 1000 tons of the halfway point of production of HMA, submit samples split from your HMA production sample for AASHTO T 283 and AASHTO T 324 (Modified) tests to the Engineer.

For production samples taken, submit 3 parts to the Engineer and use 1 part for your testing.

38. **Joe has stated that TSR and HWT samples can only be pulled at the plant but unless they dropped windrow from the section below they can still pull it on grade. I have also heard that we would be pulling the QA samples at the plant. I understand this from a liability concern but they need to be there with buckets and be ready to receive, split, box and label the QA samples. I have also heard that we could just give them a split of our QC samples but that goes against the independent QA sample requirement.**

38. 1. (Comment from 01/23/2015) CT Response: Samples can be taken from windrow either created at the plant or a windrow at the project. QA Samples are always independent. The engineer designates when the independent QA sample is to be taken. The contractors will not be required to split samples to provide QA samples.

39-1.01D(9)(a) General

The Department tests treated aggregate for acceptance before lime treatment except for gradation.

The Engineer takes HMA samples for AASHTO T 283 and AASHTO T 324 (Modified) from one of the

following:

1. At the plant

2. At the truck

3. Windrow

39. **Use of non-amine based liquid anti-strip**

39. 1. (Comment from 01/23/2015) Issue: Will CT approve non-amine based anti-strip?

39. 2. (Comment from 01/23/2015) CT response: Concern is long- and short-term effects on the HMA. Because we currently do not use non-amine based LAS, we have no means to measure product effectiveness. If there is a need to use this type of LAS, a scope of work must be submitted to the RPC for approval. Industry would be the lead on this.

40. **CT Certifications**

40. 1. (Comment from 01/23/2015) Is CT certifying labs or personnel only? CT Response: For mix design you need AASHTO cert, CT IA certification and CLAM.