Section 39 STG Meeting

Group Memory

Southern Regional Laboratory

February 23, 2016

Next Meeting dates

Feb. 23 Location: SRL

March 17 Location: Granite Sacramento

April 12 Location: Granite Sacramento

Desire outcome for next meeting:

Continue to work, resolve issues.

NOTE: ITEMS IN BLUE have been cleared

Opening comments from meetings

(Comment from 7/22/2015) Caltrans is requesting that this Section 39 group sunset by the September meeting. Caltrans does not want this to be a standing committee. Caltrans will deal with new issues if they are fatal flaws. Regardless of where we are with the issues, this committee will sunset in September. Existing issues that are not resolved by September can either be rolled into Section 39 QCQA or write another Section 39 scoping document and request approval from the RPC.

(Comment from 7/22/2015) Industry has six new issues from the last meeting. In addition, we now have two more issues added from yesterday's "Industry Only" meeting. Industry wants to know where the issues will be addressed, if this committee is terminated. If there is no committee, how will issues be brought forward and resolved? There are still holes in the spec that need to be fixed. There are issues that are critical to contractors and may not necessarily be seen by Caltrans as critical. How will these issues be addressed? Industry says they still have a lot of issues to address.

(Comment from 7/22/2015) Industry comment: What do we do when new issues show up that should be worked on right away? Could we get those issues added to the scoping document? We need to be able to bring in issues that come up, and if they are critical, they would get attention right away.

(Comment from 7/22/2015) Industry comment: Why don't we just amend the existing Section 39 scoping document to identify the issues needing to be worked on? That amendment would go to RPC for approval.

(Comment from 7/22/2015) Industry comment: This really boils down to the need for a standing committee for Section 39.
(Comment from 8/25/2015) These meetings will continue.
(Comment from 9/30/2015) Caltrans – Jesse B – would like to have some idea of the items we are working on – He is not in favor of a standing Section 39 committee with no scoping document. Industry comment: We may be able to combine this sub task group with the QCQA sub task group, depending on progress made in the near future. For now, we need to maintain both sub task groups.

(Comment from 10- 23- 2015) Nothing has changed.

(Comment from 12-02-2015) CT Comment: RAP/RAS STG will reconvene to address virgin binder values and come up with an NSSP. Industry: Is there any discussion about disallowing the intermediate temperature requirement waiver when there is more than 15% RAP? CT: Waiver is not allowed in projects with RAP greater than 15% NSSP is not final yet. Caltrans will continue to meet with industry to come up with a permanent solution.

(December 9, 2015) Industry: Industry proposes the elimination of the 2.0 kpa on the original binder as it unnecessarily reduces the amount of RAP that can be used. Recommend CT adhere to the AASHTO M320 standard.

(Comment from 01-05-2016) MPQP Draft Oct. 2015 – Industry comment: There are significant changes. Industry would like a "mark changes" draft for review. **Caltrans will check to see if it is ready for review**.

(Comment from 01-05-2016) Caltrans reports the update for CRM verification will be in the April RSS. The requirements will be in projects starting around July.

(Comment from 02-23-2016) Caltrans sent the draft version of the MPQP today – Feb 23, 2016. Industry will review and provide comments by next meeting.

(Comment from 02-23-2016) Industry requests changes or revisions to the MPQP be identified in the draft language (track changes). Pete Spector will check on this.

~~**(Comment from 7/22/2015) Outcome: Industry will discuss this off line and make a recommendation to the RPC based on that discussion.**~~

Section 39 issues: (5/20/2014 Industry concerns list)

1. Aggregate temperature (when using RAP)
2. Minor asphalt AASHTO T283 requirements
3. Define the parameters for Minor HMA (less than 1000 tons, 500 tons etc.)
4. Use of cores vs. nondestructive density gauges
5. Mix laydown temperatures and for WMA technologies

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. **Specification**

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.

2. 16. (Comment from 2/19/2015) no update

2. 17. (Comment from 3/18/2015) No update

2. 18. (Comment from 5/21/2015) No update.

2. 19. **(Comment from 6/25/2015) Still in OE – Caltrans (Kee Foo) will check on this and provide an update at the next meeting.** The section 39 spec is being reviewed by the Caltrans 2015 Review Council. I

2. 20. (Comment from 7/22/2015) Concern is that there is has not been any notification that a "final version" has been made available to industry for review and comment. Is Section 39 following the same process as other sections? The last posting of the revised Standard Speciation Section 39 is dated October 2014, on their website. The latest version of the RSS came out last month. The latest changes for RSS Section 39 released in May 2015 are dated October 2014.

2. 21. (Comment from 7/22/2015) Industry concern is to ensure that the issues we have resolved are incorporated into the RSS. ALSO industry members here want to be included in the review process.

2. 22. (Comment from 7/22/2015) **Caltrans will check with OE to see if industry can be provided the latest spec for Section 39 for review.**

2. 23. (Comment from 7/22/2015) Caltrans says for the 25 sections not yet pasted as part of the 2015 spec on their website are not provided to them by August 31, 2015 then the contract language will be drawn from the most recent version of the Revised 2010 Standard Spec. If we do not make any changes between now and then, the contract specs will include the language from the October 2014 version of the RSS.

2. 24. (Comment from 8/25/2015) We are down to the last stakeholder approval in Caltrans. Industry is good to go with it, now. Current version 5 should be completed by the end of August and sent to OE.

2. 25. (Comment from 9/30/2015) Version 6 is up on the internet.

2. 26. (Comment from 10- 23- 2015) CT has no new information. Industry says CT has reported it will be posted Oct. 30 on the internet. It will be available in print in January. Section 39 numbers have changed.

2. 27. (Comment from 12-02-2015) CT: The 2015 standard specification is up on the internet. OE will allow an RSS.

2. 28. (Comment from 02-23-2016) The next update will be the April RSS.

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. 10. **(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. 11. (Comment from 9/25/2014)

3. 12. (Comment from 7/23/2014) Tony L will do a literature search on the subject and report back at the next meeting.

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

3. 14. (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. 15. (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. 16. (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. 17. (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. 18. (Comment from 8/13/2014) Industry Comment: None of these things has been tied to performance.

3. 19. (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 spec revisions associated with post-plant gradation and provide feedback to Caltrans.**

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

3. 21. (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. 22. (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. 23. 12/11/14 CT No Change

3. 24. (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. 25. (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.

~~3. 26.~~ (Comment from 2/19/2015) Joe compiled the comments and sent them out. Small working group has not been convened. Industry would like to know what the next step for Caltrans is going to be on this issue. Industry *wants to have virgin aggregate temperature issue resolved separately from post plant gradation.*

3. 27. (Comment from 3/18/2015) Kee reported back today on the data industry provided: Caltrans wants to implement post-plant gradation and eliminate the 375 degree requirement. **Industry will meet and discuss**

spec revisions associated with post-plant gradation and provide feedback to Caltrans at the next meeting April 9th.

~~3. 28.~~ *(Comment from 3/18/2015) There will not be any guidance from Caltrans*.

3. 29. (Comment from 3/18/2015) CT says they need data to show how big a problem this is. Caltrans wants to put an extraction test into the spec to monitor breakdown. The solvent extraction test would be a "report only" item. CT would be comparing breakdown results from different percentages of RAP. Volumetrics should be recorded to see if there is an issue resulting from the breakdown. CT says most states do post-plant gradation. Industry concern is that projects may be held up due to data collection and research activities related to a "report only" test requirement. Industry recommends that UCPRC could be engaged to do this as a proper research project, with them doing the research. **CT will put the proposal together for solvent extraction test, ~~to be a report only item, or~~ as a research project for UC PRC and send it out by April 3rd. Industry guidance: If this is a report-only item, it needs to be a one-time event, and we cannot hold projects up in the process. Industry says that if the 375 degree max aggregate temperature requirement remains in the spec, the issue needs to be elevated above this committee. The max temperature spec would eliminate or discourage the use of RAP especially in higher percentages**

3. 30. (Comment from 3/18/2015) There will not be any guidance from Caltrans related to virgin aggregate temperatures, per Kee Foo. CT will remove the temperature requirement on virgin aggregate if post-plant gradation is adopted.

3. 31. (CT Comment from 4/9/2015) CT will ask METS and construction to set aside the maximum 375 F. temperature requirement while data is collected on mix verification samples to evaluate the changes in aggregate breakdown on DP, VMA and other mix properties. The length of time required for data collection is TBD. CT will report back in two weeks.

3. 32. (Comment from 5/21/2015) CT E-mail Response dated 05-05-15:

Tony and Pascal,

One of my Action item from the last Section 39 subtask group meeting is (CT Comment from 4/9/2015) CT will ask METS and construction to set aside the maximum 375 F. temperature requirement while data is collected on mix verification samples to evaluate the changes in aggregate breakdown on DP, VMA and other mix properties. The length of time required for data collection is TBD. CT will report back in two weeks.

(Comment from 5/21/2015) After consultation, CT position on the Aggregate Temperature Issue is as follow:

- CT will be not set aside the maximum 375 F aggregate temperature requirement. It will still be part of Section 39 specifications.
- CT will accept Contractor CCO to remove the maximum 375 F aggregate temperature requirement with the following provision
  - Submit aggregate production temperature.
  - Submit pre-production aggregate gradation at production start-up and at 5,000 tons of HMA production. Mathematically combine virgin aggregate gradation (taken from hot bin or cold belt) and RAP aggregate gradation (from AASHTO T164, Method B and AASHTO T 30) to generate pre-production aggregate gradation.
  - Submit post-production aggregate gradation (AASHTO T164, Method B and AASHTO T 30 of production HMA samples) at production start-up and at 5,000 tons of HMA production. HMA samples must be taken at the plant. Submit a split HMA sample to the Engineer.
  - Submit air void content at Ndesign (AASHTO T 269) at production start-up and at 5,000 tons of HMA production. HMA samples must be taken at the plant.

Please let me know if you have any questions. Thanks.

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CT E-mail Response dated 05-08-15

Tony,
Yes, it is CT intention to require post plant gradations. CT welcomes Industry members to develop and implement the post plant gradation specifications. Thanks.

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3. 33. (Comment from 5/21/2015) Industry met and discussed issues. Proposed revisions were sent out for comments. Industry recommendation was to postpone the implementation of 375 max. aggregate temperature until they had data. Now it appears that CT will propose eliminating the max temperature requirement if industry agrees to go to post plant gradation. Industry does not see any basis for this maximum temperature being set. The spec needs to be based on factual data. Depending on the aggregate source, there will be different amounts of breakdown. This can be determined by looking at plant produced mix volumetrics. Industry wants the max temperature eliminated. It is totally unacceptable to industry to have the 375 max temperature. If this is enforced, it will eliminate the use of RAP. Currently there is no way to actually measure the aggregate temperature in most drum plants. **Industry will discuss their next steps in an industry-only meeting.**
3. 34. (Comment from 5/21/2015) Caltrans concern is aggregate breakdown. By instituting post-plant gradation any aggregate breakdown will be accounted for, and therefore there is no need to implement the max. aggregate temperature of 375. Caltrans proposes suspending the 375 max temperature requirement by contractor-requested change order, if the provisions above (CT E-mail Response dated 05-05-15) are met.
3. 35. (Comment from 6/25/2015) Industry met and decided they will take this issue of aggregate max temp to the RPC Co-Chairs, elevating the issue.
3. 36. (Comment from 7/22/2015) Sri is preparing a response to the issue document that we provided to the RPC co-chairs. **Mike will check with the RPC Co Chairs to let them know what we are expecting from Caltrans Co-Chair level.**
3. 37. (Comment from 8/25/2015) The Section 39 STG Co Chairs have prepared problem statements. The Section 39 STG Co Chairs have forwarded the problem statements to the ATG Co Chairs for resolution. FHWA representative will discuss this issue at the upcoming September 29 meeting.
3. 38. (Comment from 9/30/2015) FHWA opinion on max aggregate temperature: 1) do away with aggregate temperature requirement; 2) put in place post-production gradation requirement; and 3) Check post-plant PG binder properties. CALTRANS AGREES with FHWA opinion. Caltrans STG co-chair position is that we need to go to post-production gradation. This item is currently at the ATG level for discussion.
3. 39. (Comment from 10- 23- 2015) This will be discussed next Tuesday at the ATG level.
3. 40. (Comment from 12-02-2015) This has been taken to the RPC co-chairs in their quarterly meeting last October. Industry: We are waiting for a decision on this so we can resume RAP in HMA. This delay is counter to Caltrans mission of sustainability.
3. 41. **(Comment from 02-23-2016) Industry will have to decide what to do with the recommendations from the 4+2.**

4. **Additional issue: Windrow length (currently starting at 4.15 below)**
   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

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.

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. **(CT Comment 4/9/2015) CT policy has not changed. Kee will discuss with Construction to see what the status of this issue is.**

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 cited 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.**~~

4. 20. (Comment from 2/19/2015) With intelligent compaction, surface temperature is used. Industry wants to have temperature at the mat checked at mid depth, not surface. **Caltrans will draft a procedure next week and send it out.**

4. 21. (CT Comment from 4/9/2015) CT has changed spec lanquage: Do not open new HMA to traffic untill the mid depth temperature is below 160 F. See 39-1.03 O (1)

4. 22. (Comment from 5/21/2015) Still waiting for these changes relating to temperature to be posted.

4. 23. (Comment from 5/21/2015) Windrow length change was posted on 10/17/2014, per Caltrans.

4. 24. (Comment from 6/25/2015). Industry wants to go back to surface temperature at the mat for "open to traffic" requirement only. **Kee Foo will check with Joe P on this to see if there is a procedure for checking the mat temperature at mid depth for rolling temperature. This issue needs to be resolved- we need a procedure.**

4. 25. (Comment from 7/22/2015) Industry comment: What do we do with a thin lift?

4. 26. (Comment from 7/22/2015) Industry comment There needs to be a procedure drafted up for districts. How will Caltrans inspectors verify the procedure is being followed for measuring mid depth temperature? How would Caltrtans inspectors ensure compliance?

4. 27. (Comment from 7/22/2015) Industry would like this mid-depth temperature to also apply to method spec compaction. **Caltrans will take this comment forward and report back with approval or denial.**

4. 28. (Comment from 7/22/2015) Industry suggestion: How about using surface temperature, and only if that is not good, they have to verify the temperature at mid depth, for "Open to traffic?" We would still need to have a method for mid-depth temperature measurement. How would Caltrans inspectors ensure compliance?

4. 29. (Comment from 7/22/2015) **Industry and Caltrans (Brandon and Audrie) will form a small group to work on mid-depth temperature measurement procedure**.

4. 30. (Comment from 8/25/2015) Industry concern is that, while the procedure is very comprehensive, the procedure is overly complicated and not reasonable to apply in the field.

4. 31. (Comment from 9/30/2015) **Jack and Brandon will revise the temperature procedure and present at the next meeting.**

4. 32. **(Comment from 02-23-2016) Jack and Brandon will revise the temperature procedure and present at the next 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.**

5. 12. (Comment from 2/19/2015) Caltrans is still working on this. We hope to see this out by second week of March.

5. 13. (Comment from 3/18/2015) Caltrans is still working on this – it may take a little longer. Industry comment: Industry would like to review the entire CTM 125 before it is published and implemented. **Caltrans will submit draft language on the splitting methodology to the group by April 9th.**

5. 14. **(Comment from 4/9/2015) CT still working on revisions. Resources are currently diverted to CEM form revisions for RAP/RAS specifications.**

5. 15. (Comment from 5/21/2015) Industry is still waiting to review revisions to CT 125. **CT Kee will check with Audrie on CT 125.** There is new equipment coming on line for sampling at the plant. Industry is requesting a change to allow for the ability to drop samples into hopper/quartermaster device. The information has been provided to Caltrans – draft drawings of the equipment. Caltrans reports they are looking into this at METS.

5. 16. (Comment from 6/25/2015) **Audrie reports that CTM 125 has been submitted to Kee and Tony for review. Industry will provide comments by July 10. We need CTM 125 finalized. The revised CTM 125 includes the use of the quartermaster silo sampler device.**

5. 17. (Comment from 7/22/2015) This has been extended to July 24. After further review of CT 125, industry is requesting a small group be formed to work on Section E and other areas related to sample blending, splitting and reducing. **Caltrans will check on establishing a small work group and report back by July 31.**

5. 18. (Comment from 8/25/2015) Caltrans comment: Caltrans would like to include CT125 quartermaster procedure for splitting HMA and will have internal discussion.

5. 19. (Comment from 8/25/2015) Caltrans does not have a small working group at this time. Industry comments have been compiled. Caltrans will be discussing the possibility of breaking up CT 125 into specific pieces based on the subject matter**, Industry comment: Industry is requesting a small meeting to discuss industry recommendations for CT125 prior to CT breaking up CT125.**

5. 20. (Comment from 9/30/2015) CT has made a decision to split CT 125 into separate pieces based on the subject matter.

5. 21. (Comment from 9/30/2015) Industry understands that there is a concern with segregation using a Silo Sampler.

5. 22. (Comment from 10- 23- 2015) Draft scoping document on updating CT 125 was sent out. This issue will be set up with a separate ATG sub task group if the scoping document is approved. **Caltrans – Kee Foo will send the draft scoping document to Jack, Pat and Pascal and Tony L.**

5. 23. (Comment from 12-02-2015) CT: There are three phases of revising CT 125. Phase 1 includes the silo sampler and cleans up typographical errors. It also takes out lab procedures. Our intent is to post phase 1 version of CT 125 as soon as we can, but we cannot get this done until the scoping document is signed. The scoping document is in the RPC for review. The subsequent CT125 sub task group will address phase two and three, including the remaining comments and concerns raised by industry and Caltrans. No action can be taken until this scoping document is signed. Industry: This is a big issue and we need to get this done as soon as possible.

5. 24. (Comment from 12-02-2015) This item is also related to item 14 below.

5. 25. **(Comment from 02-23-2016) Industry has reviewed the scoping document, and is awaiting word on the signed scoping document. Jack and Pat will bring this up to the ATG Co-Chairs at their next meeting to verify the status of the scoping document.**

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)**

6. 5. (Comment from 8/13/2014) (Revisited 10/21/2014 **for plant-sampled material. Per AASHTO R 30** 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 hours" 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.
6. 15. (Comment from 3/18/2015) This was done and is included in the proposed spec. "The engineer reheats each sample of HMA mixture not more than two cycles. Each reheat cycle is performed by placing the loose mixture in a mechanical forced draft oven for two hours or less after reaching 140 degrees Fahrenheit."
6. 16. (Comment from 3/18/2015) Industry wants to see the language include splitting and compaction "Industry recommendation**: "To obtain workability of HMA for splitting,"** ***should be added to the beginning of the sentence. The intent is to make clear that the reheats do not include bringing samples up to temperature for compaction or other testing.***
6. 17. ***(Comment from 3/18/2015)*** Here is how industry would like to see Kee's proposal: "**To obtain workability of HMA for splitting,** the engineer reheats each sample of HMA mixture not more than two cycles. Each reheat cycle is performed by placing the loose mixture in a mechanical forced draft oven for two hours or less after the sample reaches ~~reaching~~ 140 degrees Fahrenheit." Industry would like to have this included in his submittal to Office Engineer. **Kee will put this language in and submit it to OE. Turn blue next time we hope.**
6. 18. (Comment 4/9/2015) Kee will send industry revised language. New language received 4/9/2015: To obtain workability of the HMA sample for splitting, the Engineer reheats each sample of HMA mixture not more than 2 cycles. Each reheat cycl**e** is performed by placing the loose mixture in a mechanical forced-draft oven for 2 hours or less after the sample reaches 140 degrees F.
6. 19. (Comment from 5/21/2015) Industry is waiting for this to be posted.
6. 20. (Comment from 6/25/2015) nothing new to report.
6. 21. (Comment from 7/22/2015) Caltrans says this is in the draft of the next version of the RSS, the draft 2015 Section 39.
6. 22. (Comment from 8/25/2015) We are still waiting.
6. 23. (Comment from 9/30/2015) Caltrans has included this in version 6.
6. 24. (Comment from 10- 23- 2015) Still waiting to verify this is in the internet version.
6. 25. (Comment from 12-02-2015) Caltrans reports this is done. (In 2015 SS, 39-2.04A(i)(i) General)

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.

7. 9. (Comment from 3/18/2015) Industry comment: We need to look at data for HWT field data and lab data collected to date to determine if field HWT is still required. Tony L will send reminder to industry requesting information from labs and field HWT taken for mix verification be sent directly to Audrie Spears at CT.

7. 10. (Industry Comment 4/9/2015) Tony will resend message asking for data to be sent to Audrie.

7. 11. (Comment from 5/21/2015) Tony re-sent the message to industry stakeholders, requesting them to send data to Audrie. We will check in at the next meeting on this to see how much information is being sent in.

7. 12. (Comment from 6/25/2015) CT reports no data has been received. Industry comment: This needs to be set up with pilot projects to do the research and answer the questions. This is important and it needs to be done. CT response: CT will get back to industry at the next meeting. SRL reports they have run 60 HWT tests and there have been no failures.

7. 13. (Comment from 7/22/2015) Caltrans reports they will be doing HWT and moisture sensitivity on plant produced materials. These tests will continue to be done for material produced in the field, and not for lab-produced materials. Industry comment: Industry will explore the need to gather data on HWT and T283. We need to look at new data using the new equipment and new specification requirements to properly evaluate the need for plant-produced tensile strength and HWT. CT comment: Industry needs to gather and present data to Caltrans if they want to pursue this any further. Caltrans will continue to use T283 on mix designs based on data that were generated based on Hveem data.

7. 14. (Comment from 8/25/2015) Industry agrees to table this issue until more data is gathered.

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

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 RHMA Mix design 39-1.01 D(2)**

10. 1. 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. 2. (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. 3. (Comment from 7/23/2014) CT: Can adjust binder content and/or gradation. Do not adjust number of gyrations.

10. 4. (Comment from 7/23/2014) Kee will check on this again and report back to the group.

10. 5. (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. 6. (Comment from 9/25/2014)

10. 7. (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. 8. (Comment from 11/14/2014) CT: No data available at this time to justify adjusting gyrations after the fact.

10. 9. **(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. 10. (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. 11. (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. 12. **(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.**

10. 13. **(Comment from 2/19/2015) CT will provide the reasoning.**

10. 14. **(Comment from 3/18/2015) Still waiting for Caltrans reasoning. Kee will follow up with this item. Report back in April.**

10. 15. (Comment from 4/9/2015) Caltrans (Kee Foo) provided the following statement regarding reasoning for not allowing adjustments to gyrations and pressure: CT does not support adjusting Superpave gyratory's pressure and gyrations number after the 1st failed JMF verification. Gyrations number and pressure are in the same categories of design targets (such as 4% air voids, VMA, DP etc.). Once these design targets are selected for RHMA-G they should not be changed. Similarly, the gyration number and pressure for Type HMA selected at 85 gyrations and 600 kPa should not be changed. Materials are then selected and proportioned to produce a HMA that meet these design targets. This materials selection/proportion is the submitted JMF that CT will verify. If verifications failed contractor should tweak the materials selection/proportion (JMF) to meet the design targets. Contractors should not adjust the design targets (i.e. gyrations number and pressure, air voids, etc.) to pass their submitted JMF. If the JMF failed contractor should adjust the JMF (i.e.: materials selection/proportion).

10. 16. (Industry comment) Industry feels CT statement is merely a restatement of CT position. Industry/Caltrans positions have not changed we are at an impasse on this matter.

10. 17. (Comment from 5/21/2015) No change on this from Caltrans.

10. 18. (Comment from 6/25/2015) Industry comment: Industry reiterated their concern and proposal to make the adjustments to the mix design. Industry proposes that CT allow some measure of adjustment to the pressure (+/- k100 KPA), gyrations (+/-50) and dwell time (30-90 minutes). These adjustments are being made anyway during a new mix design, when the mix verification fails. The current procedure unnecessarily wastes time and money. **Kee Foo will take this back to Construction and report back to us at the next meeting.**

10. 19. (Comment from 7/22/2015) CT has not change their position. See 10.15. Industry comment: We would like to see the reasoning for the CT position. Industry will keep this on the table for possible discussion or elevation to a higher level in the future. This is an important issue to industry.

10. 20. (Comment from 8/25/2015) Caltrans will gather input from FHWA on this issue at the September 29th test turnaround time meeting.

10. 21. (Comment from 9/30/2015) The FHWA recommendations are: 1) within a period of three years, gather data and work toward standardizing the gyrations and pressure, and 2) do not change the pressure or gyrations without a new mix design and mix reverification. Caltrans agrees with the recommendations, and will work with industry to standardize the pressure and gyrations. **(is it a number or a range? Kee Foo will contact FHWA – Dennis- to check on this question)**

10. 22. (Comment from 9/30/2015) **Kee will check to see if a scoping document is needed to move the FHWA recommendation forward.**

10. 23. (Comment from 10- 23- 2015) Caltrans and FHWA say to go with a number rather than a range, which will standardize the gyrations, and pressure, but open up the gradation band. We anticipate a lower binder content

10. 24. (Comment from 10- 23- 2015) Industry comment: Will binder content be considered? This approach will eliminate some good aggregate sources. There needs to be flexibility in the design criteria. Rubber mixes are totally different than conventional mixes.

10. 25. **(Comment from 10- 23- 2015) We will work on this without a new scoping document. We will discuss the FHWA proposal and contrast this with what we are currently doing. We will bring back a proposal to the STG. We need to find out what FHWA used as a basis for their recommendation. We need to have a small working group take this on. Phil and Pascal will take this on with Shawn and Al.**

10. 26. (Comment from 12-02-2015) Industry: Co chairs had a conference call to discuss this. We are tentatively scheduled to meet on January 19 at the SRL. Caltrans has asked for all industry members to send in their RHMA mix designs so CT can catalog pressure, gyrations, dwell time, aggregate grading, target values, design air void content and asphalt content target values. We will discuss the criteria further on

January 19th. Caltrans has stated that the minimum binder content (7.5 % TWM) is not on the table. Industry has requested that this be considered.

10. 27. Industry believes that item 62 should be included in this STG effort. Caltrans will check to see if these two can be joined.

10. 28. (Comment from 9/30/2015 from Item 62) Industry comment: Data indicates that contractors are experiencing problems meeting HWT for RHMA-G mixes. Test results are highly variable and scattered when using multiple labs. Caltrans and Industry need to decide what, if any changes need to be made to resolve this issue. Industry has identified variability in the HWT, and a small working group is addressing this. **Industry needs to collect data specifically on the RHMA mix. Tony L will put a table together to assist in data collection from industry.**

10. 29. (Comment from 01-05-2016) Going forward, see Item 62.

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. CT: Since the Aggregate Gradation Requirements table ensures that the correct aggregate size is used, the paragraph will be deleted:

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

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

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

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. (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. 7. **(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. 8. 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. 9. (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. 10. (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 may 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-11 labs 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.

13. 10. (Comment from 2/19/2015) District 11 will go through their assessment in 2016. We will continue to track this until all the accreditation assessments are done.

13. 11. (Comment from 3/18/2015) No new report

13. 12. (Comment from 4/9/2015) No new report

13. 13. (Comment from 5/21/2015) Caltrans needs to update industry when all the labs have been accredited. Industry comment: AMRL website indicates D-9, D-10, D-11 are not accredited. We assume that the SRL includes D-7, D-8 and D-12 laboratories. Some of the labs are not completely accredited.

13. 14. (Comment from 9/30/2015) Still awaiting status of district lab accreditations. **Caltrans will provide status of district lab accreditation for HWT at the next meeting.**

13. 15. (Comment from 10- 23- 2015) D-11 and D-4 are not accredited for HWT.

13. 16. (Comment from 12-02-2015) CT does not expect D-11 and D-4 to get this accreditation at this time.

14. **(Comment from 9/30/2015) AASHTO R47: Are there district labs that are not accredited for AASHTO R47?**

14. 1. (Comment from 6/25/2015) Industry wants a report on the status of this at the July meeting. Some districts are not accredited for AASHTO R47. The AMRL website indicates that all CT labs are accredited to run the HWT, other than District 11, which is scheduled to be accredited for HWT in 2016.

14. 2. (Comment from 7/22/2015) Industry believes that the AASHTO R47 is a stand-alone test method and laboratories must be AMRL certified to perform this test. Technicians must also be certified by Caltrans. Industry will work with Caltrans on CT125 to see where AASHTO R47 fits in. (See Item 5 discussion this date on CT125, relating to the formation of a small group to work on T125.

14. 3. (Comment from 8/25/2015) Industry comments have been forwarded to CT on T125.

14. 4. (Comment from 9/30/2015) This is being resolved outside this group by the joint Training and Certification project working group. Industry does not agree with the position CT has taken on R47. We will carry this until it is resolved

14. 5. (Comment from 10- 23- 2015) Nothing new to report. The R-47 Issue will be handled by the CT 125 STG. We will continue to monitor until it is resolved by the other STG.

14. 6. (Comment from 12-02-2015) Nothing new to report today. See item 5, relating to CT 125.

14. 7. (Comment from 02-23-2016) Still waiting for the CT 125 STG to be established.

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

15. 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?

15. 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.

15. 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.

15. 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.

15. 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.

15. 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.**

15. 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.

15. 8. (Comment from 2/19/2015) HQ has sent out an instruction to all districts for retesting of materials for when a failing result is obtained by CT, to double check their numbers. CT position is that contractors should ask CT to rerun the test if they report a failing result.

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

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

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

17. **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)

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

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

18. 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.

18. 2.

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.

18. 3. (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.

18. 4. (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 need

18. 5. (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.

18. 6. (Comment from 10/21/2014) CT working on this.

18. 7. Comment from 11/14/2014) Still working on it.

18. 8. (Comment from 12/17/2014) Caltrans still working on it. This will be an RSS.

18. 9. Industry wants to make sure this is now addressing RAS as well as multiple RAP.

18. 10. (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. 11. (Comment from 2/19/2015) CT continues to work through the batch sheets. Ultimately they want to have a "one-stop" single document. This is to be done and posted by the end of March.

18. 12. (Comment from 3/18/2015) Industry comment: Should come out with RAS CPD

18. 13. (CT comment 4/9/2015) Waiting on METS to complete CEM revisions.

18. 14. (Comment from 5/21/2015) Changes to 3512 are being held up by changes in RAP/RAS revisions. Caltrans reports they are still working on the RAP/RAS package for CPD. Industry reports this lack of a CPD is posing a hardship on RAS suppliers, and some are going out of business.

18. 15. (Comment from 6/25/2015) Still waiting for the revised forms. Revision to RAP/RAS specs may require additional changes to the CEM forms.

18. 16. (Comment from 7/22/2015) Still waiting for the forms.

18. 17. (Comment from 9/30/2015) CT: We will complete the revision of the forms after resolution of the RAP/RAS specification revisions.

18. 18. (Comment from 10- 23- 2015) CT: We have draft revisions on the forms which were routed to industry. Comments were received. We will meet with the forms group to get the changes implemented. **Pete will send the comments from Audrie to Caltrans stakeholders. Al will forward this to the DME's.** .

18. 19. (Comment from 12-02-2015) CT: Industry had an opportunity to comment. They provided comments. The comments will be incorporated into the forms and CT will send out for review.

18. 20. (Comment from 02-23-2016) Industry is waiting for the forms to be out for review. **Caltrans will check on the status of the forms.**

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.

19. 4. (Comment from 2/19/2015) Industry is OK with elimination of fly ash and loess. **CT will change the definition of supplemental fines to include AASHTO/ASTM D242 with exception to fly ash and loess.**

19. 5. (Comment from 3/18/2015) **CT will change the definition of supplemental fines aggregates. New definition: "mineral filler consisting of rock dust, slag dust, hydrated lime, hydraulic cement or any combination of these and complying with AASHTO M17"**

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.

19. 6. **(CT Comment from 4/9/2015) Spec change is at OE.**

19. 7. (Comment from 5/21/2015) Waiting for posting.

19. 8. (Comment from 6/25/2015) Still waiting.

19. 9. (Comment from 7/22/2015) Still waiting. Caltrans says this should be in the next draft RSS as well as the draft 2015 Section 39 specs.

19. 10. (Comment from 9/30/2015) Industry: We are waiting for final publication of the specification.

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.
20. 7. (Comment from 2/19/2015) This continues to be of interest to industry
20. 8. (Comment from 3/18/2015) finished for now.

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.**

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

27. 5. (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. 6. **(Comment from 11/14/2014) CT recommends that industry work with ATG co-chairs to take this forward as an item for Rock Products for scoping document.**~~

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

27. 8. (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. 9. **(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.**

27. 10. (Comment from 2/19/2015) This requirement may eliminate rubber from the BWC. CT is not going to make a change at this time. **Industry will discuss this off line and determine their position and report back at the next meeting.**

27. 11. (Comment from 3/18/2015) No new report.

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) "Small group" item**

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

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.
29. 6. (Comment from 2/19/2015) Small working group continues to meet and discuss. **Industry will arrange a meeting with Caltrans.**
29. 7. (Comment from 3/18/2015) Meeting has been set for next week.
29. 8. (Comment from 4/9/2015) Hongbin; The small group continues to make progress.
29. 9. (Comment from 5/21/2015) Small group needs to continue to discuss the JP changes.
29. 10. (Comment from 6/25/2015) CT has proposed some language – there will be another meeting next week.
29. 11. (Comment from 7/22/2015) Industry met yesterday and reviewed the CT proposal. Industry position is that there should be more data to support the change. This will be discussed in a small group, next meeting date for them is August 13.
29. 12. (Comment from 9/30/2015) Small group did not meet in August. Next meeting is set for October 14th.
29. 13. (Comment from 10- 23- 2015) We had a meeting in October. We are waiting for Joe to send additional information to the small group. Next small working group meeting is November 17th.
29. 14. (Comment from 12-02-2015) Industry: Consensus was reached on the revision on the HWT procedure. CT will draft revised specification language and send it out for review (looking only for fatal flaws.) It could be out as early as February as an RSS.
29. 15. (Comment from 02-23-2016) Industry provided additional comments by the January 22, 2016 deadline. **Caltrans will proceed with creating a new HWT test method and report back.** Caltrans reports this will be a new test method with a new number assigned. The spec will also be changed accordingly.

30. **Inappropriate use of NSSP's**

30. 1. This specification is in District 8 (11/14/2014)

Moisture susceptibility (tensile strength ratio)	*AASHTO T 283*	*70*
Surface Abrasion Loss (max, (g/cm²)[h]	*California Test 360*	*0.4*

[h]If the project elevation is greater than 1500 feet

30. 2. (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.

30. 3. (Comment from 2/19/2015) This continues with issue # 31 below.

30. 4. (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.

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

30. 6. (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.

30. 7. 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/cm²)[f]	*California Test 360*	*Loss not to exceed 0.4 g/cm²*

[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.

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

30. 9. (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.

30. 10. (Comment from 2/19/2015) We will continue to watch this.

31. **Use of Warm Mix NSSP**

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 limited 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

=	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

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

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

32. **Restrictions on use of WMA**

32. 1. (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.

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

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

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

32. 5. (Comment from 2/19/2015) **Industry will get together in a small work group to make a proposal to CT on WMA temperatures at next meeting.**

32. 6. **(Comment from 3/18/2015) Will have industry proposal by next meeting Caltrans will check on appropriate windrow temperature for state-mandated WMA.**

32. 7. **(CT Comment from 4/9/2015) CT is waiting for industry proposal.**

32. 8. **(Industry comment 4/9/2015) Industry will provide recommended changes before next meeting.**

32. 9. Industry submit recommendation via e-mail:

. Proposals includes the following:-

- WMA: HMA produced using a warm mix asphalt technology produced at a temperature from 240 to 325 degrees F.
- If WMA technology is used HMA, must be produced at a temperature between 240 and 325 degrees F.
- For HMA produced using warm mix asphalt technology, the temperature in the windrow does not fall below 230 degrees F.
- Spread Type A HMA with a warm mix asphalt technology at the atmospheric and surface temperatures shown in the following table:

Minimum Atmospheric and Surface Temperatures for Type A HMA

Compacted layer thickness, feet	Atmospheric,°F		Surface,°F	
	Unmodified asphalt binder	Modified asphalt binder	Unmodified asphalt binder	Modified asphalt binder
< 0.15	40	40	40	40
≥ 0.15	35	35	35	35

For method compaction, the maximum compacted layer thickness must be 0.25 foot.

- For Type A HMA with a warm mix asphalt technology placed under method compaction, if the asphalt binder is:

1. Unmodified, complete:
1.1. 1st coverage of breakdown compaction before the surface temperature drops below 220 degrees F
1.2. Breakdown and intermediate compaction before the surface temperature drops below 180 degrees F
1.3. Finish compaction before the surface temperature drops below 130 degrees F
2. Modified, complete:
2.1. 1st coverage of breakdown compaction before the surface temperature drops below 230 degrees F
2.2. Breakdown and intermediate compaction before the surface temperature drops below 180 degrees F
2.3. Finish compaction before the surface temperature drops below 130 degrees F

- For RHMA-G produced using a warm mix asphalt technology placed under method compaction:
1. Complete the 1st coverage of breakdown compaction before the surface temperature drops below 240 degrees F.
2. Complete breakdown and intermediate compaction before the surface temperature drops below 190 degrees F. Use a static steel-tired roller instead of the pneumatic-tired roller for intermediate compaction.
3. Complete finish compaction before the surface temperature drops below 130 degrees F.

- For OGFC produced with a warm mix asphalt technology:
1. Spread and compact only if the atmospheric temperature is at least 45 degrees F and surface temperature is at least 45 degrees F.
2 Complete the 1st coverage using 2 rollers before the surface temperature drops below 230 degrees F.
3. Complete compaction before the surface temperature drops below 190 degrees F.

32. 10. (Comment from 5/21/2015) CT Concerns:

Caltrans experience does not support these proposals.

1. CT has not placed HMA with WMA technologies at these proposed lowered temperatures.
2. Please provide state DOTs that allows these temperatures
3. Reports submitted to CT during the approval process of WMA technology does not support these proposals.
4. Reports submitted to CT during the approval process suggests that not all WMA technologies are the same.
5. What controls does CT has that whatever WMA options/dosage adopted by the contractor will work at these lowered temperatures?

32. 11. **(Comment from 5/21/2015) Caltrans will survey other DOT's regarding ambient temperature production/placement for WMA. Caltrans will collaborate with industry on the content of the survey questionnaire prior to the next meeting and will send a copy of the draft for comments before June 4. And then, after this, Industry will respond to the comments after we get the results of the survey, to include a comparison of the current SSP 39-2 and 39-3 and 39-4 to the proposal.**

32. 12. (Comment from 6/25/2015) Kee sent out the proposed questions to industry for review. Comments due back to Pascal and Tony by July 10th. Industry comments will be forwarded to Pete and Kee.

32. 13. (Comment from 7/22/2015) Industry comment – Industry has some recommendations.

32. 14. **(Comment from 7/22/2015) Kee will add a column for RHMA and also add a question on how they are measuring temperature: surface or mid-depth. Kee will also ensure we have not left anything off.**

32. 15. **(Comment from 9/30/2015). The group reviewed and approved Kee's survey and Kee will send it out.**

32. 16. (Comment from 10- 23- 2015) Survey has been sent to Phil Stolarski to send to other states, and collect the data.

32. 17. **(Comment from 12-02-2015) Industry (Pat Imhoff) will tabulate survey data for discussion at the next meeting.**

32. 18. (Comment from 01-05-2016) Nothing new to report

32. 19. (Comment from 02-23-2016) **Caltrans (Kee Foo) will put a draft guidance document to the designer specifying when to use state-mandated WMA. This will include looking at the existing windrow temperature for both HMA and RHMA.**

32. 20. **(Brandon Milar) will compile temperature cutoff data for WMA and report back to the group.**

33. **(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.**

33. 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.**

33. 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.

33. 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.**

33. 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.

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

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

33. 7. See comment 34

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

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

34. 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.**

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

34. 3. (Comment from 2/19/2015) Caltrans has not returned any comments to industry yet. This was submitted to co-chairs and should be signed soon – The project will be worked on in the next cycle.

34. 4. (Comment from 3/18/2015) Scoping documents are due April 15th – Jack will discuss at next ATG co-chair meeting.

34. 5. (Comments from 4/9/2015) Industry still waiting for comments from CT ATG Co chairs.

34. 6. (Comment from 5/21/2015) Industry has received the scoping documents back. The scoping document will be reviewed and approved by June 1.

34. 7. (Comment from 6/25/2015) Scoping document was submitted to CT. The industry ATG co-chairs are waiting for Caltrans to respond to the scoping document.

34. 8. (Comment from 7/22/2015) Industry is still waiting for a response from CT.

34. 9. (Comment from 9/30/2015) A scoping document has been approved. Tony and Jack V will serve as industry co-chairs and will begin work when the Caltrans co-chairs are selected. Kee will report back on the Caltrans co-chairs.

34. 10. (Comment from 10- 23- 2015) Al Vasquez and Tim Greutert. are the CT co-chairs;

34. 11. (Comment from 12-02-2015) Jack and Tony are industry co chairs. The group has met twice and is making good progress. We will get a report back at the next meeting.

34. 12. (Comment from 02-23-2016) Draft language was sent to industry and there were no comments. Industry is waiting for a response from Caltrans. **Jack will check with the ATG co-chairs to find out the status of this and report back.**

35. **The Samples Section 39-1.01C(9) below was added to Section 39 – why was this added?**

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

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

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

35. 4. 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 testing39-1.01D(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

35. 5. (Comment from 3/18/2015) 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.

35. 6. 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. Caltrans Sampling Requirement Sampling. Sampling should be a new issue. CT position is that QC samples are the contractor's and CT does not want the QC samples. CT did not intend for the engineer to be involved in the contractor's QC samples.

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

35. 8. **(Comment from 2/19/2015) CT will leave the language in to allow the contractor to request a split of the QA sample.**

35. 9. **(Comment from 2/19/2015) This is being revised in Chapter 6, table 6.1 and will revise the spec accordingly.**

35. 10. (Comment from 3/18/2015) Still waiting.

35. 11. (Comment from 4/9/2015) CT will have revision for Table 6.1 by next meeting.

35. 12. (Industry Comment from 4/9/2015) Recommend removing last sentence in 39.1.01 C (9)

35. 13. (Comment from 5/21/2015) Co chairs will send out the table provided by Kee today, for review and comment back to Construction.

35. 14. (Comment from 6/25/2015) Caltrans will remove the last sentence in 39.1.01 C (9). CT will check on the second paragraph of 39.1.01 C (9) to clarify if it is for a QA or QC test.

35. 15. (Comment from 7/22/2015) CT reports the one sentence has been removed in the draft RSS.

35. 16. (Comment from 7/22/2015) Industry feels this language is redundant and should be removed. **This appears in the verification section as well as startup. 39.1.01D2 and 39.1.01D4 and 39.1.01D8e. If the sentence is not removed, the following edit should be made: 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. Kee will check with OE if these requirements are redundant**

35. 17. **(Comment from 9/30/2015) Kee will reword this to "10,000 tons or less"**

35. 18. (Comment from 10- 23- 2015) Caltrans is still working at this.

35. 19. (Comment from 12-02-2015) Caltrans reports it's redundant and will be deleted in RSS to 2015 specs.

35. 20. (Comment from 02-23-2016) Caltrans reports this was completed in the January RSS.

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

36. 1. 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.

36. 2. (Comment from 2/19/2015) CT says new products must go through the new products system, which is on the Caltrans website. CT will have an internal discussion about establishing a QPL for LAS and report back.

36. 3. Comment from 3/18/2015) CT position on this: They will establish the QPL for non-amine based LAS. Non-amine-based LAS products will be required to identify a specific test common to all non-amine based products that can be used to qualify the acceptability of a non-amine based LAS. Industry comment: This is not practical. There are more than one type of non-amine based LAS products. CT will have an internal discussion about establishing a QPL for LAS and report back.

36. 4. (CT comment 4/9/2015) CT is looking for new LAS products to identify a common test that measures a common ingredient similar to amine based approval process. (Industry comment) Industry would like CT to remove requirements for LAS. If the selected LAS product results in passing tensile strengths and HWT this should be good enough. Contractor will identify product and min dosage in mix design and produce mix accordingly. Kee will check on this and get back to us by next meeting or earlier.

36. 5. (Comment from 5/21/2015) Kee talked to Chuck and Joe. Had a meeting with Hamid (New Product Coordinator) and Sri on how CT wants to proceed on this issue. CT decided that all non-amine based LAS will

be treated as new product and advised non-amine base LAS supplier to work with Hamid to get their product approved for Section 39 use. Acceptance will be based on new products guidelines. **Caltrans will provide new products guidelines to the group.**

36. 6. (Comment from 6/25/2015) This falls into the category of new products and it is not an approved product to be used. Questions: What did we add? How much did we add? How do we detect it? How does it affect the mix or the binder? LAS manufacturers/producers have to follow the METS protocol for new products – Any test procedures used in the LAS proposals must be standard, i.e. ASTM/AASHTO. If contractors are interested in trying out the products, they should work through the Districts to get the OK from HQ. LAS producers should work with Contractors and districts to work towards the approval of new LAS products. This information is all on the METS web site. Here is the link: http://www.dot.ca.gov/hq/esc/Translab/NewProducts/

36. 7. (Comment from 8/25/2015) **Industry (Tony L) will contact Sri B. regarding the formation of a joint CT-Industry working group to evaluate M14 for use in section 39. Industry will supply information on M14 to Caltrans.**

36. 8. **(Comment from 9/30/2015) Tony will check with Sri and report back at the next meeting.**

36. 9. (Comment from 10- 23- 2015) Caltrans says there will not be a special provision to evaluate this new product. Caltrans has directed that we will use the established process. Industry: **This needs to be discussed at the ATG meeting.**

36. 10. (Comment from 12-02-2015) Industry: No ATG meeting was held in November. We will take this up at the next ATG meeting.

36. 11. (Comment from 02-23-2016) This will be brought up to the ATG co-chairs at the next ATG co chair meeting.

37. CT Certifications

37. 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.

37. 2. (Comment from 2/19/2015) CT needs IA to catch up to the spec. There is a lag between when tests are developed and when they are available. Right now, the spec is asking for industry to get certification from CT which CT is unable to provide. ~~**Caltrans will get together with IA to make sure they have IA certs available for rubberized Asphalt binder QC testing.**~~

37. 3. (Comment from 3/18/2015) CT will check to see where they are on this. Industry concern is that projects are out with requirements for AR Binders. Some districts IA have the viscosity test and some do not. How do contractors get certified statewide.

37. 4. (CT Comment 4/9/2105) CT continues to work on IA certifications for all Districts.

37. 5. (Comment from 5/21/2015) Per HQ IA, the test has been sent to the districts for asphalt rubber binders. Industry is concerned that some districts may not be certifying industry or CT technicians. **CT will make sure a memo goes out to all IA staff to implement current procedures.**

37. 6. (Comment from 6/25/2015) Caltrans reports a memo will go out by the end of June, from IA, to address viscosity, cone penetration, resilience and softening point. CT will issue contractors certificate of proficiency or proficiency certificate (one or the other) for the AR binder test. Industry comment: We would like more clarification on this process (type of certificate/which test will be covered). **Caltrans to seek clarification from HQ IA and report back.**

37. 7. (Comment from 7/22/2015) CT will report back at next meeting.

37. 8. (Comment from 10- 23- 2015) IA came up with questions for a written test, and they have started doing the certification

38. QC Personnel Requirements

38. 1. (Comment from 2/19/2015) Industry comment: There is a lot of difference among the districts as to what constitutes an acceptable QC plan. We need to talk about testing and QC – QA spec. Many contractors want to have some minimums in the spec for how many people must be on the job for QC, to create a level playing field. This would avoid arguments in the field. CT wants an industry recommendation on staffing requirements for QC testing to create a level playing field. Industry will provide a recommendation at the next

meeting on personnel required for QC testing including an updated QC manual. CT needs to follow up with Construction on the need for an updated QC manual and report back at the next meeting.

38. 2. (Industry comment 4/9/2015) QC/QA Manual does not apply to current Section 39. Requirement for minimum technicians needs to be written into existing Section 39 specification. CT concurs. CT and industry need to determine QC Technicians requirements. **Industry will make proposal for number of technicians needed.**

38. 3. (Comment from 5/21/2015) Industry agrees there is a current requirement for one technician at the plant and one in the field. Industry response: There is no industry consensus on this.

38. 4. (Comment from 6/25/2015) CT recommends minimum of three testing personnel (one HMA production inspector, one HMA placement inspector and one HMA sampler) for 1,500 tons or less, and if over 1,500 tons, four testing personnel. Now with the smoothness consideration, industry says it would be better and safer to sample at the plant. Four people or even three is overkill in some situations.

38. 5. (Comment from 6/25/2015) Industry will discuss the following proposal in an industry-only meeting and report back to Kee and Pete: for method spec projects, one tech in the field. One at the plant. For density spec, two techs in the field, one at the plant. No decisions today.

38. 6. (Comment from 7/22/2015) Industry proposes the following minimums: 0-750 tons = 1 tech, (density or method) 750-1500 tons = 2 techs, (density or method) and over 1500 tons = 3 techs (density required) or 2 techs (method). Location of techs is contractor option.

38. 7. (Comment from 8/25/2015) Caltrans – D11 – wants 750-1500 tons = 3 techs, (density or method) and over 1500 tons = 4 techs (two at the plant and two in the field)

38. 8. (Comment from 10- 23- 2015) Caltrans position is that there needs to be someone at the plant and someone in the field. Industry says when there are questions on things like rolling patterns and all is documented by a tech, the dispute is more easily resolved. Industry does not agree with the Caltrans proposal. Industry concern is that CT does not have a uniform and consistent approach. Industry is calling for CT to make the decision. There is no consensus between industry and Caltrans. **This needs to be elevated to the ATG.** This is not a fatal flaw.

38. 9. (Comment from 10- 23- 2015) Caltrans wants 3 techs for 1500 tons or less, and 4 techs for jobs over 1500 tons. Location of techs is specified by the contractor in the proposed QC plan.

38. 10. (Comment from 12-02-2015) CT Position:

The old QC/QA specification which was agreed to by Industry and the Department was acceptable and utilized since 1996 when we rolled out the first QC/QA specifications and is currently specified under the 2010 standard specifications under 39-4.02B Quality Control Plan. As you know, it referenced the State's Quality Control Manual for Hot Mix Asphalt Production and Placement Manual and it's written fairly well and previously agreed to by Industry. It just needs to be updated to the new specs and test methods. Additionally, as the sample size has increased due to the new Superpave testing and sampling it is even more important to have the appropriate number of QC personnel available to ensure the Department received a quality product. As you can see below it may be necessary to increase the minimum number of QC personnel for 3 and 4 to 4 and 5.

All QC testers and inspectors must be supplied by the QC and must not report to, or be influenced by HMA production or placement contractors at any tier.

Less than 1500 tons per day it: 3 min

1) Field QC: Monitors the quality of delivered material and assists with the sampling required. Makes the call to halt production due to poor material qualities at delivery and placement. Assists with other QC duties such as CTM 375 and coring for density acceptance.

2) Field QC: Monitors the quality of place material and rolling patterns. Monitors matt quality, directs the compaction process, and preforms nuclear gauge testing to ensure real time adjustments are made to control compaction. Cores pavement to provide department with QA compaction cores.

3) Field QC: Responsible for sampling (Takes material samples as require by the Specifications)

4) Plant QC: monitors the quality of the material being produced by the plant and preforms plant sampling for HMA testing for grading, SE, CV, AASHTO T283 and T324. These samples size is large and more than likely will require two people to sample and test, however these are only take at specified mile stones.

Greater than 1500 tons per day it: 4 min

1) Field QC: Monitors the quality of delivered material and assists with the sampling required. Makes the call to halt production due to poor material qualities at delivery and placement. Assists with other QC duties such as CTM 375 and coring for density acceptance.

2) Field QC: Monitors the quality of place material and rolling patterns. Monitors matt quality, directs the compaction process, and preforms nuclear gauge testing to ensure real time adjustments are made to control compaction. Cores pavement to provide department with QA compaction cores.

3) Field QC: Responsible for sampling (Takes material samples as require by the Specifications)

4) Plant QC: monitors the quality of the material being produced by the plant and preforms plant sampling for HMA testing for grading, SE, CV, AASHTO T283 and T324. These samples size is large and more than likely will require two people to sample and test, however these are only take at specified mile stones. Observes loading of plant produced material to ensure best practices are being performed to eliminate segregation of material.

5)) Field QC: Assists Field QC #2 , #3, and #4 with the sampling. (Required to assist in the management of larger volume of material being produced and sampled and tested.)

The Department should add a required QC supplied plant inspector that is in direct contact with the QC manager, Resident Engineer, Field QC and the Caltrans QA inspectors at all times. As with the field QC inspectors, the Plant Inspector must be supplied by the QC and independent from HMA production and placement contractors. This QC supplied plant inspector will monitor HMA production, take corrective action at the plant when required and split samples at the plant.

The standardization of these minimum QC personnel requirement will level the playing field, with regard to bidding our projects. Currently we are experiencing little or limited QC on our HMA projects, as we do not required minimum QC personnel. Therefore, the contractors are not bidding the contract to provide QC and potential claims are being filed.

38. 11. (Comment from 12-02-2015) Industry concern is that CT does not have a uniform and consistent approach. Industry will review and respond at the next meeting.
38. 12. (December 9, 2015) Industry: Industry proposes recommendation in paragraph 38.6
38. 13. **(Comment from 02-23-2016) Industry will discuss this and present their position to Caltrans.**

39. **Current spec requires ¾ inch aggregate for 0.2 thick lift.**

39. 1. (Comment from 2/19/2015) Industry opinion is that there should not be a ¾" requirement in the spec for RHMA-G. CT will survey the districts to see if it is OK to eliminate the ¾ inch requirement entirely, or at a minimum, change the requirement to be one half inch aggregate for lift thickness through 0.2

39. 2. (CT comment 4/9/2015) Districts do not want to eliminate ¾"mix.

40. **Approval of binder modifiers**

40. 1. (Comment from 2/19/2015) Caltrans may need to define the term better for the benefits of the RE's. "Binder modifier used in xxx" We need a standard definition and reference spec.

40. 2. (Group Comment 4/9/2015) We need to look at AASHTO definition for binder modifiers.

40. 3. **(Comment from 5/21/2015) Industry (TL) will look at AASHTO definition of binder modifiers and report back.**

40. 4. (Comment from 6/25/2015) Report: The AASHTO spec says you need to identify the properties you are changing with the modifier and provide documentation that says the modifier will actually do what you are claiming. **Industry needs to look at this some more.**

40. 5. (Comment from 7/22/2015) Nothing new to report.

40. 6. **(Comment from 10- 23- 2015) Nothing new to report. Pascal will talk to Tony L.**

40. 7. (Comment from 12-02-2015) Industry proposes using the ASTM or green book approved list of binder modifiers. **Caltrans will review this and comment back at the next meeting. Industry will provide a proposed definition of modifiers for asphalt binders.**

Item 40: T. Develop definition for modifiers for asphalt binders:

Petroleum based or other approved additives to be used in recycling of Hot Mix Asphalt (HMA) to restore the desired binder properties of the mixture.

Based on ASTM D4552 Standard Practice for Classifying Hot-Mix Recycling Agents

40. 8. (Comment from 02-23-2016) Industry proposes using the ASTM or green book approved list of binder modifiers.

41. **Need CT clarification on washing requirement for fine aggregate gradation**

41. 1. (Comment from 3/18/2015) Kee Foo will look into requiring washing in fine aggregate gradation test. T-11

41. 2. (CT Comment 4/9/2015) CT will add language requiring washing on the fine aggregate in section 39.1.02 D (2)

41. 3. (Comment from 5/21/2015) This has been done and posted.

42. **Industry request to maintain SP Designation**

42. 1. (CT response 4/9/2015) Kee will check with OE to see if it is possible to maintain SP designation for projects requiring SP mix.

42. 2. (Comment from 5/21/2015) No changes to the "Type A HMA"

43. **DP is also required on plant produced mix (Caltrans).**

43. 1. (Industry comment 4/9/2015) DP has always been based on cold feed or hot bin gradations and post plant binder test. CT should have data to support this requirement.

43. 2. (Comment from 5/21/2015) Caltrans comment The DP of in-placed HMA means that the DP is measured from in-placed HMA (ie. plant produced HMA). Historically, CT has been using cold feed or hot bin gradation (as opposed to post plant gradation) by assuming the difference between pre-plant gradation and post-plant gradation in traditional HMA production will not significantly changed the measured HMA properties. However, HMA plants are moving further and further away from traditional operation that CT now wants to use post plant gradation in determining in-place HMA properties. Industry comment: We are doing this per the spec, currently.

43. 3. (Comment from 6/25/2015) Industry continues to believe the current spec requires DP to be calculated based on Plant hot bins and cold feed, as there is no requirement to run gradation on ignition oven burn-off. This has been standard practice for years. **Caltrans will consult internally and report out at next meeting on this**.

43. 4. (Comment from 7/22/2015) Caltrans wants to use post-production gradation in calculating dust proportions and VMA. Caltrans is open to looking at the volumetric properties and gradation band based on post-plant gradation. Industry is concerned about changing the way of measuring the VMA and DP. This may create issues and the criteria may need to be revisited.

43. 5. (Comment from 10- 23- 2015) Industry is waiting for a decision on post plant gradation resolution from the ATG.

43. 6. (Comment from 12-02-2015) Industry is still waiting for a decision.

43. 7. (Comment from 02-23-2016) no change

44. **Dike mix needs to be modified from Structural 3/8" mix to Dike mix**

44. 1. (Industry comment 4/9/2015) **Industry will propose changes.**

44. 2. **(Comment from 5/21/2015) Industry will propose Asphalt Institute berm mix specification to CT. CT: Please provide CT contract number and telephone number for the RE for projects where the current 3/8" gradation mix is not working**

44. 3. (Comment from 6/25/2015) **Caltrans will look at old Caltrans dike spec and Asphalt Institute spec and report back.**

44. 4. (Comment from 10- 23- 2015) Industry says what is currently in the spec does not work. **Caltrans will look at Asphalt Institute spec and report back.**

44. 5. (Comment from 12-02-2015) CT will accept the AI spec for berm mix gradation as a contractor option. Caltrans will put this into the RSS.

44. 6. (Comment from 02-23-2016) CT will put the language into the April RSS.

45. **Industry requests an annual MPQP without a contract number**

45. 1. (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.**

45. 2. (Comment from 5/21/2015) This is being worked on outside this group by the test turn-around time task force.

45. 3. (Comment from 12-02-2015) Nothing to report

45. 4. (Comment from 02-23-2016) Industry still waiting for action by the test turn-around group.

46. **CEM Form 3803 (Daily Summary of Quality control testing)**

46. 1. (Comment from 5/21/2015) last updated in 2009. This needs to be updated for superpave. **Caltrans will update this form and report back on progress at the next meeting.**

46. 2. (Comment from 6/25/2015) No progress yet.

46. 3. (Comment from 10- 23- 2015) Caltrans has provided a copy of the draft form to industry and submitted it to the Forms unit. We are waiting for it to come back from the Forms unit.

46. 4. (Comment from 12-02-2015) CT: Still waiting for the forms unit.

46. 5. (Comment from 02-23-2016) No change.

47. **Use of 3/8" conventional mix in intersections**

47. 1. (Comment from 5/21/2015) This is a design issue for using 3/8" mix for intersections. Industry concern: Need to change the spec to say less than 1/10th of a foot.

47. 2. **(Comment from 6/25/2015) Caltrans will look into this issue and report back.**

47. 3. (Comment from 10- 23- 2015) Caltrans reports this is an internal design issue and requires the design policy to be changed. Industry withdraws the issue from the table.

48. **(Comment from 6/25/2015) Some districts are not accredited for AASHTO R47. Is this covered by CTM125?**

48. 1. (Comment from 6/25/2015) CTM125 covers sampling in the field but does not cover reducing the sample in the lab. AASHTO standards reference R47 for reducing samples in the lab. Laboratories should be required to be accredited for R47. Districts 2, 4 and 9 are not accredited for R47. Industry and Caltrans will both review R47 requirements and report back at the next meeting.

48. 2. (Comment from 8/25/2015) This is covered by item 5.

49. **(Comment from 6/25/2015) Caltrans announces there will be an informational meeting on RAP/RAS to discuss the spec.**

49. 1. (Comment from 8/25/2015) Meeting was held with Industry and CT at Translab on July 28, 2015 to discuss revisions to the RAP RAS Spec. Meeting notes were recently completed and will be distributed to industry by the end of August. There will be an additional meeting between CT and binder refiners on September 3 to discuss the tolerances on binder recovered from plant-produced mix.

49. 2. (Comment from 8/25/2015) Industry comment: **Due to the potential impact on Section 39 stakeholders, they should be included in the September 3 meeting. Tony L will contact Joe Peterson to requesting that they be included in the meeting. He will also keep the group informed.**

49. 3. (Comment from 6/25/2015) In light of new information from the FHWA, Caltrans announced there will be an informational meeting on RAP/RAS to discuss the changes to the specifications. Changes may include a requirement to bump down 1 grade or use blending charts when RAP content is 16 – 25 percent.

50. **(Comment from 6/25/2015) Should there be a minimum tonnage requirement for the use of TSR, HWT and VMA for mix design and for production for mix used in the travelled way (based on assumption that non-travel way is considered minor aphalt) ?**

50. 1. (Comment from 8/25/2015) Industry Comment: Circumstances involved in the specific situation need to be taken into consideration by the designer. There needs to be guidance to the designers to put the requirements in where they are appropriate. If the designer misses it, there needs to be a conversation with the RE or the local subject matter expert.

50. 2. (Comment from 8/25/2015) Caltrans comment: We want mixes verified at intersections – even though they are small jobs. We want the best mix design. District 11 has already implemented a subject matter expert for HMA. Bidder inquiries should address this.

50. 3. (Comment from 8/25/2015) Industry: We will think about this and discuss it at the next meeting.

50. 4. (Comment from 10- 23- 2015) Industry comment: Industry withdraws the issue from the table.

51. **(Comment from 6/25/2015) Should the aggregate crush count re9-quirement be revised in light of the HWT requirements?**

51. 1. (Comment from 8/25/2015) Caltrans will not allow reduction in the crush count at this time.

52. **(Comment from 6/25/2015) We are seeing MTV's on projects using non-RHMA mixes.**

52. 1. (Comment from 8/25/2015) MTV's are required for all OGFC mixes. CT HQ has granted approval to use this on HMA mixes at high elevation, long-haul and cold weather, on a case-by-case basis.

53. **(Comment from 6/25/2015) Caltrans is not allowing AR binders for mix verification that are produced at an alternate location, where the same AR plant and same materials will be later used at the HMA plant for the project.**

53. 1. Kee will check into this. Joe Peterson had previously sent out an e mail statewide, indicating that this practice was acceptable. Now Joe has indicated this is not the Caltrans position. This issue will be discussed at the ATG level.

53. 2. (Comment from 8/25/2015) Caltrans will discuss this internally and will share information with the ATG co-chairs by the end of this week. Industry will wait for the Caltrans position and then respond.

53. 3. (Comment from 10- 23- 2015) CT: We met with industry. CT agreed to allow this to happen, and industry is waiting for a letter or memo documenting this.

53. 4. (Comment from 12-02-2015) Industry originally requested that there be a memo written to allow this. Sri's e mail is unclear. What is done for projects coming up? Industry says that CT wants to look at this issue as a research item. Mark B is taking care of this. Check back at next meeting.

53. 5. (Comment from 02-23-2016) Caltrans says language will stay silent if our contractor has a problem in a district they need to call Chuck Suszko and he will support it.

54. **(Comment from 6/25/2015) Why do we need to run untreated TSR's when we already know we need to treat the mix design.**

54. 1. (Comment from 8/25/2015) Caltrans agrees this is not necessary to run the untreated TSR, if you provide your PI information. **Caltrans will bring proposed language at the next meeting.** If the group agrees with the language, Kee will send it to OE to become an RSS for 2015. **Pete will check with Chuck to see how this can be resolved for current projects. Reference: 39-2.01(B) (2) (b)**

54. 2. **(Comment from 10- 23- 2015) CT: CT will write an RSS once the 2015 spec is complete. Caltrans will bring proposed language at the next meeting.**

54. 3. (Comment from 12-02-2015) See the picture below. Caltrans proposed language,

39-2.01B(2)(b) Hot Mix Asphalt Treatments

If the ~~test results for AASHTO T 283 or AASHTO T 324 (Modified) for untreated plant-produced HMA are less than the minimum requirements for HMA mix design~~ hot mix asphalt treatment is required, determine the plasticity index of the aggregate blend under California Test 204.

Do not use an aggregate blend with a plasticity index greater than 10.

If the plasticity index is from 4 to 10, treat the aggregate blend can only be treated with dry lime with marination or lime slurry with marination.

If the plasticity index is less than 4~~, treat the~~ aggregate blend can only be treated with dry lime or lime slurry with marination, or treat the HMA with liquid antistrip.

54. 4. **(Comment from 12-02-2015) Industry (Jack) will propose alternate language.**

54. 5. (Comment from 01-05-2016) 39-2.01B(2)(b) Hot Mix Asphalt Treatments

(Insert as first paragraph under Section 39-2.01B(2)(b):

39-2.01B(2)(b) Hot Mix Asphalt Treatments

If the proposed JMF indicates that the Contractor is treating the aggregate with dry lime or lime slurry with marination, or treating the HMA with liquid antistrip then the testing for AASHTO T 283 or AASHTO T 324 is not required for the untreated material.

If the ~~test results for AASHTO T 283 or AASHTO T 324 (Modified) for untreated plant-produced HMA are less than the minimum requirements for HMA mix design~~ hot mix asphalt treatment is required or being used by the contractor, determine the plasticity index of the aggregate blend under California Test 204.

Do not use an aggregate blend with a plasticity index greater than 10.

If the plasticity index is from 4 to 10, ~~treat~~ the aggregate blend can only be treated with dry lime with marination or lime slurry with marination.

If the plasticity index is less than 4,~~, treat the~~ the aggregate blend can only be treated with dry lime or lime slurry with marination, or treat the HMA with liquid antistrip.

54. 6. **(Comment from 01-05-2016) Caltrans and industry agree with the proposed language. Waiting for language change.**

55. **(Comment from 6/25/2015) We need to discuss JMF and HMA sample size requirements.**

55. 1. (Comment from 8/25/2015) –No comment

55. 2. (Comment from 12-02-2015) Industry: We need to review Section 39 and the latest construction manual for sample size – is the amount 250 pounds, or 250 x 4 pounds? This needs to be clarified. Industry question: Do we need to be able to provide enough sample size to do every single test four times? **Caltrans will review and clarify sample size at the next meeting.**

55. 3. (Comment from 01-05-2016) Nothing to report

56. **(Comment from 8/25/2015) By eliminating the RHMA-G 3/8" for BWC and the OGFC 3/8" for BWC and sending out a directive that all surface courses have to be rubber, the department has intentionally or inadvertently eliminated BWC in the state. I believe this is an unintended and unforeseen outcome of trying to improve specifications but the result is the same. Can we make BWC an exception to the rubber surface course mandate and add back in the 3/8" OG and RHMA for BWC use only?**

56. 1. (Comment from 8/25/2015) Caltrans response: Scott Metcalf will forward a UCD quiet pavement study to Kee Foo, as background on the 3/8 inch aggregate. Kee Foo will take this issue back to CT. CT Districts 1,5,6 and 9, and Industry would like an exemption for bonded wearing course to place 3/8 inch open graded, gap graded rubber at less than 1/10th of a foot. They would like to have 3/8" gradations reinstated.

56. 2. (Comment from 10- 23- 2015) CT: The spec is not going to change. D-1,5,6 and 9 can request a NSSP to use 3/8" gradation.

57. **(Comment from 8/25/2015) Caltrans would like language in the spec outlining the responsibility for Quality Acceptance sampling and sample splitting. Specifically the requirements for CT participation in the sampling and splitting process.**

57. 1. (Comment from 8/25/2015) Caltrans will draft language and present at the next meeting.

57. 2. **(Comment from 10- 23- 2015) Kee will draft up the language for this.**

57. 3. (Comment from 12-02-2015) Sentences that could be interpreted as requiring contractor to obtain/split QC/QA samples will be deleted. Engineer sampling will be in Construction Manual which will basically say randomly grab two split samples (one for testing and one for dispute resolution)

57. 4. (Comment from 12-02-2015) CT reports that all QA samples will be taken according to the Construction Manual. The spec has been clarified. Caltrans will take all QA samples obtaining enough material for a two way split which allows for testing and dispute. Industry concern: We disagree with not being allowed to obtain a split sample from the QA test.

57. 5. **(Comment from 01-05-2016) Industry continues to disagree with this change and will elevate the issue to the ATG. Kee Foo and Tony L will write up the issue, and waive the third party dispute resolution at the STG level.**

58. **Issue 2 from industry concerns of 5/20/2014: Minor asphalt AASHTO T283 requirements (5/20/2014 Comment, reinstated 8/25/2015)**

58. 1. Industry comment: If I have an aggregate that is proven to pass and does not have a stripping requirement, why would I need to put the liquid anti-strip treatment in?

58. 2. CT response: Under 39-7.02D – CT will add "Unless dry tensile strength is greater than 100 PSI and wet tensile strength is greater than 70 PSI…"

58. 3. (Comment From 6/20/2014) CT Comment: This will be eventually be changed – the issue is resources at OE.

58. 4. (Comment From 7/23/2014) CT these changes have been requested to OE. You do not have to treat minor HMA if you submit AASHTO 283 and AASHTO T 324 (Modified) test results showing compliance with section 39-2.02B(2).

58. 5. **(Comment From 7/23/2014) CT needs to address the issue of mix design verification. We need to know how the general section applies. Is a mix verification required for minor asphalt? Industry prefers that mix verification not be required.**

58. 5. 1. (comment from 8/13/2014) CT sent out an advisory e mail to DME's defining minor and the requirements for testing –

With the new posting of Section 39, I wanted to give some clarification on the intended use of Minor HMA. Minor HMA has it's own BEES item code, thus has to be specified in order to be used. Minor HMA still requires a mix JMF mix design, but does not require Hamburg (AASHTO T 324) or Moisture (AASHTO T 283) testing. In addition there is no hot drop verification, rather production start up evaluation combines the hot drop with the first day of paving. All other tests (aggregate, volumetrics etc) apply. A 3513 is issued for Minor HMA, but the values for Hamburg and Moisture are left blank, and I would recommend that across the top of the 3513 the lab issuing write "MINOR HMA ONLY". The minor HMA JMF is valid for 1 year.

The intended use of Minor HMA is for 1000 tons or less of total paving in the project. This can be on shoulders, ~~intersections~~, gores etc.,

58. 6. (comment from 8/13/2014) CT says it would be a good idea to put the remark: "MINOR HMA ONLY" written across the top of the 3512.

58. 7. (Comment from 10- 23- 2015) Industry recommends modification of the 3513 to include a check box for "Minor HMA"

58. 8. (Comment from 10- 23- 2015) Caltrans says the inclusion of "intersections" in the guidance e mail quoted above is an error and should NOT be included as an example.

58. 9. (Comment from 01-05-2016) CT says no checkbox on the form. Contractors will write "MINOR HMA ONLY" on the top of the 3513

59. **Issue 3 from industry concerns of 5/20/2014: Define the parameters for Minor HMA (less than 1000 tons, 500 tons etc.) (5/20/2014 Comment, reinstated 8/25/2015)**

59. 1. CT will put out a DIB defining what minor HMA is. (will be 1000 tons total project paving or less)

59. 2. CT will send out a note to the DME's on this.

59. 3. Check with your DME for appropriate use of minor HMA.

59. 4. Industry: Minor HMA will also require gradation, AC Content, air void, VMA, and field compaction. Since only Hamburg and TSR strength are waived it will also require a job mix formula verification if one does not have one. Was this discussed during the superpave meetings? CT Response: Yes. Acceptance is based on production.

59. 5. Industry wants to take a look at minor HMA in regards to density requirements. CT response: Please bring specific items back so we can address them.

59. 6. (Comment From 6/20/2014) CT: DME's got a notice on minors, defining what a minor HMA project is -– This was sent out via e mail to all district materials engineers. I

59. 7. **(Comment From 7/23/2014) Industry would like to have something in hand to show to DME's if this comes up, i.e. DIB. Some sort of document – formalizing this. Is CT putting out a DIB? Can we have a copy of Joe's e mail? Please make sure industry gets a copy of the DIB when it goes out.**

59. 7. 1. (comment from 8/13/2014) Joe's e mail was sent to the group. A DIB will be going out in the future. CT recommends that industry use a copy of Joe's e mail in the interim. Industry comment: The DIB is important to us so we can show it to the DME's.

59. 8. (Comment from 8/25/2015) Industry is waiting for the DIB

59. 9. (Comment from 10- 23- 2015) Nothing new to report.

59. 10. **(Comment from 01-05-2016) Kee Foo will pursue getting a DIB out on this.**

60. **(Comment from 8/25/2015) Requiring the QC plan to be provided with the mix design can be problematic. Often times the contractor does not know who is going to provide the QC testing at the time the mix design is submitted. Can we have the contractor identify the AMRL laboratory with the mix design and have a separate requirement for the QC plan, i.e. "XX days prior to construction submit your QC plan for review.**

60. 1. (Comment from 9/30/2015) Industry would like to have the requirement for the QC Plan submittal identifying who will be on the job to provide QC testing separated from the mix design submittal to address this. CT would like to keep the QC plan and the JMF submittal separated. 39-1-01-c(3) needs to be changed to accommodate this. This would require a modification of the JMF Certification check-off. Industry is suggesting the changes to the spec, for CT to review. (See below.) **Caltrans will review and comment at the next meeting.**

39-1.01C(2) Job Mix Formula

39-1.01C(2)(a) General

Except for the HMA to be used in miscellaneous areas and dikes, submit your proposed JMF for each type of HMA to be used. The JMF must be submitted on the Contractor Job Mix Formula Proposal form along with:

1. Mix design documentation on Contractor Hot Mix Asphalt Design Data form dated within 12 months of submittal

2. JMF verification on a Caltrans Hot Mix Asphalt Verification form, if applicable

3. JMF renewal on a Caltrans Job Mix Formula Renewal form, if applicable

4. MSDS for:

4.1. Asphalt binder

4.2. Supplemental fine aggregate except fines from dust collectors

4.3. Antistrip additives

The Contractor Hot Mix Asphalt Design Data form **must identify the AMRL-accredited lab responsible for the mix design and** show documentation on aggregate quality.

39-1.01C(3) Quality Control Plan

~~With your proposed JMF submittal,~~ **At least 5 days prior to the pre-paving meeting submit a QC plan for HMA.**

The QC plan must describe the organization ad procedure for:

1. Controlling HMA quality characteristics

2. Taking samples, including sampling locations

3. Establishing, implementing, and maintaining QC

4. Determining when corrective actions are needed

5. Implementing corrective actions

6. Methods and materials for backfilling core locations

60. 2. (Comment from 10- 23- 2015) CT needs to say that the QC plan needs to be approved and distributed prior to the pre-paving meeting. Caltrans is still looking into the proposed language revision.

60. 3. (Comment from 01-05-2016) Caltrans/Industry comments:

60. 3. 1. (Comment from 01-05-2016) Industry comment: "The contractor will provide the name of the qualified laboratory and other pertinent information required with the mix design submittal."

60. 3. 2. (Comment from 01-05-2016) Industry comment: "The contractor will provide the Quality Control Plan at least five days prior to the pre-paving meeting."

60. 3. 3. (Comment from 01-05-2016) "The engineer reviews the QC plan within five business days from the submittal."

61. **Standardize the way GSE is calculated**

61. 1. (Comment from 9/30/2015) Industry comment: Some districts use the binder content and GMM from the LP-9 provided in the mix design. Other districts run their own GMM on RAP samples obtained at the time of mix verification but use the binder content from the LP-9. This is apples and oranges. We need to standardize this procedure. Caltrans agrees that there should be a consistent method to come up with the GSE value. The RAP GMM and the RAP binder content need to be from the same sample. **CT will look into this and respond at the next meeting.**

61. 2. (Comment from 10- 23- 2015) For up to 15% RAP use GMM from LP-9. Above 15% to a maximum of 25% RAP, use GMM from Contractor Production Testing. Industry needs to look at this and blue it at next meeting.

61. 3. (Comment from December 9, 2015) Industry comment: Unless augmenting the pile use the GMM from LP-9. When using 15% or greater RAP, if augmenting the pile use GMM from Contractor Production Testing.

61. 4. **(Comment from 01-05-2016) CT will look at modifying LP-9 or creating a new LP for mix design calculations. This may include any calculation relating to mix design. We will work with the owner of LP-9 to get this done.**

62. **Difficulty meeting Hamburg for RHMA-G**

62. 1. (Comment from 9/30/2015) Industry comment: Data indicates that contractors are experiencing problems meeting HWT for RHMA-G mixes. Test results are highly variable and scattered when using multiple labs. Caltrans and Industry need to decide what, if any changes need to be made to resolve this issue. Industry has identified variability in the HWT, and a small working group is addressing this. **Industry needs to collect data specifically on the RHMA mix. Tony L will put a table together to assist in data collection from industry.**

62. 2. (Comment from 10- 23- 2015) Nothing to report.

62. 3. (Comment from 12-02-2015) Group waiting to see if this issue should be part of item 10 above.

62. 4. (Comment from 12/09/2015) Industry comment: Issue 62 will be part of Issue 10 effort.

62. 5. (Comment from 01-05-2016) Industry comment: We request a clarification on contractor options to use ½ inch RHMA-G when ¾ inch RHMA-G is specified. (See Issue 10) We are waiting for status report from the small work group working on pressure and gyration specification meeting on January 19th at the SRL.

62. 6. **(Comment from 02-23-2016) Industry provided survey on RHMA mix difficulties to the STG. A small working group will review the information and report back to the STG.**

63. **(Comment from 9/30/2015) Quantify visual inspection. Section 39-2.01 A4 (See Pascal)**

63. 1. **(Comment from 10- 23- 2015) Industry will make a proposal.**

63. 2. **(comment from 12/09/2015) Industry comment: Industry will look at Contruction manual language as a starting point and get back to CT.**

63. 3. (Comment from 01-05-2016) Item: 63: Visual Inspection language. Current language in QC/QA Manual: "Visually inspect the finished hot mix asphalt surface for marks, tearing, and irregular texture that may be caused by segregated mix. Notify the contractor of any defective areas."

63. 4. (Comment from 01-05-2016) Industry comment: This is too subjective – Some RE's do not have enough experience to perform a visual inspection and accept or reject a job. The QC/QA language should be included in the spec. Some guidelines should be included in the spec. The spec does not define visual inspection – what it entails, what you are looking for.

63. 5. **(Comment from 01-05-2016) Caltrans will incorporate "Visually inspect the finished hot mix asphalt surface for marks, tearing, and irregular texture that may be caused by segregated mix. Notify the contractor of any defective areas." into the "acceptance and quality control" section.**

64. **(Comment from 9/30/2015) Caltrans would like to look at common compaction temperature for mix design. (Kee Foo)**

64. 1. (Comment from 10- 23- 2015) Industry is not in favor of this. SP2 requires the compaction to be determined from the viscosity-temperature relationship.

64. 2. (Comment from 01-05-2016) Industry comment: If Caltrans wants to go in this direction, they need to make sure the data support it. This would be counter to historical approach to our work. This does not make good technical sense. Show us the research, the data to support your position before you change the spec. We should look at technically sound ways to accommodate the budgetary constraints. CT might look at different temperatures for different binder grades. CT might also consider extending the life of JMF approval to two years.

64. 3. **(Comment from 01-05-2016) Caltrans will discuss this internally and bring the discussion forward at the next meeting.**

65. **(Comment from 9/30/2015) Industry comment: We need to look for flexibility / cracking test (Mike)**

65. 1. **(Comment from 01-05-2016) Caltrans is open to considering this. FHWA will update the group at the next meeting.**

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66. **(Comment from 12-02-2015) Aggregate blending procedures for BSG using LP-9.**

66. 1. (Comment from 12-02-2015) Some Districts use the contractor's binder content from the 3512 but they run their own Gmm. They don't use their test data for the passing #4 from their combined aggregate and RAP grading's when calculating the percent of coarse, fine and RAP aggregate for the aggregate blend BSG using LP-9.

For example in one case involving a 1/2" HMA-SP mix containing 15% RAP; To calculate the aggregate blend BSG using LP-9 Caltrans should use their combined aggregate grading passing #4 of 57% and their RAP grading passing #4 of 78% from the verification sample testing. This would result in 39.9% coarse aggregate, 45.1% fine aggregate and 15% RAP aggregate to calculate combined aggregate blend BSG. Using their Gmb the VMA would calculate to an average of 13.5. The District lab used the contractors aggregate grading passing #4 of 59% and RAP grading passing #4 of 81% from the CEM-3512. Doing this will resulted in 38.2% coarse aggregate, 46.9% fine aggregate and 15% RAP aggregate. Using this method of determining the combined aggregate blend BSG the contractors VMA is now 13.4 and fails. Why wouldn't Caltrans use data from tests run on the verification sample material? Where in the specification does it state that the Department is to use the CEM-3512 combined aggregate passing #4 and RAP passing #4?

66. 2. **(Comment from 01-05-2016) Industry proposal: Use actual production gradation and AC content to calculate VMA with the exception of RAP. When using RAP, use RAP gradation target values from mix design.**

66. 3. **(Comment from 01-05-2016) Caltrans comment: We will review this issue and reply at the next meeting.**

67. **(Comment from 12-02-2015) Caltrans comment: Conflict in tables in specs. Consider plans that indicate a layer thickness of 0.35' HMA Type A. How can this be broken in to two lifts?**

39-2.02C says you can, but 39-2.02B(4)(b) says you can't.

'----------

39-2.02B(4)(b) 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 shown	Gradation
0.10 foot	3/8 inch
Greater than 0.10 to less than 0.20 foot	1/2 inch
0.20 to less than 0.25 foot	3/4 inch
0.25 foot or greater	3/4 inch or 1 inch

39-2.02C Construction

Where the pavement thickness shown is greater than 0.30 foot, you may place Type A HMA in multiple lifts not less than 0.15 foot each. If placing Type A HMA in multiple lifts:

1. Aggregate gradation 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

2. Apply a tack coat before placing a subsequent lift

67. 1. **(Comment from 01-05-2016) CALTRANS PROPOSED LANGUAGE "When placing TYPE A HMA multiple lifts, the table in Section 39-2.02B(4)(b) does not apply."**

68. **(Comment from 12-02-2015) There are projects that are coming out with a conflict in the spec considering layer thinckness that defines method compaction vs. density.**

68. 1. (Comment from 12-02-2015) Industry comment: The language "For method compaction, the maximum compacted layer thickness must be 0.25 foot." has come out for some projects.

68. 2. (Comment from 01-05-2016) Industry comment: This language is confusing. If you want method compaction with lifts greater than 0.15 feet it should be spelled out in the plans more clearly where this is required. This is not in the Section 39 Standard Spec. This just started showing up. Districts are adding this. CT needs to look at Method Compaction 39-1.03 O(2)

68. 3. **(Comment from 01-05-2016) CT reply: We will consider moving this sentence under method compaction. This is already in the 2010 RSS 39-2.03. Similar language has been added to intelligent compaction specs.**

68. 4. **(Comment from 01-05-2016) Industry comment: Need to** state "For method compaction, the ~~maximum~~ compacted layer thickness must ~~be~~ not exceed 0.25 foot maximum."

68. 5. **(Comment from 01-05-2016) CT response: We will have OE review industry comment.**

69. **(Comment from 12-02-2015) Failed JMF Verification**

69. 1. (Comment from 12-02-2015) CT comment: Priority should be given to other projects following two failed JMF verifications.

69. 2. (Comment from 01-05-2016) Caltrans proposes to add language for handling projects with a failed JMF as a lower priority than other projects. Failed JMF would result in that project going to the back of the line for verification.

69. 3. (Comment from 01-05-2016) Industry comment: Industry opposes this change. This means projects having trouble will continue to have problems with mix approval. This would result in more claims. Problems with the plant, the stockpile or whatever are not mix design failures – We just have to be sure we can duplicate the mix at the production plant. Industry believes this is NOT a statewide issue.

70. **NSSP Update (Comment from 02-23-2016)**

The 2010 SSP index has been updated as of 02-12-16 and can be found at:

http://dot.ca.gov/hq/esc/oe/construction_contract_standards/SSPs/2010-SSPs/ssp_index/2010_Index.docx

71. **Industry proposal – We would like to have an option to use ½ inch RHMA-G in 0.20 lifts (Comment from 02-23-2016)**

71. 1. (Comment from 02-23-2016) Caltrans has expressed concern that projects using ½ inch aggregate with a 0.20 lift will rut.

71. 2. (Comment from 02-23-2016) Right now if a lift thickness 0.20 or greater, ¾ inch is required. There is no option to go with ½ or ¾ inch aggregate.

71. 3. **(Comment from 02-23-2016) Randy Reichert will provide data on ½ and ¾ inch aggregate to Pete Spector with 0.15 and 0.20 lifts.**

71. 4. **(Comment from 02-23-2016) Tony and Kee will send out a survey to identify projects that have ½ inch aggregate for 0.20 lifts. Do we have any jobs where there is rutting?**

71. 5. (Comment from 02-23-2016) Industry is aware of projects of 0.20 lifts with ½ inch aggregate, that have not experienced rutting.

71. 6. (Comment from 02-23-2016) Caltrans has experienced rutting with ½ inch aggregate on one project. The lift thickness on this project was 0.15. (See item 39)

71. 7. (Comment from 02-23-2016) Industry - Phil R is aware of two projects that used ½ inch aggregate on 0.20 lifts: Highway 20 on Colusa, and also Highway 12/I-5. This second one has heavy traffic and no rutting.

72. **Industry: Change in lime source for JMF (Comment from 02-23-2016)**

73. **Industry: Exclude sampling locations behind the paver for smoothness, on thin lifts of 0.10 or less. (Comment from 02-23-2016)**

74. **Industry: Lifts < 0.10 are required to use a 3/8 inch mix - Some RE's are requiring ½ inch mix. (Comment from 02-23-2016)**