1050302 CONTRACTOR QUALITY CONTROL GENERAL REQUIREMENTS – COMPLIANCE WITH THE MATERIALS MANUAL – SECTION 9.2 STRUCTURAL CONCRETE PRODUCTION FACILITIES GUIDE
COMMENTS FROM INTERNAL/INDUSTRY REVIEW

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Comments: (4-3-12)
1. The last paragraph in 9.2.4 should state that the plant is no longer required to be inspected at the minimum frequency when they are placed on Status B. In this case, the Department would be required to do an inspection prior to the plant returning to Status A.

Response: The language that the plant doesn't have to be inspected is in Materials Manual 5.6. It does not need to be repeated here. This language here allows for the Department to make an inspection prior to the plant returning to status A. It is not required because it will depend on the time frame the plant was on status B. By making it a requirement, District Materials Offices will have to inspect, regardless of the situation.
No change made.

2. The following two statements that were deleted should remain and be placed under the General Requirements: "Devices will be checked up to the maximum quantity normally required for a batch. As a minimum four-step checks will be made at approximately equal intervals. This will include the maximum quantity normally required for a batch." The sentiment of the first statement is also stated in 9.2.9.3. This is a section on scales under Plant Batching Requirements. The above requirements are for when the scales are getting calibrated, not when it's being used for batching.

Response: The four step check requirement has been removed to make the water measuring device calibration process consistent with all other processes. The scale check sentence was moved from 9.2.9.3 to 9.2.6.
Change made.

3. 9.2.6.8 gives the batch adjustment allowances for admixtures, but these are same requirements given for the use of admixtures. I think this needs to state what can be allowed without a new mix design, not the original requirements for admixtures. It needs to state whether an admixture which originally fell within the data sheet range can go outside the range without a new mix design if the producer has the written recommendation from the admixture producer's technical representative. It needs to state whether an admixture which is already outside the data sheet range and has the written recommendation can go farther outside of the range. It only makes sense that it could be brought back within the original range, but the mix may no longer perform as intended. I think this needs clearer guidelines. It probably also depends on the type of admixture.

Response: No changes made. The language already states that a new mix design is not needed for admixture adjustments. A mix design may be within the data sheet range or outside the range already.

4. The meaning of the sentence in the last paragraph of 9.2.6.8 needs to be explained or clarified.

I'm still not completely sure what is meant by, "Batch adjustments shall not be used for batch tolerances of aggregate and cementitious materials."

Response: This language was added in a previous revision to eliminate requests for using the batch adjustments as a batch tolerance.
No change made.

5. The last sentence in the last paragraph of 9.2.6.8 states, "The adjustments shall be noted on the concrete delivery tickets." I think there should be direction if the producer wants to go to certain adjustments permanently. This should be in terms of whether a new mix number can be given without going through a trial batch and whether the new mix design number is a new number entirely or an adjustment to the original one. I think a new number would be less confusing than noting all the adjustments on the delivery ticket on a daily basis.

Response: The intent of this section is to allow the producer to make these adjustments without requiring a new mix design. It is not the intent to allow for the adjustments to be a permanent change. If the producer needs to permanently make adjustments, he should get a new mix design number.
No change made.

6. I think the concept of continuous batching in 9.2.6.9 is not clear. If the moisture is originally taken 2 hours prior to batching and then the plant is still producing for DOT 2 hours after starting, they were continuously batching for 2 hours, but it's been 4 hours since a moisture was taken. I think this should state that the free moisture shall be determined within two hours prior to each day's batching and every four hours thereafter if still batching for the Department. If batching for the Department stops and moistures have not been taken every 4 hours, a new moisture has to be established within the two hours prior to resuming batching.

Response: This language was revised for consistency with prestressed SCC requirements.
No change made.

7. A comparison criteria for verification of free moisture was added in 9.2.6.9. I think this is a good thing to state, but it also needs to state what takes place if the criteria is not met. One suggestion is that the cook out method is performed for a certain amount of time until the plant is getting consistent, verified readings.

Response: Language added to clarify what to do.
Change made.

8. The directions for hot weather mixes in 9.2.7 state, "Ensure that the mix temperature is not less than 94°F at any time." I think a time frame should be given in order to get the concrete to this temperature. It won't start at 94ºF. This section should also give direction on how often the concrete temperature needs to be taken to make sure that it is not less than 94ºF at any time after it initially reaches the 94°F.

Response: The language requires that the mix does start at 94 degrees. The producer must ensure that the mix is 94 degrees at all times. It is up to him how to accomplish this requirement.
No change made.

9. In the section for Concrete trial mix for extended transit time mixes, the only required plastic property is slump after completion of the extended elapsed time. I think this should be all plastic properties. The word “is” needs to be inserted in the last sentence, “Ensure that the mix temperature IS not less than 94°F at any time.” The above comment about this temperature requirement also applies in this section.

Response: The time extension for transit time is focused on how much the extension affects the slump. The plastic properties required for the 90 minute trial would already be performed at this point.. The word “IS” was added.
No other changes made

10. In the section for Concrete trial mix for Specifications Section 353 (slab replacement), the trial mix should be held for 50 to 55 minutes since the specification doesn’t allow addition of the accelerator after 60 minutes. This is the timeframe in which the plastic properties will be tested.

Response: No change made.

11. In 9.2.8 Step (2) of the procedure for slump loss tests, it states, “This test may be used for lower ambient temperature placements without any admixtures adjustments.” This statement doesn’t specify whether it can be used for lower ambient temperature placements with admixtures adjustments. Please clarify.

Response: The sentence has been removed to allow for adjustments to admixtures for lower temperatures.
Change made.

12. In 9.2.8 Step (8) of the procedure for slump loss tests, it states, “Ensure that the concrete maintains a slump of at least 5 inches for the anticipated elapsed time.” This step should be removed or placed somewhere else. This procedure is for how to perform the slump loss test and how to determine the mix design’s elapsed time. When project personnel are looking to approve a drilled shaft mix design for a specific project is the time to compare the mix design’s elapsed time to the anticipated elapsed time.

Response: Step 8 has been removed. The language is in Section 346 requiring 5” slump to be maintained during the elapsed time.
Change made.

13. In 9.2.8 Step (10) of the procedure for slump loss tests, it states, “Submit slump loss test results to the Contractor for obtaining the approval in terms of elapsed time before concrete placements.” The slump loss data should first be submitted from the producer to the DMRE to get approval for the slump loss for the mix design in terms of the elapsed time, ambient, and concrete temperatures. The producer should only submit approved slump loss data to the Contractor. The approval referenced in this step is talking about project approval.

Response: The District Materials Office has the opportunity to witness the slump loss test. It is not the intent to have the slump loss tests approved by DMO before. The State Materials Office will coordinate with the State Construction Office to have CPAM instructions for involving the DMRE in the slump loss approval for a specific project.
No change made.

14. Remove the following statement from 9.2.9.3, “Check scales up to at least the maximum load normally handled on each respective scale.” All other directions on how to calibrate the scales have been moved to 9.2.6.4. A previous comment addressed leaving it in this section.

Response: Change made.

15. The last paragraph in 9.2.10.1 states, “Inspect all mixers at least once each week for changes due to accumulation of hardened concrete or to wear on blades.” The eighth paragraph in 9.2.10.3 states, “The concrete producer shall inspect all truck mixers at least once each week for changes due to accumulation of hardened concrete or to wear of blades or chutes. The blades or chutes shall be repaired or replaced as necessary to meet these requirements. Any appreciable accumulation of hardened concrete shall be removed before any mixer may be used.” This whole paragraph should be removed and placed in the General Requirements of 9.2.10.1 without any of the specific references to truck requirements.

Response: No change made. The language in 9.2.10.3 is specific to truck mixer requirements, including chutes.

16. In the double asterisk under Table 1, remove “during production” after the two requirements for increased testing. For the typical testing frequency for water, “during production” is not specified. If we leave “during production” in the language, it could be argued that those are the only days that count. The test should be taken at the proper frequency no matter how often they are producing as long as they are on Status A. The same is true when we are enforcing an increased frequency.

Response: No change made. The producer does not need to perform testing if not producing for the Department.

17. The second paragraph of 9.2.15.1.1 states, “Certify from the first day and every 30 calendar days of production or less thereafter to the Contractor…” The third paragraph of 9.2.15.1.1 states, “The sampling for chloride determination shall start on the first day of production of each mix design at the plant and repeat every 30 calendar days or less thereafter…” It goes on to state, “Chlorides shall be sampled once per week during production…” I understand that you can’t sample a chloride for a DOT mix design if the producer isn’t producing for us, but the requirement is still every 30 calendar days and during increased frequency once per week. If they hadn’t produced for a period greater than the 30 days or one week, the chloride sample would be required on the first production day back. I think the phrase “of production” needs to be removed from “every 30 calendar days of production” and the phrase “during production” needs to be removed from “once per week during production.”

Response: No change made. The producer does not need to perform testing if not producing for the Department.

18. “Concrete sampling for a mix design shall restart any time concrete production is suspended for any reason for more than 30 calendar days.” A chloride sample could be required when production was suspended for less than 30 days. If the sample was taken, the producer then produced for 2 weeks, didn’t produce for a little over 2 weeks, and then started back again, the chloride sample would be due since it had been longer than 30 days since the last chloride

sample. This sentence needs to be clarified.

Response: As long as the result is within the 30 day period, the result would still be good.
No change made.

19. Add the word “materials” to the first sentence in the fifth paragraph of 9.2.15.1.1. It would read, “When more than one mix design uses the same cementitious materials, aggregates, admixtures, and has similar proportions, the concrete producer has the option to only test for chlorides of the mix design with the highest cement content to represent all such mixes.” I also think the phrase “similar proportions” should be defined.

Response: The word “materials” has been added to the first sentence. The language regarding “similar proportions” was removed in prior revisions.
Change made.

20. The first sentence of the sixth paragraph of 9.2.15.1.1 states, “If chloride test results exceed the limits shown in Florida Department of Transportation Specifications, Section 346, suspend concrete production immediately for every mix design using the same component materials, including admixtures, until corrective measures are made.” All mixes at a plant typically have the same component materials. I think this should state “suspend concrete production immediately for every mix design represented by the failing chloride test.” If a plant has more than one chloride test representing different mixes with the same materials and only one test fails, I wouldn’t think you’d have to stop producing both mixes.

Response: Change made.

21. The second note under 9.2.16 should read, “Items 4, 5, 6, and 11 may not apply to precast operations with onsite production facilities.” Items 12 and 13 are already covered in the first note. Item 6 applies if the production facility uses trucks, but doesn’t if they use a bucket. Items 1, 2, 9, and 10 do apply.

Response: Items denoted as not applying to precast operations were coordinated with the State Materials Office Prestressed Engineer.
No change made.

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Comments: (4-3-12)
District Three staff has reviewed the subject procedure and have the following comments at this time.

1. 9.2.8 Drilled Shaft Concrete: This revision would require an unnecessary number of slump loss tests. Our last drilled shaft job had a temperature variation from 46° to 98°. How many slump loss tests would this require? Also, this revision could require unnecessary Engineering Analysis Reviews. Where will the slump loss procedure be located?

Response: The slump loss procedure is here in Materials Manual 9.2 Volume II. The temperature range has been deleted from this Section and from Section 346.
Further changes will be made in the future based on research for slump loss data.

2. Item (2), last sentence: Consider deleting the last sentence and substitute with: This test may be used for lower ambient temperature placements with the manufacturers recommended admix adjustments to comply with the elapsed time that is specified in Section 455.

Response: No change made at this time. The State Materials Office will continue to review slump loss test requirements and revise in future changes.

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Comments: (4-2-12)

1. Section 9.2.6.4: What is the advantage of eliminating the 4–step check of the water measuring device? Is a scale for water allowed a 1.0% tolerance as a "water measuring device", or is it required to conform to the 0.5% tolerance for scales?

Response: The water measuring device is required to meet the 1.0% tolerance. The advantage of eliminating the 4 step check to move away from prescriptive measures and allow the water measuring device to be verified the same as all other measuring devices.

2. Section 9.2.6.9: Batch Adjustments for Moisture- The change to 4 hour intervals seems to be a good change. Also, the comparison criterion was very much needed. This was always a grey area with different opinions on what the criterion was.

Response: Thank you for your input.

3. Section 9.2.6.10:- Is this eliminating the requirement for a chloride to do an aggregate substitution? If so, this is a good change.

Response: Yes, this is eliminating the requirement for a chloride for aggregate substitutions.

4. Section 9.2.10.3: Truck Mixers – Mixer Identification Cards- Need to change the wording "The contractor WILL remove" to "The contractor MAY remove". There needs to be some judgment allowance here for minor deficiencies. This goes along with having the one time allowance for a counter problem. The producer should be given the chance to fix and then re-inspect broken counters as it has been in the past. These repairs will not be able to happen "immediately", as required with the changed wording.

Response: This language was revised to match the Contractor's requirements in Section 346. If the deficiency cannot be repaired immediately, the card must be removed in accordance with Section 346.

No change made.

5. Section 9.2.11.3: Why is the requirement to mix for 30 revolutions after addition of water eliminated? It remains in 9-2-10.3.1 for automated slump control systems but is eliminated in 9-2-11.3.

Response: The deleted language is in reference to water added at the jobsite and is redundant to requirements already covered by Section 346.

Also, the statement regarding refilling water tanks, yet recording water missing from the tank is not clear. Is the requirement to refill the water tank, and have the water used for slump adjustments at the plant printed on the ticket?

Response: Yes. If water is added at the slump rack, the water should be added to the delivery ticket before the truck leaves the facility. The allowable jobsite water should also be adjusted. Adjustments may be made to already printed tickets by hand if the totals are legible. Changes must be initialed by the BPO. Changes made to clarify that the revisions may be made by hand if the printed delivery ticket cannot be adjusted.
Change made.

6. Section 9-2.12: when two or more trucks are found to contain lumps and balls – Is this found in consecutive trucks, in a single placement, or over the entire project, how many lumps and balls…"must demonstrate the ability to batch….free of lumps and balls" The wording of this section is not acceptable- there must be a tolerance for minor lumps and balls.

Response: This language comes from the Materials Bulletin No. 05-11 issued on October 7, 2011. The requirement to demonstrate the ability to batch free of lumps and balls is applied to a plant after batches with unacceptable lumps and balls (two or more consecutive trucks).
No change made.

7. Section 9.2.15.1, Table 1: The confirmation of absorption values between two different labs for crushed limestone coarse aggregates is not realistic. The absorption values would be on different samples, and the absorption values from a quarry are usually a more accurate running average of testing performed over the month. To compare a single value from two different testing labs will not provide a valid point of reference. For silica sand fine aggregates the absorption testing will vary more to testing technician variances than variances in the material. There is little need to require testing of absorption on silica sand, and even less need for a comparison of tests from different sources. If an absorption values is established for a silica sand source, any true change in absorption value for the silica sand will be less than the standard criterion for requiring re-calibration of a moisture meter.

Response: The requirement for the plant to run the absorption and make the confirmation with the mine's values has been removed. The production facility does not influence the absorption so there is no value in requiring the test or the comparison of the data.
Change made.

8. Section 9.1-15.1, Table 1: Increased water testing- What is the allowable timeframe of a "missed water test" is it one day over the requirement? Within the month required? To implement a increased frequency to 45 days for a test a couple days over a 6 month frequency,

seems harsh, especially for a facility with a proven history to move to the reduced frequency.

Response: This is applied when the required frequency is not adhered to. The allowance is 180 days. That should be sufficient time to meet the required frequency.
No change made.

9. Section 9.2.15.1.1(Chloride Testing Certification): How is a producer expected to "certify" to the Contractor these requirements? How would that process work?

Response: The certification was provided by including the information in the delivery ticket. Now that it has been removed, the producer must provide a certification statement and test results to the Contractor every 30 days.

10. Section 9-2-15.1.1 (Option to test one mix design for chlorides): Changing the wording from "most amount of cementitious" to "highest cement", does this mean the mix with the highest "Portland cement" content, or should this be considered "HIGHEST CEMENTITIOUS" content?

Response: The requirement is based on the cement content.
No change made.

11. Section 9.2.16- elimination of chloride content on delivery ticket: This is a good change as the interpretation of what was expected district by district was inconsistent.

Response: Thank you.

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