

WACA/WSDOT Meeting

Minutes for Tuesday, March 5, 2009

Attendees:

Spencer Kull, Calportland	Dave Burg, Ashgrove	Felix Chandra, Stoneway
Anthony Sarhan, FHWA	Kevin Wolf, Calportland	Neil Guptill, Calportland
Eric Clark, Corliss	Dick Boss, Cadman	David Neel, Boral
Steve Ford, Miles Sand & Gravel	Rich Rietcheck, Boral	Craig Matteson, Central Pre-Mix
Tom McGraw, Lafarge	Rob Molohon, WSDOT	Maha Ablson, WSDOT
Kurt Williams, WSDOT	Mo Sheikhezadeh, WSDOT	Mike Polodna, WSDOT
Bob Raynes, Cemex		

Location: WSDOT, HQ Materials Laboratory, Main Conference Room
1655 South 2nd Avenue, Tumwater, Washington

Next WACA Meeting Date:

Tuesday, June 2, 2009, at WACA's Office in Des Moines, 9:30 AM – 12:00 Noon

Future WACA Meetings Dates:

Tuesday, September 22, 2009, at WSDOT HQ Mats Lab, Main Conf Room, 9:30 AM – 12:00 Noon

Tuesday, December 8, 2009, at WACA's Office in Des Moines, 9:30 AM – 12:00 Noon

Meeting Minutes are available at: <http://www.wsdot.wa.gov/biz/mats/>

Issue: Performance Specifications for Concrete Mix Designs - Mo S.

Develop performance specification parameters for concrete that can be developed into specifications.

3/5/09 – Mo discussed that he is educating WSDOT staff on the specifics of the proposed performance specification and that he is addressing their concerns. He has reviewed the KU gradations which produce good results and may incorporate them into the performance spec. There was some discussion on whether gradations really make a difference in concrete performance. Dick Boss mentioned an NRMCA study that shows aggregate gradations do not matter in concrete. Dave Burg will send a copy of the report to Kurt Williams [Copies received on 3/6/2009]. Mo discussed that shrinkage cracking continues to be a concern and that differential temperatures in the girders and the deck may be causing deck cracking. Mo is looking at limiting concrete temperature on decks pours to 75 °F and noted that this may require night work. Group discussed noting that while they can meet this specification it will cost more and may require investment in equipment to cool the concrete such as liquid nitrogen cooling equipment. The group also noted that the lower concrete temperatures could affect the air entrainment.

Action Plan: Further discussion at June 2009 WACA meeting– Mo S.

Issue: Degradation for concrete Aggregate/Base Course – Kurt W.

A research study is on-going to test the effect of using aggregate with low degradation values in concrete mixes.

3/5/09 – Kurt reported that the degradation study is ongoing and to continue the study WSDOT is looking for a source with low degradation numbers. Kurt asked Dick if he could still supply a low- degradation aggregate for the next round of testing and Dick noted he could but it would be from a waste pile. Kurt said he would follow up with Dick at the next WACA meeting in June on this issue.

Action Plan: Continue to give updates to WACA at Monthly Meetings – Kurt W.

Issue: Concrete Mix Design Documentation Requirements – Tamson Omps

3/5/09 – Kurt reported that the Construction Manual will be re-written to clarify the mix design submittal process.

Action Plan: Issue resolved. Remove from agenda.

Issue: Streambed Aggregates – Gary Albert

This regards WSDOT Standard Specification 9-03.11 Streambed Aggregates.

3/5/09 - We previously discussed the re-use of material excavated out of the streambed. On a job in which Gary was involved, the contractor could not re-use the material and had to use new material. Another issue regards WSDOT Standard Specification 9-03.11(4) Habitat Boulders. Gary reports using quarried rock in many applications as fish “resting” rocks in streams in the past. The requirement for round rocks, and their availability is being questioned. Both of these issues are being addressed by WSDOT Hydraulics, and WDFW.

Action Plan: These issues require further investigation and will be tracked to completion: Mike and Kurt

Issue: Proposed Specification Change to Section 6-02.3(2) Proportioning Materials - Mo

This regards changes to the allowable chloride ion content in concrete. Proposed specification is shown below:

6-02.3(2) Proportioning Materials

The soluble chloride ion content shall be determined by the concrete supplier and included with the mix design. The soluble chloride ion content shall be determined by (1) testing mixed concrete cured at least 28 days or (2) totaled from tests of individual concrete ingredients (cement, aggregate, admixtures, water, fly ash, ground granulated blast furnace slag, and other supplementary cementing materials). Chloride ion limits for admixtures and water are provided in Sections 9-23 and 9-25. Soluble chloride ion limits for mixed concrete shall not exceed the following percent by mass of cement when tested in accordance with AASHTO T 260:

Category	Acid-soluble	Water-soluble
Prestressed concrete	0.08	0.06
Reinforced concrete	0.10	0.08

Unless otherwise specified, the Contractor shall use Type I or II Portland cement in all concrete as defined in Section 9-01.2(1).

The use of fly ash is required for Class 4000D and 4000P concrete, except that ground granulated blast furnace slag may be substituted for fly ash at a 1:1 ratio. The use of fly ash and ground granulated blast furnace slag is optional for all other classes of concrete.

Fly ash, if used, shall not exceed 35-percent by weight of the total cementitious material and shall conform to Section 9-23.9. Ground granulated blast furnace slag, if used, shall not exceed 25-percent by weight of the total cementitious material and shall conform to Section 9-23.10. When both ground granulated blast furnace slag and fly ash are included in the concrete mix, the total weight of both these materials is limited to 35-percent by weight of the total cementitious material.

The water/cement ratio shall be calculated on the total weight of cementitious material. The following are considered cementitious materials: Portland cement, fly ash, ground granulated blast furnace slag and microsilica.

As an alternative to the use of fly ash, ground granulated blast furnace slag and cement as separate components, a blended hydraulic cement that meets the requirements of Section 9-01.2(4) Blended Hydraulic Cements may be used.

3/5/09 – Mo presented proposed changes to 6-02.3(2). A question was raised whether “mass of cement” really means “mass of cementitious”.

Action Plan: Mo will update at the next meeting

Issue: Cement Acceptance Program (CAP) - Kurt

3/5/09 – Kurt reported that the letter to producers informing them to comply with the CAP requirements will go out by March 13, 2009. The updated QC-1 will go out with the letter. It is also available in the WSDOT Materials Manual which can be found on the WSDOT website, www.wsdot.wa.gov.

Action Plan: Issue complete.

Issue: Cert Compliance: Section 6-02.3(5)B, Does this section need any updates:

3/5/09 – Kurt presented the specification below and asked if there are any problems with meeting the current certification of compliance specification, for example providing the names of the admixtures. The group discussed and Craig M. noted that he abbreviates the admixture names on the concrete ticket. Dick B. asked if the cement mill certification was still required and Kurt said it was. Felix C. noted he is having issues with signing the concrete ticket noting that this was a union contract issue. Anthony S. noted that there are FHWA audit requirements for certain things such as the signature on the concrete ticket so this requirement will remain in place. Overall the group did not note difficulty with meeting the current certification of compliance specification.

6-02.3(5)B Certification of Compliance

The concrete producer shall provide a Certificate of Compliance for each truckload of concrete. The Certificate of Compliance shall verify that the delivered concrete is in compliance with the mix design and shall include:

Manufacturer plant (batching facility)

Contracting Agency Contract number.

Date
Time batched
Truck No.
Initial revolution counter reading
Quantity (quantity batched this load)
Type of concrete by class and producer design mix number
Cement producer, type, and Mill Certification No. (The mill test number as required by Section 9-01.3 is the basis for acceptance of cement.)
Fly ash (if used) brand and Type
Approved aggregate gradation designation
Mix design weight per cubic yard and actual batched weights for:
Cement
Fly ash (if used)
Coarse concrete aggregate and moisture content (each size)
Fine concrete aggregate and moisture content
Water (including free moisture in aggregates)
Admixtures brand and total quantity batched
Air-entraining admixture
Water reducing admixture
Other admixture

For concretes that use combined aggregate gradation, the Certificate of Compliance shall include the aggregate components and moisture contents for each size in lieu of the aggregate information described above.

The Certificate of Compliance shall be signed by a responsible representative of the concrete producer, affirming the accuracy of the information provided. In lieu of providing a machine produced record containing all of the above information, the concrete producer may use the Contracting Agency-provided printed forms, which shall be completed for each load of concrete delivered to the project.

For commercial concrete, the Certificate of Compliance shall include, as a minimum, the batching facility, date, and quantity batched per load.

Action Plan: Issue Complete unless issues brought up at future WACA meetings

New Issue: ASR Testing – Kurt W

Changes to Specifications Section 9-03.1(1) will use AASHTO T 303 only and deletes ASTM C 1260. This is due to differences in the testing methods, for example water cement ratio is different between the two.

3/5/09 – Kurt reported that WSDOT will automatically retest any pit that previously tested below 0.45%, but now test at greater than 0.45%. Kurt noted he is considering conducting round robin tests with other labs to help with repeatability in tests results done at different labs. Kurt also looking at running the AASHTO T 303 test on both fine and coarse aggregates from each pit, as we have data showing that the fine aggregate is not always the most expansive. There were no objections to running both tests on both coarse and fine aggregates.

There was also discussion about using the FAA method which combines coarse and fine aggregates into one test. Kurt noted that this is being looked into.

Kurt noted that WSDOT will accept a one-year ASTM C 1293 test that are started one year prior to the pit renewal so that the results will be available as a pit's current approval expires. The aggregate sources that want to run the one year tests early will need to coordinate this through the WSDOT aggregate source approval process per the Standard Specifications [Section 9-03.1(1)] for sampling, etc..

Action Plan: Further discussion at June 2009 WACA meeting– Kurt

New Issue: Processing Plants – Kurt W.

This regards the case when an aggregate processing plant is located not at an active pit site.

3/5/09 – Kurt noted that WSDOT needs a method for approving sources that are mined in one location and trucked to another location for processing. Developing a QC program for the processing plant was discussed. WSDOT would need verification that the facility controlled and tracked their sources as well as their finished products. Kevin Burg stated that the QC program could include certification statements from producers. Shorter timelines for stockpile approvals and/or a tonnage limit were discussed. Bob would like the program to include a way to use material from a tunnel excavation. Kurt asked if WACA could help develop a QC program. Dick B. noted that using the current system would work.

Action Plan: Further discussion at June 2009 WACA meeting– Kurt

New Issue: WSU Deck Testing –Mo S.

3/5/09 – Mo reported on the interim results of a deck testing study being conducted at WSU. They were studying the effects of Shrinkage Reducing Admixtures (SRAs). The State of Rhode Island has had good results using SRAs. The tests so far determined that the SRAs can dramatically reduce cracking in concrete bridge decks. They also tend to remove air from the mixes. Dick stated that they will not produce concrete with both air and an SRA for that very reason.

Action Plan: Remove from agenda. Mo will update with final results when they are available.

New Issue: Deleterious Substances – Kurt W.

3/5/09 – Kurt noted that he is looking at updating the current deleterious substances specification, Section 9-03.1(2)A [and Section 9-03.1(4)A] as he is concerned that these specifications may not be up to date and handed out Table 3 from ASTM C-33 as this is being looked at to update the specifications. Kurt asked everyone to review and he will bring any proposed changes to the June meeting for discussion.

Action Plan: Further discussion at the June 2009 WACA meeting– Kurt