WACA/WSDOT Meeting
Minutes
For Wednesday, March 4, 2015

Day/Time: Wednesday, March 4, 2015 at 9:30 AM – Noon
Location: at WSDOT HQ Mats Lab, Crimson Conference Room

In attendance:

David Jones, WSDOT	Robert Raynes, Cemex	Kevin Wolf, CalPortland
Rob Molohon, WSDOT	Rob Shogren, Lafarge	Allan Kramer, Lehigh
Tim Moore, WSDOT Br.	Dave Burg, Ash Grove	John Cherne, Cadman Inc.
Jed Bingle, WSDOT Br.	Craig Matteson, CPM Old Castle	Tom Weist, Old Castle
Marco Foster, WSDOT	Monica Jones, Lafarge	Bruce Chattin, WACA
Garrett Webster, WSDOT	D. Germer, CalPortland	Greg McKinnon, Stoneway
Joe DeVol, WSDOT	Scott Diloreto, BASF	

Next WACA Meeting Date:
Wednesday, June 3, 2015 at WACA's Office in Des Moines, 9:30 AM – Noon

Future WACA Meetings Dates:
Wednesday, September 2, 2015 at WSDOT HQ Mats Lab, Crimson Conference Room, 9:30 AM – Noon
Wednesday, December 2, 2015 at WACA's Office in Des Moines, 9:30 AM – Noon
Wednesday, March 2, 2016 at WSDOT HQ Mat Lab, Crimson Conference Room, 9:30 AM - Noon

Meeting Minutes are available at:
http://www.wsdot.wa.gov/Business/MaterialsLab/WACAMinutes.htm

New Business:

Sand Equivalent Stock Solution – Joe DeVol
3/4/2015 – Joe DeVol of the WSDOT State Materials Laboratory explained why the WSDOT is changing stock solution used in determining plastic fines in aggregates in accordance with WSDOT FOP for AASHTO T 176 Plastic Fines in Graded Aggregates and Soils by Use of the Sand Equivalent Test. Historically WSDOT has used stock solutions that contained formaldehyde until some safety concerns were identified by L&I. To address this concern WSDOT is now adopting a stock solution that contains no formaldehyde and is made from a calcium chloride solution. This revision should be completed by August 2015. Bob Raynes of Cemex asked Joe what brand of solution is WSDOT going to use. Joe indicated that WSDOT is

not using any brand, but is blending its own solution per AASHTO T 176. Joe stated that they had done compassion testing and did not see any differences in test results.

5000 ECC (Engineered Cementitious Composite) Constructability Review - Marco Foster, Tim Moore, Jed Bingle

3/4/2015 – Marco Foster of the WSDOT Construction Office explained briefly about 5000 ECC concrete and introduced Tim Moore and Jed Bingle of the WSDOT Bridge Office. Jed gave a presentation on the research that had been completed on bridge columns using 5000 ECC and SMA (Shape Memory Alloy) reinforcement at the University Nevada, Reno, see attached. Tim Moore then explained the material specification requirements, see attached. This generated a lot of discussion among WACA members. Rob Shogren of Larfarge asked about using other cements that are available. Tim indicated the goal was to implement the research performed at the University of Nevada, Reno into real world application on the columns Jed had identified in his presentation. Rob Shogren then explained that mixing this concrete will be a challenge due to the high amount of poly-vinyl-alcohol fibers and that a high shear mixer would be required. A WACA member reminded the group that local availability of Class F fly will be short term as soon Centralia power plant converts from coal to natural gas. Tim then explained that Ground Granulated Blast Furnace Slag could be used as fly ash substitute. Tim then asked WACA if any members had experience with ECC. The WACA members present all stated "no". Rob Shogren indicated that it would be almost impossible to get good mixing in a standard drum plant and this mixing of ECC might have to be done by a pre-caster. WACA then asked what the consistency of this mix is. Tim stated the flow would be a 30" spread. Bob Raynes of Cemex stated the following; the Supplier is responsible for the compressive strength, flow, and thermal control, yet we have to use a prescribed mix. Bob then stated this seems conflicting. WACA then stated that thermal control should be the Contractor's responsibility. Tim then stated that the Contractor will have 30 days to determine a thermal control plan. WACA recommended that WSDOT make the cooling pipes part of the plans. Tim agreed. Tim then asked the group if they were comfortable with determining the thermal control. Bob Raynes indicated that thermal control will be the Contractor's responsibility and recommended that WSDOT discuss this issue with the AGC. WACA did indicate they can develop thermal curves, but it is up to the Contractor to use them. Marco Foster asked WACA how long would it take to developed thermal curves for ECC. WACA responded it would take 7 days to run the test. Marco then explained the project will go on add by the first of the year and that we will need to ensure the contract allows time to address these concerns. WACA stated they will need to test the mix and develop a thermal curve and this information will be provided to the Contractor/Consultant. Tim then asked group if they could mix it and make the strength requirements. WACA asked what the strength requirement is. Tim stated 5000 psi minimum. Rob Shogren then stated that only 4 CY of ECC could be batched at a time. WACA then asked in the fine aggregate is natural sand or man-made. Tim indicated that we are looking into this. Tim then asked if the two columns can be poured in one day. WACA stated it would take two days. Tim then asked the group is there technical representatives with 2 year experience. WACA stated "yes" and this representative should work for WSDOT not the Contractor. WACA also indicated that WSDOT would be renting the plant for two days. Marco Foster then asked WACA if they would be able to bid this project. WACA responded if we know we can produce ECC.

Recycled concrete aggregate Specification – David Jones

3/4/2015 – David Jones of the WSDOT State Materials Laboratory explained that commercial

concrete is a good application to use recycled concrete. He also explained there has been research using recycled concrete aggregates in pavement. Bruce Chattin explained that the concept of recycling is getting a better view. David Jones suggested that small groups be formed to address the different uses of recycle concrete and reclaimed aggregate. WACA explained that other entities (Local Agencies, Industry, and Commmerical) don't understand commercial concrete and they think it is class 3000. Bruce Chattin asked about using recycled in other mixes. David Jones explained that structural concrete would not be a good fit. WACA indicated that most of their work is structural concrete. WACA also stated that pavement would be good application for recycle concrete and reclaimed aggregate. David Jones asked if some of their members could review the specification that WSDOT will draft. WACA asked if these new specification would be revised to address reclaimed aggregates. David Jones answered that they could. WACA also stated that City of Seattle will allow 10% recycle. Concrete suppliers have tried guarantees for using recycled materials in pavement in the City of Seattle but this has not gone very far. WACA stated that City of Seattle is the largest paving market in Washington and recommends that WSDOT make contact with them.

Concrete Mix Designs on Qualified Products List – David Jones

3/4/15 – David Jones explained the process of listing concrete mix designs on the QPL. Mix designs that are listed on the QPL will be approved for five years if there are no changes to the mix design and will cost the concrete supplier about $1,000 per mix design. WACA asked if the WSDOT laboratory will verify the mix designs. David Jones stated "no" the process will be the same except the review of the mix designs will be performed to ensure compliance with the Standard Specifications, by the WSDOT's QPL Engineer. Bob Raynes of Cemex stated that ODOT verifies mix designs which can be used on multiple projects. David Jones indicated we are in the process of drafting these requirements.

Old Business:

Issue: Pumping – Bruce Chattin

3/4/15 – Bruce Chattin indicated that some headway has been made in this area. The American Concrete Pumping Association (ACPA) is also concerned about quality. Bruce explained that the ACPA certification addresses maintenance and safety but not quality. The pumpers will be at the AGC meeting this April.

12/3/14 – David Jones indicated that he did not want to discuss this topic since Mark Gaines from the WSDOT Construction office was not in attendance. Mark had been working with WACA on this topic. Bruce Chattin informed the group about ACPA (American Concrete Pumping Association) program certification. Bruce briefly explained the requirements of this certification. He recommended that WSDOT require this certification for concrete pumping. Pump operators have to learn about sampling and testing concrete. Bruce Chattin stressed that the following points need to be required; Safety, Sampling, Certification, Pre-Construction meetings, and Shared responsibility.

Issue: Quality Control Plans – David Jones

WSDOT is moving towards requiring QC Plans from material suppliers. Discuss how this will affect WACA members.

3/4/2015 – David Jones explained the status of WSDOT's adoption of the WAQTC system. David explained that WSDOT IAIs (Independent Assurance Inspectors) will be WAQTC qualified this fall. The IAIs will qualify WSDOT testers in WAQTC test methods and the goal is have this completed by 2018. David Jones also explained that ACI certification will be accepted for concrete testing. David Jones stated that we anticipate that we will need a partner from the industry such as AGC to assist in qualifying Contractor personnel. David Jones explained in 2017 most of WSDOT will be WAQTC qualified and then WSDOT will turn our attention to quality control plans from aggregates and concrete suppliers.

12/3/14 – David Jones explained that requiring QCPs from industry will be sometime after 2018. WSDOT's goal is get all of the department's testers WAQTC qualified by 2018. WACA asked if ACI qualifications would be recognized by WAQTC. David Jones stated yes for concrete testing. WACA indicated that ACI also addresses aggregate testing. David Jones explained what states are participating in WAQTC and what the WSDOT systems would look like. Bruce Chattin stated that WACA would like to participate in these meetings and we have very talented people within our organization and we could help. David Jones explained that currently WSDOT has two programs; Design Build and Design Bid Build and WSDOT needs them to do the same thing. Bruce indicated that WACA would like to assist in the ACI portion of this program. He also asked David to send him list of WSDOT personnel who would be interested ACI certification. David Jones indicated that would be WSDOT's Regional Materials Engineers. David Jones reminded the group that WSDOT is just looking at adopting WAQTC test methods for field testing only.

Issue: WSDOT Standard Specification 1-06.3 Manufacturer's Certification of Compliance – Greg McKinnon

Greg McKinnon of Stoneway Concrete inquired if the "corporate official" part of this specification applies to concrete.

The Manufacturer's Certificate of Compliance must identify the manufacturer, the type and quantity of material being certified, the applicable Specifications being affirmed, and the signature of a responsible corporate official of the manufacturer and include supporting mill tests or documents. A Manufacturer's Certificate of Compliance shall be furnished with each lot of material delivered to the Work and the lot so certified shall be clearly identified in the certificate."

3/4/2015 – David Jones explained that requirement for signature will be removed from Section 6-02.3(5)B in the upcoming April amendment package. ***This issue has been resolved.***

12/3/14 – David Jones indicated that a draft revision has been approved by the HQ Construction Office and submitted to the FHWA for review. He said he was not sure if this revision would make the cut-off date for the January amendments.

Issue: Type IL Cement

3/4/2015 – David Jones handed the group a drafted specification for Section 9-01.2(4)that incorporated Type IT(PX)(LY), Type IT(SX)(LY), and Type IL(X) , see attached. David indicated he wanted WACA's input. WACA asked if they could comment. David responded with "yes" but the specification cut off for submittals is June 1, 2015, so any comments need to be in advance of that cut off. Any comments should arrive by March 31, 2015. Rob Shogren of Lafarge stated the revised specification looks good to him, but reminded the group there could be some ASTM revisions.

12/3/14 – Mike Polodna presented the revisions to Section 9-01.2(4) Blended Hydraulic Cement of the Standard Specifications. This section has been expanded to include; Type IP(X)(MS), Type IS(X)(MS), Type IT(PX)(LY), Type IT(SX)(LY), and Type IL(X). Mike Polodna explained the reason for these revisions. Monica Jones of Lafarge Cement indicated some concerns with these revisions. She explained that they were unable to get this material to pass the requirements indicated in the revision. Monica also explained there has been some additional research performed in this area. Mike Polodna asked if she could send this information to him. Monica reported having received a text from Rob Shogren of Lafarge in which he stated that Lafarge was Ok with the proposal.

Issue: 4 X 4 Concrete Mixes – Peter Balick

Peter stated that when using 4 X 4 concrete mixes on panel replacements the mix sets up so quickly that there is no time to have both the contractor and WSDOT do much testing. It was suggested that a test panel could be required and that these issues could be addressed in a special provision.

3/4/2015 – David Jones stated that we were waiting for input from some industry representatives. WACA member stated that we have been using 4x4 mixes for many years, primarily for emergency work. David Jones asked the group if 4x4 mixes can fit under Section 9-20 of the Standard Specifications. Bob Raynes commented that 9-20 requires 3000 psi in 3 hours and that requirement is pretty tough for a concrete to meet. Maybe the upper limit for air should not be restricted if you are making strength.

*12/3/14 – David Jones asked the group is this a proprietary concrete mixture? If so should this material be listed under Section 9-20 Concrete Patching Material, Grout, and Mortar of the Standard Specifications? WACA stated there is no consistency in measuring the air. David Jones asked if this material could handle the freeze thaw durability in accordance with ASTM C 666. (*Note: 4 x 4 Concrete Mixes have little or no air.) *David Jones asked the group has this material been evaluated under Section 9-20 of the Standard Specifications. The difference of materials specified in Section 5-01 Cement Concrete Pavement Rehabilitation and Section 9-20 is material under Section 5-01 require testing and materials listed under 9-20 that are listed on the Qualified Products List are accepted in accordance with Section 1-06.3 Manufacturer's Certificate of Compliance. WACA explained since we are not doing any concrete pavement at this time we are not willing to submit this material through the QPL process to see if it would meet the requirements of Section 9-20.*