

9230000 Water for Concrete
COMMENTS FROM INTERNAL/INDUSTRY REVIEW

Keith Waugh
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Comment: (4-13-10) I didn't see where curing water or water used at the jobsite for mixing grout for pointing & patching, etc is addressed. The last sentence of the first paragraph says "only" and that is too restrictive.

Response: Recycled or Reclaimed water should not be used for curing the concrete (also known as blessing the concrete), nor should it be used for pointing & patching. This is specifically why the word "only" was used for recycled and reclaimed water in this section. No change made.

Ghulam Mujtaba, P.E., C.P.M
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Comments: (4-20-10) the proposed specification the reclaimed water has not been defined. It has mentioned that "Reclaimed water shall be as defined in Chapter 62-610, F.A.C.". I suggest that the definition of F.A.C has to be repeated in this specification.

Response: The Florida Administrative Code is mentioned in the Standard Specification Book several times. In no other location is the Florida Administrative Code repeated in the specification. This would also cause the specification to be updated anytime the Florida Administrative Code is changed. No change made.

Duane Brautigam
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Comments: (5-7-10) In the last paragraph, i.e., "Ensure the water test results from the testing lab are submitted to the concrete production facility within fourteen calendar days." Question: Within 14 calendar days of "what"? Also, number formatting should be "14", not "fourteen". Is the intent to post water test results within 14 days of the sampling? How can this be enforced if DOT does not know when the sampling takes place and the submittal is only to the concrete production facility?

Response: After review with the State Specifications Office, this sentence has been deleted. The State Materials Office will find a more appropriate place for the language in producer related documents. Sentence deleted.

Ken Zinck
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Comments: (5-13-10) District 5 comments for the subject review from Karen Carlie and the Construction Materials group: 923-1 General Requirements. Suggest adding a definition of "open bodies of water." Open bodies of water shall be naturally occurring rivers, lakes, and ponds.

Response: Agree. Change made.

923-2.2 Initial Sampling and Testing Frequency: Approval: Open bodies of water and well

water shall be initially sampled once prior to use.

Response: Agree. Change made.

923-2.1 and 923-4: If CMEC or CCRL accreditation is required for the physical properties test. Please consider adding the option to perform ASTM C 31 and C 39 for 4 x 8 cylinders in lieu ASTM C 109 for cubes. Many labs are not accredited for ASTM C 109 (currently there are none on the list of FDOT approved labs). Many labs do not have this accreditation because it requires the purchase of a flow cone, vibratory table, and mixer. I understand that we are not requiring the flow test in 923 but the equipment to perform this test is required for the lab to obtain the accreditation in ASTM C 109. It seems like an undue expense for the laboratory and the spec as written will be hard for us to enforce.

Response: Labs testing physical properties have been testing the mortar. The new requirement is that they be accredited for ASTM C 109. Any lab performing physical properties testing for Section 923 will now have to be CMEC or CCRL accredited. No change made.

Chris Papastratis
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Comments: (5-17-10) In this spec, it is being recommended to change from as approved by the "Engineer" to "Department". We question this change because Engineer is the common practice.

Response: The Engineer is the State Construction Engineer or his representative. The approval of the water for use in concrete at the concrete production facility is being performed by the District Materials Office. Therefore, the term "Department" is more appropriate. No change made.

Ron Holcomb
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Comments: (5-18-10) The proposed revision is intended to clarify requirements by aligning FDOT and DEP terms and definitions for different types of water and to add the requirement to use an accredited lab for water testing. COMMENT: It is our opinion that this does not align the terms and definitions of the FDOT and the DEP for water, as the DEP does not define an "open body of water". (It is assumed that this is intended to define a settling or storm water retention pond which may be found on a typical ready-mix plant site.) Noting the DEP definition for reclaimed water accurately defines it as treated water and not process water found at a typical ready-mix plant. However to limit recycled water to the same uses as reclaimed water seems too restrictive, since the use of the term recycled water covers several possible sources, including settling and storm water retention ponds. It would seem that if the recycled water passes the quality requirements, including the mortar test, then that water should be allowed as batch water for structural concrete. The requirement to "Ensure the water test results from the testing lab are submitted to the concrete production facility within fourteen calendar day" should be amended to define that the 14 days starts from when the lab receives the sample, as the limited number of labs that qualify can be a great distance from some ready-mix plants, and will make the

transportation time of water samples critical. The previous wording was “Samples arriving at the laboratory shall be allowed 14 days for completion of tests”. Even this did not allow much leeway as the mortar test alone requires 7 days. There is a typo in the chemical nomenclature for sulfate in Table 1, it is correct in table 2.

Response: “Open bodies of water” is going to be defined as naturally occurring (see District 5 comments). Change made for District 5 comment.

It was the decision of the FDOT and FDEP that there is not enough data to allow the use of Reclaimed or Recycled water for use as batching of Structural Concrete. Please see the FDOT research project titled “Recycled Process Water in Ready-Mixed Concrete Operations” (Contract No. BB 258) dated February, 1999. No change made.

14 day testing requirement has been removed from Section 923.

The chemical nomenclature for sulfate in Table 1 and Table 2 have been changed.

O'Leary, Jeff
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Comments: (5-28-10) The problem statement talks only to aligning language with DEP. However, there is a change in the chloride limit. If there is no good technical reason to lower the limit, it should not be lowered.

Response: There is no change in the specification. The change is asking to measure chloride instead of sodium chloride. The ion of interest is chloride only which represents 62% of the atomic weight of the molecule NaCl. So 62% of 5% is equal to 3.1% of chloride.

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Ken Zinck
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Comments: (6-8-10) 923-2.1 and 923-4: If CMEC or CCRL accreditation is required for the physical properties test. Please consider adding the option to perform ASTM C 31 and C 39 for 4 x 8 cylinders in lieu ASTM C 109 for cubes. Many labs are not accredited for ASTM C 109 (currently there are none on the list of FDOT approved labs). Many labs do not have this accreditation because it requires the purchase of a flow cone, vibratory table, and mixer. I understand that we are not requiring the flow test in 923 but the equipment to perform this test is required for the lab to obtain the accreditation in ASTM C 109. It seems like an undue expense for the laboratory and the spec as written will be hard for us to enforce.

Response: Labs testing physical properties have been testing the mortar so they should already have the necessary equipment to perform the testing. No additional equipment should have to be purchased since AASHTO T 106 and ASTM C 109 are equivalent. The new requirement is that they be accredited for ASTM C 109 which will be an additional expense. Any lab performing physical properties testing for Section 923 will now have to be CMEC or CCRL accredited. This requirement has been added at the request of District Materials Offices to address concerns that the labs performing the testing for water for concrete (both chemical and physical) are not familiar enough with the required test methods to ensure confidence in the results. Requiring the accreditation will ensure that they familiarize themselves with the testing requirements. The Department is not requiring these labs to be inspected under the Qualified Labs program, only that they meet and maintain the accreditation in the appropriate test method(s) under the appropriate accrediting agency. This means they will not be listed on the SMO list of laboratories with the test method. The District Materials Offices will be

responsible for ensuring that the laboratories in question are listed on the accrediting agency's list under the appropriate test method.
