



Florida Department of Transportation

RON DESANTIS
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

KEVIN J. THIBAUT
SECRETARY

July 8, 2019

Khoa Nguyen
Director, Office of Technical Services
Federal Highway Administration
3500 Financial Plaza, Suite 400
Tallahassee, Florida 32312

Re: State Specifications Office
Section: **923**
Proposed Specification: **9230000 Water for Concrete.**

Dear Mr. Nguyen:

We are submitting, for your approval, two copies of the above referenced Supplemental Specification.

The changes are proposed by Awilda Merced-Fernandez in the State Materials Office to update accreditation requirements and equivalent chemical tests allowed.

Please review and transmit your comments, if any, within two weeks. Comments should be sent via email to stefanie.maxwell@dot.state.fl.us.

If you have any questions relating to this specification change, please call me at 414-4140.

Sincerely,

Signature on file

Stefanie D. Maxwell, P.E.
Manager, Program Management Office

SM/rf

Attachment

cc: Florida Transportation Builders' Assoc.
State Construction Engineer

WATER FOR CONCRETE (REV 5-9-19)

SECTION 923 is deleted and the following substituted:

923-1 General Requirements.

Water for use with cement shall be clear and free from oil, and injurious amounts of acid, alkali, chlorides, organic matter, and other deleterious substances. It shall not be salty or brackish. ~~Water that if it~~ contains quantities of substances which ~~discolor it or makes it~~ discolored or smell or taste unusual or objectionable or cause suspicion, it shall not be used unless approved by the Department. Water sources permitted include potable water supplies that are approved by a public health department, open bodies of water, well water, reclaimed water, and recycled water. Reclaimed water shall be as defined in Chapter 62-610, F.A.C. Open bodies of water are defined as naturally occurring rivers, lakes, and ponds. Recycled water includes wash water from mixer washout operations and (stored in a lined settling pond). All other sources of water not listed above shall be considered recycled and reclaimed water.

923-2 Evaluation of Water for Concrete.

923-2.1 General: Water from potable water supplies approved by a public health department may be used without additional testing. The concrete producer shall submit test data of water samples from other sources. To determine chemical properties, the concrete producer shall use a laboratory accredited by the National Environmental Laboratory or Construction Materials Engineering Council Accreditation Program including accreditation on referred chemical tests on Table 1 and 2. ~~To determine physical properties, use a laboratory accredited by the Construction Materials Engineering Council Accreditation Program or Cement and Concrete Reference Laboratory.~~

923-2.2 Initial Sampling and Testing Frequency: Open bodies of water and well water shall be initially sampled once prior to use. Recycled and reclaimed water shall be tested once per week for four weeks initially, and thereafter once per month for four months prior to its use, provided that the results of the test samples comply with all the applicable limits. Failing test results will result in restarting initial sampling and testing.

923-2.3 Production Sampling and Testing Frequency: Open bodies of water and recycled water shall be tested monthly. Well water and reclaimed water shall be tested once every three months. If the last eight consecutive well water and reclaimed water samples meet the requirements, then the sample frequency may be reduced to one sample every six months, as approved by the Department. If a well water or reclaimed water sample fails once the frequency has been reduced, then the sampling frequency shall revert ~~back~~ to once every three months.

923-3 Chemical Requirements.

923-3.1 Testing: All chemical analysis ~~or tests~~ shall be performed in accordance with the test methods listed in Tables 1 and 2 or equivalent Standard Methods for the Examination of Water and Wastewater (SM). Inorganic Anions (Chlorides and Sulfates) may be determined simultaneously using SM 4110B Ion Chromatography or separately using SM 4500 Cl⁻ and SM 4500 SO₄²⁻-E in lieu of ASTM D 512 and ASTM D 516. The test method used shall be included in the concrete producer report.

923-3.2 Recycled and Reclaimed Water: Recycled and reclaimed water shall be tested before use and shall not exceed the limits in Table 1:

Table 1		
Chemical Test	Test Method	Maximum (%)
Total Solids	SM 2540 B	5.00
Total Chlorides as Cl ⁻	ASTM D 512	0.05
Total Sulfates as SO ₄ ²⁻	ASTM D 516	0.30

923-3.3 Open Bodies of Water and Well Water: Open bodies of water and well water shall be tested before use and shall not exceed the limits of Table 2:

Table 2		
Chemical Test	Test Method	Maximum (%)
Alkalinity Calculated in terms of Calcium Carbonate	SM 2320 B	0.05
Total Organic Solids	SM 2540 E	0.05
Total Inorganic Solids	SM 2540 E	0.08
Total Chlorides as Cl ⁻	ASTM D 512	0.05

923-4 Physical Requirements for Mortar.

923-4.1 General: To determine physical properties, use a laboratory accredited by the Construction Materials Engineering Council Accreditation Program or inspected by the Cement and Concrete Reference Laboratory.

923-4.2 Testing: Mortar shall be tested in accordance with ASTM C 109 with the following exception: the mortar shall not be tested for flow. The mortar, composed of the sampled water, shall have a compressive strength of not less than 90% when compared to a mortar prepared using distilled water and tested at seven days.

Water of a questionable quality, as determined by the Department, shall be subject to the acceptance criteria for time of set as required by ASTM C 1602, Table 1.

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