

# ORINATION FORM

## Proposed Revisions to the Specifications

(Please provide all information - incomplete forms will be returned)

Date:

Office:

Originator:

Specification Section:

Telephone:

Article/Subarticle:

email:

Will the proposed revision require changes to:

| Publication                                | Yes | No | Office Staff Contacted |
|--|-----|----|------------------------|
| Standard Plans Index                       |     |    |                        |
| Traffic Engineering Manual                 |     |    |                        |
| FDOT Design Manual                         |     |    |                        |
| Construction Project Administration Manual |     |    |                        |
| Basis of Estimate/Pay Items                |     |    |                        |
| Structures Design Guidelines               |     |    |                        |
| Approved Product List                      |     |    |                        |
| Materials Manual                           |     |    |                        |

Will this revision necessitate any of the following:

Design Bulletin

Construction Bulletin

Estimates Bulletin

Materials Bulletin

Are all references to external publications current?

Yes

No

If not, what references need to be updated? (Please include changes in the redline document.)

Why does the existing language need to be changed?

Summary of the changes:

Are these changes applicable to all Department jobs?

Yes

No

If not, what are the restrictions?

Contact the State Specifications Office for assistance in completing this form.

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**MEMORANDUM**

**DATE:** May 23, 2019

**TO:** Specification Review Distribution List

**FROM:** Dan Hurtado, P.E., State Specifications Engineer

**SUBJECT:** Proposed Specification: **9230000 Water for Concrete.**

In accordance with Specification Development Procedures, we are sending you a copy of a proposed specification change.

This change was proposed Awilda Merced-Fernandez in the State Materials Office to update accreditation requirements and equivalent chemical tests allowed.

Please share this proposal with others within your responsibility. Review comments are due within four weeks and should be sent to Mail Station 75 or online at

<http://www2.dot.state.fl.us/ProgramManagement/Development/IndustryReview.aspx> .

Comments received after **June 20, 2019**, may not be considered. Your input is encouraged.

DH/rf  
Attachment

## 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<sup>-</sup> and SM 4500 SO<sub>4</sub><sup>2-</sup>-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 <sup>-</sup>              | ASTM D 512  | 0.05        |
| Total Sulfates as SO <sub>4</sub> <sup>2-</sup> | 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 <sup>-</sup>                  | 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.