

ORIGINATION FORM

Date: September 10, 2013
Originator: Timothy J. Ruelke
Contact Information: State Materials Office/352-955-6620

Specification Title: Curing Materials for Concrete
Specification Section, Article, or Subarticle Number: 925

Why does the existing language need to be changed? Currently curing compound is accepted based on pre-testing done by the State Materials Office with project based testing performed after 6 months up to one year for every batch. A batch is defined as 2,200 gallons. This process does not align with current construction practices especially on projects where a smaller amount of curing compound is needed.

Summary of the changes:

- Revise the method of acceptance for curing compound from pretesting and acceptance testing to QPL
- Provide criteria for products to get on the QPL
- Provide information for project personnel for sampling and testing at the project site to ensure that the curing compound being used is consistent with product requirements at the time the product was placed on the QPL.

Are these changes applicable to all Department jobs? If not, what are the restrictions? These changes are applicable to all Department jobs.

Will these changes result in an increase or decrease in project costs? If yes, what is the estimated change in costs? The changes should decrease project costs on some projects. The project personnel will not have to determine if the pretest is still valid or if the material needs to be tested in order to meet acceptance requirements.

With who have you discussed these changes? The State Construction Office and the District Materials Concrete personnel.

What other offices will be impacted by these changes? Construction.

Are changes needed to the PPM, Design Standards, SDG, CPAM or other manual? No.

Is a Design Bulletin, Construction Memo, or Estimates Bulletin needed? A joint Materials Bulletin/Construction Memo will be needed.

Contact the State Specifications Office for assistance in completing this form.
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ANANTH PRASAD, P.E.
SECRETARY

MEMORANDUM

DATE: November 15, 2013
TO: Specification Review Distribution List
FROM: Daniel Scheer, P.E., State Specifications Engineer
SUBJECT: Proposed Specification: **9250000 Curing Materials for Concrete.**

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

This change was proposed by Timothy Ruelke of the State Materials Office to update the language for current construction practice.

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 to my attention via e-mail at SP965DS, or daniel.scheer@dot.state.fl.us. Comments received after **December 13, 2013**, may not be considered. Your input is encouraged.

DS/dt
Attachment

CURING MATERIALS FOR CONCRETE.
(REV 9-11-13)

SECTION 925 is deleted and the following substituted:

SECTION 925
CURING MATERIALS FOR CONCRETE

925-1 Burlap.

Burlap for curing concrete shall consist either of two layers, each weighing 10 to 18 ounces/10 square feet, or of four layers, each weighing 6 to 7 ounces/10 square feet. Burlap which has been used as a container for sugar shall not be used. Burlap that is being used for the first time shall be thoroughly washed in order to remove starches used in sizing the material. Burlap shall be furnished in strips of at least 3 feet wide and shall be at least 3 feet longer than the width of surface to be covered.

925-2 Membrane-Forming Curing Compound.

925-2.1 General: Membrane-forming curing compound shall conform to requirements of ASTM C309 (Type 1 for clear compound and Type 2 for white pigmented compound), and the following additional requirements: ASTM C309.

The membrane-forming curing compound shall be of a consistency suitable for spraying at temperatures prevalent at the time of construction operations application, and which forms a continuous, uniform film. It shall be free from precipitated matter caused by conditions of storage or temperature. The compound shall be relatively nontoxic meet the requirements of Section 6. Thoroughly agitate the curing compound in accordance with the manufacturer's recommendations prior to shipment from manufacturer's plant and prior to use at job site.

Comment [dt1]: This is addressed in 925-2.2.1 and 925-2.2.2.

Curing compound delivered to the job site in drums shall be in the manufacturer's original container, and clearly labeled with the following information:

- (a) manufacturer's name, plant location, grade designation of compound,
- (b) product name (trade name)
- (c) type
- (d) batch or LOT number, and quantity.
- (e) date of manufacture

Curing compound delivered in bulk shall be supplied from and delivered to storage tanks designed to provide thorough agitation by means of compressed air.

925-2.2 Product Acceptance: Acceptance of membrane-forming curing compound shall be based on the product being listed on the Department's Qualified Products List (QPL).

925-2.2.1 Qualified Products List: All membrane forming curing compounds shall be one of the products listed on the Department's Qualified Products List (QPL).

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Comment [dt2]: This is addressed in 925-2.2.

Manufacturers seeking evaluation of their product shall submit an application in accordance with Section 6 and include with the submittal, product data sheets, material safety data sheets (MSDS) and certified test reports from an independent laboratory showing the product meets the requirements of this Section when tested in accordance with the National Transportation Product Evaluation Program (NTPEP) Project Work Plan for the Laboratory Testing of Liquid Membrane-Forming Compounds for Curing Concrete. Include an Infrared

Spectrophotometry (IR) Scan and a certification stating the nominal minimum percentage of non-volatile material for the product formulation. Deviation of the non-volatile material below this certified value shall be considered a change in formulation and shall be grounds for removal from the QPL.

Independent laboratories must be accredited by the AASHTO Accreditation Program (AAP). ~~The laboratory must provide verification to the State Materials Office (SMO) that any and all deficiencies from the most recent AAP inspection have been corrected.~~

~~*925-2.2.2 Certification: Prior to use, the Contractor shall provide to the Engineer with manufacturer a certification from the manufacturer of the curing compound, conforming to the requirements of Section 6 that the requirements of this Section are met. The certification shall conform to the requirements of Section 6.*~~

~~*925-2.2 Sampling: Samples shall be obtained as specified in ASTM C309 with the following exception. Take one sample for each Lot, batch, or other unit of production representing each 2,200 gallons or fraction thereof. Filled containers, represented by the samples shall be sealed and marked by the sampling agency for later identification and correlation. Each sample shall be at least 1 quart. Allow fourteen days for completion of the tests after arrival of the sample in the laboratory.*~~

~~*925-2.3 Storage Product Life: Curing compound that has been tested and stored for longer than six months but less than one year shall be retested prior to use. Store the curing compound in accordance with the manufacturer's recommendations. Curing compounds that has not been stored longer than used within one year of the date of manufacture shall not be incorporated into the work. Product shall be stored in accordance with the manufacturer's recommendation.*~~

Comment [dt3]: The manufacturer is responsible for obtaining and providing the laboratory verification of correction of deficiencies.

925-3 Sheet Materials.

925-3.1 General: Waterproof paper, polyethylene film and white burlap-polyethylene sheet, for curing concrete shall meet the requirements of ASTM C171, with the additional requirements for waterproof paper and for polyethylene film as shown below.

925-3.2 Additional Requirements for Waterproof Paper: The paper as prepared for use shall be in such dimensions that each unit as laid will extend at least 18 inches beyond the edges of the slab. If laid longitudinally, paper not manufactured in sizes which will provide this width shall be securely sewed or cemented together; the joints being sealed in such manner that they do not open up or separate during the curing period.

At the option of the Contractor, instead of the single longitudinal strip specified above, the blanket may be furnished in three strips; one strip being the neat width of the pavement, with two side strips.

925-3.3 Additional Requirements for Polyethylene Sheeting: The sheets, as prepared for use, shall be of such dimensions that each unit as laid will extend beyond the edges of the slab by at least twice the thickness dimension of the pavement edge, and the sheets shall overlap by at least 18 inches.

No sheet may be reused except after individual inspection and approval by the Engineer. Any sheets determined by the Engineer to be so damaged as to not afford the protection to the concrete in preventing moisture loss during the curing period will be rejected.

9250000
All Jobs

925-4 Certification.

For burlap or white burlap-polyethylene, the Contractor shall provide the Engineer a certification conforming to the requirements of Section 6 from the manufacturer confirming that the requirements of this Section are met. Each certification shall cover only one type of burlap or white burlap-polyethylene sheeting.