

## ORIGINATION FORM

**THE INFORMATION BELOW IS TO BE PROVIDED BY THE ORIGINATOR**

Modify Specification \_\_\_\_\_ 4000000SS \_\_\_\_\_.  
Section/File number

New Section \_\_\_\_\_.  
Section number

**Subject:** Construction Joints – Joints in Concrete Bridge Decks

**Origination date:** May 23, 2005

**Originator:** Steven Plotkin  
**Office/Phone:** 850-414-4155  
**Email address/** [steve.plotkin@dot.state.fl.us](mailto:steve.plotkin@dot.state.fl.us)  
**Userid:** cn982ps

**Problem statement:** The current spec. 400-9.7 which is intended to provide for the installation of crack control grooves in concrete bridge decks, rarely results in controlled cracks

**Information source:** Comments from FDOT and Contractor personnel based on first hand experience with actual examples on construction projects.

**Background data:** Contractors continually report to the Department that when deck concrete becomes hard enough, or has full set, to allow an effective crack control groove to be cut with a conventional heavy concrete saw, it is too late. This is because uncontrolled cracks have already formed and; therefore, the grooves are not effective. Recently two alternative methods for installing crack control grooves have become available and have proven to be effective when used while concrete is green or not fully set and these are the forming of a hand tooled “V” groove or the use of an early entry dry cut saw. Spec. 400-9.7 is being changed to incorporate these methods and to delete the current ineffective method.

**Recommended Usage Note:** Jobs with concrete structures.

**Desired implementation date:** Beginning with the January 2006 letting.



# Florida Department of Transportation

JEB BUSH  
GOVERNOR

605 Suwannee Street  
Tallahassee, FL 32399-0450

JOSÉ ABREU  
SECRETARY

## **MEMORANDUM**

**DATE:** June 20, 2005

**TO:** Specification Review Distribution List

**FROM:** Duane F. Brautigam, P.E., State Specifications Engineer

**SUBJECT: Proposed Specifications Change: 4000900 - Concrete Structures**

In accordance with Specification Development Procedures, we are sending you a copy of a proposed specification change to Section 400.

This change was proposed by Steve Plotkin of the State Construction Office to specify crack control groove and coating requirements.

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 SP965DB or duane.brautigam@dot.state.fl.us. Comments received after July 18, 2005 may not be considered. Your input is encouraged.

DFB/jf

Attachment

COMMENTS:

---

---

---

---

---

---

---

---

Submitted by:

Phone #:

---

**CONCRETE STRUCTURES.  
(REV 6-17-05)**

SUBARTICLE 400-9.7 (Page 349) is deleted and the following substituted:

**400-9.7 Crack Control Grooves**~~Joints~~ **in Concrete Bridge Decks:** ~~When the plans provide an option for or require joints in concrete decks to be made with a saw cut, make the cut in accordance with plan details and no later than the day following concrete placement~~  
*When the plans require crack control grooves in the top surface of decks, either install a tooled "V" groove prior to initial concrete set or saw a groove using an early entry dry cut saw. When using an early entry dry cut saw, operate in accordance with the manufacturer's recommendations. Commence sawing as soon as the concrete has hardened enough to permit standing on the surface without leaving visible tracks or impressions and before uncontrolled concrete cracks occur.*

SUBARTICLE 400-16.6 (Page 360) is deleted and the following substituted:

~~**400-16.6 Traffic Barriers, Railings, Parapets and End Post:** When construction is by the slip form method, maintain surface moisture and begin curing before the loss of water sheen but no more than 30 minutes after extruding. Apply membrane curing compound as defined in this Section or apply an approved coating which acts as a curing compound and Class 5 coating.~~

**400-16.6 Traffic Barriers, Railings, Parapets and End Post:** *Ensure concrete is cured in accordance with 400-16.2(b). When construction is by the slip form method, coat all concrete surfaces with a curing compound that meets the requirements of 925-2, either within 30 minutes of extrusion or before the loss of water sheen, whichever occurs first. Ensure a curing compound coating period of not less than seven days after application. Prior to each concrete placement, submit to the Engineer the method that will be used to periodically measure the rate of application in gallons/sq ft [liters/per m<sup>3</sup>]. Also, prior to each placement, submit to the Engineer the anticipated quantity of curing compound in gallons [liters] that will be used to meet the coverage rate specified in 400-16.2 along with the corresponding square footage [square meters] of barriers, railings, parapets and end posts to be coated with that quantity. Compute the actual quantity of curing compound that is applied during each concrete placement and submit the quantity to the Engineer. Applied Finish Coatings, that are on the Qualified Products List and that are flagged as permitted for use as a curing compound, may be used in lieu of a curing compound; If an Applied Finish Coating is used in lieu of a curing compound, have a backup system that is in full compliance with 400-16.2(b) available at all times to ensure that an effective alternative system will be immediately available if the Applied Finish Coating cannot be applied within 30 minutes of extrusion or before the loss of water sheen.*

## ORIGINATION FORM

**THE INFORMATION BELOW IS TO BE PROVIDED BY THE ORIGINATOR**

Modify Specification \_\_\_\_\_ 4000000SS \_\_\_\_\_.  
Section/File number

New Section \_\_\_\_\_.  
Section number

**Subject:** Curing Concrete - Traffic Barriers, Railings, Parapets and End Post

**Origination date:** May 3, 2005

**Originator:** Steven Plotkin  
**Office/Phone:** 850-414-4155  
**Email address/** steve.plotkin@dot.state.fl.us  
**Userid:** cn982ps

**Problem statement:** Bridge barrier walls almost always display widespread cracking much of which can be reduced by improved curing procedures.

**Information source:** Concrete curing task team made up of the following members: Mike Bergin (SMO), Lee Markert (Dist. 4 DMO), Larry Sessions (SSDO), and Steven Plotkin (SCO)

**Background data:** Recent analysis about why bridge barrier walls consistently crack has shown that a key cause is the quality of curing. Curing compound is not being applied early enough and at the correct application rate (1 gallon/150 sq. feet). Also, Class V applied coating (heavy textured paint) has been tested and found to be more effective than curing compounds, as well as providing an aesthetic coating. These coatings are actually better than curing compounds since they become a permanent curing system and do not have to be removed, as does curing compound, in order to ensure that Class V coating will adhere properly. When Class V Finish is used in lieu of curing compounds, two construction operations are eliminated: curing compound application and its subsequent removal. So the benefits of using Class V Finish should be the reduced curing cost while increasing curing quality. When only curing compound is used, the new spec language should ensure that the time and rate of application are as intended.

**Recommended  
Usage Note:**

Jobs with concrete structures.

**Desired  
implementation  
date:**

Beginning with the July 2006 letting.