



Florida Department of Transportation

CHARLIE CRIST
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

STEPHANIE KOPELOUSOS
SECRETARY

March 29, 2010

Monica Gourdine
Program Operations Engineer
Federal Highway Administration
545 John Knox Road, Suite 200
Tallahassee, Florida 32303

Re: Office of Design, Specifications
Section 453
Proposed Specification: **4530405 Epoxy Jointing of Precast Segments.**

Dear Ms. Gourdine:

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

These changes, implemented as a Special Provision for the July 2010 Workbook, were proposed by Charles Boyd of the State Structures Design Office to change the required contact time for slow set epoxy from 8 hours to 6 hours for all temperature ranges for consistency.

Please review and transmit your comments, if any, within two weeks. Comments should be sent via Email to ST986RP or rudy.powell@dot.state.fl.us.

If you have any questions relating to this specification change, please call Rudy Powell, State Specifications Engineer at 414-4280.

Sincerely,

Rudy Powell, Jr., P.E.
State Specifications Engineer

RP/dt
Attachment

cc: Gregory Jones, Chief Civil Litigation
Florida Transportation Builders' Assoc.
State Construction Engineer

EPOXY JOINTING OF PRECAST SEGMENTS – CONTACT TIME (OPEN TIME) AND CONTACT STRENGTH
(REV ~~2-18-10~~~~1-29-10~~) (7-10)

SUBSECTION 453-4.5.2 (of the Supplemental Specifications) is deleted and the following substituted:

453-4.5.2 Contact Time (open Time) and Contact Strength: The contact time (open time) of the mixed epoxy-bonding agent shall be:

Normal-Set Epoxy 60 Minutes, Minimum
Slow-Set Epoxy ~~6~~8 Hours, Minimum

The above contact time (open time) will be deemed acceptable if a slant cylinder test specimen, prepared and tested in accordance with the conditions below, sustains the following stress (contact strength) on the slant plane calculated as the axial (vertical) load divided by the area of the slant ellipse:

Normal-Set Epoxy 1,000 psi at 48 hours after joining
Slow-Set Epoxy 1,000 psi at 14 days after joining

The cement mortar/concrete material for the slant-cylinder test shall have a compressive strength of at least 4,500 psi at 28 days when tested to ASTM C39. The slant-cylinder test procedure must be in accordance with ASTM C882 with the following modifications:

1. Joining of the sloped surfaces shall be delayed for the following period of time, measured from the time the epoxy was mixed:

Normal-Set Epoxy 60 Minutes
Slow-Set Epoxy ~~6~~8 Hours

2. During the period between mixing of the epoxy and joining of the sloped surfaces, the specimens will be uncovered and maintained at the maximum temperature of the application range for the formulation tested.

3. Assemble the specimens together and cure at the maximum temperature of the formulation range (48 hours for normal set and 14 days for slow set epoxies) prior to testing.

For slow-set epoxy, an additional test specimen shall be made and tested to failure at 24 hours. The formulation of the slow set epoxy is acceptable only if the epoxy-bonding agent exhibits a brittle break.

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