



*Florida Department of Transportation*

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GOVERNOR

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KEVIN J. THIBAUT, P.E.  
SECRETARY

December 18, 2020

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

Re: State Specifications Office  
Section: **450**  
Proposed Specification: **4500802 Precast Prestressed Concrete Construction.**

Dear Mr. Nguyen:

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

The changes are proposed by Thomas Frank from the State Materials Office to adjust allowable stress in CFRP stands and additional editorial changes.

Please review and transmit your comments, if any, within two weeks. Comments should be sent via email to [daniel.strickland@dot.state.fl.us](mailto:daniel.strickland@dot.state.fl.us).

If you have any questions relating to this specification change, please call me at 414-4130.

Sincerely,

Signature on file

Daniel Strickland, P.E.  
State Specifications Engineer

DS/rf  
Attachment

cc: Florida Transportation Builders' Assoc.  
State Construction Engineer

**PRECAST PRESTRESSED CONCRETE CONSTRUCTION**  
**(REV 11-4-20)**

SUBARTICLE 450-8.2.1 is deleted and the following substituted:

**450-8.2 Operations:**

**450-8.2.1 General:** The tensioning operations consist of the application of the final force or load required by the Plans and with adjustments for abutment rotation, bed shortening, anchorage header movement, live end seating, dead end seating, splice chuck seating, friction in the jacking system and any other elements as applicable for the type of bed and anchorage used. Also, adjust the force when the temperature differential between the ambient temperature at time of stressing and the expected concrete temperature at time of placement is greater than 25°F. Increase the force at the rate of 1% for each 10°F increment that the ambient temperature at time of stressing is below the expected concrete temperature at time of placing. Decrease the force at the rate of 1% for each 10°F that the ambient temperature at time of stressing is above the expected concrete temperature at the time of placing. Do not allow the stress in the steel prestressing strand to exceed 80% of the specified tensile strength of the strand, after seating. Do not allow the stress in the CFRP prestressing strand to exceed 70% of the specified tensile strength of the strand, after seating. During each tensioning operation, for the verification of the live and dead end seating, check the seating of at least 4 strands or a minimum of 10% of the total number of strands, whichever is greater. Maintain a record of the tensioning operation.

Compensation for temperature differential and abutment rotation are not required for self-stressing beds. However, adjust the final load for the effects of bed shortening due to the load from all the strands.

If the placement of concrete is delayed for more than seven calendar days after the completion of the stressing operation, check and adjust the final strand load as necessary before placement of concrete and maintain a record of the stressing operation.

Accomplish tensioning by either single strand tensioning or multiple strand tensioning, and ensure that it is symmetrical about the vertical axis of the product. Tensioning methods, in general, consist of tensioning to the required loads indicated by the jacking system, or tensioning to the required load while monitoring the elongation of the prestressing strand.

Production personnel will perform tensioning operations under supervision of personnel possessing a certificate of completion of PCI Quality Control Personnel Certification Level II, and Section 450 Specification examination, or certified personnel may perform tensioning operations directly.

SUBARTICLE 450-11.6.1 is deleted and the following substituted:

**450-11.6.1 Beam Ends that will not be Permanently Encased in Concrete Diaphragms:**

1. Remove any corrosion product from all accessible surfaces at the cut end of the strands.

2. Apply two layers of epoxy to the exposed beam ends (including clipped and chamfered surfaces) at the applicable time frame below:

a. For beams without debonded strands, at least 3 calendar days prior to shipping but no later than 50 calendar days after detensioning.

b. For beams with debonded strands, at least 3 calendar days prior to shipping, or between 42 and 50 calendar days after detensioning, whichever occurs first.

3. As an option to item 2b, the epoxy may be applied in two steps as follows:

a. To the upper area of the beam end within 4 inches of the outer stands of the bottom strand group any time after detensioning.

b. To the remaining area that includes the bottom strand group between 42 and 50 calendar days after detensioning. Ensure that the entire beam end is fully coated at least 3 calendar days prior to shipping.

Ensure that the first epoxy layer is cured before applying the second layer.

The finished thickness of the epoxy coating must be a minimum of 1/16 inch and form a vertical flat plane without deviations or localized depressions from recessed strands or other defects.

Ensure that the epoxy coating is cured per the manufacturer's recommendations prior to shipping the products.

Any modifications to the time limits above must be approved by the Engineer.

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