



*Florida Department of Transportation*

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JARED W. PERDUE, P.E.  
SECRETARY

August 21, 2025

Daniel Holt, PE, PTOE  
Director, Project Delivery  
Director, Technical Services  
FHWA  
400 West Washington Street, Suite 4200  
Orlando, FL 32801

Re: State Specifications Office  
Section: 415  
Proposed Specification: **4150100 Reinforcing For Concrete**

Dear Mr. Holt:

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

The changes are proposed by Alexander Lewis to correct internal reference, change FRP UV exposure limit from a prescriptive day amount to manufacturer recommendation, and allow nonmetallic fasteners for both metal and FRP reinforcement, provided that they are an approved product.

Please review and transmit your comments, if any, within two weeks (10 business days). Comments should be sent via email [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 (850) 414-4130.

Sincerely,

Signature on File

Daniel Strickland, P.E.  
State Specifications Engineer

DS/jb

Attachment

cc: Florida Transportation Builders' Assoc.  
State Construction Engineer

## REINFORCING FOR CONCRETE (REV 6-5-25)

ARTICLE 415-1 is deleted and the following substituted:

### 415-1 Description.

Furnish and place steel ~~and-or~~ fiber reinforced polymer (FRP) reinforcement~~ing~~ of the quality, type, size, and quantity designated. Obtain all FRP-reinforcing~~bars~~ from a producer on the Department's Production Facility Listing.

ARTICLE 415-2 is deleted and the following substituted:

### 415-2 Materials.

Meet the following requirements:

<del>Steel Bar</del> Reinforcement <u>Steel</u> .....	931-1.1
<del>Steel Welded</del> Wire Reinforcement .....	931-1.2
FRP Bar Reinforcement .....	932-4

ARTICLE 415-3 is deleted and the following substituted:

### 415-3 Protection of Material.

~~415-3.1 Steel Reinforcing:~~ Store ~~steel~~ reinforcement above the surface of the ground, upon platforms, skids, or other supports, and protect it from mechanical injury and surface deterioration. Ensure that the ~~steel~~ reinforcement is free from loose rust, scale, dirt, paint, oil, and other foreign material prior to incorporation into the work. Protect FRP against UV exposure and extreme ambient storage temperatures as required by the FRP manufacturer. If the manufacturer does not provide any requirements, limit FRP sun exposure to 4 months and maximum ambient storage temperature to 120°F.

~~415-3.2 Fiber Reinforcing Polymer (FRP) Reinforcing: Store FRP reinforcement above the surface of the ground, in boxes or upon platforms, skids, or other supports, and protect it from mechanical injury and direct exposure to UV light. Ensure that the FRP reinforcement is free from dirt, paint, oil, and other foreign material prior to incorporation into the work.~~

ARTICLE 415-4 is deleted and the following substituted:

### 415-4 Bending, Splicing, and Cutting.

**415-4.1 Steel Reinforcement~~ing~~:** Fabricate reinforcing bars as prescribed in the CRSI Manual of Standard Practice. Shop bend the reinforcement cold to the shapes indicated in the Plans. Do not bend the reinforcement to shape in the field. Minor bending adjustments may be performed in the field with the approval of the Engineer.

Do not hot bend or straighten, weld, or thermal cut reinforcing steel.

**415-4.2 Fiber Reinforcing Polymer (FRP) Reinforcement~~ing~~:** No field fabrication of FRP reinforcing bars is permitted except tying and field cutting per ACI 440.5. Do not bend or straighten, couple, thermal cut, or shear cut FRP reinforcing bars.

SUBARTICLE 415-5.3 is deleted and the following substituted:

**415-5.3 Tying:** Securely tie all reinforcement together without damage. Use ties of sufficient strength to maintain the reinforcement in its proper position. For stainless steel reinforcement, use stainless steel wire or non-metallic tying materials.

The tying materials should not damage the reinforcement during the construction.

~~—————**415-5.3.1 Steel Reinforcing:** Tie steel reinforcing using pliable steel wire that readily bends and twists without breaking and that provides a tie of sufficient strength to hold the steel reinforcing in its proper position. Tie stainless reinforcing steel using plastic-coated pliable steel wire; or stainless steel wire meeting the requirements of ASTM A276, UNS S31600.~~

~~—————Non-metallic fasteners for steel reinforcing may be used in precast concrete products upon approval by the appropriate District Materials Office (DMO).~~

~~—————**415-5.3.2 Fiber Reinforcing Polymer (FRP) Reinforcing:** Tie FRP reinforcing using self-locking plastic straps; or plastic-coated pliable steel wire that readily bends and twists without breaking and that provides a tie of sufficient strength to hold the FRP reinforcing in its proper position.~~

## **REINFORCING FOR CONCRETE**

### **(REV 6-5-25)**

ARTICLE 415-1 is deleted and the following substituted:

#### **415-1 Description.**

Furnish and place steel or fiber reinforced polymer (FRP) reinforcement of the quality, type, size, and quantity designated. Obtain all reinforcing from a producer on the Department's Production Facility Listing.

ARTICLE 415-2 is deleted and the following substituted:

#### **415-2 Materials.**

Meet the following requirements:

Reinforcement Steel.....	931-1.1
Wire Reinforcement.....	931-1.2
FRP Bar Reinforcement.....	932-4

ARTICLE 415-3 is deleted and the following substituted:

#### **415-3 Protection of Material.**

Store reinforcement above the surface of the ground, upon platforms, skids, or other supports, and protect it from mechanical injury and surface deterioration. Ensure that the reinforcement is free from loose rust, scale, dirt, paint, oil, and other foreign material prior to incorporation into the work. Protect FRP against UV exposure and extreme ambient storage temperatures as required by the FRP manufacturer. If the manufacturer does not provide any requirements, limit FRP sun exposure to 4 months and maximum ambient storage temperature to 120°F.

ARTICLE 415-4 is deleted and the following substituted:

#### **415-4 Bending, Splicing, and Cutting.**

**415-4.1 Steel Reinforcement:** Fabricate reinforcing bars as prescribed in the CRSI Manual of Standard Practice. Shop bend the reinforcement cold to the shapes indicated in the Plans. Do not bend the reinforcement to shape in the field. Minor bending adjustments may be performed in the field with the approval of the Engineer.

Do not hot bend or straighten, weld, or thermal cut reinforcing steel.

**415-4.2 Fiber Reinforcing Polymer (FRP) Reinforcement:** No field fabrication of FRP reinforcing bars is permitted except tying and field cutting per ACI 440.5. Do not bend or straighten, couple, thermal cut, or shear cut FRP reinforcing bars.

SUBARTICLE 415-5.3 is deleted and the following substituted:

**415-5.3 Tying:** Securely tie all reinforcement together without damage. Use ties of sufficient strength to maintain the reinforcement in its proper position. For stainless steel reinforcement, use stainless steel wire or non-metallic tying materials.

The tying materials should not damage the reinforcement during the construction.