



Florida Department of Transportation

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SECRETARY

February 1, 2016

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

Re: State Specifications Office
Section **931**
Proposed Specification: **9310101-2 Metal Accessory Materials for Concrete Pavement
and Concrete Structures.**

Dear Mr. Nguyen:

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

The changes are proposed by Charles Boyd of the State Structures Design Office to incorporate specification language for stainless steel and FRP reinforcing and prestressing strand into the Standard Specifications. Additional acceptance requirements for steel bars and wire reinforcement have been added.

Please review and transmit your comments, if any, within two weeks. Comments should be sent via email to daniel.scheer@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 Scheer, P.E.
State Specifications Engineer

DS/ot

Attachment

cc: Florida Transportation Builders' Assoc.
State Construction Engineer

METAL ACCESSORY MATERIALS FOR CONCRETE PAVEMENT AND CONCRETE STRUCTURES.

(REV ~~11-16-151-1342-1-16~~)

SUBARTICLE 931-1 is deleted and the following substituted:

931-1.1 Steel Bars:

931-1.1.1 Carbon Steel Bars: ~~Unless otherwise shown in the Plans, billet~~ Carbon steel bars for concrete reinforcement shall conform to the requirements of ASTM A615 Grades 60 or 75 except that the process of manufacture will not be restricted. For processes not included in ASTM A615 the phosphorus content will be limited to 0.08%.

931-1.1.2 Stainless Steel Bars: *Stainless steel bars for concrete reinforcement shall conform to the requirements of ASTM A955, Grades 60 or 75;; or ASTM A276, ~~or~~ UNS S316053 or S31803.*

931-1.1.3 Low-Carbon Chromium Steel Bars: *Low-carbon chromium steel bars for concrete reinforcement shall conform to the requirements of ASTM A1035 Grade 100.*

931-1.1.4 Special Requirements: The following special requirements shall apply:
1. Unless otherwise specified or shown in the Plans all ~~reinforcement~~ reinforcing bars No. 3 and larger shall be deformed bars.

~~2. All billet steel bars shall be of the grade called for in the Plans.~~

3. Twisted bars shall not be used.

4. Wherever in the Specifications the word “purchaser” appears it shall be taken to mean the Department.

931-1.1.5 Acceptance of Steel Bars:

~~Acceptance of reinforcing steel shall be based on~~ *the manufacturer being on the National Transportation Product Evaluation Program (NTPEP) list of compliant producers, samples taken by the Department, and manufacturer’s certified mill analysis. The test results shall certifying that the test results* meet the specification limits of the ASTM or AASHTO designation for the particular size, grade and any additional requirements. The manufacturer’s certified mill analysis for each heat, size, and grade per shipment of reinforcing steel shall be provided to the Engineer prior to use.

The Engineer will select samples representing each LOT of reinforcing steel. A sample is defined as the reinforcing steel and a copy of the certified mill analysis corresponding to the sample. A LOT is defined as the weight of all bars, regardless of size, grade or pay item in consecutive shipments of ~~80-100~~ tons or less. Samples shall be cut from bundled steel that is shipped to the jobsite.

Projects with less than two tons of bars do not require Department sampling.

931-1.2 ~~Welded-Wire Reinforcing Reinforcement~~ Steel:

931-1.2.1 Carbon Steel Wire Reinforcement: *Plain and deformed carbon steel wire reinforcement shall meet the requirements of ASTM A1064. Deformed carbon steel wire shall be Grade 75.*

931-1.2.2 Stainless Steel Wire Reinforcement: *Plain and deformed stainless steel wire reinforcement shall meet the requirements of ASTM A276, UNS S30400.*

931-1.2.3 Acceptance of Wire Reinforcement: *Acceptance of wire reinforcement shall be based on the manufacturer’s certified mill analysis certifying that the test results meet*

the test results meet the specification limits of the ASTM designation for the particular sizes and any additional requirements. Prior to use, submit to the Engineer the manufacturer's certified mill analysis for each heat and size per shipment.

931-1.3 Carbon Steel Welded Wire Reinforcement:

~~931-1.23.1 Plain Carbon Steel Welded Wire Reinforcing Steelment: Unless otherwise shown in the Plans, plain w~~Welded wire reinforcing steel shall meet the requirements of ASTM A1064.

~~Acceptance of plain welded wire reinforcement shall be based on the manufacturer's certified mill analysis certifying that the test results meet the specification limits of the ASTM designation for the particular sizes and any additional requirements. Prior to use, submit to the Engineer the manufacturer's certified mill analysis for each heat and size per shipment.~~

~~931-1.2.2 Deformed Welded Wire Reinforcing Steel: Unless otherwise shown in the Plans, deformed welded wire reinforcement shall meet the requirements of ASTM A1064.~~

931-1.3.2 Acceptance of Carbon Steel Welded Wire Reinforcement:

Acceptance of ~~deformed~~ welded wire reinforcement shall be based on the manufacturer's certified mill analysis certifying that the test results meet the specification limits of the ASTM designation for the particular sizes and any additional requirements. Prior to use, submit to the Engineer the manufacturer's certified mill analysis for each heat and size per shipment.

931-1.4 Couplers for Steel Bars:

931-1.4.1 Approved Product List (APL): *The couplers used shall be a product included on the Department's APL.*

Manufacturers seeking approval of their product shall demonstrate the performance of their product in accordance with the requirements in 931-1.4.2 through 931-1.4.4 as applicable and 931-1.4.5.

931-1.4.12 Couplers for Carbon Steel Bars: *Couplers for use with carbon steel bars shall be fabricated from an alloy that is electrochemically compatible with bars that meet the requirements of 931-1.1.1.*

931-1.4.23 Couplers for Stainless Steel Bars: *Couplers for use with stainless steel bars shall be fabricated from an alloy that is electrochemically compatible with bars that meet the requirements of 931-1.1.2.*

931-1.4.34 Couplers for Low-Carbon Chromium Steel Bars: *Couplers for use with low-carbon chromium steel bars shall be fabricated from an alloy that is electrochemically compatible with bars that meet the requirements of 931-1.1.3.*

931-1.4.45 Special Requirements: *Couplers shall develop at least 125% of the specified yield strength of the bar being spliced.*

~~931-1.4.5 Approved Product List (APL): The couplers used shall be a product included on the Department's APL.~~

~~Manufacturers seeking approval of their product shall demonstrate the performance of their product in accordance with the requirements in 931-1.4.1 through 931-1.4.3 as applicable.~~

The following new Article is added after ARTICLE 931-4:

931-5 Spirals for Concrete Piling.

~~———— **931-5.1 Carbon Steel Spirals:** Carbon steel spirals for reinforcing in concrete piling shall conform to the requirements of ASTM A1064, any grade.~~

~~———— **931-5.2 Stainless Steel Spirals:** Stainless steel spirals for reinforcing in the concrete piling shall be austenitic stainless steel conforming to the requirements of ASTM A276, Grade UNS S30400.~~

METAL ACCESSORY MATERIALS FOR CONCRETE PAVEMENT AND CONCRETE STRUCTURES.**(REV 2-1-16)**

SUBARTICLE 931-1 is deleted and the following substituted:

931-1.1 Steel Bars:

931-1.1.1 Carbon Steel Bars: Carbon steel bars for concrete reinforcement shall conform to the requirements of ASTM A615 Grades 60 or 75 except that the process of manufacture will not be restricted. For processes not included in ASTM A615 the phosphorus content will be limited to 0.08%.

931-1.1.2 Stainless Steel Bars: Stainless steel bars for concrete reinforcement shall conform to the requirements of ASTM A955, Grades 60 or 75; or ASTM A276, UNS S31653 or S31803.

931-1.1.3 Low-Carbon Chromium Steel Bars: Low-carbon chromium steel bars for concrete reinforcement shall conform to the requirements of ASTM A1035 Grade 100.

931-1.1.4 Special Requirements: The following special requirements shall apply:

1. Unless otherwise specified or shown in the Plans all reinforcing bars No. 3 and larger shall be deformed bars.
2. Twisted bars shall not be used.
3. Wherever in the Specifications the word "purchaser" appears it shall be taken to mean the Department.

931-1.1.5 Acceptance of Steel Bars: Acceptance of reinforcing steel shall be based on the manufacturer being on the National Transportation Product Evaluation Program (NTPEP) list of compliant producers, samples taken by the Department, and manufacturer's certified mill analysis. The test results shall meet the specification limits of the ASTM or AASHTO designation for the particular size, grade and any additional requirements. The manufacturer's certified mill analysis for each heat, size, and grade per shipment of reinforcing steel shall be provided to the Engineer prior to use.

The Engineer will select samples representing each LOT of reinforcing steel. A sample is defined as the reinforcing steel and a copy of the certified mill analysis corresponding to the sample. A LOT is defined as the weight of all bars, regardless of size, grade or pay item in consecutive shipments of 100 tons or less. Samples shall be cut from bundled steel that is shipped to the jobsite.

Projects with less than two tons of bars do not require Department sampling.

931-1.2 Wire Reinforcement:

931-1.2.1 Carbon Steel Wire Reinforcement: Plain and deformed carbon steel wire reinforcement shall meet the requirements of ASTM A1064. Deformed carbon steel wire shall be Grade 75.

931-1.2.2 Stainless Steel Wire Reinforcement: Plain and deformed stainless steel wire reinforcement shall meet the requirements of ASTM A276, UNS S30400.

931-1.2.3 Acceptance of Wire Reinforcement: Acceptance of wire reinforcement shall be based on the manufacturer's certified mill analysis certifying that the test results meet the specification limits of the ASTM designation for the particular sizes and any

additional requirements. Prior to use, submit to the Engineer the manufacturer's certified mill analysis for each heat and size per shipment.

931-1.3 Carbon Steel Welded Wire Reinforcement:

931-1.3.1 Carbon Steel Welded Wire Reinforcement: Welded wire reinforcing steel shall meet the requirements of ASTM A1064.

931-1.3.2 Acceptance of Carbon Steel Welded Wire Reinforcement:

Acceptance of welded wire reinforcement shall be based on the manufacturer's certified mill analysis certifying that the test results meet the specification limits of the ASTM designation for the particular sizes and any additional requirements. Prior to use, submit to the Engineer the manufacturer's certified mill analysis for each heat and size per shipment.

931-1.4 Couplers for Steel Bars:

931-1.4.1 Approved Product List (APL): The couplers used shall be a product included on the Department's APL.

Manufacturers seeking approval of their product shall demonstrate the performance of their product in accordance with the requirements in 931-1.4.2 through 931-1.4.4 as applicable and 931-1.4.5.

931-1.4.2 Couplers for Carbon Steel Bars: Couplers for use with carbon steel bars shall be fabricated from an alloy that is electrochemically compatible with bars that meet the requirements of 931-1.1.1.

931-1.4.3 Couplers for Stainless Steel Bars: Couplers for use with stainless steel bars shall be fabricated from an alloy that is electrochemically compatible with bars that meet the requirements of 931-1.1.2.

931-1.4.4 Couplers for Low-Carbon Chromium Steel Bars: Couplers for use with low-carbon chromium steel bars shall be fabricated from an alloy that is electrochemically compatible with bars that meet the requirements of 931-1.1.3.

931-1.4.5 Special Requirements: Couplers shall develop at least 125% of the specified yield strength of the bar being spliced.