

SECTION 03200

REINFORCING STEEL

PART 1 - GENERAL

1.1 Description

A. Scope:

1. Contractor shall provide all labor, materials, equipment and incidentals as shown, specified and required to furnish and place all steel reinforcement for concrete, including all cutting, bending, fastening and any special work necessary to hold the reinforcement in place and protect it from injury and corrosion.
2. The work shall also include furnishing deformed reinforcing bars to be grouted into reinforced concrete masonry walls.

B. Related Sections:

1. Section 02200, Earthwork.
2. Section 03300, Cast-In-Place Concrete.

1.2 Submittals

A. Shop Drawings: Submit for approval the following:

1. Detailed placing and shop fabricating drawings, prepared in accordance with ACI 315 shall be furnished for all concrete reinforcement. These drawings shall be made to such a scale as to clearly show construction joint locations, openings, the arrangement, spacing and splicing of the bars. No materials shall be cut or fabricated until related drawings have been approved by Engineer.
2. Mill test certificates.

PART 2 - PRODUCTS

2.1 General

- A. Materials: Reinforcing bars shall be deformed new billet steel bars conforming to ASTM A 615, Grade 60.
- B. Bars noted on plans to be epoxy-coated, shall be coated with Scotch-kote Brand Fusion Bonded Epoxy Coating 213 or 214 as manufactured by 3M, St. Paul, Minnesota, or equal. Coating shall be applied to cleaned steel reinforcing bars by the electrostatic spray method and fully cured in accordance with the recommendations of the manufacturer of the coating material. Before coating, the bars shall be cleaned by abrasive blast cleaning to meet the requirements of near white metal in accordance with SSPC-SP10. The coating shall be applied to the cleaned surface as soon as possible after cleaning, and before oxidation of the surface discernable to the unaided eye occurs. However, in no case shall application of the coating be delayed more than 8 hours after cleaning. The film thickness of the coating after curing shall be 5 to 20 mils, inclusive, as measured using ASTM G 12 on the body of the reinforcing bar between the deformations and/or ribs on a straight length of bar. The coating shall be free from holes, voids, cracks, and damaged areas discernible to the unaided eye. Damaged or other unsatisfactory areas shall be patched with a coating material and by a method recommended by the coating manufacturer.
- C. Wire mesh reinforced shall conform to ASTM A 185 "Welded Steel Wire Fabric for Concrete Reinforcement."
- D. Satisfactory test certificates shall be furnished Engineer on any shipments as required.

PART 3 - EXECUTION

3.1 Fabrication and Storage

- A. All reinforcement shall be cut and bent cold accurately to the dimensions approved. Bends shall be made in conformance with the Manual of Standard Practice of the Concrete Reinforcing Steel Institute. If shipped to the job fabricated, it shall be properly bundled and tagged so that it can be handled without damage and readily identified with the approved placing diagrams.
- B. Reinforcing steel shall be stored above ground on platforms or other supports and shall be protected from the weather at all times by suitable covering. It shall be stored in an orderly manner and plainly marked to facilitate identification.

3.2 Cleaning and Placing

- A. Before being placed in position, the reinforcement shall be thoroughly cleaned of all loose mill scale and rust, and of any dirt, coatings, or other material that might reduce the bond.
- B. Before being placed in position, any epoxy coated reinforcement that has been damaged shall be repaired per manufacturer's recommendations, and shall be thoroughly cleared of all loose mill rust and of any dirt coating or other material that might reduce the bond.
- C. All reinforcement shall be placed in the exact positions and with the spacing shown on the Drawings, or as otherwise directed. It shall be so securely fastened in position by saddle tying at intersections with annealed wire of not less than No. 18 gauge or by suitable clips, that no displacement with occur. Precast concrete blocks or metal chairs as approved by Engineer shall be used for supporting horizontal reinforcement in slabs on grade, and footings. For all concrete surfaces, where legs of supports are in contact with forms, provide supports complying with CRSI "Manual of Standard Practice" as follows: Provide either, plastic coated or stainless steel legs. No reinforcement shall be placed so that there is less concrete between it and the finished concrete surface than the minimums shown on the Drawings, or specified in the ACI - 318 Building Code.
- D. Wire mesh reinforcement shall be securely fastened at the ends and edges. Wire mesh shall be supported at elevations indicated prior to concrete placement. Edge laps shall not be less than one mesh in width and end laps not less than two meshes in length.
- E. Substitutions of different size bars or mesh will be permitted only with the written authorization of Engineer.
- F. Concrete shall not be placed until the reinforcing steel is inspected and permission for placing concrete is granted by Engineer. All concrete placed in violation of this provision will be rejected.