



South Carolina Department of Transportation

2007

**STANDARD
SPECIFICATIONS
FOR
HIGHWAY
CONSTRUCTION**

SECTION 703**REINFORCING STEEL****703.1 Description****703.1.1 General**

- 1 This section contains specifications for materials, equipment, construction, measurement, and payment for furnishing and placing reinforcing steel consisting of bars, wire, wire mesh, bar supports, and ties.

703.1.2 Production of Iron and Steel Products on Federal Aid Projects

- 1 On federal-aid projects, use only iron and steel products, including tie wire and supports for reinforcing steel and coatings, for which the manufacturing processes occurred in the United States in accordance with **Subsection 106.11**.

703.2 Materials**703.2.1 Reinforcing Bars**

- 1 Provide reinforcing bars (rebar) and dowels that meet the requirements of ASTM A 706 with a minimum single yield strength level of 60,000 psi, designated as Grade 60 and are from a source listed on the most recent edition of *SCDOT Qualified Product List 60*. Acceptance or rejection of all reinforcing steel is based on 30-inch long samples taken in the field and tested by the OMR or an OMR authorized AASHTO accredited testing laboratory.

703.2.2 Wire and Wire Fabric

- 1 Provide wire for concrete reinforcement, either as such or in fabricated form, conforming to AASHTO M 32 or AASHTO M 225. Provide welded steel wire fabric for concrete reinforcement meeting the requirements of AASHTO M 55.

703.2.3 Galvanized Reinforcing Bars**703.2.3.1 Use and Production**

- 1 Use zinc-coated galvanized deformed steel reinforcing bars in structural concrete where shown on the Plans and extend it to the limits shown. Provide zinc-coated reinforcing steel in structures that is hot-dip galvanized in accordance with ASTM A 767, Class II, 2 ounces per square foot with a minimum thickness of 3.5 mils. Galvanize the steel bars after fabrication.
- 2 Do not use reinforcing steel produced by water quenching method.

703.2.3.2 Repair of Galvanized Reinforcing Steel**703.2.3.2.1 Shop Repair**

- 1 Reject zinc-coated reinforcing steel bars that do not meet the requirements above and do not repair such reinforcing steel bars.

703.2.6 Bar Supports**703.2.6.1 General**

- 1 Unless otherwise approved in writing by the BCE, utilize plastic bar supports in lieu of wire bar supports in Zone A, which consists of Beaufort, Berkeley, Charleston, Colleton, Dorchester, Georgetown, Horry, and Jasper Counties.
- 2 Wire bar supports or plastic bar supports may be utilized in Zone B, which consists of all counties not in Zone A.
- 3 Provide bar supports for galvanized rebar as specified in **Subsection 703.2.3.3.**

703.2.6.2 Wire Bar Supports

- 1 Ensure that the wire bar supports comply with standard type and classes of protection as specified in the CRSI *Manual of Standard Practice* unless noted otherwise in this subsection, on the Plans, or in the Special Provisions. Space wire supports to provide adequate support for slab reinforcing steel.
- 2 For flat slab spans, support the lower layer of slab steel with Beam Bolster (BB) bar supports. Place 1 row near each end of span with interior rows spaced approximately 24 inches on centers.
- 3 For beam spans, support the lower layer of slab steel withy Beam Bolster (BB) bar supports spaced approximately 36 inches on centers with a minimum of three rows between longitudinal beams and one row on each overhang placed not more than 12 inches from edge of slab. Ensure that the BB bar supports have Class 1 maximum protection, unless shown otherwise in the Plans. Support top reinforcing bars by Continuous High Chairs Upper (CHCU) bar supports or Beam Bolster Upper (BBU) bar supports as shown on the Plans and spaced a maximum of 30 inches on centers.
- 4 Provide tie wire galvanized in accordance with AASHTO M 232, Class D or stainless steel, for use with galvanized bars. Use black tie wire for non-galvanized bars.

703.2.6.3 Plastic Bar Supports

- 1 Ensure that plastic bar supports meet the following requirements:
 - A. Chairs and bolsters are of adequate strength to resist a 300 pound concentrated load without permanent deformation or breakage.
 - B. The plastic bar support material is manufactured from either resin or first generation recycled thermoplastic resin, is colored white, gray, or black, and is chemically inert in concrete.
 - C. Plastic reinforcing bar supports are in a configuration that does not restrict concrete flow and consolidation around and under the reinforcing bar support.