

1602 - EPOXY COATED STEEL FOR CONCRETE REINFORCEMENT

SECTION 1602

EPOXY COATED STEEL FOR CONCRETE REINFORCEMENT

1602.1 DESCRIPTION

This specification covers the requirements for epoxy coated steel for concrete reinforcement. The protective epoxy coating is applied to the reinforcing steel by the electrostatic spray or the electrostatic fluidized-bed method.

1602.2 REQUIREMENTS

a. General.

(1) Appendices to the standards cited below that are identified as non-mandatory information in those standards, are to be considered mandatory information for the purposes of this specification.

(2) Applicators must be certified under the Concrete Reinforcing Steel Institute (CRSI) Epoxy Coating Plant Certification program.

b. Epoxy Coated Steel Bars.

(1) Unless shown otherwise in the Contract Documents, use uncoated steel bars that comply with **SECTION 1601** for straight bars or **SECTION 1604** for helical reinforcement.

(2) Apply an epoxy coating that complies with ASTM A 775.

(3) Fabricators must comply with the provisions of ASTM D 3963, "Standard Specification for Fabrication and Jobsite Handling of Epoxy-Coated Reinforcing Steel Bars."

c. Epoxy Coated Steel Wire and Welded Wire Fabric.

(1) Unless shown otherwise on the Contract Documents, use material which complies with **SECTION 1603** for welded wire fabric or **SECTION 1604** for steel wire.

(2) Apply an epoxy coating that complies with ASTM A 884, Type 1 with Class A coating thickness. Prestressed beams may utilize preformed welded wire fabric having an ASTM A 884, Type 2 coating. Do not re-bend after applying the Type 2 coating.

d. Dowel Bars and Straight Tie Bars* for Pavement.

(1) Use steel bars that comply with **SECTION 1601**.

(2) Apply an epoxy coating that complies with ASTM A 775.

(3) Coating or patching material need not be applied to the cut end faces of the bars. For dowel bars to be mounted in baskets, coating will not be required within 2 inches of the end that will be fixed in the supporting basket by welding.

(4) Cut the bars by a method that minimizes heat input and surface damage and results in no appreciable deformation of the ends.

* Refers to straight bars that are not bent after being epoxy coated. For field straightened tie bars (delivered bent), provide uncoated Grade 40 steel bars that comply with **SECTION 1601**. Do not use epoxy coated steel for field straightened tie bars.

1602.3 TEST METHODS

As specified in the ASTM standards referenced above.

1602.4 PREQUALIFICATION

a. Applicators. Epoxy coating applicator plants supplying material to KDOT projects must be prequalified. Follow the instructions on CRSI's website to participate in the Epoxy Coating Plant Certification program. Send a copy of the most recent yearly certification, grade sheets and inspection notes, as well as audit responses when applicable, to the Bureau of Construction and Materials for review.

In order to maintain prequalified status, send copies of the yearly certification, grade sheets and inspection notes, as well as audit response when applicable, each year as soon as they are received from CRSI. Failure to

1602 - EPOXY COATED STEEL FOR CONCRETE REINFORCEMENT

provide copies of this information may result in removal from prequalified status.

b. Organic Coatings. Organic coatings used for protection of reinforcing steel under this specification must be prequalified under ASTM A 775 or in the case of dowel bars or straight tie bars for pavement, ASTM A 934 if applicable. Manufacturers desiring to supply material should submit a certified test report by an independent laboratory regularly inspected by the Cement and Concrete Reference Laboratory (CCRL) to the Bureau of Construction and Materials.

c. Patching Material for Organic Coatings. Patching material for organic coatings used for protection of reinforcing steel under this specification must be prequalified under ASTM D 3963. Manufacturers desiring to supply material should submit a certified test report by an independent laboratory regularly inspected by the Cement and Concrete Reference Laboratory (CCRL) to the Bureau of Construction and Materials.

d. Prequalified Lists. The Bureau of Construction and Materials will maintain lists of prequalified applicators, organic materials and patching materials for use on KDOT projects.

1602.5 BASIS OF ACCEPTANCE

Receipt and approval by the Regional Materials Laboratory of the documents required for the uncoated reinforcing steel.

Receipt and approval by the Regional Materials Laboratory of a certification prepared by the Plant that applied the coating, stating that all bars have been coated in accordance with this specification. Provide this certification to the KDOT representative at the coating plant.

Satisfactory results of bend tests (if applicable), coating thickness and continuity tests conducted on the coated material by representatives of KDOT.

Visual inspection at destination for proper tagging of each bundle to enable identification of each heat or lot, for condition and for other properties.