

**KANSAS DEPARTMENT OF TRANSPORTATION  
SPECIAL PROVISION TO THE  
STANDARD SPECIFICATIONS, EDITION 2015**

Add a new **SECTION** in **DIVISION 800**:

**TIE BAR INSERTION  
(CROSS-STITCHING)**

**1.0 DESCRIPTION**

Drill holes and anchor deformed tie bar reinforcement diagonally across longitudinal cracks/joints as shown in the Contract Documents.

**BID ITEM**

Tie Bar Insertion

**UNITS**

Each

**2.0 MATERIALS**

**a. Tie Bars.** Provide epoxy-coated (including the ends) deformed reinforcing steel bars, hereafter referred to as tie bars that comply with **SECTION 1600**.

**b. Anchoring System.** Use Type IV, Grade 1 - low viscosity Epoxy-Resin-Based Bonding System and the Class that complies with **SECTION 1700**.

**3.0 CONSTRUCTION REQUIREMENTS**

**a. Equipment.** Use a hydraulic drill with tungsten carbide bits. Control the forward and reverse travel of the drills by mechanically applied pressure. Mount the drill on a suitable piece of equipment such that it is quickly transported and positioned. Rest and reference the drill rig frame on and to the pavement surface such that the drilled holes are cylindrical and repeatable in terms of position and alignment on the surface being drilled. Hand-held drills are prohibited.

**b. General.** Drill the holes in a slab at the offset, depth, and angle shown in the Contract Documents.

Drill such that the:

- Centerline of the holes is perpendicular to the crack/joint (in plan view) at each location being drilled.
- Adjacent holes are drilled in opposite directions across the crack/joint.

Repair cracks and spalls that result from drilling with a partial or full-depth repair as directed by the Engineer.

Clean the drilled holes (and chipped areas at the surface resulting from drilling) in accordance with the anchoring material Manufacturer's written recommendations. Submit recommendations to the Engineer before drilling any holes. As a minimum, clean holes with oil-free and moisture-free compressed air. The Engineer will check the compressed air stream purity with a clean white cloth. The compressor must deliver air at a minimum flow volume of 120 cubic feet per minute and develop a minimum nozzle pressure of 90 psi. Insert the nozzle to the back of the hole to force out all dust and debris.

Place the anchoring system material into the back of the hole using a nozzle or wand of sufficient length. Insert the tie bar such that the anchoring material is evenly distributed around the tie bar. Use an amount that slightly extrudes out the hole as the tie bar is inserted. Remove the excess and trowel the anchoring material smooth to the pavement surface, filling any chipped areas. Do not allow traffic on the repaired area until the anchoring material is cured as recommended by the manufacturer's specifications.

#### **4.0 MEASUREMENT AND PAYMENT**

The Engineer will measure each tie bar.

Payment for "Tie Bar Insertion" at the contract unit price is full compensation for the specified work. No payment will be made for extra work required to repair damage to the adjacent pavement that occurred during drilling.

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Sept-15 Letting