

505 – TIE BAR INSERTION-REPAIR NEW PCCP

SECTION 505

TIE BAR INSERTION-REPAIR NEW PCCP

505.1 DESCRIPTION

Drill holes and anchor deformed tie bar reinforcement diagonally across all longitudinal cracks and only those transverse cracks that extend partial depth, as determined through coring, to repair the newly constructed Portland Cement Concrete Pavement (PCCP) that is damaged. See Standard Drawing RD723, latest version.

505.2 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**.

505.3 CONSTRUCTION REQUIREMENTS

a. Equipment. Use hydraulic or handheld pneumatic or electric drills 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. Handheld drills may be used when they can be demonstrated to produce the same results as hydraulic drills with regard to drilling cylindrical holes and repeatable in terms of position and alignment. The Engineer may establish production rates for the hand-held drills.

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. Use a compressor that delivers air at a minimum flow volume of 120 cubic feet per minute and develops 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.

505.4 MEASUREMENT AND PAYMENT

This work is subsidiary to bid items in **DIVISIONS 501** and **502**.