1. Coordinate with Pavement Engineer for use.

Cross Stitching Longitudinal Cracks, Item SPV.0060.##

A Description

This special provision describes tying existing concrete pavement slabs together by drilling holes, installing and anchoring epoxy coated tie bars diagonally across longitudinal cracks. Perform this work conforming to the plan details for cross stitching tie bar installation and as follows.

B Materials

Furnish epoxy coated tie bars and epoxy grout per standard spec 416.2.3.

C Construction

Install the tie bars as part of the cross stitching operation in the existing concrete pavement as shown in the details and according to the following specifications.

Use a 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 not permitted.

Drill the end holes in a slab at the offset, depth, and angle specified on detail drawing. Drill such that the hole centerlines are perpendicular to the crack (in plan view) at each location being drilled. Adjacent holes are drilled in opposite directions across the crack. Hole diameters are no more than 3/8” larger than the tie bar diameter. Repair cracks and spalls that result from drilling with a partial or full-depth repair as the engineer directs.

Clean drilling dust, debris, and excess moisture from drill holes before inserting the epoxy grout and tie bar. Clean holes with oil-free and moisture-free compressed air. The compressor must deliver air at a minimum pressure 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.

Inject the epoxy grout into the back of the drill hole. Use a grout with a workable viscosity, pumpable, yet thick enough to remain in the hole. Insert a sufficient volume of grout into the hole to provide a small quantity of excess material at the face of the concrete after fully inserting the bar.

Use a positive fixed displacement dispensing system, equipped with a nozzle of sufficient length to deposit the epoxy at the back of the drilled hole. Use a system equipped with a means of checking the mix ratio of the epoxy components. Use the manufacturer’s recommended mix ratio and check the ratio at least once a day.

For minor quantities of tie bars, the contractor may use hand-powered mixing and injecting equipment capable of thoroughly mixing and depositing the epoxy grout at the back of the drill hole.

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.

D Measurement

The department will measure Cross Stitching Longitudinal Cracks by each tie bar installed and accepted.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER DESCRIPTION UNIT

SPV.0060.## Cross Stitching Longitudinal Cracks EACH

Payment is full compensation for furnishing all materials including epoxy coated tie bars; drilling holes; installing tie bars; furnishing and installing epoxy grout. No payment will be made for extra work required to repair damage to the adjacent pavement that occurs during drilling.

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