

EPOXY INJECTION FOR CRACK SEALING

****From Thetford BHF 0177(9)**

- xx. DESCRIPTION. This work shall consist of applying a low viscosity structural injection epoxy resin material with automated dispensing equipment at the locations indicated in the Plans and as directed by the Engineer.

This work under this Section shall be performed in accordance with these provisions, the Plans, and Section 580 of the Standard Specifications.

- xx. MATERIALS. Low viscosity, structural epoxy injection adhesive material shall be one of the following products:

Five Star LV Adhesive
Five Star Products, Inc.
750 Commerce Drive
Fairfield, CT 06825
Tel: (203)336-7900
Fax: (203)336-7930
www.fivestarprouducts.com

Pro-Poxy 100
Unitex Chemicals
3101 Gardner Avenue
Kansas City, MO 64120
Tel: (816)231-7700
Fax: (816)483-3149
www.unitex-chemicals.com

Sikadur 52
Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Tel: (201)933-8800
Fax: (201)804-1076
www.sika.com

Requests for substitutions for the above shall be submitted to the Agency's Office of Contract Administration a minimum of 10 days in advance of the bid opening date. Substitutions for the above after award shall be approved by the Structures Engineer prior to use.

- xx. PROPORTIONING AND MIXING. The product shall be mixed in accordance with the manufacturer's recommendations. The Contractor shall only mix the quantity of material that can be used within its potlife.

- xx. SURFACE PREPARATION. The surface to be repaired shall be clean and sound, and free of all dust, laitance, grease, curing compounds, impregnations, waxes, and any other contaminants or foreign materials. The moisture content of the concrete surface shall be in accordance with the manufacturer's recommendations, but free of standing water. The surface shall be cleaned and prepared by blast cleaning or an equivalent mechanical means approved by the Engineer.

- xx. INJECTING EPOXY. The Contractor shall install the injection ports as required by the automated dispensing system manufacturer. Spacing of the porting devices shall be accomplished as required to achieve the travel of epoxy resin for the pressure injection grouting between ports and to fill the crack(s) in their entirety. On structures open on both sides, porting devices shall be provided on opposite sides at staggered elevations. Porting devices shall be supplied by the manufacturer of the automated dispensing system.

The porting devices and the surface of the crack(s) shall be sealed using the manufacturer's recommended rapid-setting, high-strength, structural epoxy adhesive to prevent the escape of the epoxy resin during the pressure injection procedure.

The epoxy shall be dispensed under constant pressure in accordance with the procedures recommended by the automated dispensing system manufacturer, as required to achieve maximum filling and penetration of the prepared crack(s) without the inclusion of air pockets or voids in the epoxy resin. The epoxy resin shall be dispensed from a single port, starting at the lowest port until there is the appearance of epoxy resin at an adjacent (higher) port, thus indicating travel. When travel is indicated, the Contractor shall discontinue or continue the pressure injection from that port based on the Contractor's experience and as directed by the Engineer. The Contractor shall continue this procedure by then dispensing the epoxy resin from the port showing signs of travel until the crack(s) have been thoroughly filled with epoxy resin to the satisfaction of the Engineer.

If in the Contractor's experience the use of multiple ports, by use of a manifold system, is feasible, the Contractor shall provide in writing the proposed pressure injection procedure using multiple ports for the Engineer's review and approval. The Contractor shall not perform any work until the Engineer has approved the use of multiple ports for pressure injection.

The minimum ambient and substrate temperature for placement of the rapid-setting, high-strength, structural epoxy adhesive and the injection of the epoxy resin shall be 4°C (40°F).

- xx. ENVIRONMENTAL PROTECTION. During cleaning, surface preparation, and dispensing operations, the Contractor shall provide appropriate measures to protect the public, the work area, the bridge, the river, etc. from contamination due to drippings, spatter, wind-blown particles, falling objects, blowouts, etc. The Contractor shall be fully responsible for property damage or personal injury which may result from operations incidental to the automated dispensing of epoxy.
- xx. METHOD OF MEASUREMENT. The quantity of Special Provision (Epoxy Injection for Crack Sealing) to be measured for payment will be the number of liters (gallons) of epoxy used in the complete and accepted work, measured to the nearest liter (gallon).
- xx. BASIS OF PAYMENT. The accepted quantity of Special Provision (Epoxy Injection for Crack Sealing) will be paid for at the Contract unit price per liter (gallon). Payment will be full compensation for furnishing, transporting, storing, handling, and placing the materials specified; surface preparation; satisfactory completion of curing; and

for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.625 Special Provision (Epoxy Injection for Crack Sealing)	Liter (Gallon)