

SECTION 1091—EPOXY INJECTION CRACK SEAL

1091.1 DESCRIPTION—This work is the preparation and sealing of cracks with epoxy resin mixture, excluding overhead sealing.

1091.2 MATERIAL—

(a) **Epoxy Resin System.** Provide a system conforming to the strength requirements of [ASTM C 881](#), Type I, Grade 1, [Section 706.1](#), for epoxy injection and from a manufacturer listed in [Bulletin 15](#).

(b) **Surface Seal.** Provide a surface seal as recommended by the manufacturer and of adequate strength to hold injection fittings firmly in place and to resist injection pressures adequately to prevent leakage during injection.

(c) **Injection Fittings.** As recommended by the manufacturer.

(d) **Certification.** [Section 106.03\(b\)3](#)

1091.3 CONSTRUCTION—Construct as directed and as follows:

(a) **Preliminary Work.** The Representative will mark areas to be sealed.

(b) **Preparation for Sealing.** Thoroughly clean the surfaces of rust, scale, grease, loose and disintegrated particles, and material. Remove unsound concrete and mortar as directed. Glue injection ports in place at spacings as recommended by the manufacturer. Bevel cracks, as directed, to facilitate installation of injection ports. Seal the surface and areas surrounding the entry ports with surface seal. Apply seal so that the epoxy injection resin is sealed until initially cured.

(c) **Mixing Epoxy Resin System.** Mix the epoxy resin system according to the manufacturer's instructions with a minimum 180 second mixing time using a low speed (400 rpm to 600 rpm) electric drill with an approved mixing paddle. The mixing may also be accomplished by an injection machine capable of metering and mixing the specific proportions of components within a tolerance of $\pm 5\%$.

(d) **Injection Procedure.** Do not inject the cracked area until after the surface sealer has hardened. Inject the epoxy with a hand held gun, pressure pot, or injection machine or as recommended by the manufacturer. Start injection at the lowest point on the crack. When the material begins to flow from the next higher entry port, remove the nozzle, plug the port, and insert the nozzle in the next higher entry port. Continue the operation until the crack is completely filled. After the epoxy material has achieved an initial cure, remove the entry ports and, if necessary, patch the areas with the same material used to seal the rest of the crack surface.

(e) **Application Limitations.** Do not apply or inject epoxy materials if the ambient or concrete temperature is below 10 °C (50F).

1091.4 MEASUREMENT AND PAYMENT—

(a) Meter (Linear Foot) or

(b) Dollar

The proposal will include an item and a predetermined amount of money for Epoxy Injection Crack Seal. The contract item will have a unit of measure of Dollar, a unit price of \$1.00, and a quantity equal to the predetermined amount.

Due to the contingent or unpredictable nature of the work being performed, the provisions of Section 110.02(d) are not applicable to this item.

Measured and paid for, under the Epoxy Injection Crack Seal item as follows:

- 1. Negotiated Price.** At an agreed upon price. This price will be agreed upon with the Department, before performing the work. When applicable, agreement is also required with the FHWA.

- 2. Force Account Basis.** [Section 110.03\(d\)](#)