What Epoxy Injection Is Used for in Concrete Repair

Homeowner guide

Epoxy injection can bond the faces of a suitable crack in concrete. If you're reviewing an injection proposal, ask what the repair needs to accomplish and what the engineer knows about the crack before selecting a product or procedure. RES, Understanding Epoxy Injection

Identify the repair objective

Start with the purpose of the work. The objective might be structural bonding of suitable cracked concrete, controlling water entry, improving appearance, or a combination. A rigid bonding repair and a flexible water-control repair serve different needs. If the proposal aims to accomplish more than one thing, ask what addresses each objective. Epoxy injection can address the crack itself. The movement or other conditions that caused it may need separate work. American Concrete Institute, Structural Crack Repair by Epoxy Injection (RAP-1)

How crack movement and moisture affect the review

An active crack changes width over time. A single photograph or a short period of observation can miss changes as temperatures or loads vary. Bring dated photos, earlier reports, any measurements and repair records. Tell the engineer when movement or dampness was first noticed and whether water is currently seeping through the crack.

The engineer evaluates what caused the crack, whether movement is likely to continue, the condition of the concrete around it, moisture and how much of the repair area can be reached. Those findings help determine whether a rigid bonding repair fits and whether the system under consideration is compatible with the site conditions. ACI RAP-1 · Simpson Strong-Tie, Crack Injection Guide

The repair process and verification

Evaluate and specify → Prepare → Inject and cure → Verify

1. **Evaluate and specify.** Establish the cause, confirm the objective and select a suitable system and verification plan for the project.
2. **Prepare.** The applicator prepares the crack and surrounding concrete and uses ports and surface sealing as required by the specified system.
3. **Inject and cure.** A qualified applicator follows the approved repair procedure and current product instructions.
4. **Verify.** Document the work and complete any specified checks before it is concealed. Ask who reviews the records and what evidence the project requires for acceptance.

Product-specific preparation, pressures, temperatures, cure times and protective measures belong in the approved procedure and current manufacturer instructions. RES, Understanding Epoxy Injection · ACI RAP-1

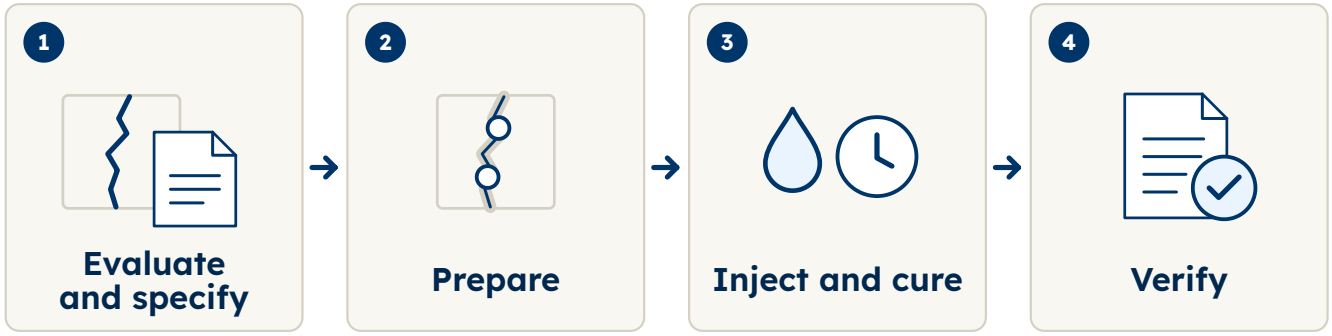


Figure 1. An epoxy injection project starts with evaluation and ends with the checks specified for the repair.

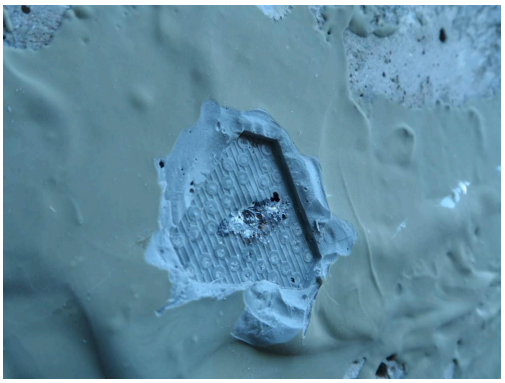


Figure 2. Illustrative example from Colorado. The Bureau of Reclamation used epoxy injection to rebond cracked concrete in the Hansen Siphon pier. This close-up shows epoxy visible in the crack after an injection port was removed.

Photo courtesy of the U.S. Bureau of Reclamation. Figure 10, "Epoxy can be seen within the crack after a port was removed," from Westin T. Joy's article *Epoxy Grouting of the Hansen Siphon Pier Damaged During the Colorado Flooding*, *Water Operation and Maintenance Bulletin* No. 235, December 2013, p. 8. Original photo extracted from the bulletin page. U.S. public domain. Original bulletin and image · Public-domain basis, 17 U.S.C. § 105

Questions to ask before proceeding

- What caused the crack, what movement has been observed and how will the underlying condition be addressed?
- Is the objective structural bonding, water control, appearance or a combination? Which work addresses each objective?
- Can the specified area be accessed and prepared? What happens if moisture, deteriorated concrete or limited access changes the plan?
- Which product and procedure are specified, and who approves a substitution or change in scope?
- Who will record the work, perform any specified checks and provide the results? What should we document if the crack or dampness reappears?

Before authorizing work, ask for a written scope identifying the crack locations, the repair objective and the records you'll receive. Keep that scope with the earlier photos and reports so there is a record to compare with later observations.

Field notes

Date _____ Location / crack ID _____

Repair objective _____

Agreed checks / follow-up _____

What to do next

Still gathering photos of the crack? Start with
How to Document a Crack in a Wall, Slab or Foundation

Comparing an injection bid with other repair options? Use
How to Compare Foundation Repair Proposals