

What are "injection" repairs for concrete wall cracks?

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Gordon from Montreal writes: I want to seal a crack in my foundation myself using an injection system. I hear there are two types of injection materials and can I do it myself?

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You are right Gordon, the two primary materials used for injection into concrete wall cracks are epoxy and polyurethane. There is also a Bentonite clay injection system but I do not recommend it as it is too easy for the applicator to fill up your weeping tiles with clay by accident. People are drawn to injection systems because it avoids the cost and trouble of digging up the soil and doing the repair on the outside of the wall, the best but most expensive way to fix a wall.

Before you inject anything anywhere consider the fact that around 80 percent of all basement water leaks can be handled by getting outside water away from the foundation: rain gutters to collect the water flow from the roof, downspouts set up to get it at least 5 feet away from the foundation and landscaping that stops run-off from flowing towards the house, especially in the spring while the ground is frozen. Those three efforts are critical because even if we do manage to perfectly seal a crack, if there is a lake outside that wall, the water will just move down the wall until it finds another crack. Often if we remove the water, we don't even need to seal the crack.

OK, you have taken care of the surface water but there is still a crack and it still leaks a bit, or you are worried that it might leak in the future. The first step in dealing with the crack is finding out if the crack is moving or not. For details check out Foundation Settling. As I indicated there you have to find out if the crack is moving or stable and if moving, is it just vibrating or growing larger? That is important because epoxy is a good sealer but cures very rigid and the concrete will crack right next to the repair if there is still foundation movement. Polyurethane is a more flexible material that can handle vibrations and a little growth in the crack. Cracks that continue to grow over time require professional evaluations as to what is happening to the structure of the house.

When I first answered this e-mail, I indicated that both epoxy and polyurethane were used by professional basement crack sealing companies and that some rental companies had epoxy ejection systems. Since that time DIY epoxy ejection systems have shown up in some of the larger hardware stores. Just recently I discovered a DIY kit for polyurethane injection, the product that I prefer to use on foundation cracks.

Remember that neither system is any good on cement block foundations because of the hollow cores in the blocks. They require repointing the mortar with cement based products, or better using what is often called a drainage system called a Beaver Dam.

For a more general discussion, check out Basement Perimeter Drainage and Leaking Foundations.

Keywords:

Concrete, Cracks, Epoxy, Leaking, Polyurethane, Repair