

## High Pressure Crack Injection using HyperFlex, Packers and a Pump

- For narrow cracks 1/8 of an inch wide or smaller, where hand injection with a caulking tube is insufficient to force urethane into the leak path.
- Water flow may range from a single weep all the way to active water flow.

### Tools & Equipment Required

- Hammer Drill with 5/8" bit
- Electric Grout Pump, Grease Gun or other hand operated pump
- 5/8" Packers and ratchet set
- Garden Sprayer with water
- Burlap, Oakum or Backer rod, if needed
- Personal Protective Equipment
- HyperFlex 5 Gallon Pail or 300ml cartridge

### Instructions:

1. Drill a 5/8" hole every 12' or so, "stitching" the crack if irregular. You may or may not get a return of water. See drawing in Section 2, Drilling if needed.
2. Using the garden sprayer clean as much dust and debris from the injection hole and the crack itself. The cleaner the better.
3. Insert packer into the hole, tightening it so that the zerk end fitting is sticking up just above the surface. Make sure the packer is tight.

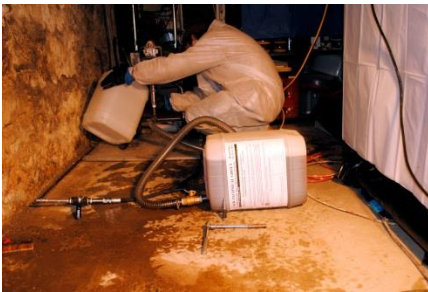


This shows the correct way to set a packer for injection

4. "Chink", if necessary, however with with the finest cracks it may not be possible
5. Set up injection device according to instructions from Section 2.
6. Hook your injection device onto the packer zerk fitting. It will still be able to move once attached but will not pull off
7. Begin to pump HyperFlex into the packer. You will see water being forced from the face of the crack, then HyperFlex. STOP Pumping when you either see nothing but HyperFlex flowing from the face of the crack (no water) or if the packer will not accept any further urethane. If a packer does not accept any urethane at all, it may be necessary to re-drill, perhaps on the opposite side of the crack. As always, DO NOT FORCE urethane into a packer that will not accept it. Pressure could build, forcing the packer out of the wall and showering you and everyone nearby with HyperFlex.

8. On occasion, the opposite will occur, where the packer keeps taking urethane but none is visible at the face of the crack. This usually means you have locked into a void, usually behind the substrate. Since it takes less pressure to flow to the void than back to the face of the crack you can pump for a long time. In this situation, let the packer take some HyperFlex then move to another packer and continue injecting. Go back to the previous packer later after HyperFlex has had a chance to work. As it fills the void, you should be able to force it into the crack. In general though, if the packer is accepting grout, that material is going somewhere
9. CLEAN UP – It is best to wait a few days if possible to clean up, your packers and injection points especially if there was a fair amount of HyperFlex pumped into the leak system. This is because it can “work” behind the wall for quite some time when injected with pressure. To repair the injection points loosen the packer and, using a punch of some sort and a hammer, knock the packer into the hole so the zerk fitting is below the surface of the substrate. You can patch the holes with your preferred patching medium and paint or seal as needed.
10. Excess urethane at the face of the crack can be scraped off as soon as it is fully cured, no need to wait as with the packer injection sites.

Preparing pump for injection



Packer is set in place



Injection wand attached to packer



Injection in process. Note how HyperFlex has migrated into the corner



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Mars, PA 16046  
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