



PRO Concrete Crack Repair Guide

Polyurethane Injection

CRACK PREPARATION

Place a drop cloth on the floor in front of the work area. Clean the surface surrounding the crack using the wire brush. Remove loose or flaking concrete, efflorescence, paint, or coating to approximately 1-2 inches on either side of the crack. Wipe the surface clean of dust after brushing. The surface must be dry for proper installation of injection ports and surface seal. For best results, if the surface is wet, wait until dry or if necessary, use a hot air gun, hair drier, or oil-free compressed air to dry.

SURFACE PORT PLACEMENT

- The lowest surface port (closest to the floor) will be adhered 2-3" above the bottom of the crack.
- Surface ports are then spaced apart the thickness of the concrete wall, usually about 8".
- Drilling or routing is not necessary.

SURFACE PORT ATTACHMENT + CRACK SEALING

1. Prepare the epoxy surface adhesive by dispensing (using the dual-caulking gun) a sufficient amount onto a paper plate or scrap piece of cardboard. Mix the adhesive with the supplied trowel (repeat this step each time you run out of mixed adhesive).

2. Remove the cap from the surface port, then apply a small amount of mixed adhesive to the bottom of the port base. Place the first port starting at the bottom of the crack. Center the ports over the crack and repeat every 8" until the entire crack is ported.

NOTE! Do not allow the epoxy to block the bottom of the port opening or the crack beneath the port.

3. Work the mixed surface adhesive along the entire length of the crack using the plastic trowel. The recommended epoxy adhesive application is 1/8" thick and 2" wide. Make sure to mound a sufficient amount of adhesive around the base of the ports. Expect to use 20 ounces per 10-foot of crack. Do not work the epoxy into the crack, simply apply over the surface.

4. Allow the surface adhesive to cure before beginning injection (about 20 minutes until fingernail hard).



Adhesive applied to bottom of port base



Center port over crack



Attach restrictor



Attach nut



Urethane Injection

Using the Dual-Caulking Gun

1. Prepare the cartridge by removing the cap and plug, inserting the restrictor, and attaching the mixer to the tube set with the nut.

2. Load the dual-caulking gun as follows:

- Depress the brake plate with your thumb, and, while holding it, pull back on the back knob and plate attached to the pushrods.
- With the tool facing upward, slide dual cartridges in (largest tube first in) until the cartridge front and retaining nut are within the notch of the carriage. Match piston ratio (i.e. 300/300 300/150 – 150/150). Line up the tube set with the pistons and begin squeezing the trigger handle slowly, making sure the drive rod is riding inside the cartridge on the right side, and the pistons are inserted directly into each tube.
- Before pressure is applied, recheck the front of the tube set to make sure it is in the notched opening of the tool front, so when pressure is applied it will lock into place.
- Hold the tool with the installed tube set pointing upward; squeeze the trigger handle until the pistons make contact with the plungers, checking that the front is still locked in place. This will also remove any air trapped in the tube set. (Cannot stop the material flow if the air is trapped in cartridges) Begin squeezing, allowing excess energy generated to be absorbed and stored in the spring. Do not allow spring to bottom out. This extends the life of the tool and controls the force generated.
- The tool is now loaded and ready for operation.

INJECTION PROCEDURE

1. Using the squeeze bottle, inject 1-2 cups of water into the top surface port. Water commonly will flow out of every port below. This indicates that the crack is contiguous and that the surface ports are not blocked by epoxy adhesive. If water does not flow out from certain ports below, inject water into those ports. Water is useful for flushing the crack of debris and aid in resin activation.

2. Place the injection foam dual cartridge into the dual-caulking gun. Remove the plastic cap, then twist and pull to remove the plastic seal. Replace seal with restrictor.

Place the 1/4 X 24 mixing nozzle on top of the restrictor, over the end of the cartridge, attaching with the plastic nut.

3. Attach the flexible hose assembly (wide end) over the mixer tip by pushing firmly.

4. For vertical cracks, attach the small end of the hose assembly to the lowest port by pressing firmly (horizontal cracks begin at either end if one is not lower than the other).

5. Begin injecting slowly with low pressure until the urethane resin begins to flow from the port above it. Use the white plastic pinch valve on the hose assembly to turn off resin flow, plug the port with the cap provided, and move up to the next port. Repeat this procedure until the entire crack has been injected with urethane foam.

* The surface ports can be removed by striking with a hammer after foaming is complete 3-4 hours after injection is complete. If desired, the epoxy adhesive can be ground off the surface for a smooth/clean finish. The epoxy adhesive is paintable.

TIPS

• To improve the ability of the urethane to penetrate hairline cracks, heat the cartridges in a pot, bucket, or pail of hot tap water for 20 minutes. This temperature exposure will thin the material so that it can more easily flow into the crack with less resistance. epoxy adhesive is paintable.

• The secret to effective crack injection is patient, low-pressure introduction of the resin. Hairline cracks will require 3 - 4 minutes at each port for the proper filling to take place.

Notes: To release the pushrods depress the thumb plate while squeezing the trigger handle. This relieves the pressure on the thumb plate and allows the pushrods to release.

Over Squeezing of Trigger Handle May Cause:

- Leaking of material from rear of cartridges.
- Cutting of the drive rod.

Keep Tool Clean - Wipe clean every time the cartridges are changed for best results. Do not leave empty or partially used cartridges in too.



If you have detailed questions about your application or project please visit www.radonseal.com or contact a RadonSeal customer service representative for expert advice.

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