



Crack Injection Resin

INSTRUCTION GUIDE

RICH-105 • RICH-110 • RICH-115

REQUIRED TOOLS & MATERIALS

- Richtech Industries RICH-105/110/115 Crack Repair Resin(s) (600 mL Dual-Pack)
- Richtech Industries Crack Adhesive (Parts A & B)
- Dual-Component Injection Gun
- Injection Ports and Caps
- Static Mixers (Nozzles)
- Retaining Nut(s)
- Plastic Trowel
- Rubber Gloves
- Mixing Sticks
- Wire Brush
- Safety Goggles
- Spray Bottle
- Garbage Bag
- Chalk
- Hobby Knife
- Pliers
- Hammer Drill*
- Chisel*
- Hammer*
- *Only required for drill port installation.

WARNING

Be careful around floor drains and drainage tile.

Do not inject between concrete and wood.

For actively leaking cracks where the crack surface will not dry for patching purposes, alternative hydraulic cement may be used in place of Richtech Crack Surface Paste and Port Adhesives.

The temperature of the concrete must be at least 41°F (5°C)

Protective gear must be worn (i.e. face shield, goggles, or safety glasses).

Ensure good ventilation or wear respirator.

Uncured resins can irritate eyes and skin. See Safety Data Sheet (SDS) for more information.

CRACK INJECTION PROCEDURE

Read the following instructions completely prior to starting the repair. Follow the each step carefully. Be prepared. Wear protective goggles, suitable gloves, and clothing.

Step 1: Preparing the work area

- Cover floor below the working area with a garbage bag.
- Cover any nearby furniture, appliances, or other personal belongings to avoid concrete dust.

Step 2: Cleaning the crack

Clean area to be repaired from loose concrete, paint, oil, dirt, and other debris by using a wire brush in and around the area to be repaired (i.e. crack, tie rod, around a pipe). A chisel or hobby knife can also be used to clean out any loose concrete in the crack. Make sure that the concrete surface is dry.

Step 3: Marking injection port locations

Using chalk, mark injection port locations according to the guidelines below:

Concrete Cracks: Mark the first injection port position at or near floor level. Measure from the first port position up and along the crack the remaining port positions with the distance between

each port equal to the wall thickness (usually 8"-10").

Tie Rods: Use one injection port for each tie rod.

Around Pipes: Mark four injection port positions (0°, 90°, 180°, and 270°) around the pipe. For pipes less than 2" in diameter, two injection port positions are sufficient (90° and 270°).

Step 4: Pre-drilling and inserting drill ports

This step only applies to kits containing drill ports. If you do not have drill ports, skip this step.

Using a hammer drill with a 1/2" bit, drill in the holes for the drill ports. Use your markings in Step 3 as a guide for each drill hole location.

Using a hobby knife, remove and clean any loose concrete or debris from the port holes that were drilled. Make sure the port holes are cleaned out very well and visible to the crack.

The drill ports have a fish-hook like end which is inserted in the crack and once inserted properly, it is tightly secured from the pressure caused from the injection. Using a chisel and hammer, place a drill port into the pre-drilled hole and with the chisel on the fish-hook, hammer the port into position.

Step 5: Applying Richtech Crack Adhesive to injection ports and crack

MIXING PART A AND PART B INSTRUCTIONS

For best results:

Adhesives must be at 46°F (8°C) or above when ready to mix. Do not use on wet surfaces or expose part A to moisture. Keep out of direct sunlight, store at room temperature. Keep adhesives warm when using in cool conditions.

Mixing and applying instructions:

Richtech Crack Adhesives Part A and Part B are mixed at a 1:1 ratio. The surface to be sealed is to be free of all contaminants that would act as a bond breaker. Surface must be dry and dust-free. Wear rubber gloves for protection.

- Unscrew the top caps on the Part A and Part B. Using separate wooden stir sticks for each component, poke the foil to open seal. Stir each component separately. Do not share the sticks between the two parts.
- Pour equal amounts of Part A and Part B onto a piece of cardboard and mix with a plastic trowel until a uniform appearance is achieved (approx. 2 - 4 minutes depending on temperature). **ONLY MIX AMOUNTS YOU WILL USE WITHIN 2 MINUTES AT A TIME.**
- If you used drill ports, skip this bullet. To apply the flat or corner injection ports, use the plastic trowel to carefully spread the adhesive mixture on the bottom of the port being cautious not to cover the injection hole. Glue port over the crack so that the port injection hole lines up over the crack and hold in place until secure. Use your markings in Step 3 as a guide to position and glue each injection port.
- Once injection ports are in place, use the plastic trowel to apply adhesive evenly over the crack and over base of injection ports.

Use generous amounts of adhesive mixture to ensure no resin leakage during injection.

- If the crack is visible above grade level on the outside of the foundation wall (or on the other side), clean surface with a wire brush, wipe and dry surface from dirt and residue, then apply adhesive mixture to that surface as well. This will act as a wall barrier during the injection process.

ALLOW ADHESIVE TO CURE COMPLETELY BEFORE CONTINUING TO THE NEXT STEP.

Adhesive is cured when mixture is dry and hard to the touch.

Curing time depends on ambient temperature and accuracy of the mixture.

Step 6: Establishing water flow through the crack

Using a hand-held water spray bottle or squirt bottle, flush crack by injection water into top injection ports, allowing water to drain from the lower ports, ensuring a clear and wet path in the crack.

If leakage occurs along the crack during this process other than through the port injection holes, stop and reseal areas with additional adhesive mixture and allow paste to cure before proceeding onto the next step.

Step 7: Sealing the crack by injection

Be prepared. Wear protective goggles, suitable gloves, and clothing.

Holding the dual-pack in an upright position, remove tip cover and snap the top part of the dual-pack using pliers. Tips may be used to reseal dual-pack for later use.

Attach the static mixer (nozzle) and tightly secure the retaining nut to hold the nozzle in place.

Keeping the dual-pack in an upright position, load the dual-pack into the dual-component injection gun. Be very careful that the resin from one component does not travel to the second component, as this can cause premature curing.

Injection starts at the most bottom injection port. Insert the nozzle tip into the injection port while keeping the gun slightly slanted down so that the handle is higher than the nozzle tip and the port. This will help the resin to flow in the right direction and prevents the resin from backing up into the dual-pack and curing inside the tube or nozzle. Start injecting slowly, applying even pressure and allowing the material plenty of time to react.

Continue injecting until resins flows out of the next injection port up (this should take approximately 20-240 seconds). Release the gun, cap the current port and continue injection through the next port up. Continue same procedure from one port onto the next until the entire crack is sealed. Remember to keep the gun slightly slanted downwards during the entire injection process to ensure that the resin does not cure inside the dual-pack or nozzle.

NOTE: IN CASE OF LEAKAGE, STOP INJECTION AND RESEAL WITH ADHESIVE MIXTURE. If flow to the next port is not established, then slightly increase pressure to break through the plugged passage. If the flow is still not established, continue injection from the next port up.

Step 8: Curing

Once crack is completely filled, let cure (approximately 24 hours) and remove injection ports and sealing cement (adhesive once cured) if you wish. The cured adhesive can be removed by applying heat over the material with a heat gun, which will soften it to a flexible state and can then be removed with a metal scraper.