

Technical Bulletin # 661F

Bulletin Description

Cracking of concrete slabs and substrates is a common occurrence. Excessive tensile and compressive forces, freeze-thaw cycles, and incorrect water to cement mix ratios are common causes. One practice to repair cracks is to pressure inject thermosetting resin into them. This bulletin describes several techniques for repairing minor cracks in concrete foundations prior installing equipment.

Repair Techniques

The basic technique used to repair a crack starts with drilling a hole at each end of the crack. The holes should have a diameter that is wider than the crack. They will act as an injection point at one end and a vent point at the other. The holes will also relieve stress in the concrete and will help prevent the crack from spreading.

Additional holes should be drilled every 8 to 12 inches along the crack. As each hole is used as an injection point with the adjacent hole acting as the previous hole's vent. Zirc fittings or injection ports should be placed in the injection holes.

The fittings can be secured with either PHILLYBOND #6 or Repair Compound. The fittings or ports should allow a grease gun hose to screw onto the fitting.

Once the fill and vent points have been prepared, the exposed crack must be sealed. All loose or contaminated concrete in and around the crack must be removed by chiseling it out with a hammer and chisel. Once this step is completed, cover the top of the crack with either PHILLYBOND #6 or REPAIR COMPOUND. Use PHILLYBOND #6 if pressure injecting into the crack that day as it cures quickly. REPAIR COMPOUND requires overnight to cure. Once the material used to seal the crack has cured, pressure injection of a thermosetting resin liquid into the crack can commence.

Several resin systems can be used to fill cracks in concrete including CONCRETE ADHESIVE, PHILLYCLAD, 1775/620TS, CHOCKFAST RED LIQUIDS. Please see the individual product Technical Bulletins for details on unit size and coverage. CHOCKFAST Gray can also be used for to fill cracks greater than 1/8 inch in width.

Carefully mix the resin and hardener per manufacturer's instructions. Pour the mixed material into a clean grease gun or a fill-able caulking cartridge and begin pressure injecting at one end of the crack. Continue to inject resin until it begins to come out of the adjacent hole. Once resin appears in its hole inset a zirc fitting into it and continue injection into that hole. Continue this process the entire length of the crack.

Epoxy resin cures through an exothermic reaction. The resin will begin to generate heat once the curing cycle begins. If the grease gun or airless pump begins to become warm, immediately clean the equipment with a suitable solvent such as IMPAX IXT-59. Failing to do so may result in loss of equipment. When finished IMPAX IXT-59 can be used for general clean up.

Reference

For details on the epoxies mentioned above please request Bulletin No. 950 for PHILLYCLAD 1775/620TS, No. 1014 CONCRETE ADHESIVE, No. 1015 REPAIR COMPOUND or No. 964 PHILLYBOND #6.

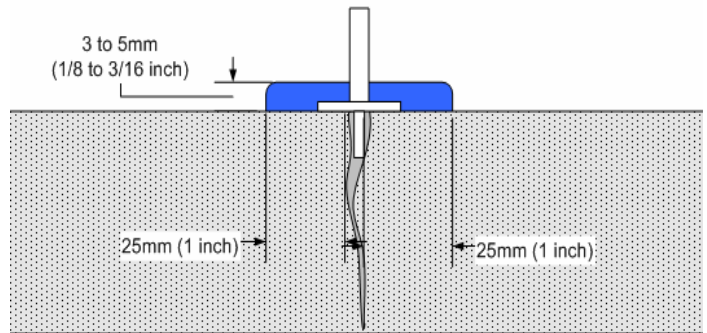
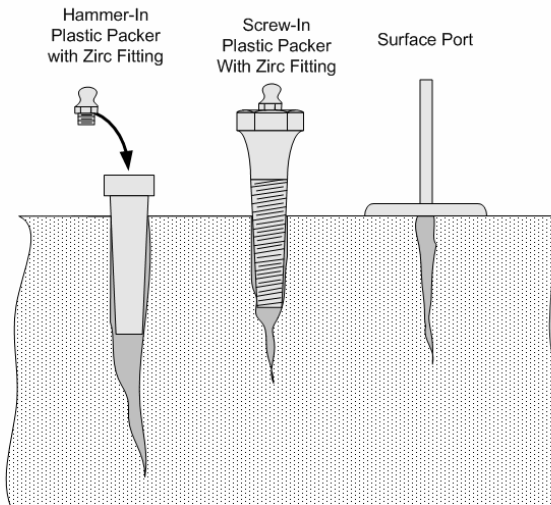
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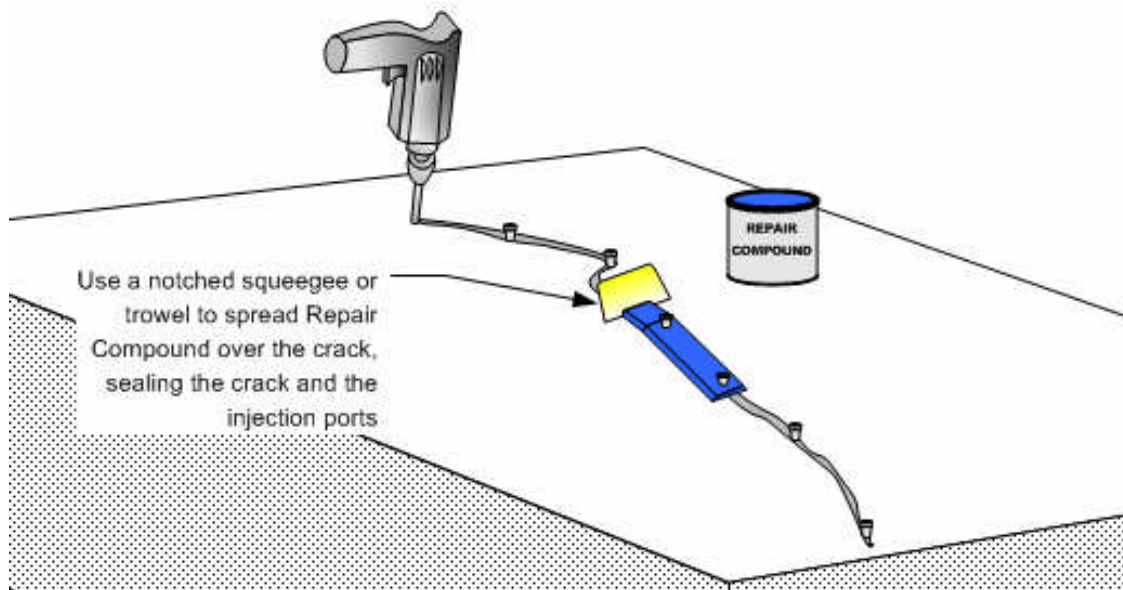
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Porting Adapter Installed in a Crack



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