

Crack Repair Instructions



Concrete Solutions® Crack Repair system was developed from over ten years of research and development on actual jobs throughout the world. It has proven to be very successful for repairing structural moving cracks prior to applying the Concrete Solutions Polymer Concrete application. It is not a guaranteed system but has a high success rate against cracks re-occurring.

There are basically two types of cracks; structural cracks and non-moving surface cracks. Structural cracks go all the way through the substrate and begin or end at an edge or joint. They can be less than 1/16" to more than one inch in width. Structural cracks should always be repaired with the Concrete Solutions Crack Repair System. Non-moving surface cracks start and stop in the middle of a slab and do not go all the way through the concrete substrate. Non-moving cracks will not need to be repaired but can simply be covered up during the resurfacing application of the Polymer Concrete. If in doubt whether or not a crack is moving, treat it as a moving crack and repair it with the Concrete Solutions Crack Repair System. This is the best crack repair system to use prior to applying a polymer concrete overlay system. For the Concrete Solutions Color Flake System, Tuff-Grit System and for solid color epoxy and urethane coating systems, the cracks only need to be filled with Epoxy 500 mixed with silica sand. It is not necessary to use the 4" Fabric and Elastomeric Basecoat except when doing a polymer concrete overlay system.

PRODUCTS AND TOOLS NEEDED

Application Steps	Product Name	Coverage Rate/Gallon	Tools for Application
Fill Cracks with Epoxy	Epoxy 500 (Mix with with Silica Sand #60)	1/8" x 1/4" crack = 300 ft 1/4" x 1/2" crack = 150 ft	<ul style="list-style-type: none"> • rubber gloves • measuring cup • 5" stiff putty knife • 1 gallon mixing bucket • paint brush • stir stick
Apply Elastomeric Basecoat	Elastomeric Basecoat	250 linear feet	<ul style="list-style-type: none"> • 4" paint brush
Lay 4" Fabric	Crack Repair Fabric	300 ft per roll	<ul style="list-style-type: none"> • utility knife/scissors
Apply Elastomeric Basecoat	Elastomeric Basecoat	250 linear feet	<ul style="list-style-type: none"> • 4" paint brush
Patch Fabric with Polymer Concrete Patching	Concrete Polymer (Mix with cement, sand and water)	150 linear feet	<ul style="list-style-type: none"> • 24" metal squeegee
<p>Note: Other equipment and supplies will be needed for cleaning the cracks and mixing the crack repair materials. Read the instructions below for more information on what you will need.</p>			

1. CLEAN THE CRACKS

Before cracks can be repaired they must be cleaned. Cracks should be cleaned during the surface preparation process. For indoor jobs where shotblasting is used, the cracks can be cut open at least 1/2" deep using a dustless grinder and diamond blade attachment. For outdoor jobs, cracks can be cleaned while pressure washing the surface by holding the tip of the spray wand a couple of inches from the crack, to clean it as deep as possible. After cleaning the surface and the cracks, a wet/dry vacuum can be used to help dry the cracks. Once the cracks look dry on the surface they are ready to be repaired.

2. PRIME THE CRACKS WITH CONCRETE SOLUTIONS EPOXY 500

Mix By Volume:

2 Parts Part A (Resin)
1 Part Part B (Hardener)

The next step is to mix up some of the Epoxy 500 to prime the cracks. Wear disposable rubber gloves while mixing and try not to mix more material than can be used within 15 minutes. Start by mixing 1 pint of part A (resin) and 1/2 pint of part B (Hardener). Mix part A and B together for approximately 3 minutes in a 1/2 gallon size mixing bucket using a stir stick. Be sure to scrape the sides and bottom of the bucket as you mix.

Immediately after mixing the Epoxy 500, prime the inside edges of the larger cracks (over 1/8" wide) using a small 3" paint brush. Fine cracks can be primed by brushing a thin bead of the Epoxy 500 directly over the crack and allowing it to soak down in. The quickest method to prime fine cracks is to use a catsup bottle to squeeze a small bead of material over the cracks. If the Epoxy 500 doesn't penetrate into the crack after a few minutes, use a 5" stiff putty knife to help press it in. If the mixed Epoxy 500 gets hot in the bucket or begins to smoke, do not try to use it. Allow it to harden and cool before throwing it away.

3. FILL THE CRACKS WITH EPOXY 500 SAND MIX

Immediately after the cracks have been primed, add some #60 silica sand to the left over mix or mix up another small batch of the Epoxy 500 and then add some silica sand to make a semi-pourable patching mix. Generally mix 1 part of Epoxy 500 to 2 – 3 parts of #60 silica sand. Use a 5" putty knife to scoop small amounts of the sand mix out of the bucket and press the sand mix into the cracks. Fill them as deep as possible, being careful not to spread the sand mix too wide on the surface. Try to keep the Epoxy 500 prime coat and sand mix from spreading wider than 1½" on either side of the crack, so the 4" Crack Repair Fabric in step 7 will cover the Epoxy 500 repairs.



1. Pressure wash cracks.



2. Prime with Epoxy 500.



3. Fill with Epoxy 500 sand mix.

4. SCRAPE THE EXCESS EPOXY AND SAND MIX FROM THE SURFACE

After filling the cracks, flush with the surface, use a 5" putty knife to scrape the excess sand mix off the surface and re-use it if possible in nearby cracks. After filling the cracks and scraping the surface, check for any holes or sunken areas that have opened up and if necessary apply more sand mix where needed. (See pictures 1 – 4)

5. APPLY CONCRETE SOLUTIONS ELASTOMERIC BASECOAT OVER THE EPOXY 500

Before applying the Concrete Solutions Elastomeric Basecoat, scrape all the crack repairs to remove any drips left behind from the epoxy application. The Elastomeric Basecoat can be applied over the Epoxy 500 while it is still tacky within one hour or after it is completely dry. Brush the Elastomeric Basecoat over the repaired cracks approximately 5" wide (2 ½" on each side of the center of the crack). Do not apply the Elastomeric Basecoat too thick and do not brush more than 1 to 2 lineal feet at a time, so that the fabric can be laid and secured before the it begins to dry.

6. LAY THE CRACK REPAIR FABRIC INTO THE WET ELASTOMERIC BASECOAT

After brushing 1 to 2 feet of Elastomeric Basecoat 5 inches wide over the crack, immediately lay the into the wet Elastomeric Basecoat and centered over the crack as much as possible.



4. Scrape up excess sand mix.



5. Apply Elastomeric Basecoat over Epoxy 500.



6. Lay crack repair fabric over Elastomeric Basecoat.

7. APPLY CONCRETE SOLUTIONS ELASTOMERIC BASECOAT OVER THE FABRIC

Immediately after laying the fabric into the first coat of Elastomeric Basecoat, brush another thin coat over the fabric to completely saturate it and to secure the fabric flush with the surface. Continue applying the Elastomeric Basecoat and fabric in 1 to 2 foot sections at a time until all of the cracks have been completed. Where the crack changes directions, cut the fabric using a pair of scissors or a utility knife. Lay the cut piece end to end where the crack changes directions without overlapping the edges.

PATCHING THE CRACK REPAIRS WITH CONCRETE SOLUTIONS POLYMER CONCRETE

Once the Elastomeric Basecoat is completely dry under the fabric and on top of the fabric the crack repairs should be patched smooth with the Concrete Solutions Polymer Concrete. Even though the Elastomeric Basecoat on top

of the fabric feels dry, it may still be wet under the fabric. To be sure it is completely dry, push firmly on the fabric with your fingers to see if it can be moved. If it moves, the Elastomeric Basecoat is still curing underneath which means it will be necessary to wait longer before proceeding with the patching application. The purpose of the patching application is to cover the crack repairs so they will not be noticeable through the Concrete Solutions Polymer Concrete thin resurfacing and texture coat applications, such as the Squeegee Coat, Fine Broom Finish, Trowel Knockdown Texture and Swirl Pattern Finish. For the Stamped Concrete and Leveling applications, 1/4" thick or more, it will not be necessary to patch over the Elastomeric Basecoat and 4" Fabric since the thick resurfacing application will be sufficient to cover them.

The Mixing Formula for the Concrete Solutions Polymer Concrete Patching Mix is as follows:

- 1 Part Concrete Solutions Concrete Polymer
- 1 Part Water
- 2 Parts Cement (Portland Type I/II)
- 4 Parts Silica Sand (#60 or 90)

Note: Substitute the word "part" for any size measure (quart, gallon etc.) To make up the amount of mix desired.

Mix these ingredients together in a 5 gallon bucket for 3 – 5 minutes using a 1/2" drill motor and a mixing paddle to achieve a creamy, lump free consistency.

8. FOG THE SURFACE WITH WATER NEXT TO THE CRACK REPAIRS

The best way to apply the patching mix is by working in sections of approximately 10 lineal feet at a time. First lightly wet the concrete surface next to the Elastomeric Basecoat and Fabric with water about 2 feet on each side using a pump-up sprayer. The water helps the Polymer Concrete stay workable long enough to finish it into a smooth surface.

9. SPREAD THE PATCHING MIX OVER THE CRACK REPAIRS

Pour out a thin row of the Concrete Solutions Polymer Concrete Patching Mix down the center of the 10 foot section of crack repair you just fogged with water. Using the Concrete Solutions 24" metal edge squeegee, quickly spread the patching mix material back and forth over the crack repair to work it into the water dampened concrete surface.



7. Apply Elastomeric Basecoat over fabric.



8. Fog surface with water.



9. Spread patching mix over crack repair.



10. Pull the material to a pile.



11. Spread it to a smooth finish.



12. Scrap edge and feather to zero.

10. PULL THE MATERIAL INTO A PILE NEAR THE STARTING EDGE

After quickly spreading the patching material back and forth over a 10 foot section, pull the excess material into a pile at one end of the patch.

11. SPREAD THE PATCHING MIX SMOOTH OVER THE CRACK REPAIRS

Place the behind the pile of material so it is centered over the fabric. Press it firmly against the surface while pulling the patching mix down the center of the fabric. You should be leaving a thin 2 foot wide patch of material one foot on each side of the fabric.

12. SCRAPE UP THE EXCESS MATERIAL FROM THE EDGES

After spreading the patching mix smooth over the cracks, carefully scrape up any excess material that remains on the edges of the patch using a 5" putty knife or the metal edge squeegee. Keep the putty knife as close to the feathered edges of the patch as possible to prevent marking up the deeper areas of the patch. The excess material can be put back into the mixing bucket to be re-used on nearby cracks. To be sure the edges are completely feathered to zero they can be fogged with water using a spray bottle and then feathered flush with the surface using the 5" putty knife, hand trowel or the metal edge squeegee.



13. Begin the next patch.



14. Apply a squeegee coat over entire surface.



15. Apply desired finish.

13. BEGIN THE NEXT PATCH WHERE YOU LEFT OFF

Once you have completed your first 10 foot section and feathered all the edges to zero, begin where you left off with the next 10 foot section and so on until all the crack repairs are patched smooth with the Concrete Solutions Polymer Concrete. **Note:** One patch coat is usually sufficient if you are planning to do a Trowel Knockdown Finish over the surface. For Fine Broom Finishes and Swirl Pattern Finishes two patch coats are recommended to be sure the fabric does not show through the finished application. Patching over the Fabric and Elastomeric Basecoat with the Concrete Solutions Polymer Concrete is the same idea as patching over drywall taping, just using different materials. If done properly the repairs will not show through your finished application.

14. APPLY A SQUEEGEE/BOND COAT OVER THE REPAIRS

When all the patching is completed, allow the Concrete Solutions Polymer Concrete to dry approximately one hour or until dry to touch before proceeding with the resurfacing application. A turbo fan (used by carpet cleaners) can be used to speed up the drying process if desired. The next step after all the crack repairs are completed is to apply the Concrete Solutions Polymer Concrete Squeegee/Bond Coat or Resurfacer to smooth out the surface and to blend all the repairs together. See the Polymer Concrete Squeegee/Bond Coat instructions in the Concrete Solutions Training Manual for information.

15. APPLY THE DESIRED TEXTURE COAT OR 1/4" STAMPING APPLICATION

After applying a Squeegee/Bond Coat over the surface, a texture coat of Concrete Solutions Polymer Concrete can be applied or a 1/4" Stamped Concrete application. Refer to the Polymer Concrete Texture Coat section or the 1/4" Stamped Concrete section in the Concrete Solutions Training Manual for detailed mixing and application instructions.



Fine broom finish



Swirl pattern finish



Trowel knockdown finish



1/4" stamped concrete finish

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Rhino Linings Corporation
9747 Businesspark Avenue, San Diego, CA 92131
858-450-0441 • Fax 858-450-6881
1-800-422-2603
www.rhino linings.com

Concrete Solutions by Rhino Linings
7455 Carroll Road, San Diego, CA 92121
1-800-232-8311 • Fax 858-566-4346
www.concretesolutions.com