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PROJECT ID:
CONTRACT NO: _____

LOCATION: _____

RELEASED: 5.1.25
REVISION: -

AC-PRK	POLYMER CONCRETE REPAIR KIT

Polyester Repair Kit

Polyester is a material that is easy to repair with materials that are easy to handle. An average do-it-yourselfer can easily carry out polyester repairs. On this page you will find a detailed description of how to carry out polyester repairs.

What is Repaired with Polyester

- Reinforce an existing polyester product
- Repair cracks
- Repair deep/large scratches
- Repair holes from drilling or damage
- Repair broken parts

With a polyester repair, all damaged fibers are removed and the laminate is completely rebuilt by laminating with polyester resin and fiberglass mat. The repair is then completed. If you do this neatly, the repair will be just a strong as the original and the repair will be virtually invisible.

What do you need:

Included:
- Polyester laminating resin
- Glass mat
- Brushes
- Mixing cups & mixing spatulas
- Polyester top coat
- Acetone (for cleaning)

Provided by others:
- Fiber disc
- Latex gloves
- Dust mask
- Venting roller
- Sandpaper and polishing paste (for finishing)



Tips For A Polyester Repair:

- Glass mat can be cut and torn. Tearing creates invisible seams.
- Do not use too much hardener for your polyester repair, an average of 2% is recommended. The more resin you make, the less processing time you have due to the temperature development during the chemical reaction.
- De-aerate each layer by using a tamping motion with a brush or by using a de-aeration roller.
- If the resin is not yet completely hard, you do not need to sand before applying the next coat. Test this by making an impression in the polyester with your nail.
- Minor damage can also be repaired by mixing an amount of cut glass fibers with a small amount of prepared polyester resin. The resulting paste can be used as a repair paste in small holes or damage.

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Step-By-Step Plan for Polyester Repair

Step 1. Preparing the polyester repair
Work can only be done on clean and undamaged polyester. Remove all broken and pulverized polyester. This can be done by grinding with a fiber disc. This releases a lot of dust, so protect yourself against this with a dust mask. Fix loose parts and position loose parts.

Step 2. Beveling Edges
Bevel the edges of the damaged part well. If you also reach the rear of the repair, you do not have to grind away the entire thickness. In that case, half the thickness is sufficient. This limits the amount of grinding work and also the final size of the repair. Also grind away any gelcoat on parts where you will apply new glass mat. This way you have a good and large enough surface to allow the repair to adhere.

Step 3. Making a shim
You should now have a cleanly ground workpiece, but there may still be parts missing or gaps that need to be bridged. Because laminating actually only works well when something is being worked on, the larger missing pieces must be temporarily provided with a shim. It depends very much on the workpiece how it can best be made. In many cases, a piece of wood or cardboard or even a folded or wadded newspaper is sufficient. It the filler piece needs to be removable again, wrap it in kitchen foil or packing tape.

Step 4. Laminating fiberglass mat with polyester resin
Cut enough glass mat to fill the repair. Often multiple layers need to be applied. Make each layer of glass mat slightly smaller than the previous layer. This way you neatly fill the damage.
Now it's time to do the actual repair. Mix an amount of polyester resin with sufficient polyester hardener. For 0.25 kg of polyester resin you need approximately 5 ml of hardener.
Apply the polyester to the broken surfaces and place a piece of fiberglass mat in it. Apply more polyester until the glass mat is saturated. Roll the laminate with a de-aeration roller after each layer. Then apply a second layer and saturate it as well. You will notice that you need a little less resin for this because the glass mat also absorbs excess resin from the previous layer. Be more careful when applying resin towards the end of the repair. This way you don't apply too much resin. The structure of the glass mat may remain visible.

Step 5. Repeat on the back if necessary
If you can get to the rear, remove the temporary reinforcements now. Grind the back cleanly or diagonally and apply a glass mat with polyester resin. The working method is the same as the front.

Step 6. Finish the polyester repair with topcoat or lacquer
The repair is now just as strong as the original. All that remains is to finish the repair so that it is no longer visible.
Once the back of the repair is visible, you can grind it flat. This again can be done with the fiber disc. Move it quickly over the surface, do not let the fiber disc catch laminate. Then apply a color-matched top coat. Mix the polyester topcoat with sufficient hardener and apply it with a fleece roller.
You can finish the front in the same way, but it is also possible to choose to finish the finish more extensively. This makes the repair completely invisible. To do this, grind out the repair to just below the surface. Check this with a slat. Make sure you stay approximately 0.5-1 mm below the surface. Now make gelcoat in color and apply it to the repair. Repeat this after curing if necessary to get above the surface. Gelcoat cures with an adhesive effect. Remove the sticky layer by wiping it away with a cloth and acetone. Sand the repair area flat with waterproof 240-grit sandpaper. If the repair is almost completely flat, switch to 400-grit sandpaper until the repair is completely flat. You then finish the entire sanding ladder until you have a somewhat shiny surface. Polish this to a high gloss. The repair has now become invisible.

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