

## Detailed Vertical & Overhead Application Instructions

### Site Preparation

**Ensure that Surface is Clean and Dry:** For most vertical work such as Retaining Walls, Bridge Pillars, Columns, Ceiling Joists, and Curbs, there is very little preparation necessary to ensure the area is clean and free of contaminants. If needed, use chipping hammers, grinders, blasting equipment to mechanically remove loose concrete, corrosion, dirt and all contamination to produce a clean, dry, rough surface. Usually a wire brush is more than sufficient to clean the concrete or any rusting rebar. If you are fixing a curb where the damage has been painted over, you will want to grind the paint off with an angle grinder equipped with a diamond cup wheel or stone. You will want to use a leaf blower to get all the remaining dust and grit out of the cleaned area.

**Tape or No Tape:** If you want a flush to grade repair, you do not need to use duct tape, although some applicators use duct tape to mirror the damaged area. If you prefer an “above grade-cut-out-look” you will want to use duct tape to symmetrically tape off around the repair.

### Mixing and Applying either FlexKrete Primer or FlexPrime

**Some contractors prefer to prime with the FlexKrete Resin instead of FlexPrime, especially in cold weather and some overhead repair situations.**

**To Prime with FlexKrete Resin:** **Measure out and catalyze enough material to paint a thick coat over the area. 1-2 minute mixing times and the use of FlexTemp Additive are recommended for tack times needed in less than 10 minutes. The coating must be very tacky and sticky in order to hold repair material.**

**To Prime with FlexPrime:**

**Estimate Amount of FlexPrime:** You are going to mix enough FlexPrime to paint a VERY THIN coat that completely covers the concrete and voids within the repair area. A simple way to estimate the amount needed is to estimate approximately 300 square foot of coverage per gallon. (i.e. 2.5 sf. an ounce) (38 sf. a pint) (75 sf. a quart).

**Mix and Apply FlexPrime:** Mix equal parts of A & B for 3+ minutes, and apply a VERY THIN COAT with a brush, roller, or spray. Make sure that the FlexPrime is not puddled at all. If the surface is very rough you may need to take a dry brush to thin out any puddles or ridges.

**Allow FlexPrime to Tack:** For vertical repairs it is critical to ensure that the FlexPrime is TACKY enough to hold the FlexKrete in place while it cures. If you do not want to wait as long for the FlexPrime to reach it's VERY STICKY stage, a torch can be used to preheat the concrete before applying FlexPrime so that it will tack more rapidly. Without torching the tacky stage can take over 30 minutes at 70 degrees, up to several hours in colder temperatures.

### Mixing and Applying FlexKrete

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**Estimate The Volume of FlexKrete Slurry Needed:** Since you will want to mix enough slurry to fill the repair area but not throw any away, it is a good idea to have all the repair areas in the immediate area, primed and ready. The simplest method is to look at the repair and estimate the volume of sand required to completely fill the void, and then divide by 2 to determine the amount of FlexKrete needed. (Example: One gallon void  $\div$  2 = ½ gallon of FlexKrete to 1 gallon of fumed silica and 1 gallon of sand)

**Determine Consistency of FlexKrete Vertical/Overhead Slurry:** A good starting point for a stiff batch is 1 part FlexKrete, 2 parts amorphous fumed silica, and 2 parts medium blasting sand. MORE FUMED SILICA MAKES IT STIFFER, LESS SAND MAKES IT LIGHTER. If you are doing overhead repairs that are very thick, you may want to cut back on the sand to 1.5 parts to lighten up the slurry. For curbs, you can cut back on the parts of fumed silica and replace with sand if you do not need that stiff of a mixture. You can vary the ratios to meet your needs as long as there are no more than 4 parts of fumed silica and sand to one part of FlexKrete.

**Mix FlexKrete Vertical/Overhead Slurry:** The easiest way to mix in the fluffy fumed silica is to catalyze the FlexKrete for one minute, then stop mixing. Then add fumed silica and then load the sand on top of it, working it in manually with your paddle before paddle mixing. Some applicators also use cardboard covers over their mixing bucket to prevent loss of fumed silica. You should always wear respiratory protection when working around fumed silica.

**Trowel Slurry:** The vertical slurry mix is very stiff like bread dough or silly putty, therefore, the easiest way to get the material out of the bucket and onto the repair is to use a gloved hand to simply grab handfuls of material and pack them into the void above grade. Then you can then slice to grade or trowel above grade to the tape.

**Retain Expansion Joints:** On vertical and overhead repairs it is usually easiest to place expansion joint strips at the point of movement, while you are packing in the FlexKrete slurry.

### **Finishing**

**Finishing:** If you use the tape off method, you should pull the tape before the repair is set up. If you use the “Flush-to-Grade” method, and the area is not going to be painted, you may want to put some finishing touches on the cured repair with an angle grinder or stone for final smoothing, "dusting" and/or color matching.