

**PI.055 - QUICK NOTES: Preparing Cracks for Polymer Modified Cementitious Overlays**

Revised: 1.30.16

The following guide is designed to assist the experienced trained and certified installer with the application of crack filling with QUICK-CRACK™ Repair Fill or MERCAP-445™. Understand that “crack repair” cannot be guaranteed. If each step followed the likelihood that the crack will remain stable is high and the concrete will again crack in the saw cut tension relief joint that should be installed.

Before the application of QUICK-CRACK™ or MERCAP-445™, please read and understand the Product Information Sheets, Technical Data Sheets and Safety Data Sheets pertaining to all of the products to be used. Improper preparation, application or understanding of other important variables may result in job failure and/or personal injury.

Differences: QUICK-CRACK™ has a much faster cure schedule than MERCAP-445™. However, QUICK-CRACK™ is very moisture sensitive and MERCAP-445™ is not as sensitive to moisture.

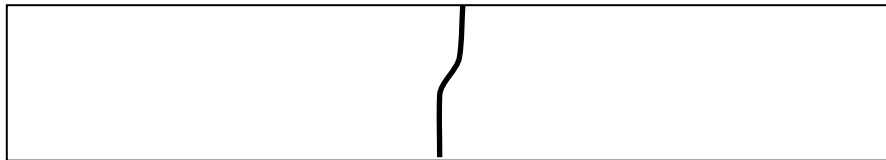
<b>Preparation</b>	<ol style="list-style-type: none"> <li>1. Use a “V” type joint preparation blade for chasing open the cracks that are to be filled. This will remove any loose edges of concrete and create a larger opening for accepting the repair resin.</li> <li>2. Use a high powered leaf blower to remove any debris that will interfere with the QUICK-CRACK™ or MERCAP-445™ from adhering to the sides of the concrete.</li> <li>3. <b>Ensure that the concrete area around and in the crack are completely dry.</b> QUICK-CRACK™ Repair Fill will not adhere to damp concrete. It is critical that the crack not simply be dry on the surface of the concrete but also at the bottom of the crack at grade level. If the top of the crack is dry but the bottom is not, QUICK-CRACK™ will harden and cure on top but not the bottom. This will result in a delayed “rising” of the material weeks or months later due to the lack of curing at grade level. To achieve the level of dry required, use a “rose bud” type torch to ensure the crack is dry down to grade.</li> </ol>
<b>Application</b>	<ol style="list-style-type: none"> <li>1. Mix only the needed amount of QUICK-CRACK™ or MERCAP-445™ that can be applied within a 10 minute period.</li> <li>2. Mix according to the container recommendations.</li> <li>3. Pour QUICK-CRACK™ or MERCAP-445™ into the opened crack and allow to seep down into the crack.</li> <li>4. <b>DO NOT GET ANY QUICK-CRACK™ or MERCAP-445™ ON THE SURFACE OF THE CONCRETE TO BE RESURFACED or OVERLAYED.</b> Polymer modified cementitious overlay products will not permanently adhere without an aggregate binder.</li> <li>5. When filling the open crack it is important not to completely fill the crack all the way to the surface. Allow the QUICK-CRACK™ or MERCAP-445™ to fill up to 1/8” or 4 mm below the surface of the concrete that is to be resurfaced.</li> <li>6. Expect areas of the crack to require additional applications where it has saturated deeper than in other areas. It is important to fill the crack repeatedly until it stops absorbing into the crack.</li> <li>7. Once cracks stop absorbing, pour a bead of dry, clean silica quartz over the filled crack. Be sure that the crack is done absorbing before proceeding to this step. The bead of silica quartz should be applied 3/4” or 19 mm thick and 2” or 51 mm wide across the filled crack. This will act as a binder for the overlayment to adhere to it.</li> <li>8. Once the QUICK-CRACK™ or MERCAP-445™ has hardened, blow off or sweep off the excess silica and use a stiff bristled brush to remove loose silica quartz from the crack. At this point the filled cracks should appear as slighted recessed and not protruding up above the surface of the concrete that is to be coated. If the fill is protruding above the surface of the concrete, use a small hand grinder to profile the fill level with the concrete surface.</li> <li>9. New saw cuts that will act as expansion joints and/or tension relief joints must be installed in the concrete surface on exterior applications. These cuts should be placed as close to the crack as possible and in the same direction and angle. See diagram below.</li> </ol>
<b>Advantages</b>	<ul style="list-style-type: none"> <li>• Safe, non-hazardous and user friendly.</li> <li>• The correct level of flexibility and tensile strength to help fill the crack.</li> </ul>
<b>Disadvantages</b>	<ul style="list-style-type: none"> <li>• Crack filling is not to be considered guaranteed crack repair whatsoever. Although crack filling is a viable attempt to fill the crack in hopes of creating a more controlled crack in a saw cut, it is not to be guaranteed.</li> <li>• QUICK-CRACK™ or MERCAP-445™ must be carefully applied, as polymer modified cementitious coatings including will not permanently adhere without a binder.</li> </ul>

It is important to understand the complete objective before you proceed to attempting to repair and fill a crack. Most concrete surfaces have tool joints applied to the slab to help try to control where the concrete will eventually crack. Many times, these tool joints are not where the concrete ultimately cracks.

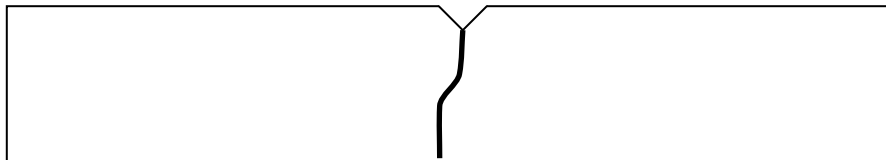
With that said, the end objective is to “weld” the crack together making it the strongest portion of the slab and cutting a new tension relief cut where the concrete will crack again. Essentially, you are simply controlling where the concrete will crack by cutting a weaker line in the slab.

Simple welding a crack is not sufficient. If you do not cut a tension relief joint the concrete will not crack in the new weld but right next to the weld. Unfortunately, many homeowners do not want a new cut in their concrete, especially if it is at an angle that is not in line with the existing tool joints. It will be up to you to explain that they have the choice of either accepting a straight line in the form of a saw cut or a crooked crack as they previously had. The diagrams below will help you understand all of this.

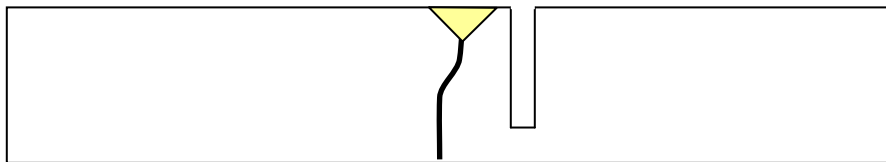
**Side profile of concrete with a crack**



**Side profile of crack chased with V-Blade**



**Side profile of new tension relief cut**



**Top view of concrete repaired**

