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# CONCRETE CRACK LOCK

## Carbon-Fibre Crack Bridging Stitch

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High Strength

Non-Corrosive

Alkali Resistant

Minimal Aesthetic Impact



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# CONCRETE CRACK LOCK

## Carbon-Fibre Crack Bridging Stitch

### DESCRIPTION

The Concrete Crack Lock (CCL) is a revolutionary new product that was developed to improve concrete crack repair. The CCL is installed by making a single blade-width cut across the crack and drilling two holes along the cut at the appropriate locations. Once the preparation is complete and free of dust, it is filled with an approved ARDEX Epoxy Paste such as ARDEX RA 88 (for vertical applications) or ARDEX RA 142, ARDEX RA 144 or ARDEX RA 146 (for horizontal applications) and the CCL is inserted. Once installed, the CCL permanently bonds both sides of the crack together. Due to the unique shape of the CCL and the preparation in the concrete, the tensile strength of the carbon fibre is relied upon as well as the epoxy bond strength along its length.

### TYPICAL APPLICATIONS

The Concrete Crack Lock has been engineered to stop cracks in concrete slabs, poured walls, masonry, concrete block foundations, columns, industrial buildings, bridges, and foundations. The CCL System is designed for cracks of various sizes under virtually any circumstance. It can also be used to increase seismic strength to repairs after an earthquake.

### ADVANTAGES

- High Strength
- Non-Corrosive
- Alkali Resistant
- Minimal Aesthetic Impact

### PREPARATION

The surface of the concrete must be clean and free of loose debris. Lay out the individual crack locks by marking the crack every 200 to 300mm. Then, trace the crack locks at each location and orient them at roughly 90 degrees to the crack. Vary the angle at each location slightly to reinforce the crack from moving in all directions.

Once the layout is complete, cut across the crack ensuring that the cut is at full depth for the entire length. The blade should be set at around 12mm deep to allow sufficient cover over the CCLs. Once the cuts are made, mark the ends along the cut and drill 13mm holes at each end.

### APPLICATION

Clean all loose debris from the preparation and fill with an approved ARDEX Epoxy Resins such as ARDEX RA 88 (for vertical applications) or ARDEX RA 142, ARDEX RA 144 or ARDEX RA 146 (for horizontal applications). Once the preparation is filled with epoxy, insert the Concrete Crack Lock and scrape any excess epoxy off of the surface. This material can be worked into the crack between the CCLs. The crack needs to be filled by this method or by injection to stop any movement between the opposite sides of the crack.

### TOOLING & FINISHING

Any tool that will accept a diamond saw blade suitable for cutting concrete will work to make the cuts across the crack. A tuck point grinder or slotting tool with dust shroud works best to minimise dust while allowing to set the depth of the cut. Use any hammer drill with a 13mm diameter masonry drill bit to drill the holes. Larger bits can be used but will require additional epoxy to fill the larger holes.

### Pay Attention To The Following:

Design calculations must be made and certified by an independent licensed professional engineer.

## **TECHNICAL DATA**

Results may differ based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions and curing conditions.

### **Storage Conditions**

Store dry at 4° - 35°C

### **Shelf Life**

10 years

### **Color**

Black

### **Primary Fibre Direction**

unidirectional

## **FIBRE PROPERTIES**

### **Tensile Strength**

4900MPa

### **Tensile Modulus**

250GPa

### **Strain**

2%

### **Density**

1.79 g/cm<sup>3</sup>

### **Nominal Fibre Thickness**

0.4445mm

## **CRACK LOCK PROPERTIES**

### **Tensile Strength**

1241MPa

### **Web Thickness**

1.40mm

### **Web Width**

10.67mm

## **DISCLAIMER**

The technical details, recommendations and other information contained in this data sheet are given in good faith and represent the best of our knowledge and experience at the time of printing. It is your responsibility to ensure that our products are used and handled correctly and in accordance with any applicable Australian Standard, our instructions and recommendations and only for the uses they are intended. We also reserve the right to update information without prior notice to you to reflect our ongoing research and development program. Country specific recommendations, depending on local standards, codes of practice, building regulations or industry guidelines, may effect specific installation recommendations. The supply of our products and services is also subject to certain terms, warranties and exclusions, which may have already been disclosed to you in prior dealings or are otherwise available to you on request. You should make yourself familiar with them.

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