

TECHNICAL DATA SHEET

Rhino Carbon Fiber™ Concrete Crack Lock® Stitches | Revision Date 7/25/2019

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01: PRODUCT IDENTIFICATION

RHINO PRODUCTS USA
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Product Name: Rhino Carbon Fiber™ Concrete Crack Lock® stitch

02: DESCRIPTION

The Rhino Carbon Fiber™ Concrete Crack Lock® stitch (CCL) is a revolutionary new product that was developed to improve concrete crack repair. The CCL is installed by making a single blades 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 RCF™ High Strength Anchoring Epoxy Paste 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 fiber is relied upon as well as the epoxy bond strength along its length.

03: WHERE TO USE:

The Rhino Carbon Fiber™ Concrete Crack Lock® stitch has been engineered to stop cracks in concrete slabs, poured walls, masonry, concrete block foundations, columns, industrial buildings, bridges, and foundations. The Rhino Carbon Fiber™ Concrete Crack Lock® stitch 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.

04: ADVANTAGES

- High Strength
- Non-Corrosive
- Alkali Resistant
- Minimal Aesthetic Impact
- Minimally Intrusive
- Shape Maximizes Strength

05: 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 40° - 95°F (4° - 35°C)
Shelf Life 10 years
Color Black
Primary Fiber Direction unidirectional

FIBER PROPERTIES		
Property	English	Metric
Tensile Strength	710 ksi	4900 MPa
Tensile Modulus	36.3 Msi	250 GPa
Strain	2%	2%
Density	0.065 lbs / in ³	1.79 g/cm ³
Nominal Fiber Thickness	0.0175 in.	0.4445 mm



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Concrete Crack Lock® stitch properties

Property	English	Metric
Tensile Strength	180,000 psi	1241 MPa
Web Thickness	.048 in	1.40 mm
Web Width	.455 in	10.67 mm

06: LAYOUT: SURFACE PREP

The surface of concrete must be clean and free of loose debris. Lay out the individual crack locks by marking the crack every 8" to 12". Then trace the crack locks at each location and orient them at roughly 90 degrees to the crack (a simple template may also be used). Vary the angle at each location slightly to reinforce the crack from moving in all directions.

Once the layout is complete, make the cuts across the crack using a .08 (2mm) thick cutting wheel and ensure that you are cutting to a minimum depth of 5/8" (16mm) for the entire length. This will allow sufficient epoxy cover over the CCL's. Once the cuts are made, drill 1/2" (13mm) diameter holes at the appropriate locations on the ends of the cuts to accept the CCL.

Hint: once one end is drilled, re-check the spacing prior to drilling the second end. Also 5/8" (16mm) diameter holes may be drilled to help ensure proper fit even with a slight misalignment but this will use slightly more epoxy.

07: APPLICATION

Clean all loose debris from the preparation and fill with RCF™ High Strength Anchoring Epoxy Paste. Once the preparation is filled with epoxy, work the CCL into the preparation ensuring that all voids around it are filled and scrape any excess epoxy off of the surface. This material can be worked into the crack between the CCL. The crack needs to be filled by this method or by injection to stop any movement between the opposite sides of the crack.

08: 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 minimize dust while allowing you to set the depth of the cut. Use any hammer drill with a 1/2" diameter masonry drill bit to drill the holes. Larger bits can be used but will require additional epoxy to fill the larger holes.

09: LIMITATIONS

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

