

KIT INCLUDES:

- 10' x 12" wide SRS-660 Bi-Directional Carbon Fiber fabric
- 2 ea. SRS-1000 Structural Epoxy Adhesive (15.9 oz)
- 2 ea. SRS 2100 Rapid Cure Concrete Repair Paste
- 4 static mixing nozzles
- 1 Plastic putty knife
- 1 pair of nitrile gloves

REQUIRED INSTALLATION EQUIPMENT

Surface grinder with diamond cup wheel. Dust extractor or vacuum. SRS-10GUN high thrust dispensing gun for SRS-2100. SRS 16-22GUN dispensing gun for SRS-1000 cartridges. Heavy duty scissors or shears. *Foam rollers and paint tray. *Hardened slotted aluminum roller (* Optional)

SYSTEM OVERVIEW

CrackGuard Carbon Fiber Crack Repair is designed to reinforce cracked concrete and masonry foundation walls. The system uses 12 inch bidirectional carbon fiber fabric bonded with structural epoxy to bridge cracks and restore tensile strength across damaged wall sections. Carbon fiber reinforcement distributes structural loads across the crack and helps resist further crack widening and structural deterioration. CrackGuard carbon fiber reinforcement provides approximately 35,000 pounds per square foot of confinement strength. Each CrackGuard kit provides 10 feet of carbon fiber reinforcement designed specifically for foundation crack repair applications.

TYPICAL APPLICATIONS

Vertical cracks in poured concrete foundation walls. Stair step cracks in CMU block walls. Reinforcement following structural crack injection. Minor spall repair and confinement. Horizontal crack confinement. For larger repair areas, SRS-660 BI is available in roll kits up to 24" wide and 100' long

HORIZONTAL CRACK CONFINEMENT

CrackGuard may also be installed horizontally across cracks or hinge joints to provide localized crack confinement. Typical uses include horizontal cracks in poured concrete walls, hinge joints in block walls, and localized reinforcement in structural crack repairs. Horizontal carbon fiber reinforcement does not replace structural wall stabilization. If cracking is caused by wall bowing or flexural movement, stabilization should be addressed using BowGuard Carbon Fiber Wall Stabilization Systems.

WALL CONDITION ASSESSMENT

CrackGuard carbon fiber reinforcement bridges cracks and resists further widening. The system should be installed on structurally sound concrete or masonry substrates capable of supporting bonded reinforcement. If concrete surfaces are severely deteriorated, weak or sandy, or heavily spalled, the substrate should first be repaired or strengthened prior to installing carbon fiber reinforcement. The surface should also be flat with all voids filled flush prior to installation.

SETTLEMENT INDICATORS

Cracks that appear wider at the top and tighter at the bottom may indicate foundation settlement. If settlement is suspected the structure should be evaluated and stabilized prior to performing crack reinforcement repairs. Foundation stabilization such as piering or underpinning may be required.

OPTIONAL STRUCTURAL CRACK INJECTION

If cracks extend through the wall thickness, structural epoxy crack injection may be performed prior to installing carbon fiber reinforcement. Refer to the CrackGuard Structural Injection Instructions.

INSTALLATION ENVIRONMENT REQUIREMENTS

CrackGuard Carbon Fiber Crack Repair may be installed on the interior or exterior of the foundation wall. Ambient air temperature must be above 60°F (16°C) and concrete surface temperature must be above 60°F (16°C). These temperatures must be maintained during installation and for at least 24 hours after installation. Exterior installations must be protected from rain and moisture for 24 hours and tented if necessary to maintain proper curing temperatures. Any exterior applications need to be coated for UV protection.

SURFACE PREPARATION

Using a surface grinder with a diamond cup wheel, grind the wall surface 7 to 8 inches on each side of the crack. Grinding must remove paint, coatings, efflorescence, laitance, and surface contaminants. Prepared surface should achieve a minimum ICRI CSP 2 concrete surface profile. Vacuum or blow off all dust after grinding.

OPTIONAL CONCRETE PRE-TREATMENT

If concrete surfaces are porous, sandy, or weakened, SRS 4000 Concrete Guard may be applied as a pretreatment. SRS 4000 penetrates and strengthens concrete internally, reduces porosity, and improves epoxy bond performance. Allow the surface to dry prior to installing carbon fiber reinforcement.

CRACK AND SURFACE REPAIR

If concrete surfaces are porous, sandy, or weakened, SRS 4000 Concrete Guard may be applied as a pretreatment. SRS-4000 penetrates and strengthens concrete internally, reduces porosity, and improves epoxy bond performance. Allow the surface to dry prior to installing carbon fiber reinforcement.

SPALL AND SURFACE REPAIR

SRS-2100 Rapid Cure Repair Paste may be used to repair minor spalls, surface voids, small defects, and crack filling prior to installing carbon fiber reinforcement. Because SRS-2100 cures rapidly, perform repairs continuously to avoid material curing in the mixing nozzle. If a cartridge empties while the nozzle remains wet, the wet nozzle may be transferred to the next cartridge. For larger spalled or deteriorated areas repair the surface using SRS-2000 Structural Epoxy Paste or a suitable high strength repair mortar. Allow repairs to cure prior to installing carbon fiber reinforcement.

CARBON FIBER INSTALLATION

STEP 1 LAYOUT – Position the carbon fiber reinforcement so the crack is centered beneath the fabric with approximately 6 inches of coverage on each side. Install the fabric so the primary fibers run vertically across the crack. If the crack changes direction the carbon fiber may be cut and overlapped with a minimum 6 inch overlap. Do not twist or deform the carbon fiber fabric. Optional Sub-Slab Installation – If a crack may allow future moisture intrusion, a small apron of the floor may be removed so the carbon fiber strap can extend beneath the slab, down to the footing, and onto the drainage bed.

STEP 2 PRIME COAT– Using the dispensing gun apply a thin prime coat of SRS-1000 Structural Epoxy Adhesive directly onto the concrete surface. A foam roller may be used to distribute the epoxy and work it into the concrete surface.

STEP 3 HIGH BUILD COAT– Apply a second layer of SRS-1000 epoxy to create a high build wet coat for embedding the carbon fiber.

STEP 4 INSTALL CARBON FIBER – Place the carbon fiber fabric into the wet epoxy and press it into the surface using smoothing knives, gloved hands, or a hardened slotted aluminum roller to remove trapped air.

STEP 5 FINAL SATURATION COAT– Apply a final coat of SRS-1000 epoxy over the carbon fiber. Work the epoxy in the direction of the fibers until the fabric appears fully saturated and dark in color. Encapsulate all edges of the reinforcement.

STEP 6 FINAL INSPECTION – Verify that the carbon fiber is fully bonded, the fabric is fully saturated, no wrinkles or air pockets are present, and the edges are fully sealed. Allow epoxy to cure according to product specifications.

FINISHING

After curing excess epoxy may be lightly sanded and the wall may be painted or coated if desired.

TECHNICAL SUPPORT

Structural Reinforcement Solutions 1-888-292-2592 www.StructuralRS.com