

PRODUCT

CPR Products' Carbon Beam Kit: carbon fiber wet lay-up system for concrete repair and stabilization. CPR's #500 Bonding Epoxy has been custom formulated to bond this specific carbon fiber securely to concrete, and cure with a paintable surface. *NOTE* Surface preparation is vital. Without proper wall prep, the fabric will not bond with the concrete.

IMPORTANT: If the wall has a bow or displacement near 2 inches or more, do not install carbon fiber before you excavate behind and straighten the wall. **Consulting a structural engineer is highly recommended**

WATCH A VIDEO OF CARBON BEAM INSTALLATION: www.cpr-products.com/beamvideo.html

DESCRIPTION:

35 Stitch-Bonded Uni-Directional Carbon Fabric is produced from continuous tow carbon fiber. Unique fiber spreading techniques are utilized to obtain the correct UD fabric weight. Carbon Beam can be used for everything from foundation repair, concrete crack repair, concrete reinforcement, bowed basement and foundation walls, reinforcing concrete in roads and bridges, restoring the structural integrity of commercial buildings, both post and pre-construction, and even stabilizing mine shafts.

INCLUDED

One roll of carbon fiber fabric: 100 feet long, 12 inches wide
Three 1.5 gallon units of #500 Bonding Epoxy

REQUIRED BUT NOT INCLUDED

Consultation with structural engineer
Protective eyewear, gloves, and clothing
Diamond-wheel grinder with vacuum attachment
Respirator and ventilation equipment
At least 2 clean, unused measuring buckets –with markings to measure total ounces
Clean, unused paint roller
Clean, unused paint roller pan

ADVANTAGES:

Economical
Stronger than steel
12 inch surface area displaces more load than other narrower products
Stabilize bowing walls
Simple to install
Strengthens displaced walls
Can be used in conjunction with crack injection
Maintenance free
Thin as a dime
Can be painted or coated over

Foundation settlement and movement can be caused by building on clay, back-filled soils that were improperly compacted, or improper maintenance around foundations.

An unstable wall generally requires reinforcement to prevent further movement.

Fixing Bowed Basement and Foundation Walls

A Bowed basement or foundation wall can be straightened but may require excavation near the foundation; lifting the weight of the structure off of the wall and pushing the wall back to as close to plumb as possible. Even after this is accomplished, loss of structural integrity due to stress-cracks dictates a need for reinforcement.

Using carbon-fiber fabric straps in combination with our custom formulated #500 Bonding Epoxy, structural integrity can be re-established.

The repaired wall can then be painted; creating a nearly invisible repair.

Surface Preparation: Surface must be clean and sound, 13-14 inches wide in area of installation. The wall will require grinding (with a diamond-wheel and vacuum attachment) to obtain exposure to solid concrete. Remove all dirt, grease, wax, curing compounds and other foreign matter. Remove water and dust from all surfaces prior to application. Prepared surface areas should be smooth, vertical to wall, and no more than five feet apart (consult structural engineer).

Installation: Cut Carbon Beam fabric to specified length(s). Mix #500 Bonding Epoxy resin at a 2 to 1 ratio (2 parts A component, 1 part B component) using a jiffy mixer.

Keep in mind that a small quantity of this epoxy ***starts curing in 20 minutes*** – so only mix what you can use in this amount of time - ****30 oz. at a time MAXIMUM (20 oz. A and 10 oz. B)**** This is enough resin to fully install one 8' strap of fiber.

***CAUTION: Epoxy cures much faster and generates intense heat when mixed in mass – for example, if you mix an entire 1.5 gallon unit at once it will start generating heat almost immediately, melting the container, then will begin to solidify in a few minutes.**

Pour resin into a paint roller pan, and then apply a thick primer coat to the prepped area using a fine-nap 6" paint roller. Lift fabric and carefully press it into place. Use gloved hands to lightly smooth out air bubbles from the top of the fabric, down. Starting from the top, apply a second coat of resin, rolling vertically in the direction of the stitching to push out air pockets. Completely saturate the beam with resin, ensuring that carbon fiber fabric is fully encapsulated. Allow 24-48 hours for final cure of the #500 Bonding Epoxy.

Limitations/Precautions

Temperature of substrate must be above 40°F. New Concrete must be at least 28 days old.

Storage

Carbon Beam and #500 Bonding Resin should be stored in a dry environment between 60-80 deg. F.