

CARBONBOND CONCRETE REINFORCEMENT SYSTEM



DESCRIPTION

The Intech Carbonbond is a carbon fiber fabric used to strengthen structural elements. The fabric is composed of bi-directional carbon fibers that will be field laminated using Intech Epoxy saturating Intech#500.

SUGGESTED USES

- Increasing the in-plane, out-of-plane and ductility of unreinforced brick and masonry buildings.
- Stabilizing industrial chimneys against seismic and wind forces.
- Increasing the in-plane and out-of-plane strengths of concrete tilt-up walls.

ADVANTAGES

- Corrosion resistant - minimizing costs and wear
- Adds only a 1/16th of an inch to the repaired surface
- Light weight (the weight of aluminum)
- Reduces installation time since heavy equipment and welding is eliminated
- Low thermal expansion
- Flexible wrap conforms to any shape
- Minimal change to structure's shape, weight and appearance
- Used for increasing strength, stiffness, fatigue resistance of damaged structures up to, and at times beyond its initial design value
- Used for shear, confinement or flexural strengthening
- Minimal disruption and noise
- Economical
- Reduces hazards, damage and secondary damage resulting from seismic incidents and falling debris

PACKAGING

*Shipped FOB Caseyville, IL or through authorized distributors.

TYPICAL DATA

Storage Conditions	Store dry at 40°F-95°F
Color	Black
Primary Fiber Direction	Bi-Directional
Weight Per Square Yard (Bc25t)	25 oz.

DIRECTIONS FOR USE

Prepare surface, mix epoxies thoroughly and saturate and apply the wraps.

SURFACE PREPARATION

The preparation of surfaces to receive the Intech Carbonbond must be given careful attention, as the bonding capability of the epoxy for a given application is primarily dependent on proper surface preparation. Concrete surfaces must be structurally sound and free from contaminants such as dust, oil or dirt. Surfaces must be shot blasted or mechanically abraded to achieve a minimum 5-mil profile. Remove fins, sharp edges, and protrusions that may trap air behind the installed wrap. Coated surfaces must be mechanically cleaned

PACKAGING

Product	BC25T
Description	25 oz/sq yd Bi-directional
Primary Fiber	Carbon
Standard Roll Length	100 yds
Available Widths	50"
Roll Sq. Ft.	2000 sq ft

*Minimum order quantities apply; consult Intech representative for more information. Special ordering may be possible after consulting with a representative of Intech. These figures represent standard sizes and are not guaranteed as they may be subject to change at any time.
*Contact Intech representative for special order.

and abraded with 60-80 mesh sandpaper and approved by the manufacturer before applying adhesive. A calcium chloride test is recommended and hydrostatic pressure must be <5psi before epoxy coatings application. Repair all damaged concrete, spalls and irregular surfaces and fill uneven surfaces with Intech putty mix.

MIXING EPOXY

Mixing Epoxy Thorough and complete mixing is critical, a Intech mixer is recommended.

WARNING: Epoxies develop heat during mixing and curing. To keep temperature rise to a minimum, a high surface area to volume ratio during mixing is recommended. For manual mixing, each mix volume should be kept to 5 gallons or less. For automated mixing follow the equipment manufacturer's instructions.

First, mix each component separately. Proportion each component at their specified ratios and mix using a slow-speed drill with jiffy paddle at 400-600 RPM for 3-5 minutes until a consistent color is achieved. No stripes, streaks or color variation should be visible. Use an up and down motion, scraping the mixing container sides and bottom. Mix no more material than may be applied within the specified pot life of the epoxy.

APPLICATION OF WRAPS

FOR DRY LAY-UP

- STEP 1: Using a roller or sprayer, apply a coat of Intech primer onto the prepared surface.
- STEP 2: Apply a coat of saturating resin (Intech#500) to the still tacky primed surface.
- STEP 3: Press the dry fabric (wrap) onto the surface and using a roller, apply pressure to the surface of the fabric to ensure good bonding to the substrate and to roll out any entrapped air before the epoxy sets. Smooth the fabric from center to the edge to remove air pockets. Good saturation of the fabric is indicated by some epoxy oozing out to the external face of the fabric and wetting the fibers on the external face.
- STEP 4: Apply a final coat of saturating resin on top of the fabric using a roller or by using a sprayer (spiked roller can be used to remove any entrapped air).
- STEP 5: Apply paint or protective coating if desired while the final resin coat is still tacky. Fully cured resin must be scuffed for optimum bonding to the paint or protective coating When multi-layer wraps are used, each individual layer shall be firmly bedded and adhered to the preceding layer or the substrate before the epoxy on the preceding layer is fully cured and is still tacky.

PHYSICAL PROPERTIES

	BC25T	ASTM TEST METHOD
Tensile Strength (psi) AVG. Value*	45,500	D3039
Tensile Strength (psi) Design Value**	38,030	D3039
Tensile Modulus (Mpsi) AVG. Value*	3.32	D3039
Tensile Modulus (Mpsi) Design Value**	2.02	D3039
Ply Thickness	.05	
Strength per in/width (lbs/in) AVG. Value*	2,626	D3039
Strength per in/width (lbs/in) Design Value**	2,255	D3039
Resin content by weight (%)	49	
Fiber content by weight (%)	51	

*All tests were performed on fully cured specimens (according to manufacturer's curing specifications), composed of a bi-directional carbon fiber fabric saturated in #500 saturating resin. The average test results of 20-25 specimens were used.

**Design Value = Avg. Value - 3 Std. Deviations; according to ACI Guide 440.2R

FOR WET LAY-UP

STEP 1: Using a roller or sprayer, apply a coat of Intech primer onto the prepared surface.

- STEP 2 (For applications requiring Tack Coat): Apply the tack coat (Intech#4) to the surface using a trowel or putty knife, filling out all pores and leaving a 20-mil thick coating (measured wet) of the tack coat on the surface.
- STEP 3: Press the resin-saturated fabric on to the substrate and using a roller apply pressure to the surface of the fabric to ensure good bonding to the substrate and to roll out any trapped air before the epoxy sets. Smooth the fabric from center to the edge to remove air pockets.
- STEP 4: Apply paint or protective coating, if desired while the final resin coat is still tacky. Dry resin must be scuffed for optimum bonding to the paints or protective coatings.

CURING OF WRAPS

Curing times and temperature for wrap shall be maintained for the designated formulation used, according to the instructions supplied with the epoxy. The cured composite should have a uniform thickness and density, and lack porosity.

PROCEDURE MODIFICATIONS

Due to environmental factors affecting quality of work, installation procedures may be modified to achieve maximum results. Procedure modifications shall be discussed with and approved by the Engineer of record prior to implementing the modifications.

CONDITIONS TO AVOID

- Do not apply to concrete with temperature outside of application temperature range
- Do not apply to concrete less than 30 days old
- Do not apply to concrete with curing or sealing membranes
- Do not apply to base concrete at a temperature less than 45°F