

TechnoWrap™ BC

Bidirectional Carbon Wrap

PRODUCT DESCRIPTION

The Technopol® Carbon Wrap (TechnoWrap™BC) is a 0/90-degree bidirectional, high-strength, non-corrosive carbon fabric designed to be field laminated with epoxy saturant resin to create a carbon-fiber-reinforced polymer (CFRP) composite for structural reinforcement applications.



Buildings
Structures



Transportation
Infrastructure



Water &
Wastewater



Oil, Gas &
Industrial



Waterfront
Structures



Industrial
Facilities

TECHNICAL DATA (DRY FIBER)

	Unit	TechnoWrap™BC
Weave Pattern	-	Bidirectional
Primary Fiber Direction	Degree	0/90
Weight	gr/m ²	200-600
Color	-	Black
Tensile Strength ISO 10618	MPa	4900
Tensile Modulus ISO 10618	Gpa	230
Elongation at Break ISO 10618	%	1.7
Penetrating Time	Sec	30-60
Application Methods	-	Hand lay-up Spray machine Robot processes
Compatible Resins	-	Epoxy, Polyester, Phenolic, Polyurethane, Vinylester
Shelf Time	years	10
Storage Condition	-	Store dry at 4°C-40°C

PHYSICAL PROPERTIES

Code	Width (mm)	Thickness (mm)
TechnoWrap™BC200	50-100	0.11
TechnoWrap™BC400	50-100	0.22
TechnoWrap™BC600	50-100	0.33

ADVANTAGES

- High strength
- Lightweight
- Non-corrosive
- Low aesthetic impact
- Flexible
- Ambient cure
- Chemical and corrosion resistant

- Easy to impregnate using wet or dry lay-up methods
- Molds to fit various shapes

TYPICAL USES

Seismic Retrofit

- Shear strengthening
- Displacement/ductility
- Life safety

Damage Repair

- Deterioration/corrosion
- Blast/vehicle impact

Load Rating Upgrade

- Increased live loads
- New equipment
- Change of use

Defect Remediation

- Size/layout errors
- Low concrete strengths

PACKAGING

Roll Size (Width x Length): 0.5m-1.0m X 50m-100m

INSTALLATION PROCEDURE

PREPARATION OF SUBSTRATE

Prepare surfaces per ICRI Guideline No. 310.1R. Concrete shall be abrasively prepared to achieve an open pore structure in accordance with ICRI Guideline No. 310.2R by means of grinding, sand blasting, shot blasting, or



pressure washing.

Application surfaces shall be clean, sound, and free of standing water at time of application. All dust, laitance, grease, curing compounds, and other foreign materials that may hinder the bond must be removed before installation. In some applications, such as column confinement, the engineer may determine that the installation is not bond-critical, in which case abrasive surface preparation is not required. Existing concave and convex surfaces must be filled/transitioned using thickened epoxy, or a suitable repair mortar. All corners to be wrapped around shall be rounded to a ½" (13 mm) minimum radius using a grinder, or thickened epoxy.

APPLICATION

TechnoWrap™BC installation shall only be performed by contractors and personnel who have been properly trained. Apply one coat of primer using a nap roller. Where minor surface defects are present, apply epoxy saturant thickened with fumed silica (maximum ratio of 2 parts fumed silica to 1 part epoxy, by volume) in lifts no thicker than 25 mm. Apply the saturated fabric before the primer and paste/thickened epoxy have cured. Sheets can be cut to required length using heavy-duty scissors. Saturate fabric mechanically or manually, ensuring that full fiber saturation is achieved. Apply the saturated sheet to the primed surface and remove entrapped air using hand pressure, rollers, or trowels. Apply additional layers, as necessary, to meet the project requirements, ensuring each layer is in firm contact with the previous layer. Feather all seams and edges with thickened epoxy. Allow epoxy to fully cure (approximately 72 hours at 21°F) and lightly sand epoxy before applying finish coating.

LIMITATIONS

- Design calculations must be achieved by a professional company.
- Concrete deterioration and steel corrosion must be resolved prior to application.
- Only apply this product when the ambient temperature ranges of the approved epoxy adhesive. Minimum application temperature is 4°C.

CAUTION

The use of safety glasses and chemically resistant gloves is recommended. Use appropriate clothing to minimize skin contact. The use of NIOSH-approved respirator is required to protect respiratory tract when ventilation is not adequate to limit exposure below the PEL. Refer to Safety Data Sheets (SDS) for detailed information.

FAIRST AID

Skin

Wash fibers off skin with water and soap. If fibers are embedded in the skin, remove with tweezers. Discard clothing that may contain embedded fibers. Seek medical advice if exposure results in adverse effects.

Eyes

Immediately flush with a continuous water stream for at least 20 minutes. Washing immediately after exposure is expected to be effective in preventing damage to the eyes. Seek medical advice.

Inhalation

If there is inhalation exposure to the fibers of this product, remove source of exposure and move victim to fresh air. If victim is not breathing, give artificial respiration. If there is breathing difficulty, give oxygen. Seek medical advice for any respiratory problems.

Ingestion

Ingestion is not a likely means of exposure for this product. If ingestion does occur, do not induce vomiting. Give nothing by mouth if victim is unconscious. Seek medical advice.

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